

# *Sisters with Transistors* surveys the women of electronic music

Erik Schreiber  
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*Directed by Lisa Rovner; narrated by Laurie Anderson*

Technological development not only improves our scientific understanding and productive capacities, it also creates new possibilities for the arts. The emergence of electronic oscillators and magnetic audio tape was crucial to the development of electronic music, one of the artistic innovations of the 20th century. The documentary *Sisters with Transistors* (2020) examines the contributions that women have made, as performers and composers, to this art form.

Electronic music came into its own after World War II, growing to encompass techniques such as tape manipulation (e.g., splicing, altering playback speed or creating loops) and the use of oscillators, electronic instruments or computers to produce sound. Some works have a surreal quality, and others conjure images of outer space.

Among the best-known figures are Pierre Schaeffer and Pierre Henry, whose *musique concrète* compositions relied on found sounds and audio effects. Karlheinz Stockhausen combined these techniques with the use of oscillators and other devices.

*Sisters with Transistors* often demonstrates how historical developments influence artists and their work. One of the first composers that the documentary treats is Delia Derbyshire, who was born in the United Kingdom shortly before World War II. Derbyshire was in Coventry during the German bombing campaign in 1940-41, the Blitz. The otherworldly sounds of the air raid siren and the all-clear signal made deep impressions on Derbyshire and helped to orient her toward electronic music, she says. At the BBC's Radiophonic Workshop, she began experimenting with tape loops and oscillators and ultimately composed

music for BBC shows. Derbyshire is best known for her electronic realization of Ron Grainer's theme song for the popular science fiction series *Doctor Who*.

The environment also affected Éliane Radigue, who lived near the airport in Nice, in southern France. Rather than tuning out the sound of airplanes flying overhead, she listened closely and learned to distinguish them from one another. Hearing work by Schaeffer was a revelation, she says. She managed to become his assistant at the national public broadcasting organization, where she worked with Henry as well. Although Radigue endured sexist comments in this environment, she soon developed her own techniques, which came to include feedback and long tape loops.

One of the most prominent figures in the documentary is Pauline Oliveros, who obtained her first tape recorder in the 1950s. As the film observes, many artists rebelled against the social and political rigidity that prevailed during the Cold War. For Oliveros, this meant moving to California and becoming involved with the San Francisco Tape Music Center, which was a focal point for electronic music. Oliveros responded to the horrors of the Vietnam War by turning away from social engagement in favor of searching for "inner peace." This inward turn led her to develop a practice that she called "deep listening." As a lesbian, Oliveros faced professional and social challenges, but nevertheless gained significant recognition.

Although associated with nonconformity, electronic music has had its traditionalists, too. The documentary briefly examines the transgender musician Wendy Carlos, who recorded an album of Bach compositions arranged for and performed on the Moog synthesizer. She released the album *Switched-On Bach* in 1968 while she was still living as Walter Carlos. The album reached the top 10 in the United States and ultimately

went platinum.

For composer Suzanne Ciani and others, *Switched-On Bach* was retrograde. In the film, Ciani argues that the point of electronic music was to explore the new possibilities that it offered, not to recreate Baroque music. But unlike Carlos, Ciani was unable to get a record deal. To make a living, she began creating music and sound effects for commercials. She gained notice by recreating the sound of a bottle of Coca-Cola being opened and poured.

Some of the film's most valuable comments come from composer Laurie Spiegel. She explains that her artistic goal has been to create work that reflects "the real, authentic experience of being alive, in contrast to the 1950s hypocritical reality ... in which everything was glossed over with cotton candy." Folk music informed some of her computer-based compositions, such as "Appalachian Grove."

Computers were considered "the enemy of the counterculture," Spiegel notes, because they "belonged to the banks and the military and the insurance companies." But she points out that humanity has always used tools, and asserts that a computer is a new tool that makes possible the liberation of music. "We've only begun to scratch the surface of what's possible musically," she says.

Now that sound recording and editing technology is available on smartphones and on the internet, the techniques that earlier electronic musicians used seem primitive. Derbyshire and others laboriously cut and spliced tape to create their work, and Spiegel initially had to punch holes in cards that she fed into a computer. Their accomplishments seem the more remarkable in retrospect.

But the amount of labor involved cannot be the sole, or main, criterion in evaluating music. As a documentary, *Sisters with Transistors* can give only a sampling of many compositions without spending adequate time on any one piece. One nevertheless notices the variable quality of the work, which runs the gamut from the gimmicky and dated to the subtle and absorbing.

The film's attitude toward gender is somewhat complicated. Although the film concentrates on women, several of the composers, such as Radigue and Spiegel, forthrightly acknowledge the influence that men had on their work. One segment examines Louis

and Bebe Barron, who worked as equal partners. But occasional comments about "dead white men's notes" imply a need for a separate "women's music," whatever that might mean. Such conceptions can only drag culture in the wrong direction. The answer to backwardness and discrimination is not gender exclusivism, but the broadest and richest possible encounter with life and reality.

In any event, *Sisters with Transistors* is an engaging and intelligent film that considers the interaction between historical development, technology and art. For anyone unfamiliar with the rich and varied field of electronic music, it may serve as a stimulating introduction.



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