

Iannis Xenakis: Composer, Architect, Visionary

The Drawing Center

Main Gallery

January 14, 2010 – April 9, 2010

About the Exhibition

Iannis Xenakis: Composer, Architect, Visionary, curated by Carey Lovelace and Sharon Kanach, will explore the role of drawing—or “thinking through the hand”—in the work of pioneering avant-garde composer Iannis Xenakis (1922–2001). A contemporary of Karlheinz Stockhausen, Pierre Boulez, and John Cage, Xenakis was a major figure in postwar music, as well as an engineer and architect who created revolutionary designs, working with Le Corbusier. Many of Xenakis’ innovations in music and architecture were realized on paper first, ultimately yielding hundreds of striking graphic documents. The first museum exhibition in North America devoted to his works on paper, The Drawing Center’s presentation will feature over sixty documents spanning from 1953 to 1984, including rarely-seen hand-rendered and computer-generated musical scores, architectural drawings, pre-compositional renderings, and drawn schemas of the site-specific “Polytopes” that Xenakis developed throughout his career.

Receiving formal architectural and engineering instruction at the Athens Polytechnic Institute in Greece from 1940 to 1947, Xenakis, after moving to Paris in 1947, worked with architect Le Corbusier, at first as an engineer and later as a collaborator. In 1956, for the Brussels Expo '58, he began designing the Philips Pavilion, an icon of 20th-century architecture. He transposed the glissandi—or “glide” from one pitch to another—of his epochal orchestral *Metastaseis* (1953–54), to formulate the pavilion’s volumetric architecture, showing that there could be a continuity of line through curves. For another Le Corbusier project, the Convent at La Tourette, for which he was project manager, he used drawing to work out his hallmark contribution, “undulating glass panes” on many of the edifice’s fenestrated façades, an application of the architect’s Modulor, based on the Fibonacci series, the Golden Mean and the dimensions of the

body's scale. Xenakis' layered methods of calculation and planning on paper, both mathematical and graphic, reveal his hand's transcriptions of his mind's eye.

In late 1950 through 1953 he studied with composer Olivier Messiaen, who encouraged him to develop the approach for which he later became legendary—fusing architecture, music, and mathematics together in the compositional process. Xenakis sought ways out of traditional harmonic polyphonic music, widely considered a musical dead-end at the time. Influenced by new notions of advanced mathematics that were exploring ideas of contingency and relativism, he began to use probability distributions and stochastic mathematical techniques to create masses of sound, linear permutations, and sonic pointillism.

In preparatory sketches, a rare sampling of which will be on view, Xenakis used an architect's hand and approach to meticulously work out contingencies and levels of his musical compositions. These include preliminary drawings, algebraic and geometric calculations, brief notes to himself, projections of various contingencies, and schematics at a high level of definition. To conceptualize beyond two dimensions, he used color pencil to represent, for example, timbre, or levels of dynamic intensity, or the physical distribution of musicians. Layers of transparencies allowed formulations on multiple levels simultaneously. Xenakis' training in drafting allowed him to “think out loud”—on paper—an entire piece of music from beginning to end: “It was much easier for me to use a graphic approach to music than the classical notation [staves] with which I had never been able to see everything at the same time, as you do on a graph...”

Even musical scores, rendered by the composer himself, and mixing traditional and innovative forms of notation, are dynamic documents. Each composition is an intricately layered constellation of marks that seem to almost physically represent kinetic audio flows and masses of sounds. Dots, dashes, lines, hatches, and mathematical equations dip, soar, and drive across the page.

Also on view will be drawings and graphic conceptual renderings for Xenakis's unique site-specific, multimedia “Polytopes.” Unique in their concentration on abstract

processes mixed with near-heroic settings, in locales ranging from the ruins of Persepolis in Iran to the ancient Cluny thermal baths in Paris. These “installation” works further explore the spatial intersections between light, color, sound, and architecture. Xenakis often improvised dynamic, even whimsical, new approaches to hand-rendered scoring. For *Mycènes Alpha* (1978), one of whose elements involved musicians distributed among mythic terrain in Greece, he created hieroglyphic diagrams of Greek words, numbers, and even figuration showing physical placement. For *Polytope de Cluny*, exactly rendered geometric schematics map source-phases of computer generated light-shows. Balance and harmony in an almost Pythagorean sense, a belief in the power of pure form, a complex dimensionality, are conveyed in the most casual sketch.

