Chapter 9
Collecting Experience: The Multiple Incarnations of *Very Nervous System*

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David Rokeby's *Very Nervous System* is an interactive installation in which the audience's movements are translated into a complex, responsive soundscape. Rokeby has been exhibiting the installation since the 1980s and it is now seen as a classic media artwork. It has been written about extensively, awarded several prizes, exhibited frequently all over the world, and acquired for the permanent collection of numerous museums. But what exactly is *Very Nervous System*? Over its 30-year life, the work has had many incarnations. Its hardware, software, physical configuration, and sonic output have all changed. The technological core of the system has been used as the substrate for many of Rokeby's other works and has also been packaged, sold, and extensively used as a tool by other artists.

The mutability, celebrity, and longevity of *Very Nervous System* all pose interesting questions about the documentation, conservation, and contextualization of media artworks over time and through processes of change. These questions are compounded by the emphatically experiential nature of the work. As a physical installation, *Very Nervous System* is basically an empty space – a zone of potentiality that is activated by the participation of its audience. The work exists in the multiple individual experiences that have brought it to life in its many configurations over three decades. In 2009, the Ludwig Boltzmann Institute for Media.Art.Research commissioned Caitlin Jones and I to create a documentary collection for *Very Nervous System* based on its presentation in the exhibition *See This Sound* at the Lentos Art Museum in Linz (Jones and Muller 2010). Caitlin Jones is a curator and archivist who played a key role in developing the Variable Media Network approach to conservation, and our approach to this collection followed a model that we describe as an Indeterminate Archive: a collection of materials that provides multiple perspectives on an artwork. Through extensive interviewing with both artist and audience, this model seeks to capture the relationship between audience experience and the artist's intent or, as we have framed it, "between real and ideal" (Jones and Muller 2008b). This strategy acknowledges the fundamental importance of audience experience to the existence of new media artworks and creates a place for the audience within the documentary record.

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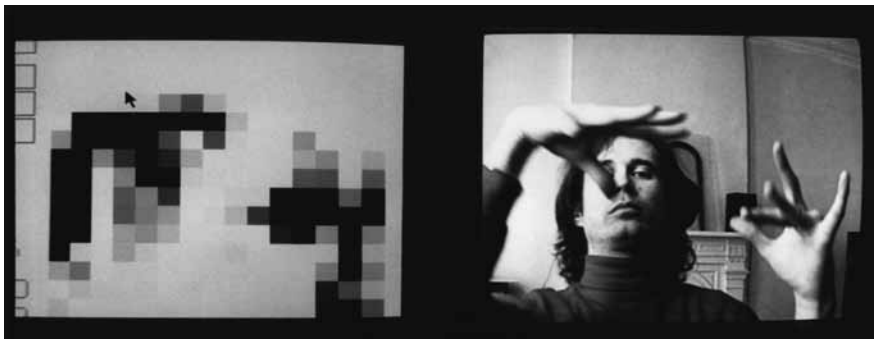

Figure 9.1 David Rokeby as seen by *Very Nervous System*, Toronto, 1990. Image courtesy of David Rokeby

In this chapter, I argue that one of Rokeby's primary reasons for creating *Very Nervous System* was to draw attention to the *experience* of interacting with computers. Understanding the changing nature of the audience's experience is therefore a key part of understanding the way this artwork expresses and explores the changing relationship between humans and technology. Through an examination of the materials in the Indeterminate Archive, I investigate here the shifting connections between the artwork, the artist's intent, and audience experience over the 30-year existence of *Very Nervous System*.

Audience Experience and Artist's Intent in the Indeterminate Archive

The documentary and conservation challenges of media art are by now well rehearsed. The lack of a stable and discrete "object," the rapid obsolescence of technology, the reluctance of museums to collect media art works, and the challenge of audience interaction – all of these issues have prompted a wealth of interesting discussions and practical initiatives over the past decade (Jones 2008). In the absence of a stable artifact, the cornerstone of many preservation strategies for new media works is artist's intent. Perhaps pre-eminent amongst contemporary approaches is that of the Variable Media Network, the key principle of which is to record information about the essence (or "kernel") of an artwork independent of the media in which it manifests (Depocas et al. 2003). This should allow future conservators to emulate the work's essential characteristics when its original technological ingredients are obsolete. These characteristics may be the work's behavior, its external appearance, or any number of other factors *as defined by its creator*.

Documentation of artist's intent is crucially important, but as this chapter will show, intent is not necessarily more stable than the artwork it produces. The Indeterminate Archive developed by Caitlin Jones and myself is based on recognition of the archival value of both the artist's intent *and* the audience

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experience of the work. Audience experience is a vital ingredient of any artwork, but its importance is magnified where a work itself is mutable, or based on a process or interaction. As I have argued at length elsewhere (Muller 2008, 2010), media art theory emphasizes the role of participants, but descriptions of their experiences in their own words rarely appear in the documentary record. The Indeterminate Archive seeks to address this gap.

