## Smirnov, Andrey. 2013. *Sound in Z: Experiments in Sound and Electronic Music in Early 20th-Century Russia.* London: Koenig Books

**Reviewed by Thomas Patteson**

The history of experimental sound technologies in the early twentieth century has long been standardized into a well-trodden tour of the same familiar highlights: Thaddeus Cahill's Telharmonium, Russolo's *Art of Noises*, the prophetic visions of Busoni and Varèse, the novelties of Theremin. In both general histories and specialized accounts of "electronic music," these topics are generally treated as appetizers preceding the main course, which commences promptly after World War II with the emergence of the dueling schools of *musique concrète* and *elektronische Musik*. In recent years, this narrative has been questioned and extended in a number of important ways, and the previously unsuspected depths of early twentieth-century musical technoculture have begun to be sounded.[1] This is not merely a matter of quibbling over whether electronic music began in the 1950s or the 1920s; broadening the historical scope to include earlier phenomena makes for a new image of electronic music, one that highlights the social and cultural contexts that are often written out of canonic histories.

Adding to this effort is Andrey Smirnov's book *Sound in Z,* a thorough and thought-provoking study of sound technology and musical experimentation in Russia during the first decades of the twentieth century. Smirnov, Senior Lecturer and head of the Sector for Multimedia at the Center for Electroacoustic Music at Moscow State Conservatory, deftly combines lucid technical explanations of relevant artifacts with the broader cultural history of a uniquely turbulent milieu. His book illuminates how the technological experiments of Russian artists in the early twentieth century were integrally related to parallel developments in the arts and sciences, philosophy, and politics. *Sound in Z* traces a welter of activity that encompasses not only music in the conventional sense, but a seemingly centrifugal expansion of the art into fields both adjacent and far-flung. The book's eight chapters comprise a comprehensive survey of technology and experimental sound in the young Soviet Union. Given the ambitious nature of his project, Smirnov's book inevitably becomes something of an *omnium-gatherum*, but he succeeds in doing justice to the period's musical ferment, one which was previously all but unknown outside of Russia.

Those looking for familiar signposts in the history of electronic music will not be disappointed. The inventions of Léon Theremin are given an

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entire chapter, which provides a fine overview of the still underappreciated scope of his work. The instruments of lesser-known inventors are featured as well, from the "Sonar" of Nikolai Ananiev—which seems to have paralleled the Trautonium in Germany, both in playing technique and in popular esteem—to the "Ekvodin" of Konstantin Kovalsky and Andrei Volodin, an elaborately developed instrument that anticipated the analog synthesizer of the 1960s. The centerpiece of the book's treatment of instrumental technology, however, is the two chapters on sound-on-film and graphical sound technologies, which together occupy about a third of the text. Smirnov provides a richly detailed tour of these techniques, from the early Soviet sound films of Avraamov, Eisenstein, and Vertov, to the intricate graphical sound techniques of Voinov, Sholpo, and Yankovsky. The degree of technical detail in these chapters may be overwhelming for some readers, but Smirnov is to be commended for making the bewildering variety of these techniques largely comprehensible to English audiences.

Another little-known aspect of early twentieth-century Russian music was the domain of microtonality, a fascinating phenomenon whose broader history is yet to be written. Smirnov sheds valuable light on microtonal research in Russia, from speculative proposals such as Arseni Avraamov's forty-eight-tone "ultra-chromatic" approach to more systematic approaches of scholars such as Pavel Leiberg. Again, Smirnov makes clear that microtonal research, far from being an esoteric artistic novelty, was fueled by the speculative, universalist spirit of the time. Virtually all of those pursuing various alternatives to twelve-tone equal temperament saw their work as part of a more ambitious cultural project rooted in metaphysical concerns and/or, in the case of Avraamov, radical politics.

Throughout *Sound in Z*, Smirnov weaves into his account the broader cultural history of Russia in the first decades of the twentieth century. The frenzy of activity in sound and music was part of broadly ramified projects to reinvent society from the ground up. By giving indications of the profound intellectual and cultural upheavals of the years around the Soviet Revolution, Smirnov helps to illuminate the seemingly quixotic artistic undertakings of the time, which can otherwise appear ungrounded or simply bizarre. The synoptic, all-encompassing aspirations of figures such as Avraamov, for example, make more sense in light of the influence of Alexander Bogdanov's "tectology," an interdisciplinary, proto-cybernetic search for a scientific basis underlying all knowledge. Given this interdisciplinary gyre of influences, it's hardly surprising that many of the most far-reaching musical speculations of the time emerged not from the ranks of conservatory-trained composers, but rather from visual artists, poets, scholars, and engineers. To give just two examples, the painter Kazimir Malevich spoke of musical dynamism being replaced by "stati-

cism, i.e. holding back musical sonorous masses from temporal evolution" (21), while Denis Kaufman—later known as the pioneering filmmaker Dziga Vertov—conducted experiments in his homemade "Laboratory of Hearing" that anticipated the mid-century techno-phenomenology of Pierre Schaeffer (25).

