GENDYN and Merzbow: Xenakis's dynamic stochastic synthesis as noise

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Audio quiz: GENDYN or Merzbow?

http://bit.ly/GENDYNorMerzbow

The audio extracts are taken from either the GENDYN works by Xenakis or albums by Merzbow. Can you guess whether it's GENDYN or Merzbow? (See answers below).

Introduction

In 2002, various noise artists including Masami Akita (aka Merzbow) paid homage to Xenakis through contributing remixes to the CD release of his electroacoustic work, *Persepolis*. These remixes are inevitably "noisier" than Xenakis's original from 1971. However, in 1991, Xenakis had completed the first incarnation of his GENDYN program – from *GENeration DYNamique stochastique* (dynamic stochastic synthesis) – which would produce compositions that are almost comparable in terms of noisiness. This poster explores the relationship between his late stochastic synthesis works with noise music today, in terms of their aesthetic and conceptual concerns. Through a comparison of GENDYN and Merzbow who has typified noise in recent years, it is hoped that useful insights will be gained into both the GENDYN works and noise.

Merzbow

Merzbow is a project started in 1981 by Japanese artist, Masami Akita. The name refers to *Merzbau*, long-term projects by the Swiss Dada artist, Kurt Schwitters. *Merz* was his term for work involving collages made from fragments of found or discarded objects. Similarly, early Merzbow recordings are sonic collages in the manner of *musique concrète*, albeit in a very "unmusical" and bastardised form. Samples of recorded sounds were gradually dropped or transfigured beyond recognition, and his music became increasingly noisy from the mid 80s. His name has become synonymous with not just Japanese noise, but noise in general through his prolific output and for being one of the most noisy and uncompromising. Thus Merzbow was chosen as the subject for comparison with GENDYN.

Definitions

Noise has various definitions. For Paul Hegarty, it is subjective: "noise is already that qualification [e.g. unpleasant, loud etc]; ... a judgement that noise is occurring. ... Noise is cultural ..." (Hegarty 2007, 3). Similarly, Akita notes how: "most pop music is noise to me" (quoted in Bailey 2009, 70). Thus noise is negative i.e. unwanted, other, not ordered. Noise is negatively defined "i.e. by what it is not (not acceptable sound, not music, not valid, not a message or a meaning)" in terms of information theory, subjective, as genre and as law. Noise is a negativity: exists only in relation to what it is not, "help[ing] to structure and define its opposite (the world of meaning, law, regulation, goodness, beauty, and so on)" (Hegarty 2007, 5).

In contrast, Xenakis's primary understanding of noise was acoustic, referring to a physical definition that is quantifiable: "Now, what is noise? So-called white noise can be represented by a curve with no smoothness at all, and no periodicity" (Xenakis 1996, 152). Additionally, Xenakis viewed the prevailing acoustic notion of noise based on Fourier analysis as a construct of multiple sine tones to be both unrelated to human perception and unnecessarily computationally expensive. Thus he states: "Using the principle of harmonic analysis, it is possible to create a route from simplicity to higher complexity. How might one reverse this progression? By starting from random walks produced by stochastic functions, and by injecting symmetries, regularities and periodicities, even up to the point of repeated waveforms" (Xenakis 1996, 153). Xenakis proposes a positively defined zero-point of noise from which a range of sounds to the opposite end of the spectrum can emerge. At least in concept, periodic or musical tones are defined somewhat negatively, in relation to noise, and not vice versa. His conceptual model also seems appropriate for recent noise music where instead of the resultant sounds being a culmination of distorting periodic sounds, it becomes the starting point from which snippets of recognisable parameters can form.

Technology and materiality

The sonic results of such "non-standard" synthesis methods are sometimes regarded as idiosyncratic anomalies when compared to the electroacoustic canon. In the case of Xenakis, this is in part due to the lack of affinities with IRCAM and GRM after his split with Schaeffer. Using Gerhad Eckel's terms in contrasting Xenakis's approach to the two leading electroacoustic institutions in France, Peter Hoffmann identifies IRCAM with the "Technology of Writing", GRM with the "Technology of Editing", and CEMAMu, Xenakis's own research institute, with the "Technology of Computing". Broadly speaking, at IRCAM, audio analysis is undertaken for the purposes of score-following and the combining of instruments with electroacoustic or tape parts, and at GRM, combinations and transformations of recorded sounds are explored. Both approaches involve the use of computers, but merely for the extensions of the possibilities of notation in the former and tape music in the latter. However, CEMAMu is concerned with the use of computers for the advancement of music that is unique to computers, or more specifically, the manipulation of audio samples as compositional material. Therefore, although Xenakis's programming style is certainly idiosyncratic, his use of the computer is highly idiomatic to the medium with which much electroacoustic music is currently created (Hoffmann 2009, 59–63). Hence GENDYN implements one possible idiomatic use of digital technology that takes into account its materiality.

Attempts at the creation of idiomatic computer music can also be found in noise music today. Akita describes his early encounters with technology: „My first motivation for creating sound was anti-use of electric equipment – Broken tape recorder, broken guitar, amp etc. I thought I could get a secret voice from equipment itself when I lost control" (Christie, quoted in Pozo n.d). Later, the main source of sound became no-input mixer feedback (Hensley 1999). Misuse, by revealing the limits of the medium often exposes the idiomatic, through a removed and culturally unconditioned viewpoint: the residual is exposed, highlighting materiality. As Greg Hainge explains, "Noise musicians ... highlight those [unwanted] elements of music production that the production process attempts to silence, and as such they foreground the technological system itself" (Hainge, quoted in Kelly 2009, 57–58).