We developed our first Indeterminate Archive in 2007 for another of Rokeby's works, *The Giver of Names*, at the Daniel Langlois Foundation in Montreal (Jones and Muller 2008a). We have described our methods and the rationale behind them in detail elsewhere (Jones and Muller 2008b), but a summary here will help the reader to understand the structure and materials of the Archive. It combines a lengthy artist interview with numerous audience interviews, backed up by technical information, links to other exhibitions, and a bibliography. The artist interview is based on techniques drawn from the Variable Media Network questionnaire (which focuses on the relationship between the conceptual and technical aspects of the work), with additional questions that encourage the artist to describe the work as closely as possible in terms of audience experience. The audience interviews draw from techniques in Oral History and Experience Design to elicit rich, descriptive accounts of artwork encounters that move from perception, through action to cognition and critique. Essentially, the interviewer encourages the participants to describe their experience as closely as possible before they begin to evaluate the work or their own actions.

This approach seeks to capture rich and vibrant oral accounts that bring the work to life in all its variety and complexity. The Archive draws attention to the dialog between artistic intent (or the "ideal" version of the artwork) and the audience experience (or "real" instantiation of the work). It is important to be clear that whilst the Indeterminate Archive uses the audience experience as companion and, sometimes, even counterpoint to artist intent, it does not aim to show that the artist is wrong or that the work has failed. Rather, the dialog between real and ideal is intended to create a valuable indeterminacy, which captures the work's mutability and contingency.

The invitation to create a second Indeterminate Archive for *Very Nervous System* offered a compelling opportunity for two reasons. First, *Very Nervous System* provides an unmatched demonstration of the importance of experience in media art. Second, its celebrity and longevity make it a fascinating focus from the point of view of the relationship between real and ideal. The work is, for many, one of the first successful artistic experiments in gestural, embodied interaction. A large number of texts have been written about it (a bibliography of which is included in the Indeterminate Archive) and many curators and critics of media art have read about it without ever having experienced it themselves. As Erkki Huhtamo has argued, *Very Nervous System*'s fame "may have perpetuated some fixed ideas about its nature and prevented critics from appreciating some of its dimensions" (Huhtamo 1998). This begs the question of how the "real" individual experiences of the work in 2009 relate to this powerful and long-lived ideal.

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Figure 9.2 Timeline of David Rokeby's *Very Nervous System* by Caitlin Jones and Lizzie Muller. Image courtesy of Ludovic Carpentier and the Daniel Langlois Foundation

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The Lifespan of *Very Nervous System* (1983–?)

One of the characteristics of new media artworks is the appearance of a date range rather than a single authorial date to signify the ongoing making and remaking of the work. *Very Nervous System* is a particularly striking example of this phenomenon. Its date range is not only long but also unstable. The work appears with different start and completion dates in different catalogs, and there are even two different date ranges given on Rokeby's own website (1982–91 and 1986–90).

In the Indeterminate Archive our strategy for addressing this long and varying lifespan was to produce a timeline that fleshed out the history of the work. The timeline charted the major technical developments of the work and mapped these onto significant exhibitions and moments in its life. We created the timeline during a conversation with Rokeby in which he told the "story" of *Very Nervous System* in as much detail as he could. Whilst there are necessarily gaps and omissions in this story, it reveals what seemed important to Rokeby about the work as he looked back on it in 2009. In the Indeterminate Archive we acknowledge the contingency of this version of the artwork's life by including the original hand-drawn timeline alongside the formalized version that contains links to additional information (videos, texts, excerpts from interviews, and technical documents) connected to the events that appear (Figure 9.2).

The variable start dates given for the work reflect the different decisions by Rokeby as to whether to include in the date span other works, which in retrospect appear to be early versions of *Very Nervous System*. The timeline shows how *Very Nervous System*, as a fully-fledged work, grew from Rokeby's aim between 1979 and 1982 to create an "immersive environment." In 1983 there was a work-in-progress showing of Rokeby's ongoing project, at which point he introduced an Apple II computer and gave the work a name: *Reflexions*. He suggests that this exhibition is probably the most accurate start date of *Very Nervous System* (Rokeby 2010). This is therefore the date we have used when referring to the work in the Archive, but the timeline makes clear that 1983 is in fact just one moment in a process that has no clear beginning.

The timeline not only tells the story of *Very Nervous System* but also offers insights into the history of media art as an emerging form and of David Rokeby's own career. Early showings at Digicon (which Rokeby refers to in the timeline as 'half trade-show half art show') and SIGGRAPH '88 reveal the close relationship between the nascent community of new media artists in the 1980s and the academic and industrial research base in computing. As the work gains reputation, it is shown in the burgeoning international scene of specialist media art venues and festivals such as Ars Electronica, Linz, and the European Media Arts Festival, Osnabruck. The work begins to garner awards, and by the 1990s, it is shown increasingly at mainstream events like the Venice Biennale in 1996 (see Figure 9.3).

