

Book review

Jennifer Iverson, *Electronic Inspirations – Technologies of the Cold War Musical Avant-Garde*. New York: Oxford University Press, 2019. ISBN: 9780190868192. doi:[10.1017/S1355771823000572](https://doi.org/10.1017/S1355771823000572)

Technology-based music is an active field in scholarship, and as new historical accounts of institutions, technical and aesthetic development and practices are added, the understanding is continually advanced in shorter and longer steps. Jennifer Iverson's contribution is a well-formulated description of electronic music as it emerged (particularly in Western Europe) after the Second World War in a social and political climate dominated by the Cold War. The radio studio of Westdeutscher Rundfunk (WDR) in Cologne had a particularly pivotal role in the 1950s development due to its facilities, its active support of new electronic music, its centrality as a hub for musical development, and the scientific, technical and artistic competence that was shared in a collaborative atmosphere. Iverson adds a wealth of detail on its activities and accomplishments, and provides significant insights into the what, how and who of this historical period. Her descriptions of the previously 'invisible' efforts of studio staff are of particular importance.

The emergence of electronic music in the difficult post-Second World War period posed questions: 'Was avant-garde electronic music a marginal cultural experiment or a revolutionary new paradigm? How did the electronic studio connect in the cultural sphere? In short, why did this difficult, avant-garde electronic music matter?' (p. 2). In order to address these questions, Iverson's book sets out to investigate three main themes: 1) the development of innovations at WDR and the musical influence these had on the avant-garde scene; 2) the working culture at the studio as a study of collaboration rather than individual efforts; and 3) the absorption of technological progress as a means of mitigating the threatening shadows of the Cold War.

The investigation has been organised in six chapters, with the addition of an introduction and an epilogue. This structure is complemented by unusually rich notes and an extensive bibliographical listing of archives, scores, discography, correspondence, primary and secondary sources, plus a glossary of actors.

In the first chapter, 'Origins', Iverson describes the Western post-war desire for a new music, free from a scandalised music tradition and at the same time distanced from both pre-war experiments and the

Soviet social realism that was promoted in Eastern Europe. The composers' desires coalesced with the wider cultural war between East and West, and the Darmstadt summer school, for example, was funded generously from 1946 onwards. In Iverson's account of how military technologies were repurposed for musical work, she describes how 'electronic studios reprogrammed World War II legacies, their new sonic possibilities shaping the Cold War future' (p. 22). Thus, the invention of a new music had social consequences; electronic music was part of rebuilding the cultural profile of West Germany (and surely a welcome vehicle for catching up with the French invention *musique concrète* and the experimentation at Columbia and Princeton universities in the New York area).

The essence of the argument for the studio was the need to construct timbres from scratch, and not manipulation and processing of recorded material, as in *musique concrète*. This argument existed well before Stockhausen arrived in 1953 and is recognised as creating certain tensions between the highbrow musical ambitions and the more practical approaches developed for radio drama sound effects.

Most accounts of the Cologne studio do not emphasise the collaborative aspects as much as Iverson does. Through her descriptions of composers and organisers she places the studio centre stage as a multifaceted work environment: a heterogeneous combination of technical competence, acoustics and psychoacoustics for developing new aesthetics. This understanding is underpinned by thorough accounts of the practices of several actors, studio founders and composers.

The second chapter, 'Kinship', emphasises in particular the relationship between European composers and John Cage. Iverson points out that his thinking and compositional methods had a huge impact on the development of electronic music in Europe among composers such as Boulez, Schaeffer and Stockhausen, and argues that his work with inharmonic timbres in the pieces for prepared piano helped lay the groundwork for much of the new electronic music, perhaps especially in the development of additive synthesis. David Tudor's work is extensively emphasised in this chapter, and considered instrumental in developing a network among composers in Darmstadt, Donaueschingen, Paris, Cologne – and the New York area.

