Meta-Xenakis

New Perspectives on Iannis Xenakis's Life, Work, and Legacies

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https://www.openbookpublishers.com

Sharon Kanach and Peter Nelson (eds), *Meta-Xenakis: New Perspectives on Iannis Xenakis's Life, Work, and Legacies*. Cambridge, UK: Open Book Publishers, 2024, https://doi.org/10.11647/OBP.0390

Digital material and resources associated with this volume are available at https://doi.org/10.11647/OBP.0390#resources

ISBN Paperback: 978-1-80511-224-2
ISBN Hardback: 978-1-80511-225-9
ISBN Digital (PDF): 978-1-80511-226-6
ISBN Digital ebook (epub): 978-1-80511-227-3
ISBN HTML: 978-1-80511-229-7
DOI: 10.11647/OBP.0390

Cover image: Iannis Xenakis at the C.R. MacIntosh Museum, Glasgow, Scotland, 1987. Photo by Henning Lohner, courtesy of CIX Archives, Lohner collection.

Cover design: Jeevanjot Kaur Nagpal

With generous support from: Centre Iannis Xenakis, Xenakis Project of the Americas/The Brook Center, Université de Rouen: BQRI, IRIHS, GRHis, CÉRÉdI.

9. Iannis Xenakis's Philosophy of Music, Stochastics, and the Postmodern Sublime

Nathan Friedman

In "The Total Rejection of Heritage, or Iannis Xenakis," an article originally published in 1980, Czech author Milan Kundera (1929–2023) wrote, "faced with Xenakis's music I was completely unprepared, unschooled, uninitiated, an utterly naïve listener. And yet I felt genuine pleasure at hearing his works, and I would listen avidly. I needed them: they brought me some strange consolation."[1]

After the invasion of his country by the Soviet Union in 1968, Kundera sought out not "the patriotic music of Smetana"[2] but the "world of noises in Xenakis's works,"[3] because of a profound disenchantment with "man as man, man with his cruelty but also with the alibi he uses to disguise that cruelty, man always quick to justify his barbarity by his feelings."[4] For Kundera, Western music, based on "the artificial sound of a note and of a scale,"[5] was inexorably bound up with the sentiment of subjectivity, which he considered to be "part and parcel" to the brutality of European history[6] and it took Xenakis's rejection of this "insurmountable convention"[7] in order to produce a beauty "washed clean of affective filth, stripped of sentimental barbarity."[8]

Kundera's assessment of the traditions of Western music and the effect of the musical avant-garde prefigured by several years similar arguments that form the cornerstone of Jean-François Lyotard's (1924–98) *The Inhuman*, originally published in 1988. Lyotard contrasts the principles of humanism (especially that since the Enlightenment) with two types of what he calls the "inhuman": the logic of capital (which he refers to as

1 Kundera, 2010, p. 74.
2 Ibid.
3 Ibid., p. 78.
4 Ibid., p. 75.
5 Ibid., p. 77.
6 Ibid., p. 75.
7 Ibid., p. 77.
8 Ibid., p. 78.

 https://doi.org/10.11647/OBP.0390.11

development), and "the infinitely secret one of which the soul is hostage."[9] The latter he explains as an infant-like state, an "initial misery" that requires programming by "the institutions which constitute culture" in order to transition to the truly human.[10] The primary difference between these two forms of the inhuman is one of temporality: capital goes quickly, retaining information just long enough for it to be of use, and then forgetting it again; whereas the process of attaining the inner inhuman is slow. Both forms, however, converge on what Lyotard refers to variously as the event (Heidegger's *Ereignis*), the now, the instant, or the moment, which constitutes the essence of what he refers to as the *postmodern sublime*.

As an aside, in discussing the postmodern sublime, Lyotard is adamant that he does not use the word "postmodern" in the popular sense,[11] but rather in the sense of something that the trajectory of modernity makes inevitable. He writes:

> we have to say that the postmodern is always implied in the modern because of the fact that modernity, modern temporality, comprises in itself an impulsion to exceed itself into a state other than itself. And not only to exceed itself in that way, but to resolve itself into a sort of ultimate stability.[12]

In other words, modernism's "narrative of emancipation"[13] contains the seeds of its own undoing.