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Figure 9.3 ***Very Nervous System*** **at the Venice Biennale in 1986. Image courtesy of David Rokeby**

In the 2000s, when Rokeby was recognized as a significant artist, the work is shown in retrospectives, where it is accorded a privileged position as his defining achievement.[1]

The technical developments of the work over 30 years offer a glimpse into the history of creative computing. Rokeby notes the release of the MIDI protocol at the same event as the first official showing of *Reflexions* in 1983 and the emergence of MAX MSP in 1991 – both hugely significant tools for artists working with computers. These developments in creative computing intersect with *Very Nervous System*'s double life as both artwork and creative tool. The timeline shows how the "suite of tools" called "VNS" emerged from the artwork – first appearing as custom hardware, the "VNS box" or "Rokebytizer"

1 Rokeby did not mention the various acquisitions of *Very Nervous System* during the creation of the timeline perhaps because he did not believe they related to significant technical or conceptual developments in the life of the work, but the list of organizations that have bought the work offers an insight into the vital role of science museums in collecting and preserving media art. It has been acquired by five institutions, all with an interdisciplinary science/art emphasis: Technorama Schweiz in Winterthur in around 1993; Citta della Cienza in Naples in around 1994; COSI (Columbus, Ohio Science Museum) in 1995; Technopolis, near Brussels in around 1999; and the Clay Center (a science and art center), Charleston, West Virginia in 2002.

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(which was first sold to Paul Garrin, the video installation and interactive artist, in 1989). The software version (*softVNS*) was released in 1999 and *softVNS 2* followed in 2002. Rokeby estimates that around 100 users purchased this version (Rokeby 2013). Numerous other histories spring from VNS's adoption as a tool. In particular, it has played a significant role in the field of technologically mediated performance (see, for example, Winkler 1997). It has also been used as a tool for rehabilitation in medical and therapeutic contexts (Rokeby 1991, 1998). Rokeby's desire to make the system available to others as a tool was motivated by the same spirit of curiosity that drives his own art practice. In 2006 he explained this in an interview with the curator Peter Ride:

> One of the things that is a key part of my engagement in this stuff is a love of the generation of possibilities and developing software is a very powerful way to produce possibilities … I'm fascinated when I see people use these things in ways that I hadn't imagined. (Rokeby in Ride 2006)

In order to understand the constant making and remaking of *Very Nervous System* over 30 years, the work must be seen not only as artwork and tool, but more fundamentally as an *ongoing* live process of artistic enquiry. As Peter Ride has pointed out, *Very Nervous System* is not only the technological substrate of Rokeby's oeuvre, it is also its conceptual base layer: a set of ideas and questions that has fueled his practice. As an artist, Rokeby uses the process of making or remaking works as a way of engaging with the computational medium, the nature of interaction, and questions of human and machine perception. Whilst finished artworks may emerge from this process, there are no clear "end" points:

> My practice, in some ways, is better framed as a research practice. I rarely start with an absolutely clear end point in mind when I'm working on a project, so how can I know when I am done when I don't have a coherent goal? (Rokeby in Ride 2006)

Understanding *Very Nervous System* as a process of ongoing exploration allows us to understand its documentary and conservational challenges more richly. *Very Nervous System* is a mode of engagement and enquiry. As such, it does not fit easily within a museological culture dominated by objects, scarcity, and a conception of authenticity that forces inauthentic borders around intellectual and creative processes.

The various end dates given for *Very Nervous System* indicate moments when Rokeby believed that the process of research embodied in the work had come to an end. By 1991, *Very Nervous System* had reached a point of technical and conceptual maturity and stability, and it received an Award of Distinction for Interactive Art at Ars Electronica. At this point, Rokeby claims he had exhausted his interest in what *Very Nervous System* could tell him (Rokeby 2010). The year 1991 could have been (and was for a while) a plausible point to end the

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Very Nervous System date range (notwithstanding conservational "tweaks" to hardware and software), until 2003, when Rokeby accepted an opportunity to revisit the work and make substantial changes for an exhibition in Winnipeg. At this point, he created a new sound palette and a new behavior paradigm in which sound responses were located spatially around the installation. According to him, the 2003 version "looks back" to the earliest 1981 version of the work where sounds were also arrayed in space (Rokeby 2013). In light of the 2003 remake of the work, it is probably most realistic to say that *Very Nervous System* cannot be given a reliable end date whilst Rokeby himself is still alive.

Caroline Seck Langill (2009) has investigated the conservational challenges brought about by this lifelong link between artists and technological artworks. Because of the difficulty inherent in any staging of a complex media work, she suggests that it is inevitable that "as long as [media] artists are alive, they will essentially fulfill the role of conservators of their own work." In responding to the possibilities of new technologies, artists will "upgrade" their work, often fundamentally altering it for each exhibition. In doing so, she argues that artists, unlike museum conservators "are less concerned with the original components of the work, with the result that its historical context and original intentions may be lost." She also states that artists' "self-emulation" through continual upgrades obscures an important aspect of the work's historical narrative, which "acted as evidence of what was happening on the frontier of new technologies and situated the work within the limits of available platforms and computer language."

