

The Wall Street Journal  
January 7, 2016

## Pierre Boulez (1925-2016) Champion of Art and Tech

by Tod Machover

Pierre Boulez, who died Jan. 5 at age 90, had a brilliant, bold, idiosyncratic and creative view of musical history and possessed a singular vision of the role and responsibility of the modern musician. For him, creating through radical composition, re-creating through conducting, and enabling and educating through institutions (many of which he invented, established and led himself) were inseparable activities. Who else in recent times has accomplished—or even attempted—so much?

I was fortunate to experience the intersection of Mr. Boulez's activities when I worked at his Institut de Recherche et Coordination Acoustique/Musique (Ircam), from 1978 to 1985. He invited me there at first as a kind of "guinea pig" to try the new technology, then named me Ircam's first director of musical research.

Although Mr. Boulez had trained in mathematics and science as well as in music, he had been less successful than others in his generation—which included such giants as Karlheinz Stockhausen—in creating innovative electronic music. He was one of the great orchestrators of instrumental music of the 20th century—and he felt that postwar electronic technology was inadequate. So he'd created Ircam to bring composers, instrumentalists, engineers and scientists together to invent the sounds, structures and systems to make possible the music he imagined.

At Ircam, Mr. Boulez approached electronic composition almost as a student, taking notes on exactly how each new process worked, looking to understand the furthest and most precise potential of machine intelligence, rehearsing each effect until it sounded splendid, and then adapting his musical sketches accordingly.

I got to Ircam when Mr. Boulez was first exploring how to put these elements together. He would get up at 4 every morning, make musical sketches for his first interactive electronic piece (a revision of his 1971 "Explosante-Fixe" that we were working on together), meet me at Ircam at 6 a.m. so we could discuss how to translate his sketches into workable processes on the new Ircam machines (the first of their kind), and by 10 a.m. he would shift gears to his administrative duties, then come back to rehearse the electronic excerpts we were developing.

Many of his special qualities are demonstrated through the fraught premiere of his great work “Répons” at the 1981 Donaueschingen Festival, one of the most important post-World War II festivals, held in Germany’s Black Forest region. Pierre had finished the score in time—just!—for rehearsal to take place in Paris, and Ircam’s new 4X machine (the world’s first digital synthesizer) had also been finished and programmed at the last minute, a fantastic, futuristic, but exceedingly fragile device. The Donaueschingen version of “Répons” was less than 20 minutes long, so the concert plan was to play the piece a first time, take an intermission, and then come back for an explanation of the piece and demonstration of the technology, followed by a second performance of the work.

All went reasonably well during the rehearsals. But as Mr. Boulez took the podium to start the historic premiere, a worsening thunderstorm outside the gymnasium where it was to be performed could be heard by the capacity crowd—a who’s who of the international music scene.

In this atmosphere, Mr. Boulez cued the fast rhythmic playing by a chamber orchestra of winds, brass and strings, with no electronic sound at first. The audience was seated around the stage, being further surrounded by six soloists in the gymnasium balcony who were connected to the 4X machine and massive amplification. One of music’s great moments is when—after about seven minutes of acoustic instrumental scurrying—the center ensemble stops on a tremolo chord, and the six soloists come crashing in, playing forceful lines that are scattered and shattered electronically throughout the space. It is as if the heavens have opened up, and a new world has been introduced.

All went well through those first seven minutes of acoustic playing. The musicians reached their tremolo chord, Mr. Boulez held the fermata, and at that very moment, just before Pierre cued in the six soloists, a huge clap of thunder was heard outside, a massive bang occurred, and the electricity went out. With perfect calm and charming demeanor, Pierre announced from the podium: “Due to the circumstances, we will take our intermission now. See you back here in 20 minutes.”

After about five minutes, power was restored, we rebooted the 4X machine without being able to test whether it was in full working order, and the audience returned. Mr. Boulez had remained cool and collected; the performance had to go on. This time, all went flawlessly. The six soloists entered with crashing electronics, and the performance proceeded to the end. With no break, Mr. Boulez gave the lecture-demo and then played “Répons” a second time.

I—and many others—immediately knew that we had heard a masterpiece. And we had also observed Mr. Boulez at his best: pursuing great risk for his art; remaining calm and charming in adversity; graciously supporting his team and his machines; preparing meticulously for the moment that mattered, knowing not everything can be controlled.

Through these qualities, Pierre Boulez marked the music and culture of our times. He has left a legacy as a bold fighter for the seriousness, sophistication and transformative power of music at a moment when we have often forgotten how—or don't have the time—to really listen.

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