Lyotard's "postmodern" sublime is contrasted with the "Romantic" sublime of Edmund Burke (1729–97)[14] and Immanuel Kant (1724–1804),[15] whereby the human subject, faced with something that is ungraspable by the senses, feels pain from its inability to imagine the object that it faces, yet also feels pleasure from its ability to rationalize that which it can neither sense nor imagine. This conception of the sublime, though it is applicable to works of art, is usually discussed only as present in the mind of the observer. Lyotard uses the postmodern sublime explicitly to refer to the engagement of an observer with artworks, and that it is something immanent to the works themselves. Using the paintings of Barnett Newman (1905–70) as an example, Lyotard proposes that when faced with an avant-garde artwork, one that eschews all notions of representation or allusion, the observer, unable to use any received model to determine what will happen "next" (while this essay discusses music, the perception of a work of visual art still happens in time), is faced with the real possibility that nothing will happen, that the work will not continue. The observer must constantly ask themselves "is it happening, is this it, is it possible?"[16] Lyotard ascribes to this uncertainty a feeling of anxiety, but also positive feelings: the "pleasure in welcoming

9 Lyotard, 1991, p. 2.
10 Ibid., p. 3.
11 Ibid., p. 34.
12 Ibid., p. 25.
13 Ibid., p. 68.
14 Burke, 2009.
15 Kant, 2000.
16 Lyotard, 1991, p. 90.

the unknown," and "the joy obtained by the intensification of being that the event brings with it."[17] Subsequently, the "next" event happens, or does not, but the observer finds themselves in an identical position to that which they were prior to the "previous" one. Thus, the commingling of pleasure and pain in the experience of each moment of avant-garde art is the postmodern sublime.

In Xenakis's writings, it is clear that he shares Lyotard's consideration of the event as the crux of avant-garde art. Examining Xenakis's thoughts on the matter, however, requires a brief investigation of his foundation in ancient Greek philosophy. The Presocratic philosopher Parmenides (fl. 475 BCE) was particularly influential on Xenakis, who dedicated his 1964 work *Eonta* to him. Parmenides was the earliest proponent of the notion of *being*, in which "what is" is "one, spherical, indestructible, eternal [...] ungenerable and imperishable, indivisible and unchanging."[18] In 1958, Xenakis took Parmenides's verse "for it is the same to think as to be" and paraphrased it thus: "for it is the same to be as not to be."[19] How exactly these statements are equivalent is of some controversy to Xenakis scholars,[20] but it suffices to note that, for Xenakis, the paraphrased version brings his philosophy of music into the realm of the event. To his paraphrase, he adds "In a universe of nothingness. A brief train of waves, so brief that its end and beginning coincide (time in nothingness) disengaging itself endlessly. *Nothingness resorbs, creates. It engenders being*."[21] He imagines the universe as a sort of flux that transcends the temporal, "open to spontaneous creation, which could form or disappear without respite, in a truly creative vortex."[22] Xenakis goes on to describe the process of composition in terms clearly belonging to the sublime:

> the choices that I make when I compose music, for example. They are distressing, for they imply renouncing something. Creation thus passes through torture. But a torture which is sane and natural. That is what is most beautiful: to decide at any moment, to act, to renounce, to propose something else. It's great. The joy is the fulfilment of living. That's what it means to live.[23]

In fact, Lyotard's postmodern sublime describes this experience, previously only understood to be available to the creator of a work, as becoming accessible also to the listener. This is the "misery" faced by the creator: "not only faced with the empty canvas or the empty page, at the 'beginning' of the work, but every time something has to be waited for, and thus forms a question at every point of questioning, at every 'and what now?'"[24] In the postmodern sublime, this occurs at every moment.