There is a tension at the heart of any attempt to conserve, document, or exhibit *Very Nervous System*. On the one hand, it is vital to recognize the fundamental nature of the work as a medium of exploration, which must change over time. On the other hand, it is important to document, or if necessary excavate, these changes in order to articulate the historical context and significance of the work. David Rokeby has written of himself: "I'm an interactive artist, I construct experiences" (Rokeby 1998). He sees his artworks not only as machines for creating certain kinds of experience but also as machines which create a space for *reflection on experience*, and particularly on the impact of computers on our experience of the world. The lifespan of *Very Nervous System* has seen the ascendance of the personal computer, the World Wide Web, the mobile phone, surveillance technologies, and computer game culture. How different would the experiences of audiences have been in 1983, 1993, 2003 and 2013?

In the Indeterminate Archive we have attempted to capture evidence of these experiences in 2009. Whilst the voices of audiences from previous decades cannot be recovered, we are not completely without evidence as to their nature. Rokeby's own practice is so focused on audience experience that, as the following section demonstrates, it is possible to trace, within his own reflections on experiential esthetics over the past three decades, the changing relationship between his own intentions, the audience's experience, and technological change.

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David Rokeby's Experiential Esthetics

There is an anecdote that appears frequently in Rokeby's interviews and writing: in preparation for the exhibition of *Reflexions* at Digicon 1983 (the "first" public exhibition of *Very Nervous System*), he spent many intense hours programming and preparing the work. When it was installed, he was surprised to discover that despite reacting perfectly to his own movements, it would not respond to visitors. Later, watching a video of himself within the installation, he realized that his own movements had become jerky and unnatural. He had slowly, over his intense period of creation, adjusted his own behavior to the system rather than adjusting the system's behavior to his own.

This formative experience made a deep impression on Rokeby. First, it persuaded him of the immense power of the interface to shape human behavior (a theme that occurs frequently in his work and writing) and, second, it demonstrated to him the importance of watching audiences interact with his work and adjusting it based on their experiences. In this sense, *Very Nervous System* is a deeply interactive artwork – not only does it create an open system that responds to participants in real time, it also responds to (or learns from) the experience of those participants through the intervention of its maker over time.

This has interesting implications from the perspective of experiential documentation. Rokeby becomes a close observer of audience experience and publishes the results of his "free form research" (Rokeby 1998) into the esthetics of interactive experiences in several essays (see, for example, Rokeby 1990, 1996, 1998). This means that despite the absence of first-hand audience accounts of the work over its 30-year life, we are still able to gain an insight into the changing nature of audience experience and its relationship to Rokeby's own intentions through his critical reflections.

Rokeby's experiential esthetics are grounded in a fascination with perception and the immense complexity of the relationship between human beings and the world. Much of his work uses the medium of the computer to reveal or examine this complexity through comparison, simulation, reduction, or augmentation of perceptual processes. *Very Nervous System* was an attempt to create an esthetic experience that would "draw as much of the universe's complexity into the computer as possible" (Rokeby 1998). In the early days of the installation, Rokeby was motivated by a desire to create an immersive and visceral experience (Rokeby 1991, 2010). *Very Nervous System* began as a phenomenological enquiry and in the 1980s, he claims, the audience experienced the installation as a "phenomenon":

> There was no [textual] explanation when the work was displayed in 1983, and people had no experience of computers at all. People were experiencing it completely fresh. It was a phenomenon. (Rokeby 2010)

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According to Rokeby, audiences in the 1980s reacted to the installation as a whole space or an environment rather than as a technological system. He believes that there was a sense of magic about the installation that was later lost. He remembers with particular fondness the work being described as "the room that sings" (Rokeby 2010). He describes dancers reacting instinctively and viscerally to the work, and responding as if the room itself was "spirited" when technical interference produced unexpected effects.

In the late 1980s and early 1990s, as people became more familiar with interactive technology, Rokeby believes there was a period of time where "the question of how it works was overtaking the experiential" (Rokeby 2010). He noticed the emergence of a particular kind of behavior, which he describes as "the first test of interactivity" (Rokeby 1998). Participants would enter the work and repeat a single gesture two or three times as a kind of enquiry to the system. If the work responded the same to each repetition, the participant's demeanor would change and they would repeat the gesture, this time as a command. Frequently, he claims, the installation would not respond to this command gesture, which would unwittingly betray the user's change in motivation through different physical dynamics.

This audience tendency towards trying to control the system was, for Rokeby, a distraction from the main intention of the work. He explains that the question he wanted the installation to provoke was "how do I work – not how does the system work" (Rokeby 2010). The crucial question of control became incredibly important to him and figures prominently in his writing over the next 20 years. One of the fundamental reasons he cites for creating the work was to cede some creative power to the audience (Rokeby 1990); however, the nature and degree of that power is the focus of ongoing critical reflection throughout his career.

