Processes & Potentials

Composing with Object Networks

Ideas

Processes, relations and compositionally interesting situations.

Interaction between elements and organization of musical materials.

Material defined by its behavior.

Encapsulation of compositional data, its behavior and possible actions.

Higher level control for accessing different time scales simultaneously.

Time as a series of snapshots in different spatial positions.

Sound Processes, Composer Objects and Polarities.

EPOC (Environment for Process and Object Composition)

Objects, States & Processes

Polarity states might be seen as outside time, the sound process as inside time and the Object inbetween.

Sound Processes can be understood as Independent streams of sound characterized by their behavior over time.

Collections of objects or other musical materials become states. Can also be seen as nodes, blocks, meso-structures or sections. States can become higher-level building blocks for a composition.

Processes can be grouped into sections or states. These groups can be subject to higher level control of the polarities. Sections can then be controlled in conductor fashion. They can also become layers or even form chords.

Snapshots

"The world is to be understood not as matter/mass moving in a framework of space and time, but of more fundamental snapshot-like entities that momentarily fuse space and matter into single possible arrangements or configurations of the entire universe. Such configurations, which can be fabulously rich and complex considering the vastness of the universe, are the ultimate "things" of reality."

(Stuart Hameroff)

Process

"Although the recipe or instruction set for process production is, or in a certain sense may be, timeless, the process itself must nevertheless be temporal. This means that processes can be said to exist only through their concrete historical manifestations. For processes, to be is to be exemplified [...] this means that the process must exist in time (with its full realization unfolding "in the course of time," so to speak). As long as it is not concretely realized, we have only a possible and not an actual process."

(Nicholas Rescher)

‘Music is traces left by composition.’
(Herbert Brun, Composers and the Computer)

‘Music-making remains an activity revealing its own ”creation principle”’
(Horacio Vaggione, Some Ontological Remarks about Music Composition Processes)

‘Musical compositions carry abstract structures’
(Miranda, Composing music with computers)

‘Starting from a given sound, many other audibly similar sounds may be developed which however, possess properties different or even excluded from the original sound... No universal tradition of large scale form-building (through these newly accessible sound-relationships) has

Microsound

'The practice of micro-time sonic design may be seen as a perspective in which a link is established between two general, contrasting views of composition: namely, one focussing on formalised, algorithmic approaches (algorithmic composition), and one involving a more qualitative experience of sound materials, so characteristic in electroacoustic music, where the perceptual, semantic and symbolic qualities of sounds may be as important as the overall framework of their articulation.'

On granular synthesis: "Most of the richness and complexity of sound afforded by this approach stems from the fact that micro-time sonic design does not implicitly prescribe any particular acoustic model: it is the implementation of a compositional micro-level strategy which determines the kind of sound behavior modelled or produced."
(Di Scipio - Micro-time Sonic Design)

Second order Sonorities

Working on Analogique B in the late 1950s, Xenakis formulated the 'hypothesis of a second order sonority'.

'Granular hypothesis': Connected with the production of timbres, where second order sonorities emerge from clouds of sonic grains.

We can analyse and reconstruct whatever existing sound. Furthermore, it is possible to create non pre-existing sounds as a combination of countless grains.

With this hypothesis, composition is supposed to be like sound synthesis in a meta-level. Many of Xenakis compositions can be analyzed as successions of sonorities, i.e. successions of sections that can be heard, metaphorically, as composed sound... To listen to one of Xenakis compositions as a succession of composed sounds, of sonorities, does not prevent us from hear its dramatic qualities, for instance.
(Makis Solomos)

Material and Form

Material and form have always been related. Microsonic materials and procedures tend to shift the aesthetic focus toward fluid morphologies. The flowing structures that we can create with microsound do not necessarily resemble the usual angular forms of musical architecture. To the contrary, they tend toward liquidic or cloudlike structures.
(Curtis Roads in interview with Brigitte Robindore.)

