Virtual Music: How the Web Got Wired for Sound. By William Duckworth. London: Routledge, 2005. 209 p., 1 compact disc. ISBN 0-415-96675-2 (pbk). $24.95 US

A book-length history of online sound could easily have been filled with "technospeak," but author William Duckworth features instead the "people with the ideas." Why? "Parts of my work seemed to go out of date almost as quickly as I wrote them down," he writes. "But then, that's the nature of the Internet" (xii). Technology changes too fast, but the people who work with it are more long-lasting.

In fact, Duckworth has always been more interested in people than technology, and what draws him to people is their ideas. His 1995 book, *Talking Music*, is an invaluable collection of interviews with America's leading experimental composers. In *Virtual Music*, Duckworth presents another group of artists, but one central concept unites them. "The Web is changing music," he writes (xv). The traditional Western concept built on discrete, participant roles (i.e., creator, performer, audience) is yielding to a more decentralized, universal exper-ience. Interactivity, "the core and catalyst of virtual music" (157), is the calling card of this new aesthetic. In nine chapters, Duckworth articulates where music on the Web is now, how it got there, and where it might go in the future.

Not surprisingly for those familiar with Duckworth's earlier writing, this aesthetic is distinctly Cagean. In Chapter 1, "A Brief History of Interactive Music," Duckworth does credit Erik Satie for first disrupting our reverence for the musical work, but he claims that John Cage permanently altered our understanding of music production. "'Art, instead of being an object made by one person, is a process set in motion by a group of people,'" declared Cage in 1967 (17). Works such as *Theatre Piece No. 1*, *Music of Changes*, and of course *4'33''* began this process by blurring the distinction between composer, performer, and audience. What is the music? Who is creating it? Who is listening? The online environment, in Duckworth's opinion, is pushing these questions from the avant-garde to the everyday.

The argument appears most convincing with respect to the world of commercial music. In Chapter 4, "Music on the Web in the Twentieth Century," CEO Willy Henshall describes Rocket Network (1993-2003) as a leaser of virtual studio space. Duckworth, however, discusses the egalitarian potential of its live jamming sessions, which are open to any online visitor. Similarly, jamming was never the goal of Thomas Dolby's Beatnik site (founded in 1993), but people have found a space there to experiment and collaborate in real time.

The clash between established practice and emerging trends is most obvious in *The Grey Album* by DJ Danger Mouse, Duckworth's "Case Study in Critical Mass" (Chapter 8). Danger Mouse ran afoul of the recording industry by sampling and combining the music of the Beatles' *White Album* with rap artist Jay-Z's *Black Album* without prior consent of the rights' holders. What interests Duckworth is not so

much the music itself, but the popular resistance that followed EMI's legal action. Culture jammers around the world connected online to organize "Grey Tuesday" (Feb. 24, 2004), when over 170 sites made *The Grey Album* freely available for downloading. To Duckworth, this action is a harbinger of the future.

But how indicative are these few examples of a sea change in music? Online sound is only about a decade old, and Duckworth often tries to force disparate events into patterns. Would *The Grey Album*'s downloaders actually consider themselves anything other than consumers, the passive audience Cage deplores? What percentage of online music-seekers actually visits online jamming sites? Duckworth's hailing of a new era seems premature, and the democratization of musical participation is still relegated to the avant-garde.

Still, Duckworth immerses the reader in so many projects that the avant-garde does seem almost ordinary. One is his own *Cathedral*, created with artist Nora Farrell in 1997, which incorporates Cagean notions of space and time in web performance. The work integrates in-person and online participation to create an improvisatory, decentralized, and completely interactive performance. Webcasts connect the *Cathedral* band with other participant groups in live jam sessions, while individuals online can chat and play virtual instruments in real time. Duckworth makes a strong case for his vision of "an ongoing, worldwide-accessible work of music and art" (90) open to all comers. Less convincing, however, is the connection he tries to draw between the experience of *Cathedral* and a "liquid" sense of time based on the Internet's multi-node structure.

On the whole, the book has some of the common pitfalls of survey texts. Duckworth's lack of focus in certain chapters isn't helped by the large number of works he introduces. Chapter 4, for example, covers nine different projects in less than thirty pages. Much of the content consists of brief descriptions and biographies. Analysis, when it appears, is often superficial and sometimes farfetched. An accompanying CD of excerpts from various pieces covered in the book is never referenced in the text. Finally, for an author so interested in the personalities behind the technology, Duckworth interviewed surprisingly few composers. The bibliography cites only five whose works appear in the text.

Despite its flaws, *Virtual Music* offers an accessible and enthusiastic introduction to the changes of the past decade. So what if there is a fundamental contradiction at its heart? Duckworth declares that the Web is changing art, yet he traces this paradigm shift back to Satie and Cage. Is the Internet really the instigator of this change or merely its facilitator? Will it truly alter how we hear music? "I don't know," Duckworth admits, "although I certainly enjoy entertaining the idea" (169).

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