Rokeby's written text accompanying *Very Nervous System*'s entry to the Ars Electronica Festival in 1991 gives a fascinating insight into his thoughts about the work at a pivotal moment in the work's life. He created *Very Nervous System* chiefly, he claims in this document, to counter the dominant characteristics of the computer and allow people to experience Human-Computer Interaction differently. For Rokeby, since the prevailing interactive paradigm was of control and mastery, *Very Nervous System* became instead "a zone of experience, of multi-dimensional encounter" (Rokeby 1991). The 1983–2003 versions of the work (unlike other movement-based interaction systems) sense overall movement within the space, and analyze and respond to that one variable in complex and unpredictable ways (see Figure 9.4). As a result, the feedback from the system to the interactor is both immediate and vague. There is no clear evidence of cause and effect, but rather a sense of an emerging relationship. For Rokeby, this experience of complex and unpredictable interaction between human and computer leads to an evolving dialog in which "the notion of control is lost and the relationship becomes encounter and involvement" (Rokeby 1991).

In 1991, after a decade of intense work with the *Very Nervous System*, the Ars Electronica document makes it clear that a tension is emerging for Rokeby between

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the seductive, visceral, and immersive experience that "informed a lot of the initial development of the work," and a desire for a more critical and reflective experience, which makes the nature of interaction more visible to the participant. During the late 1980s and early 1990s, Rokeby claims that the hype around interactivity led to a loss of criticality: "the level of enthusiasm was picking up and the level of criticality was falling down" (Rokeby 2010). As a result, his desire to make more critical and reflective experiences grew. His published writings from the mid- and late 1990s reveal an increasingly polemical position about the social and political role of interactive art in countering the unconscious and unquestioning adoption of computer technology in all areas of life.

In his 1998 essay "The Construction of Experience," Rokeby argues that the interface between humans and computers is not an inert means for controlling an interactive system, but "by defining a way of sensing and a way of acting in an interactive system the interface defines the 'experience of being' for that system" (Rokeby 1998: 31). Since such interactive systems are pervading all areas of our lives, the interfaces we design will necessarily begin to transform our ways of being in the world – from our sensory and physical experiences to our social attitudes and belief systems. This becomes a problem, he argues, when we, as users, are unable to *see* these transformations: "When an interface is accepted as transparent, the user and his or her world are changed; the transforming characteristics of the interface … are incorporated into the user and the user's world-view" (Rokeby 1996: 153).

In his essay "Transforming Mirrors: Control and Subjectivity in Interactive Media" (1996), Rokeby argues that technological artworks have a special role to play in drawing attention to the way interfaces construct our experiences of the world. All interactive technologies, he argues, reflect the consequences of our actions and as such can be seen as mirrors. Part of their allure exists in the pleasure of seeing oneself reflected and augmented. The esthetic impact of interactive artworks, however, lies not only in their ability to reflect but also to "refract" images of the self – to act as "transforming mirrors" that offer insights into our relationship to ourselves, our technologies, and the world around us (Rokeby 1996). For Rokeby, the difference between reflection and refraction is strongly related to his recurring interest in control. An interactive technology producing too direct a reflection – where the interface appears transparent and control over the technology seems absolute – creates a "closed system" in which the participant becomes entranced and stupefied. Conversely, "to the degree that a technology transforms our image in the act of reflection it provides us with a sense of the relations between this self and the experienced world" (Rokeby 1996).

In *Very Nervous System*, the refracted images of the self are expressed and experienced in the complex and indirect relationship between sound and movement. This emphasis on relationships explains the peculiar fact that Rokeby says comparatively little in his texts about the actual sounds that *Very Nervous System* makes. In 1990, he wrote that: "The music of the *Very Nervous System*

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installations is not so much in the sounds that you hear but in the interplay of the resonances that you feel as you experience the work with your body" (Rokeby 1990). The sounds made by *Very Nervous System* are not intended to be listened to, he continues, but to create a kind of physical presence that the body can relate to: "sound has a sculptural presence, both as an extension of the body and as a physical reality which one encounters with the body" (Rokeby 1990).

In our 2009 interview, Rokeby reflected on what he describes as his "awkward relationship" to the sound of *Very Nervous System*, caused by the fact that "it was not designed to be great music, but designed to be a great marker, a great artefact to enable interaction, to encourage movement" (Rokeby 2010). The sounds of the work are the area of human experience that he finds most opaque: "I really don't know how it's heard," he said. His ambivalence to the sound throws into question two commonly repeated descriptions of the work in catalogs and articles: first, that it is a sound installation; and, second, that it is a kind of gestural instrument.