What is obtained by processes of sonic design, though we may still want to call it sound material, is a formed sound-object. Clearly, as far as timbre is the form of the sound material and sound materials are themselves the object of the composer's knowledge-level strategies, this perspective on composition confounds the classical distinction between material and form.
(Di Scipio - Micro-time Sonic Design)

Sequences

A sequence is an ordered list of objects. Unlike a set, order matters, and exactly the same elements can appear multiple times at different positions in the sequence.

Perceptible patterns rather than statistical 'clouds'
(James Harley, on the use of percussion in Xenakis Orient-Occident.)

All sequences have two general properties. They can define both a field and an order. [...] Sequences are also characterized by order properties. In existing musical languages, certain sequences of notes will commonplace others exceedingly unlikely.

Permutation of a finite set of elements in fact provides a way of establishing relationships among element-groupings. Order can be applied to many different properties and can be used to focus the listener´s attention on the ordered property.
(Trevor Wishart, Audible Design)

Textures

'Texture [...] is concerned with internal behavior patterning, energy directed in- wards or re-injected, self-propagating; once instigated it is seemingly left to its own de- vices; instead of being provoked to act it merely continues behaving.'
(Denis Smalley, Spectromorphology and Structuring Processes)

'Textural perception [...] only takes over when the succession of events is both random and dense, so we have no perceptual bearings for assigning sequential properties to the sound stream. [...] Texture differs from Continuum in that we retain a sense that the sound event is composed of many discrete events.'
(Trevor Wishart, Audible Design)

Evolution

'In general, any parameter we give to a process (pitch, speed, loudness, filter centre, density etc.) should be replaceable by a time varying quantity and this quantity should be continuously variable over the shortest time-scales.'
(Trevor Wishart, Audible Design.)

'The metaphors of motion and growth are appropriate ways of considering a time-based art like electro- acoustic music. Traditional concepts of rhythm are inadequate to describe the often dramatic contours of electroacoustic gesture and the internal motion of texture which are expressed through a great variety of spectromorphologies. [...] Motion and growth have directional tendencies which lead us to expect possible outcomes, and they are helpful guides in attributing structural functions.'
(Denis Smalley, Spectromorphology: explaining sound-shapes)

Interaction

Computers simulate interaction by allowing users to change aspects of their current state and behavior. This interactive loop is completed when the computers, in turn, affect the further actions of the users.
(Todd Winkler, Composing Interactive Music)

'Each component, in the network, capable of produing, conveying, mediating, transferrring sound, depending on acoustic circumstances and the materials present in the room, plus the digital sound processing, and, in short, the whole electroacoustic chain [...] It is crucial to compose the interactions among these nodes, i.e. to shape up the range of their mutual relations, and the relations between individual nodes and the entire system.'
(Di Scipio , The Sound Ecosystems of Agostiono Di Scipio)

Ideas (from Xenakis)

Stochos / Goal

Causality / Logic

Determinism / Indeterminism

Speed / Movement

Gravity / Time

Polarities

Speed
(fast/slow)

Density
(dense/sparse)

Frequency
(hi/low)

Color
(dry/wet)

Amplitude
(loud/soft)

Surface
(rough/smooth)