In chapter three, 'Collaboration', Iverson discusses the importance of the Darmstadt summer school as an important place for learning what composers were

thinking and doing, in a time when communication was not as easy as it is today. She describes the collaborative processes among young composers who became interested in timbral synthesis, and how they worked on combining the smallest and largest aspects of composition structurally. A fair amount of detail is provided on the work of composers Stockhausen, Goeyvaerts, Pousseur, Gredinger, Koenig, Ligeti and Kagel, and this gives depth to Iverson's narrative. The introduction to studio techniques in this chapter will be particularly useful for readers with limited familiarity with how the analogue techniques were executed, practically.

WDR was above all a place for collaboration, for sharing ideas and experiments, and for working together in realising musical ideas. Stockhausen was central in connecting the various collaborators, in part because of his relationships to Meyer-Eppler and Eimert, in part due to his technical knowledge and in part because of his position in the studio itself.

Chapter four, 'Reclaiming technology', discusses theoretical aspects relevant in the development of electronic music, such as Shannon's information theory and statistical form. There were direct links between Bell Labs, WDR and Meyer-Eppler. At the time, the term 'statistical form' was criticised for being an opaque concept, likely to result in huge diversity in implementation. Composers were also criticised for engaging in pseudo-science. However, Iverson interestingly points out that the composers were 'policing an aesthetic boundary' and that this served to distinguish them as a group 'worthy of institutional support' (pp. 106–7). Composers used mathematical methods in different manners, ranging from Stockhausen's non-serial gestural approximations (using studio knobs) to Xenakis's and Koenig's stochasticism which was based on probabilities and equations from statistics and physics: 'Xenakis used probability equations to generate and deploy his musical materials, [while] Koenig created algorithms that constrained and shaped musical forms' (p. 134).

Chapter five, 'Controversy', discusses the technical musical directions taken by 'Cage and the Americans on one hand, and Boulez, Stockhausen, and the Europeans on the other hand' (p. 139). Much of this rift had its base in the implementation of indeterminacy and open form where several techniques were used. As in all other chapters, Iverson provides examples by discussing a number of musical works in detail, and achieves a more nuanced description of the differences in approach than what is often presented. She also points out that the split was aesthetic and not personal. According to Earle

Brown (p. 164), the composers were good friends, and the connections across the Atlantic Ocean were consequently richer than often imagined.

In Chapter six, 'Technosynthesis', Iverson describes how the musical development took place in the intersection of electronic instruments, phonetics, military technology, linguistics, psychoacoustics, adaptive technology and telephony, and how the environment in Cologne facilitated this development in a collaborative atmosphere. The larger question was not if electronic music was a possibility, but rather if the artistic results were interesting and truly new, not retrograde as in performances of older works with the electronic instruments from the 1920s.

Iverson also reflects on the military background of many of the technologies, and how repurposing of, for example, generators, filters and speech-altering technologies (such as the vocoder) gave impetus to new aesthetic development, allowing composers to 'crack open' linguistic sounds and to 'hear inside' them (p. 191). The technologies had become available and ready for appropriation, and the composers grappled with the ambivalent relationships between man and machine. In many ways, this techno-scientific collaboration resembled those found in development of military technologies during the Second World War.

Aesthetically speaking, Iverson writes, 'the ideas, techniques, and sounds of Cold War electronic music proliferated outwards in a series of ripples', and she sees electronic music as a sonification of 'the optimistic striving of the Cold War moment ... creating forward-looking dreams of a new musical and social order' (p. 199).

The greatest achievement in Iverson's book is that she documents and brings into focus the collaborative spirit of larger networks of actors and institutions, with regards both to the activities in WDR and the discourse between composers internationally. Iverson explains the composers' thinking through descriptions of their writings and many analyses and descriptions of musical works, and in condensing a huge number of sounding and written sources she maintains an unusually wide perspective. This makes her book a very worthwhile read for all interested in the early foundations of electronic music and for all engaged in the contemporary development of a plurality of new electronic music dialects.

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