Given the close relationship between *Very Nervous System* and technological change, it is impossible not to question its continued relevance 30 years after its first appearance. Attitudes to interactivity have changed drastically over three decades, as Rokeby pointed out in his interview within the Archive: from the wonder of the 1980s and the feverish enthusiasm of the 1990s to a point in the 2000s where unencumbered interaction becomes "something that we experience everyday" (Rokeby 2010). In some ways, he believes, this familiarity with interactive technology allows contemporary audiences to experience the work with some of the directness of audiences in the early 1980s. Crucially, for him, the continued relevance of the work remains in its complex treatment of control:

> The more we have tools that can control things, the more we have to ask what an appropriate control relationship to the things around us is … I don't think that stops being important. And I don't think our relationship to our body stops being important. So there are some basic grounded human questions that remain in the work and remain accessible. I think that means it stays relevant.

Asked to describe his ideal experience of *Very Nervous System* in 2009, Rokeby acknowledged his own shifting position over the years:

> There are a million ways to answer that question, here's how I choose to answer it today: The work is about stereoscopic proprioception … In an ideal experience in the slippage between your own sense of movement and the feedback you are getting from the system there's energy, depth, another dimension, a possibility to understand something new about your body. (Rokeby 2010)

Rokeby's concept of "stereoscopic proprioception" reconciles the tension between the experiences of visceral immersion and critical reflection. It unites two different, simultaneous perspectives on the self: an immediate sensory experience and a transformed or refracted reflection. He hopes that the combination of these two

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different perspectives will offer the participant an insight into their relationship to the world around them. What light can the *actual* experiences of audiences in 2009 shed on this mutable and powerful ideal?

2009 Incarnations

In 2009, *Very Nervous System* was shown in Linz (Austria) at the Lentos Art Museum as part of the exhibition *See This Sound: Promises in Sound and Vision*. This exhibition examined the relationship between image and sound in contemporary and historical artworks, with a particular emphasis on media technology[2]. Partly because of the historical nature of the show, Rokeby showed a combination of the "old" (1983–91) version of the work and the "new" 2003 version of the artwork.[3] The switch between the two versions was triggered by a period of stillness followed by new activity. This meant that most often the versions would change between one participant leaving and another participant entering the installation.[4] From a historical perspective, Rokeby felt that this combination of the two versions gave a better insight into the nature of *Very Nervous System.* He also thought it was "helpful to show two completely different kinds of sonic relationship to demonstrate that the music is not really an aesthetic decision" (Rokeby 2010).

Linz is a particularly interesting place in which to document audience experiences of a media artwork. The city has been home to the renowned Ars Electronica Festival since 1979 and the Ars Electronic Centre since 1996. The population of Linz therefore has had an unusual level of exposure to media art for the past 30 years. The interviews were conducted during the 2009 Festival, so they include a relatively high number of media arts professionals. Twelve interviews were collected and they include a range of different levels of knowledge of the *Very Nervous System* – from first-time encounters to reunions. The interviewees have a wide spread of ages and levels of experience with technology and art.[5]

2 The exhibition was organized by the Ludwig Boltzmann Institute for Media.Art. Research (the commissioners of the Indeterminate Archive for the *Very Nervous System*) in collaboration with the Lentos Art Museum, Ars Electronica 2009, and Linz City of Culture 09. An extensive archive related to the show can be found at: http://www.see-this-sound.at.

3 The dates given in the exhibition catalog for *Very Nervous System* are, however, 1986–91, demonstrating the ongoing challenge of accurately dating the work.

4 The installation was exhibited as an enclosed space of around 4 x 5 m, with solid white walls. For full technical details, images, and video of Rokeby interacting with both versions, see the online archive at: http://www.fondation-langlois.org/html/e/page.php?NumPage=2186.

5 The majority of the interviews were conducted in English and include a mixture of native English and German speakers. There are some obvious drawbacks to conducting interviews about personal experience in a foreign language and some interviewees struggle

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Figure 9.4 ***Very Nervous System*** **at the Lentos Art Museum, Linz, 2009. Image montage by Katja Kwastek courtesy of David Rokeby**

I will focus here on a few particularly interesting interviews that offer insights into the relationship between audience experience, artist's intent, and technological change.

Perhaps the most interesting interview from a historical perspective is with a professional musician called Günther. Günther, a Linz local, plays the theremin and has a great deal of experience in art, technology, and gestural interaction. When he enters the installation, he recalls that he previously experienced *Very Nervous System* many years ago. Whilst he is not sure of the date, he believes that

to explain themselves clearly in English. In the transcriptions used here some of the original grammar and phrasing has been altered for the sake of comprehension. All interviewees are referred to in the archive by their first name.

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he saw the work at Ars Electronica and it seems likely that this experience was at the 1991 exhibition.

Günther remembers that the first time he saw the work, he did not enjoy it. He felt that its responses were too unpredictable and that it was impossible to trust that it was really interactive. This time, he experiences the 2003 version and feels that it is much more responsive. He spends time trying to work out how the installation reacts to various movements and then he explores, with very small movements of his fingers, how sensitive the system can be. He describes it as "an instrument that I can control very precisely."