For Lyotard, the event produces a highly specific kind of temporality in the mind

17 Ibid., p. 92.
18 Antonopoulos, 2005, p. 3.
19 Xenakis, 1987, p. 44.
20 See Antonopoulos, 2005; Chrissochoidis, Mitsakis, and Houliaras, 2005; Solomos, 2004.
21 Italics in original.
22 Xenakis, 1987, p. 44.
23 Ibid., p. 45.
24 Lyotard, 1991, p. 91–2.

of the observer. In the ordinary perception of time, he describes events as "sentences" which are each "a 'now'" that are strung together with other sentences "on a single diachronic line" in our consciousness.[25] Through the action of the "objectifying synthesis" that produces this line, however, the observer forgets that each "now" must be mediated by memory as it transits from present to past, it cannot be "synthesized *directly* with other presents," since they have become pasts.[26] He also writes that the present itself "cannot be grasped: it is *not yet* or *no longer* present. It is always too late or too soon:"[27] too late because each present is "dragged away by what we call the flow of consciousness' in which 'it never stops fading away;"[28] too soon because a perception of the present would require a conscious mode of anticipation, "the intention to identify, the project of seizing and identifying [...] the thing itself"[29] of the present, which is not perceiving it in the moment.

Another aspect of the temporality of the event relates to the questions that one asks oneself in the moment. I have already discussed above the question *is it happening*? as it relates to the event, which Lyotard calls *quod*. Another question asked by oneself is *what is it*?, what does the event signify, which he calls *quid*. *Quid* must necessarily happen after *quod*, since one must recognize that something has happened in order to examine it. The temporal gap between *quid* and *quod* is a central concern of Lyotard, which he places at the core of the inhuman. In its typical rapidity, the inhuman of development seeks to answer the *quid* as quickly as possible. However, answering the *quid* in this way reduces all events to their utility, changing their information to "an environmental given" and then "'all is said,' we 'know.'"[30] Lyotard writes that "complete information means neutralizing more events" because "what is already known cannot, in principle, be experienced as an event."[31] In music, when we already "know" the answer to *quid*: the event undergoes a process that Brian Kane, drawing from the study of rhetoric, calls *figuration*, whereby the listener imports musical metaphors into the aural experience, where "all *sounds* become *tones*, and all *tones* are metaphorical."[32] What the postmodern sublime describes is an event that resists such figuration, by achieving the "other inhuman," where the *quid* is delayed as long as possible (or even indefinitely) by a "now" that "dismantles" or "deposes consciousness," that accesses "what consciousness cannot formulate, and even what consciousness forgets in order to constitute itself."[33]

The event, as described by Lyotard and Xenakis, is clearly an ideal to which they aspire, but the postmodern sublime is somewhat (or completely) inaccessible in

25 Ibid., p. 59.
26 Ibid. Italics in original.
27 Ibid. Italics in original.
28 Lyotard, 1991, p. 24–5.
29 Ibid., p. 25.
30 Ibid., p. 105.
31 Ibid., p. 65.
32 Kane, 2004, p. 126. Italics in original.
33 Lyotard, 1991, p. 90.

the process of listening because of intrusions by the human mind and its powers of figuration. Lyotard notes that the inhuman of childhood is tamed by the acquisition of a "second" nature that instills humanistic values in us, along with language, enabling us to reason and participate in communal life. The issue is that these humanistic values are generalized and sedimented into institutions (in which he includes literature, the arts, and philosophy), which cause us to forget most of the inhumanity of childhood.[34] In the arts, these institutions take the form of "the School, the programme, the project" that "proclaim that after this sentence comes that sentence, or at least that one kind of sentence is mandatory, that one kind of sentence is permitted, while another is forbidden." These introduce prejudice into the mind of the listener, causing them to "forget the possibility of nothing happening."[35]

