

News and Olds from the Electronic Orchestra Pit

When Nic Collins asked me to assist him in tapping into the “wisdom of the crowd” for a special section in LMJ19, I happily agreed to serve as a funnel for conveying the idea for the issue to the small crowd of knowledgeable people who honor me with their friendship.

As mixed a bag as the resulting section may seem, there are—at least to me—trajectories running between the respective articles (which somehow mirror trajectories of my own curiosity), forming a grid of historical and thematic connections. Nevertheless it should perhaps be emphasized that I became aware of this grid post factum only, because at the beginning I wanted myself to be surprised with the ideas the authors came up with. Theirs is the wisdom I wanted to listen to.

The historical axis runs from the 1920s until the present: Rahma Khazam’s paper, “Nikolay Obukhov and the Croix Sonore,” marks one end with a consideration of an obscure cousin of the theremin, while Phil Stearns’s description of the *Artificial Analog Neural Network* he designed and built marks the other. Volker Straebel’s essay “Media-Specific Music for Compact Disc” covers some of the years in between.

Another axis could be described as “individual artistic achievements in intermedia art.” Besides the above-mentioned articles by Khazam and Stearns, Jozef Cseres’s account of the Slovakian artist Milan Adamčiak’s practice, “In Between as a Permanent Status,” has its place here.

A third dimension in this taxonomy deals with “instrument building,” both as an art form and as a prerequisite of composition in the sense in which the German composer Helmut Lachenmann put it: “composing means building an instrument.” Rob Hordijk and his “Blip-poo Box” find their place here as a fine example of recent analogue instrument design with a twist, but the *Artificial Analog Neural Network* belongs here, as does the Croix Sonore.

If all this reasoning still sounds bleak and unconvincing, the articles certainly are not and are, like any well-crafted tool, ready for use without reading the manual.

In regard, however, to this attempt to extract a taxonomy from other people’s clever thoughts, I would like to conclude with a quote from Jorge Luis Borges’s essay “The Analytical Language of John Wilkins,” which offers a much richer take on the subject:

These ambiguities, redundancies, and deficiencies recall those attributed by Dr. Franz Kuhn to a certain Chinese encyclopedia entitled *Celestial Emporium of Benevolent Knowledge*. On those remote pages it is written that animals are divided into (a) those that belong to the emperor, (b) embalmed ones, (c) those that are trained, (d) suckling pigs, (e) mermaids, (f) fabulous ones, (g) stray dogs, (h) those that are included in this classification, (i) those that tremble as if they were mad, (j) innumerable ones, (k) those drawn with a very fine camel’s hair brush, (l) others, (m) those that have just broken a flower vase, (n) those that resemble flies from a distance.

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hans w. koch (born 1962) studied music, history and physics at the University of Education Weingarten/Wuerttemberg and composition at the Cologne University of Music with Johannes Fritsch. He lives and works (mostly) in Cologne. Besides developing performances and open forms for various, often interdisciplinary ensembles, he creates (sound-)installations, sometimes involving computers and digital media. The search for hidden aspects of everyday tools, such as household electronics, hairdryers, metal wool, old computers (and traditional instruments as well) takes place alongside his explorations of sounds and musical structures. When working with digital media, he explores boundaries and implicit (de)faults, in order to arrive at interactions that keep lives of their own and react to human input in unpredictable ways. This also extends to his use of computers as musical instruments in a rather physical manner.

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- BLASSNIGG, KATHARINA. Review of *Challenges: A Memoir of My Life in Opera* by Sarah Caldwell, with Rebecca Matlock, *Leonardo* **42**, No. 5 (2009).
- VAN RYSSSEN, STEFAAN. Review of *Metatron* (CD) by Richard Pinhas, *Leonardo* **42**, No. 2 (2009).
- VAN RYSSSEN, STEFAAN. Review of *Black Rhythms of Peru: Reviving African Musical Heritage in the Black Pacific* by Heidi Carolyn Feldman, *Leonardo* **42**, No. 2 (2009).
- ZILBERG, JONATHAN. Review of *Weimar on the Pacific: German Exile Culture in Los Angeles and the Crisis of Modernism* by Erhard Bahr, *Leonardo* **42**, No. 2 (2009).

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Nikolay Obukhov and the Croix Sonore

Rahma Khazam

INTRODUCTION BY HANS W. KOCH

Of all the forgotten composers of the early 20th century, Nikolay Obukhov probably holds a solitary crown for occupying more space in the books of music theorists than in musical life: Independent of Schoenberg and well before him, Obukhov invented a horizontal (chord-based) 12-tone musical system that included a new notational system. He also composed a vast oeuvre in the tradition of Scriabin's idea of a mystical ritual signaling the end of composition as we know it and worked on new yet little-known instruments capable of expressing these ideas. Thanks to Ravel's support, his concerts in Paris were featured in 1930s newsreels and attended and discussed by Messiaen and other avant-garde composers. Yet today it is hard to find a recording of his music, let alone a score, while his musical remains are scattered all over Paris: His manuscripts are kept in the Bibliothèque Nationale; the remains of his Croix Sonore at the Musée de la musique at the Cité de la musique; and the ruins of his tomb—once crowned with a sculpture of the Croix Sonore—are in the Paris suburb of Saint-Cloud, where he spent his last years, incapacitated after being assaulted by brigands. The Croix Sonore, which is described in detail in the following article, might appear to some to be a cheap rip-off of the theremin, which preceded it by some years—a rip-off because it is also played without being touched, and cheap because the left hand actually manipulates a volume knob, whereas the theremin is played solely by moving one's hands in the air. Nevertheless, these facts should not obscure a proper evaluation: First, the theremin was not the only instrument based on the principle of heterodyning for sound generation (cf. Jörg Mager in Germany around 1918), and there is so far no trace of any contact between Obukhov and Theremin. Secondly, their goals were totally different: Whereas the theremin was a salon-instrument by its design and in terms of the music that was written for it, the Croix Sonore was intended as a ritualistic ingredient in a *Gesamtkunstwerk*. This informed everything from the instrument's shape to the priestess-like dress of the woman playing it (there are no reports that it was ever played by a man) to its sonority and the musical texture of the compositions created for it. The goal of the article that follows is to raise questions rather than supply answers. It sets out to bring the Croix Sonore to the attention of an intermedia-conscious audience, who, unlike the historians of 12-tone music, might pay it the homage it deserves.