Günther's experience offers an interesting counterpoint to Rokeby's strong aversion to direct control. In contrast to Rokeby's intention to create a sense of complexity, which, like reality, is beyond total comprehension, Günther describes his satisfaction at discovering that "I'm in a Universe that is governed by laws that are very understandable." For him, the increased sense of control that he feels between the previous and the current versions makes the experience much more engaging. This time, he says, he feels he can "trust" the work.

Günther, as a theremin musician, is perhaps more attuned than most to the potential of the installation as a controllable instrument. His sense of the increased sensitivity raises some interesting questions about how the work has changed over time. In the Archive interview, Rokeby acknowledges that refinements in camera technologies and processor speeds over the past 20 years have made the work more sensitive. In a classic instance of conservational emulation (where the behaviors of former technologies are replicated in newer systems in order to preserve an important aspect of the work), Rokeby says he has purposely prevented the sensitivity from reaching the (now technically possible) point where every finger twitch or eyelash flutter elicits a response. For him, the important sensitivity threshold is that the work reacts when you move and is silent when you are still. The increased sensitivity and controllability experienced by Günther, however, raises the possibility that Rokeby's intense interest in the limitations of and alternatives to the experience of direct control resulted, to some extent, from the imposed limitations of technological possibilities. It is at least clear that over time, the level of control has changed from being in part technologically determined to being authorially driven.

Günther, on the other hand, raises the interesting possibility that it is not the work that has changed, but himself. In the intervening years, he claims, he has had lots of experience of touch and gestural interfaces, all of which make him more able to "engage with the work." In an insightful comment, which goes to the heart of the nature of *Very Nervous System*, Günther points out that if the audience has changed, then, necessarily, so has the artwork:

> **Interviewer**: Your feeling is that the work is different now or that your relationship to it is different now?

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> **Günther:** My relationship is definitely different, the work itself I assume is objectively the same, but again where does this work exist outside of myself, outside of my own experience?

Another interviewee with a long relationship to the *Very Nervous System* is the curator Peter Ride. In 2005, Ride organized a major Rokeby retrospective that featured *Very Nervous System*. In Linz he happily played within the installation, saying it was like meeting "an old friend." Ride, who has installed the work himself three times, finds the installation at the Lentos Art Museum physically ugly and uninviting:

> It's really ugly, and I think that's a real issue. It's like it's been stuck in the corridor to the cleaner's cupboard. There's nothing about it that's inviting. It's one of those conundrums of participatory art and new technology pieces that lots of things that people will think about with other objects – the aesthetics – aren't being brought into play here.

Ride believes that this physical ugliness would be off-putting for many gallery visitors and the work in this format would not "give people permission to participate." Ride's experience is a useful reminder that, whatever changes have occurred to the hardware and software over 30 years, *Very Nervous System* remains essentially an empty room. A great deal of the audience experience has nothing to do with the technology, but instead is to do with curatorial decisions, production values, and contextualization. Of course, these are elements which Rokeby is well aware of, but to which he has a very open attitude. The work has been shown in all different configurations – light, dark, private, and public. Rokeby describes instances where he has made the technology disappear as much as possible, and others where he has made certain elements of the apparatus fairly obvious. Whilst he has opinions about the way in which it works best, he allows a great deal of input from the curators whenever the work is displayed; *Very Nervous System* is necessarily site-specific (for better or worse) and this is part of its inherent openness.[6]

Almost all the interviewees are surprised to see an empty room when they enter the installation. Even though sound was the focus of this exhibition, interviewees often still searched for something to look at. The visibility of the technical infrastructure in this case (a fairly noticeable camera, speakers, and box containing the computer) attracted a great deal of attention from many of the interviewees. One frequent response was to attempt to find the edges of the interactive area and to avoid interacting by staying in parts of the installation where the system could not "see" you. Susanna, a middle-aged chemistry teacher with a keen interest in art,

6 I have direct experience of Rokeby's openness in this regard, having installed *Very Nervous System* myself twice as the co-curator of the exhibition *Mirror States* in Sydney and Auckland (2008).

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describes this experience: "I tried to find the space where there is no interaction – in this corner and along the walls I did not produce any sound. Somehow it was the feeling that Big Brother is Watching You, so I am looking for a space where I am not observed." Susanna's experience suggests that the increase in camera-based surveillance over the past 30 years has had an important impact on the way in which audiences react to the camera-tracking technology of *Very Nervous System*.

Several of the interviewees' responses support Rokeby's instinct that people do not "listen" to the sounds, but experience them relationally through their body. Günther suggests that the sounds are rather "80s," but he doesn't think that is important as "any sound is potentially interesting." Elfi, a middle-aged arts professional, likes the sounds of the 2003 version, which she likens to rubbish, metal, stones, and keys. Music, she thinks, "would be weird," but fundamentally her experience of the sounds is neither positive nor negative; it is simply "something you can relate with."