Also striking is the degree of institutional support extended to these experimental undertakings. Smirnov devotes an entire chapter to the plethora of new, state-sponsored organizations founded in the wake of the revolution, many of which were squelched in the wake of Stalin's rise to power, as the Soviet Union turned toward a more conservative approach to the arts. Many important projects in instrument building and microtonal research were supported by the State Institute for Musical Science (GIMN), founded in 1921, which was probably the first government-supported music technology laboratory in the world. Sonic experiments were also undertaken apart from any explicitly musical impetus, for example at the Phonological Department of the State Institute for Art Culture (GINHUK), headed by the poet-artist Igor Terentiev, who undertook a scientific study of sound along the systematic lines of Soviet Constructivism. The fascinating complexities of early Soviet culture emerge as well in Smirnov's discussion of the organization Proletkult (Proletarian Culture), which involved many members of the Russian avant-garde in an undertaking of what might be called experimental arts education for the masses. Originally an emphatically independent institution, Proletkult had 400,000 members at its height in the early 1920s, but it was soon absorbed into the state apparatus and officially shut down in 1932.

*Sound in Z* also reveals hidden facets of the man-machine debate in twentieth-century technoculture. At the Central Institute of Labor (CIT), founded by Alexei Gastev in Moscow in 1920, Fordist notions about the rationalization of working methods were aligned with quasi-anarchist principles of radical individual autonomy: mechanization was seen to presage a new kind of human freedom. The CIT spawned a school of "biomechanics," which sought a unified understanding of movement encompassing both artificial objects and human beings, the "living machine." Biomechanics branched out from studies of labor processes to provide theoretical grounding for the motion of human bodies on the theatrical stage, as pioneered by the actor and director Vsevolod Meyerhold and the polyartist Solomon Nikritin, whose "Projection Theater" was a kind of in-house artistic wing of Gastev's CIT. Members of the Projection Theater participated in elaborate, strictly planned exercises encompassing not only bodily movement, but also psychological states and sound projection. The early twentieth century's fascination with the machine remains only

dimly understood, and too-easily dismissed as mere technological fetishism. Smirnov's work helps show how Soviet "machine-worshippers" saw the new technologies not as engines of "dehumanization" but as means of achieving a higher humanism by transcending biological limitations.

Of course, any history of the period can hardly ignore the threat (and quite often, the reality) of political violence that permeated early Soviet society, especially under Stalin's Great Terror in the late 1930s. Igor Terentiev, Alexei Gastev, and Vsevolod Meyerhold were murdered by the state on account of aesthetic transgressions or imagined conspiracies against the government. Others suffered less drastic punishments: Nikritin was blacklisted as a "formalist," while Theremin was imprisoned and his career undone. Understandably, the fates of these men cast a dark tone over the book as a whole, which often reads as something of an epitaph for a doomed movement and those who died while trying to further it.

Smirnov ranges freely across wide historical terrain, relating the aesthetic experiments that are his primary concern to the scientific, social, and political currents of the times. The book doubles as a compelling introduction to early Soviet history, and includes a truly staggering collection of photographs, diagrams, and historical documents, drawn primarily from the archives of the Theremin Center in Moscow, which Smirnov founded and directed from 1992 to 2012. Although the organization of the book seems at times a bit haphazard, the chapter subsections are short enough and the general flow of things clear enough that this doesn't amount to a major problem. Occasionally, however, the proclamations and manifestos that Smirnov quotes, often at great length, could benefit from the same meticulous explications that he provides for instruments and technologies.

Smirnov's approach as a historian has clearly been influenced by an idea of one of his historical objects: just as Solomon Nikritin's notion of "projectionism" eschewed the production of artworks for the sake of the "meta-artistic" methods of creating future art forms, Smirnov describes his work as an attempt "to sketch a map" and as a "platform for further research" (6). This it is; all the same, it's hard to imagine the book being eclipsed any time soon. *Sound in Z* is a vital contribution to the history of twentieth-century musical technoculture.

*Notes*

1. Some recent studies have broadened perspectives on this period, from the uncovering of occult and scientific influences in the work of Luigi Russolo to the hitherto unknown wealth of activity in the domains of early electronic instruments and sonic media in Germany and Austria during the 1920s and '30s. See Chessa (2012); Russolo (2012); Peter Donhauser (2007); Patteson (2015).

*References*

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