Bibliography

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NIKOLAY OBUKHOV AND THE CROIX SONORE

A mystic who signed his name "*Nicolas l'illumine*" (Nicholas the visionary) and made markings in his scores using his own blood, Nikolay Obukhov (1892–1954) played a pioneering role in the history of 20th-century music. Best known as one of the early dodecaphonic composers, he also conceived several innovative musical instruments. Among them, the Croix Sonore, or Sound Cross, reflected his mystical beliefs while proving a striking auditory and visual experience.

The idea of creating a new instrument capable of expressing his artistic and spiritual convictions had obsessed Obukhov ever since he left war-torn Russia in 1918. The émigré composer settled in Paris and in 1926 produced a prototype of the Croix Sonore, following it up with an improved version in 1934. This imposing instrument, built by Michel Billaudot and Pierre Dauvillier, was 175 cm high and consisted of a sphere measuring 44 cm in diameter. The sphere housed the electronic circuitry and was surmounted by a brass cross that acted as an antenna. As in the case of the theremin, which had been invented in 1919, body capacitance controlled heterodyning vacuum tube oscillators. The pitch was modified by moving one hand out from the central star on the cross and the volume by a hand-held device concealed in the player's other hand. Beyond its status as a musical instrument, however, the sound cross held a spiritual significance for the deeply religious Obukhov, all the more so as the sounds it conjured out of the air appeared to be unfettered by material constraints, unlike the mechanically produced sounds of the piano.

The Croix Sonore was featured in 20 or so of Obukhov's compositions, including his magnum opus *Le livre de vie* (The Book of Life). It was ideally suited to producing glissandos, which he had already used in his work, while the hypnotic gestures required to play it enhanced the mystical aura in which he shrouded himself. So also did the sound it produced, an unearthly cry somewhere between the human voice, the organ and the cello. The pianist Marie-Antoinette Ausenac de Broglie gave performances on the instrument, and in 1934 the avant-garde film-maker Germaine Dulac filmed her playing it [1], accompanied by Obukhov on the piano. In 1935 in *La Revue Musicale* [2], Emil Ludwig describes one such performance, noting the mesmerizing effect it had on audiences.

Yet the Croix Sonore's success was short lived. It fell into disrepair and eventually ended up at Paris's Bibliothèque-Musée de l'Opéra, which is where Hugh Davies saw it in the early 1980s [3]. There were plans to incorporate it in the collection of the Musée de la musique at the Cité de la musique in Paris, but by then it had gone missing—only to resurface in February 2009, when a staff member of the Bibliothèque-Musée

de l'Opéra happened on it by chance. It is now on permanent loan to the Musée de la musique.

Obukhov conceived two other instruments in the early 1920s, but neither appears to have been realized. The Cristal consisted of crystal hemispheres struck by hammers, while the Ether, which Obukhov incorporated in several scores around 1932, was an electrically powered wind machine consisting of a rotating wheel that made a humming sound [4]. The Ether has also been described as an inaudible instrument, "theoretically capable of producing sounds from five octaves below to five octaves above the audible range of frequencies" [5]. Simon Shaw-Miller points out that the effect of these infra- and ultrasonic sounds would have been to expand the audience's sensory experience in subliminal ways [6].

However, designing new instruments and composing for them only partially fulfilled Obukhov's goal, which was to unite all the arts in quasi-religious sound and light performances. He was planning

an orchestral version of *Le Livre de Vie* enhanced by the music of the Croix Sonore, lighting effects and cinematographic projections when his untimely death put an end to the project. His ideas have since become common currency: Multidisciplinarity, immersive technologies and the interpenetration of art and science are keywords in the arts today.

References and Notes

1. Germaine Dulac, dir., *Instrument Radioélectrique*, black and white sound film, 00:02:08, Gaumont Pathé archives, Ref. No. AF 86 3, 23/05/1934.
2. Emil Ludwig, "La croix sonore," *La revue musicale*, No. 157 (1935) pp. 96–99.
3. Hugh Davies claimed that he saw it in a storeroom in the Opera House. It had recently returned from an exhibition in Berlin and was still packed away in its crate.
4. See Hugh Davies, "Croix sonore," in *The New Grove Dictionary of Musical Instruments*, Vol. 1 (1984) p. 515. This film, as well as its companion, *France, Paris. Musical Life. A New Instrument, Mrs Aussenac Broglie. A New Musical Notation, Mr Nico*, black and white film, 00:02:39, Gaumont (Journal Gaumont) (3422GJ 00011, 01/06/1934), are unique, not only because they show the composer performing some

of his works, but also because they provide the only opportunity to see and hear the Croix Sonore in action. Until the instrument was rediscovered, these films were the only means, other than reports and drawings, of obtaining information about the Croix Sonore.

5. Joel Chadabe, *Electric Sound: The Past and Promise of Electronic Music* (New Jersey: Prentice-Hall, 1997) p. 2.

6. Simon Shaw-Miller, "Skriabin and Obukhov: Mysterium & Le Livre de Vie," <blackboard.lincoln.ac.uk/bbcswebdav/users/dmeyerdinkgrafe/archive/skria.html>.

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