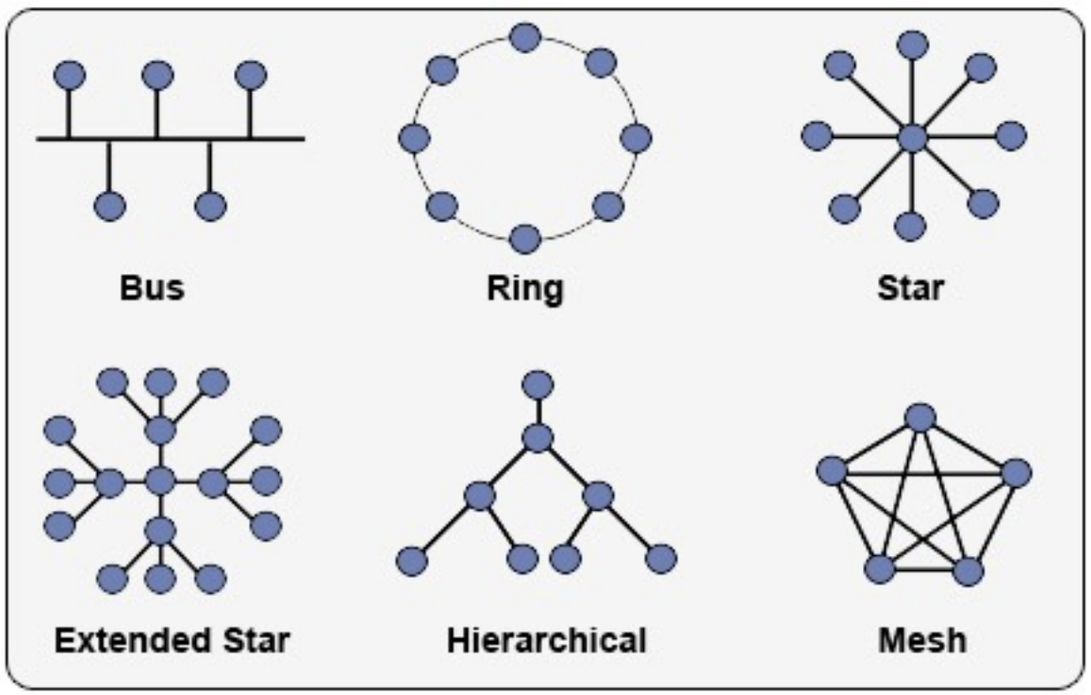
Entropy
(order/disorder)

Location
(far/near)

Networks

A network is a series of points or nodes interconnected by communication paths or links. Networks can interconnect with other networks and contain subnetworks.

Messaging protocols from telecommunications and the internet can be seen as interesting examples of messaging which could be used in the context of algorithmic music based on well defined objects and interfaces.



Networks

Each component, in a network, is capable of produing, conveying, mediating, transferrring sound, depending on acoustic circumstances and the materials present in the room, plus the digital sound processing, and, in short, the whole electroacoustic chain. For me it is crucial to compose the interactions among these nodes, i.e. to shape up the range of their mutual relations, and the relations between individual nodes and the entire system.

DI SCIPIO A. (2009) The Sound Ecosystems of Agostion Di Scipio

Networks

Composing objects means creating active entities, each of which is endowed with specific behavior modes (methods), determined in digital fashion (codes), and whose functions depend on their own methods as much as on the context in which they are being used. The objects may be functions (algorithms), lists of parameters (scores), scripts (successions of actions to be accomplished), or they may be sounds (products as well as sources).

