



Research > COMPOSING WITH PROCESS: PERSPECTIVES ON GENERATIVE AND SYSTEMS MUSIC

Generative music is a term used to describe music which has been composed using a set of rules or system. This series of six episodes explores generative approaches (including algorithmic, systems-based, formalised and procedural) to composition and performance primarily in the context of experimental technologies and music practices of the latter part of the 20th Century and examines the use of determinacy and indeterminacy in music and how these relate to issues around control, automation and artistic intention.

Each episode in the series is accompanied by an additional programme featuring exclusive or unpublished sound pieces by leading sound artists and composers working in the field.

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Joe Gilmore is an artist and graphic designer based in Leeds (UK). His work has been exhibited at various digital art festivals and galleries. His recorded works have been published internationally on several record labels including: 12k/Line (New York), Entr'acte (London), Cut (Zürich), Fällt (Belfast) and Leonardo Music Journal (San Francisco). Joe is currently a part-time lecturer in the department of Graphic Design at Leeds College of Art & Design. He is also a founder of rand()% , an Internet radio station which streamed generative music. <http://joe.qubik.com>

COMPOSING WITH PROCESS: PERSPECTIVES ON GENERATIVE AND SYSTEMS MUSIC #3.1

Determinacy and indeterminacy

This episode looks at how chance has been used in a variety of ways in the composition and performance of musical works.

01. Summary

The third episode in the series examines the use of determinacy and indeterminacy in music. It looks at how chance has been used in a variety of ways in the composition and performance of musical works – from works derived from the tossing of coins, to more rigorous explorations of the laws governing probability. The programme also looks at the use of chance in the visual arts and literature, and changing approaches to science during the twentieth century, describing the impact of these disciplines upon music making. It investigates concepts and ideas behind these works with reference to works drawn from different traditions.

02. Playlist

Part I

- Iannis Xenakis 'Mikka S' (*Chamber Music 1955-1990*, Montaigne, 2000)
- John Cage 'Seven Haiku' (*The Complete John Cage Edition, Volume 29*, Mode, 1952)
- William S. Burroughs 'Silver Smoke of Dreams' (*Break Through in Grey Room*, Sub Rosa, 1986)
- Lejaren Hiller 'Quartet No. 4' ('The Illiac Suite') (*Computer Music Retrospective*, Wergo, 1986)
- Iannis Xenakis 'Pithoprakta' (*Metastasis / Pithoprakta / Eonta*, Le Chant du Monde, 1988)
- Iannis Xenakis 'Gendy 3' (*Ais - Gendy3 - Taurhiphanie - Thallein*, Neuma Records, 1994)
- Hecker 'Stocha Acid Vlook' (from the CD accompanying the catalogue of the exhibition *Ausgeträumt...*, Secession, Vienna, 2001)
- Yasunao Tone 'Solo For Wounded CD Part 1' (*Solo For Wounded CD*, Tzadik, 1997), excerpt
- Farmers Manual 'Final Lap' (*Explorers_We*, Or, 1998)
- Farmers Manual 'Poptastic' (*Explorers_We*, Or, 1998)
- Farmers Manual 'Sci Fi Lo Fi' (*Explorers_We*, Or, 1998)
- Farmers Manual 'Galactic Bar' (*Explorers_We*, Or, 1998)
- Farmers Manual 'Space Race' (*Explorers_We*, Or, 1998)

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- Thom Blake, Mark Fell, Tony Myatt, Peter Worth, 'Yasunao Tone and MP3 Deviation'. New York: Music Research Centre, Proceedings of the International Computer Music Conference, ICMA, 2010.
- Dave Burraston, Ernest Edmonds, *Cellular automata in Generative Electronic Music and Sonic Art: A Historical and Technical Review*. Sydney, Australia: Digital Creativity, Routledge, 2001.



[Lejaren Hiller in the Experimental Music Studios]

John Cage, *Silence. Lectures and Writings*. Middletown, Connecticut: Wesleyan University Press, 1939.

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Ivan Hewett, Carey Lovelace, Sharon Kanach, Måki Xenakis, *Iannis Xenakis: Architect, Composer, Visionary*. New York: Drawing Centre, 2010.

Peter Hoffmann, *Analysis Through Resynthesis. Gendy 3 by Iannis Xenakis*, Paris: CDMC, 2001.

Roc Jiménez de Cisneros, *Blackout, Representation, Transformation and de-Control in the Sound Work of Yasunao Tone. Quaderns d'àudio*. Barcelona: Ràdio Web MACBA, 2009.

Örjan Sandred, Mikael Laurson, Mika Kuuskankare, *Revisiting the Illiac Suite – A rule based approach to stochastic processes*, 2009.

http://www.sandred.com/texts/Revisiting_the_Illiac_Suite.pdf

David Osmond-Smith, 'Choice vs. Chance', *New beginnings: the international avant-garde, 1945–62*, The Cambridge History of Twentieth-Century Music (ed). Cambridge: Cambridge University Press, 2004.

Ivan Penov, *Analysis of S. 709 by Iannis Xenakis*, 2008.

<http://www.scribd.com/doc/28669193/Iannis-Xenakis-S-709-analysis>

Agostino di Scipio, 'Clarification on Xenakis: The Cybernetics of Stochastic Music', *Presences of Iannis Xenakis*, Paris: CDMC, 2001.

Iannis Xenakis, *Formalized Music. Thought and Mathematics in Composition*. Bloomington: Indiana University Press, 1962.

Markos Zografos, *Iannis Xenakis: The Aesthetics of his Early Works*.

<http://www.furious.com/perfect/xenakis.html>



[Farmers Manual performing at Schirn Kunsthalle, Frankfurt am Main, Germany, in February 2002]

04. Related links

'The Creative Compositional Legacy of Iannis Xenakis'

<http://www.iannis-xenakis.org/Articles/Harley.pdf>

'Illiatic Suite' on Media Art Net

<http://www.medienkunstnetz.de/works/illiac-suite/>

'Iannis Xenakis and John Cage: Two Sides of a Tossed Coin'

<http://people.mills.edu/toda/chance/frames.html>

Stochos: Stochastic synthesis software

<http://sonic-disorder.com/research.html>

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