Microcomposition

Alterations in the spectral properties of the wavetable and higher-order time structures (or sonorities as Xenakis describes them) appear as by-products of "microcomposition", the manipulation of digital samples by GENDYN. Di Scipio characterises the process as "sonological emergence" (Di Scipio 1994, 205), due to macro-level epiphenomena being created through micro-level dynamic processes. These could also include the formation of certain pitches (Hoffmann 2004, 138). As Di Scipio explains, "By acting 'within' the sound rather than 'on' it, Xenakis's mechanism aims at creating a network of relations on a presyntactic (or subsymbolic) level, allowing perceptually relevant data to emerge at a time scale relevant to the listener" (Di Scipio 1998, 237).

Such accounts are reminiscent of adjectives – such as primordial, pre-linguistic, pre-subjective, pre-phenomenological and primitive – often used to describe noise. The sonological emergence of macro-level structures also recalls the possibility of the formation of new meanings in noise as described by Jacques Attali: "Noise does ... create a meaning: ... the very absence of meaning in pure noise ... by unchanneling auditory sensations, frees the listener's imagination. The absence of meaning is in this case the presence of all meanings ... a construction outside meaning. ... It makes possible the creation of a new order on another level of organization, of a new code in another network" (Attali 1986, 33).

Formlessness and generative music

Noise can be characterised by formlessness, or the disruption of form in noise music, or form as noise. The question then arises as to whether noise can remain noise upon repeated listenings. Similarly, Xenakis was well aware that even a compositional structure modelled on the laws of chance and probability of exceptional events heard several times would lose its surprise or noise effect (Xenakis 1992, 37). Whilst the repetition of musical cells, motifs and sections that are fundamental in traditional music is avoided to an extent in noise and stochastic music, its appearance at the level of a whole work cannot be avoided through successive performances: the difference is merely that of scale.

He proposed a possible solution in 1956–57 where each performance is stochastically varied (Xenakis 1992, 37), which could be interpreted as a form of generative music being explored today.

Akita's prolific output could be viewed as an alternative solution in ensuring that noise remains noise: "You may get used to one album, even start thinking of it as music, but the next one will do something else" (Hegarty 2007, 157). The fact that there will always be a next one is guaranteed by the amount of music in some releases, the 50-CD *Merzbox* in a specially-designed case with Merzbow goods including a book and art work being a prime example. Furthermore, his releases number in the hundreds, perhaps thousands, on numerous labels, in different formats with many rare, limited editions. Besides the usual LPs and CDs, there were the early mail-order cassette tapes wrapped in photocopied pages from pornographic magazines, and also the mythical limited edition of one *Merzcedes*, a Mercedes with a Merzbow album permanently fixed into the CD player. The task of listening to his entire output becomes an impossibility, in addition to commenting on the consumer fetish of collecting.

Failure

For Attali, "noise is violence ... a simulacrum of murder" (Attali 1986, 26), identified with transgression. Hegarty describes how the Bataillan notion of transgression and its failure can apply to noise as a taboo within music. If noise succeeds and becomes acceptable as music or even tomorrow's pop music, then it has failed on account of being commercially appropriated and would no longer be noise. In order to remain noise, the taboo has to be maintained i.e. it cannot become incorporated into music. But then it has failed as transgression in terms of disposing the taboo. Noise lives on in this failure, as residue (Hegarty 2007, 147).

One criticism of GENDYN concerns its *event-insensitiveness*: "the unexpected, the singularity of events, does not become a source of information and transformation, but rather favors a levelling-off tendency" (Di Scipio 1998, 236); "Indeed, the spectrum of probabilistic functions allows for one only global property to emerge, an ineluctable rush toward the average final point or 'mean state value'" (Di Scipio 2002, 25).

The criticism reflects an inner contradition and potential for failure in Xenakis's use of stochastics. On the one hand, he acknowledges that an asymptotic convergence towards a stable state will be achieved (Xenakis 1992, 4), whilst on the other hand advocating indeterminacy for the introduction of accidents, surprises and exceptional events (Xenakis 1996, 148).

It is possible to view the GENDYN compositions as a series of failures: as each section becomes increasingly less noise-like, the algorithm is restarted with new parameters, only for this process to be continually repeated until it gives up at the end of the piece in attaining noise. The transition to a new section becomes the most consistently noise-like element, but by virtue of this fact, it gradually fails to be noise. In describing this "failure", Xenakis writes: "When these exceptional events multiply and become the general case, a jump to a higher level [to that of disorder] occurs" (Xenakis 1992, 25). Rather than dynamic evolution, musical flow or an eco-system, Xenakis opts for noise, with the lack of development and segmentation in *Gendy3* and *S.709* being byproducts of his approach. He embraces noise by using the same inherent contradictions present in stochastics.

Answers to GENDYN or Merzbow:

01. Merzbow, from Amlux Track 1
02. Xenakis, from Gendy3
03. Merzbow, from Noisembryo Track 1
04. Merzbow, from Metamorphism Track 1
05. Xenakis, from Gendy3
06. Merzbow, from Metamorphism Track1
07. Merzbow, from Amlux Track 1
08. Merzbow, from Metamorphism Track 1
09. Xenakis, from Gendy3
10. Merzbo, fromw Metamorphism Track 1
11. Xenakis, from S.709
12. Merzbow, from Noisembryo Track 1