Claudia, a 61-year-old woman working in a publishing house, reminds us that media art is still an unfamiliar and challenging form for many audiences. For Claudia, who has a great interest in art and whose husband is an artist, the exhibition *See This Sound* was a disappointment as they had come expecting to see paintings. She remarks that she is not at all familiar with this kind of art and she feels that "older people can't understand very much about technics." Unexpectedly, however, she enjoys *Very Nervous System*. When she enters the space, she runs rapidly around the edges of the room and then begins to move very slowly. The installation, she says, gave her "a motive to move," and though her desire was to move fast, the work influenced her to slow down. It made her think it would be good to slow down not only physically but "also in life." She describes the piece as "meditative" and "moving," and says that it helps you "contemplate." Claudia shows no interest in how the work functions technically. Her description is close to Rokeby's 2009 ideal of "stereoscopic proprioception," in which the felt experience of movement combines with the feedback from the system to give her an insight into her relationship to movement and her way of being in the world.

The experience of another interviewee, Alexander, shows that this sense of joyful and immersive exploration does not rely upon technical naïvety. Alexander is a young software engineer. He has a moderate knowledge of art and a great deal of knowledge about computers. He experiences the pre-2003 version of the work and quickly understands that it is responding to his movement. His description of his own reaction to the work eloquently evokes Rokeby's ideal notion of a dialog of mutual influence:

> **Alexander:** It gave me a sort of joy, because it is me being a part of this art piece … It was as if a kid opens up a new toy and is playing with it … I was triggering the art, and without me it is just a few loud speakers and a camera. As I moved in there, the artwork adapted to me, and not me to the art object. Here there was a possibility to act outside of myself and the art piece interacts with me.

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Interviewer: Do you mean that you had more control?

Alexander: Not control, but influence.

For Alexander, the "joy" of the work is that he feels *involved* in the art. This is, he thinks, unusual and rewarding, as "art is usually static." His experience is an important reminder that even in 2009, when daily life is dominated by human-computer interaction, interacting with an artwork remains an unusual, and potentially deeply pleasurable, esthetic experience.

There are many more experiences recorded in the Archive, all of which provide unique and partial views of the *Very Nervous System*. It is tempting to think of all these partial perspectives as the parable of the blind men and the elephant, where each person grabs a different part of the creature. But in this case and, I would argue, in the case of any artwork, there is, in fact, no elephant. *Very Nervous System* does not exist anywhere as a complete, or fully knowable thing, but as a process of investigation on the part of the artist and a cumulative collection of experiences on the part of the audience. I hope that this chapter demonstrates that paying attention to and documenting where possible these experiences can offer valuable insights into the ongoing process that is *Very Nervous System*.

Conclusion

This chapter demonstrates that the history of *Very Nervous System* contains within it countless different and sometimes contradictory stories. Apart from its many "real" incarnations in the bodies and memories of the individual participants who have experienced it, there are multiple "ideal" images of the work, as Rokeby himself has acknowledged, in the mind of its creator. There are also, of course, countless possible critical and historical interpretations of the work, of which the argument presented in this chapter is only one.

The approach I have taken – of tracing the shifting relationship between audience experience and artist intent – is made possible through a painstaking process of recording and listening to audience's descriptions of their own experiences. Whilst I passionately advocate the value of documenting experience, the chapter concludes with a cautionary postscript. Such dense audiovisual documentary collections require significant resources both to produce and to maintain. Developments in technology – including social, portable, and locative media – offer new opportunities for the audience's voice and opinions to be documented. However, high-quality experiential documentation will always need significant hands-on production and curation in order to be searchable and usable. Since the creation of the Indeterminate Archive for *Very Nervous System*, the commissioning agency (the Ludwig Boltzmann Institute for Media.Art.Research) has closed and the hosting organization (the Daniel Langlois Foundation Centre for Research and Documentation) has "dematerialized." Whilst the Daniel Langlois

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Foundation (DLF) web presence remains active and well maintained (meaning that the Indeterminate Archives can still be accessed), its physical archive has been accessioned by the Cinémathèque Québécois.

It is likely that the greatest value of the Indeterminate Archive will be realized in the future, when *Very Nervous System* is 50 or 100 years old, when David Rokeby himself is no longer able to provide upgrades and explanations, and when our current relationship to computers and gestural interaction seems as antiquated as the telegraph. It is therefore important to remember that the digital archives created to preserve the fleeting experiential aspects of new media art share with those works a fundamental instability.[7] The traditional meaning of the term "to curate" – as a duty of eternal care – emerges strongly, in the face of these shifting sands, as an ongoing responsibility for all curators, researchers, and artists involved with new media art.

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7 One solution to this problem is to include audience experiences within the interpretation and publication strategies surrounding exhibitions. Since the creation of the Indeterminate Archives, I have worked with the Museum of Contemporary Art in Sydney, Australia to produce a "Living Catalogue" for a survey exhibition of the work of Anish Kapoor (MCA 2013, Muller 2013). Like the Indeterminate Archive, this multimedia publication for tablet computers includes interviews with the artist and with both professional and general audience members. The wide distribution of this publication means that these experiential documents are not reliant on a centralized archive for storage and access.

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