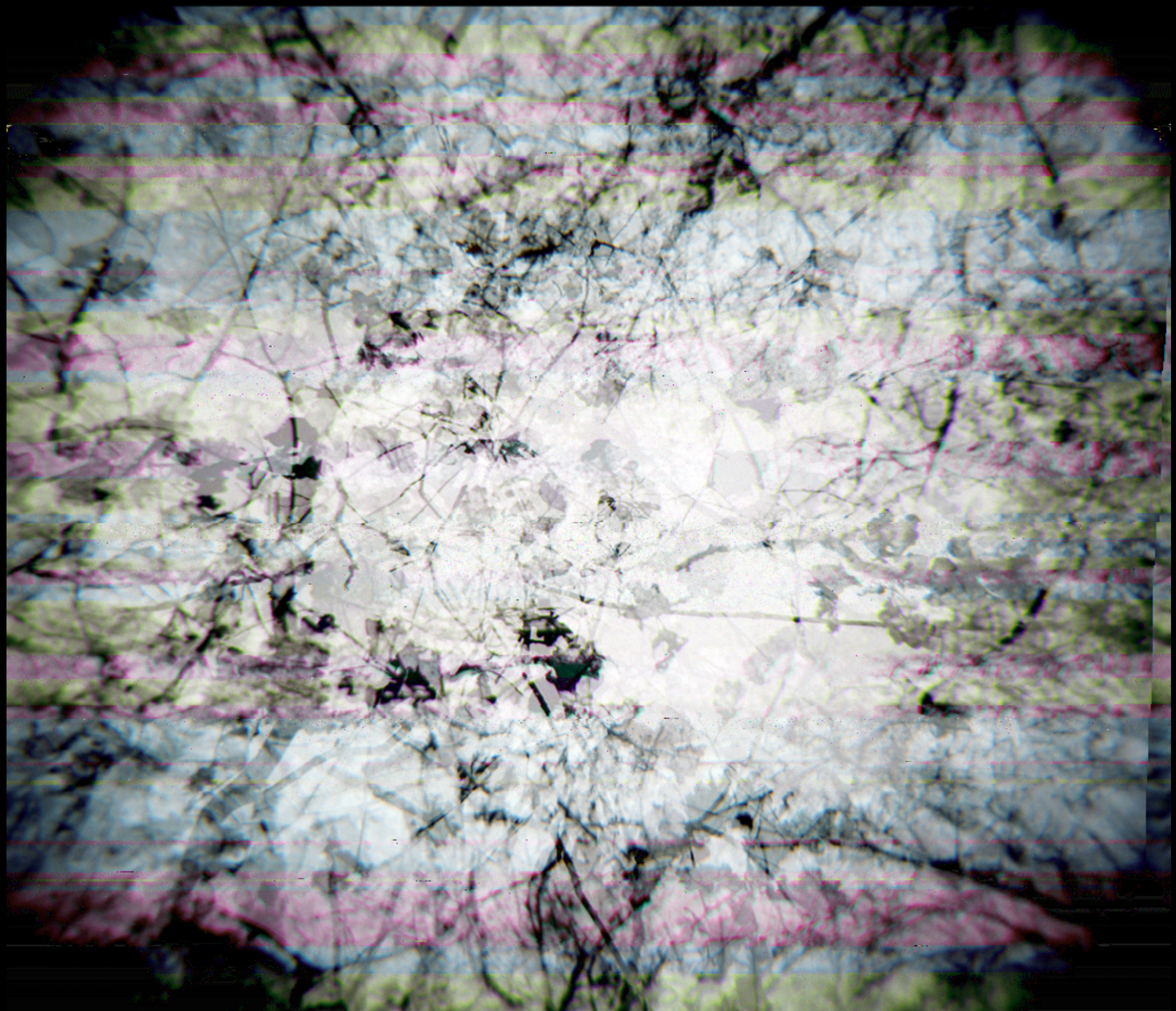
VAGGIONE H. (2001) Some Ontological Remarks about Music Composition Processes. Computer Music Journal, 25:1.

Emergance

The way complex systems and patterns arise out of a multiplicity of relatively simple interactions.

“I consider design strategies (intended objects) and perceived structures (actual objects) to be two worlds which, although distinct, are dependent one on the other. A designer's path through decisions, choices, and the evaluation of temporary results determines the general outlook as well as the details in the designed object, and therefore deserves the observer's (analyst's) attention at least as much as the properties of the object resulting from the creative process.”
(Di Scipio)

Bjarni Gunnarsson Processes & Potentials 3L025



Portholes

Processes & Potentials

A set of 6 pieces that do not necessarily need to be experienced in a linear succession. Ideas flow between them and related situations are experienced. Each of them still has its particularity and its perceivable identity. However, they could also be seen as momentary events, originating from a more continuous stream in which their relationships exist in different ways.

We can think of the world as being made of actual 'occasions'. These occasions arise from potentialities created by prior actual occasions. The actual occasions are occurrences emerging from practical events, each of which comes into being and then disappears, only to be replaced by a successor. If these experiences form the basic realities of nature then this is also a very realistic description of this album.

http://bjarni-gunnarsson.net/processes.html