This spirit of figuration was already evident in discussions of the romantic sublime. Burke noted that painting is relatively ineffective in the production of the sublime, since, as Lyotard writes, it is "doomed to imitate models, and to figurative representations of them," these models being institutionalized humanism as enshrined in the techniques of art. However, Burke considered combinatory arts such as poetry or music to be superior in their ability to represent the sublime, since they are media where "the power to move is free from the verisimilitudes of figuration."[36] Though music is free of the pictorial figuration of painting, the specter of its own types of figuration haunted modernist composers such as Xenakis. In the context of dealing with the complexities of modern life, Xenakis acknowledges that figurations, models, and simplifications (which he refers to as "abbreviations, names, formulae,"[37] "beliefs, myths, good or bad gods. Or elegant theories of physics … be they legitimate or not"[38]) can be useful, calling them "branches" that "you have to hold onto" in order to "get across quicksand,"[39] as well as "our bunkers, our mental machines, veritable automata interconnected with our defensive tactics," used for "mental self-protection."[40] He emphasizes the need for some forgetting in order to function: "For, if we should remember, what with the acuity of reality, of all the past instants, marvels and transformations, we could never take the shock. Memory, nothing but the trace of these instants, equalizes, cushions, lulls. Another self-defense."[41]

In terms of music, however, Xenakis is adamantly against such simplifications and forgetting: he writes that without the "theoretical domain" to inform our work, "we are slaves, trapped by clichés, by inherited structures that we manipulate without knowing them perfectly,"[42] and in a bulletin promoting the 1963 publication of his

34 Ibid., p. 3.
35 Lyotard, 1991, p. 91.
36 Ibid., p. 100.
37 Xenakis, 1987, p. 22.
38 Ibid., p. 47.
39 Ibid., p. 22.
40 Ibid., p. 47.
41 Ibid.
42 Ibid., p. 42.

book *Musiques formelles*, he referred to "a clean sweep of so many subconscious or acquired traditions."[43]

The desire to resist the figurating burden of the musical past was, of course, not unique to Xenakis, and was central to the high modernism of the post-World War II "zero hour." The chief strategy used by composers to attempt to do this was one of *formalization* (used by Xenakis in a similar, but not quite a synonymous sense[44]), which Kane defines as a process of abstraction that reduces the meaningful content in a sound to "sheer noise."[45] Rather than the excesses of romanticism, Lyotard writes that the postmodern sublime of the avant-garde is accessed by way of a state of privation through which "thought must be disarmed," by art that short-circuits the attempts by the consciousness to figurate the event.[46] In visual art, he describes the devices used in painting by Paul Cézanne (1839–1906), who sought "the elementary sensations" that are "hidden in ordinary perception which remains under the hegemony of habitual or classical ways of looking."[47] As Jacques Rancière writes, for the painter Maurice Denis (1870–1943)

> the painting is an assemblage of coloured flat surfaces assembled in a certain order *before* being a representation of nude women or battle horses. The anti-representative break, which replaces the figures with fields of colour, supposes that the figures themselves were *already* in their essence fields of colour, and that the modern rupture thus only releases the eternal essence of art.[48]

As painting was formalized to "fields of colour" by the Impressionists, music's melodies and harmonies were formalized by the serialists to notes or tones. Kundera notes that "European music is founded on the artificial sound of a note and of a scale; in this it is the opposite of the *objective* sound of the world."[49] Xenakis agrees, and argued in his 1955 article "La crise de la musique sérielle" that the serialists do not go far enough, that they forget the "sensorial aspect" of music, since they are only interested in an "abstract system" of notes.[50] His implication is that tones are still human creations, and thus cannot be the endpoint of the process of formalization.

Kundera describes Xenakis's "starting point" as

> not the artificial sound of a note separated from nature [...] but in the noise of the world, in a "mass of sound" that [...] comes to us from outside, like the fall of the rain, the racket of a factory, or the shouts of a mob.[51]

43 Kanach, 2003, p. 157.
44 See especially Xenakis, 1992.
45 Kane, 2004, p. 131.
46 Lyotard, 1991, p. 90.
47 Ibid., p. 102.
48 Rancière, 2019, p. 341–42. My emphasis.
49 Kundera, 2010, p. 77. Italics in original.
50 Xenakis, 1955, p. 4. My translation.
51 Kundera, 2010, p. 79.