To give the viewer an intimate experience of these unique scores at the same time hearing the music they generated, we will provide listening stations. The complex graphic score of *Pithoprakta* (1955-56), its horizontal, large-scale pages with linear markings, preserved on DVD by the Bibliothèque Nationale de France, will be projected while the viewer listens to the music, generated by stochastics, probability theory, with its primordial texture. Likewise, a listening station for *Mycènes Alpha*, with simultaneous projection of its UPIC-generated graphic score, will be included in the exhibition

In 1955 Xenakis began to explore electronic and computer-generated music and again used graphic means to conceptualize, translate, and “score” works. The music for *Mycènes Alpha*, composed on the UPIC computer, translate lines drawn on an electrostatic drawing board directly into sound. Each “page” is something approaching a complex pen and ink drawing, involving almost biomorphic forms, spidery branching, strange linearities.

In his groundbreaking career, Xenakis also speculated on aspects of late 20th-century living brought about by advances in technology and Modernist speculations. For example, his “Vertical Cosmic City” projected skyscrapers towering five kilometers above the clouds, a demographic density inducing an utopian and heterogeneous

community of five million inhabitants per structure! His freehand, somewhat whimsical drawing of an entire city thus composed is a lesson in scale where skyscrapers as we know them appear as but mere dots on the page.

About Iannis Xenakis

Iannis Xenakis (b. 1922, Braïla, Romania–d. 2001, Paris, France) fought as a young man with the Greek Resistance in World War II for which he was condemned to death. He fled to France as a political refugee in 1947 and became a French citizen in 1965. He studied engineering at Athens Polytechnic Institute and music composition at Gravesano with Hermann Scherchen as well as at the Paris Conservatory under Olivier Messiaen. He collaborated with Le Corbusier from 1947–59 as an engineer and architect on projects including the Convent de La Tourette (1955) and the Philips Pavilion at the Brussels World's Fair (1958).

In his compositional process, he employed stochastic mathematical techniques, notably probability theory as well as the Maxwell-Boltzmann kinetic theory of gases (*Pithoprakta*), Markov chains (in *Analogiques*), game theory (*Duel* and *Stratégie*), group theory (*Nomos Alpha*), Boolean algebra (*Herma* and *Eonta*), and Brownian motion (*N'Shima*). In 1962, he published *Musiques formelles*, a collection of essays later revised and translated into *Formalized Music: Thought and Mathematics in Composition* (1971). His sonic-sculptural-light architectures include *Polytope*, French Pavilion, Montreal Expo, Montreal; *Persepolis*, Iran (1971); *Polytope de Cluny*, Paris (1972); *Polytope de Mycènes*, Greece (1978); *Diatope*, for the Centre Georges-Pompidou opening, Paris (1978).

Xenakis was the founder (1965) and Director of the Center for Studies of Mathematical and Automated Music (CEMAMu), Paris; Associate Music Professor, Indiana University, Bloomington (1967–72) and founder of the Center for Mathematical and Automated Music (CMAM), Indiana University, Bloomington (1967–72); researcher at the Centre National de la Recherche Scientifique (CNRS), Paris (1970); Gresham Professor of Music, City University London (1975); Professor, University of Paris I (1972-89). He was awarded Kyoto Prize (1997) and the Polar Prize (1999).

Xenakis married writer Françoise Xenakis in 1953. Their daughter, Mâkhi Xenakis, is a painter and sculptor.

Publication

To accompany the exhibition, The Drawing Center will produce a substantive catalogue highlighting the formative role of drawing and graphic means in Xenakis' work. The catalogue will be a 150–200 page, fully-illustrated publication with works from the exhibition and containing four scholarly essays. One of the only major publications on Xenakis ever to be produced in English, the catalogue will examine his contributions to avant-garde music and architecture. A print-run of 300 catalogs will be produced in paperback, with approximately 100 black-and-white and 50 color illustrations of Xenakis' musical scores, architectural blueprints, drawings, and photographs. The publication will retail for \$40 at The Drawing Center's bookstore.

About the Curators

Iannis Xenakis: Composer, Architect, Visionary will be co-curated by Sharon Kanach and Carey Lovelace. Sharon Kanach, a Paris-based new music specialist who worked closely with Xenakis until the end of his life, has edited and translated several books of his writings. New York-based critic Carey Lovelace is co-president emeritus of the International Association of Art Critics, U.S. Chapter, and a writer for *Art in America*, *Artforum*, and other publications. Lovelace, formerly an avant-garde composer, and Kanach both attended Xenakis' legendary class at the Université de Paris I, which he led from 1972 through 1989

Organizer

Brett Littman, Executive Director
The Drawing Center, New York