

2010 STEEDMAN FELLOWSHIP

Proposal Outline

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Iannis Xenakis is a music composer whose work has contributed greatly to the use of computation and mathematical operations in the creation of music. Educated in Greece as an architect and engineer, he works in Le Corbusier's office and designs the Philips Pavilion, an ephemeral structure constructed in Brussels to host an audio-visual installation.

While Iannis Xenakis is widely acclaimed and studied as an innovator in avant guard music, his work is not extensively examined in relation to architecture, and when that is done the focus is always on his architectural designs and mostly on the Philips Pavilion. However, Xenakis in his writings was always underlining that his methods in composition are not only applicable to music, but also to the visual arts and most notably to architecture. The study I propose for the Steedman Fellowship suggests a more thorough research on Xenakis music work in relationship to his design work.

Xenakis' musical scores are composed in such a way that they have an underlying spatial dimension. His scores and diagrams for his compositions share very little resemblance to conventional musical sheets, while they could be undoubtedly "read" as spatial diagrams and architectural blueprints.

Back in the 1960s Xenakis was one of the first researchers to use computers in his musical/mathematical explorations. With a delay of some decades, the use of the computer in composition reached also the field of architecture and eventually led to a more constant, or more obvious, impact of mathematics to architecture. The architectural avant guard today has to deal with, up to a certain extent, with mathematical or computational processes like cellular automata, L-systems, stochastic process and boolean algebra, all methods employed earlier by Xenakis in his work.

Under the light of the above observations Xenakis' work could prove itself extremely helpful in relation to the questions that computation is posing to architecture today. More specifically, Xenakis' work could provide insights for architectural practice in relation to the computers in two ways:

a. First in a theoretical level. Xenakis provides a very extensive philosophical and theoretical background for his work through his writings, which seems possible to be used also in relation to architecture today.

b. Secondly in a design oriented level. Iannis Xenakis started to use mathematics and computers as his tools for composition in the beginning of the 1960's and continued this research until the end of his life. Therefore his work has to offer a great variety of methods, techniques and processes for the musical composition. Given the fact that Iannis Xenakis' way of working with music was based on 'spatial' techniques and visualization of his ideas through drawing, a study of his projects could offer precious insight for architectural design. In addition to that, the introduction of those spatial qualities in Xenakis' research that

focuses on sound, arises questions on the relation between space and sound and how the one discipline can offer resources to the other.

My proposed study for the Steedman Traveling Fellowship focuses on the study of Xenakis' methods of composition and their relation to architectural process. The fact that never before in the past has there been a profound study of Xenakis music work by architects, makes this research useful for the broader academic architectural community.

The output of the study is expected to be a series of drawings and video/3d animations where Xenakis' techniques will be presented in a visual, "architectural" format. The drawings will attempt to present and analyze the whole process followed by the composer, thus contributing to a spatial understanding of Xenakis' work.

The proposed study is going to be a further and more extensive development of research undertaken by the applicant in relation to the proposed theme. However, the resources in relation to Xenakis work are very poor. The reason for that is that a very small part of Xenakis' archive has been published; the largest part of it is kept in two institutes in Paris, the *Centre of Composition of Music Iannis Xenakis* (CCMIX)¹ and the *Institute for Music/Acoustic Research and Coordination, Centre Pombidou* (IRCAM)².

The Steedman Fellowship could give me the opportunity to visit and study for 9 months the archives of the two foundations. If I win the Steedman Fellowship, I intend to travel to Paris and begin my research on September 2010 and continue until June 2011. After the end of my stay in Paris I intend to continue with the production of drawings and computer animations, that will explore the techniques that Xenakis used in his composition. This final stage of the research is expected to finish by October 2011, when I will be able to present the results of the research.

REFERENCES:

Harley, James **Xenakis, His Life in Music** New York: Routledge, 2004.

Matossian, Nouritza **Xenakis** New York: Kahn & Averill, 1986.

Treib, Marc **Poeme Electronique, Space Calculated in Seconds** New Jersey: Princeton University Press, 1996.

Xenakis, Iannis **Formalized Music, Thought and Mathematics in Music** New York: Pendragon Press, 1992.

¹ A pedagogical and research institute that is focusing on "the promotion and the application in research and in new compositional practice which take their inspiration from the musical theories and ideas of Iannis Xenakis" as stated in 'the mission statement' on their webpage (<http://www.ccmix.com/english/index.html>).

² A non profit, research institute that is focusing on the research of experimental music. They have done extensive research on the work of Xenakis. Informations about the IRCAM can be found online: <http://www.ircam.fr/>