While it is true that Xenakis took inspiration from "natural" sounds such as these, he did not use them as such in his work. What he instead sought as the endpoint of formalization, as his "starting point," were "simple notions of sensation, of message-signals to those sensations, and of thoughts conveyed by those signals. Therefore the point of both departure and arrival is mankind."[52] Xenakis insists on the primacy of the perception of the listener to determine the fundamentals of musical formalization. He defines music as "a message (conveyed by matter) between nature and mankind or between men."[53] His use of the word "matter" is telling, creating another commonality with Lyotard. Kiene Wurth discusses Lyotard's use of "matter 'in itself'" as being "not yet subjected to [the] forms and categories" that regulate perception and cognition, and it "bypass[es] or resist[s]" them. "Matter can only 'exist' when these faculties are momentarily suspended."[54] Thus, whatever constitutes the raw "matter" of music is contingent on both the work in which it is contained and on the listener perceiving it.

For Xenakis, serialism fails to engage properly with the listener because its "linear polyphony destroys itself by its very complexity; what one hears is in reality nothing but a mass of notes in various registers."[55] In works such as *Metastasis* (1953–4) and *Pithoprakta* (1955–6), Xenakis cuts out the intermediary and addresses the sound masses of serialism directly. His widespread use of *glissandi* in these works defines a sense of pitch-space that transcends the note, and it is in these pieces that he first uses stochastic techniques. His use of these techniques reached a climax with *Achorripsis* (1956–7) and the *ST* pieces (1956–62), where Xenakis tries to create his ideal of a musical universe in a constant of flux of being and non-being. He does this by defining a variety of elementary sonic units and distributing them through probability functions into pre-established structural units, in order to avoid all traditionally inherited behavioral frameworks.[56] In his works *Analogiques A & B* (1958–9), his elementary unit becomes even smaller, namely that of *grains*: musical quanta[57] made up of very short notes whose distribution into ordered clouds[58] is controlled by stochastic means. This technique became known as granular synthesis, and the infinitesimal nature of its grains represents possibly the closest music can reach to the timescale of the Lyotardian event.

As this paper has descended to the level of microsound, we reach the bottom of a hierarchical diagram created by Xenakis for the Preface to the second edition of *Musiques formelles*.[59] By applying stochastic techniques that he originally developed for macrocomposition on the fourth level of the diagram to microsound, on the

52 Xenakis, 1955, p. 4.
53 Ibid.
54 Wurth, 2009, p. 113.
55 Xenakis, 1992, p. 8.
56 Ibid., p. 25.
57 Harley, 2004, p. 22.
58 Xenakis, 1992, p. 103.
59 Ibid., p. viii.

first, Xenakis is able to generate the novel timbres of granular synthesis. He refers to these new sounds as "second-order sonorities" and Agostino Di Scipio points out that they represent what we now call the "emergent properties' of sound structure."[60] Xenakis speculates that third and higher level sonorities are possible and notes that his mixing of techniques from each level of his table of coherences creates music that is automatically homogenized and unified.[61] While Xenakis's appraisal of the possibilities of his compositional system may be somewhat overoptimistic, his usage of these techniques undoubtedly blurs the lines between temporal micro and macro levels. The combination of novel timbres in unpredictable sequences disorients the listener and produces a sensation analogous to Lyotard's postmodern sublime. But I argue that it need not stop there. The phenomenon of emergence is what allows for Kane's tropological process of figuration, and it can continue to the higher levels of Xenakis's table. As François Delalande and Évelyne Gayou point out, listening, for Xenakis, always means understanding,[62] and that he encourages the process of novel figuration, especially through repeated listening.

Above timbre, we reach what Jean-Luc Hervé calls "sonic images," which he defines as

> an imagined concrete musical situation, in point form or sequence, which has an autonomous musical significance. ... One could say that the sonic image is the smallest element that holds the signature of the composer, from which we can see emerge his style.[63]

For Xenakis, these are the raw materials that so clearly distinguish his works: *glissandi*, clouds of sounds, and the like. Di Scipio goes further, arguing that, in principle, timbre and form are inseparable notions in Xenakis.[64] We can thus imagine a parallel series of constructed phenomena that replace the traditional materials of music: tone, gesture, melody, phrase, structural unit, and composition. Interestingly, we have returned to notions that approach the Romantic sublime: Delalande and Gayou relate the experience of listening to a work such as *Terretektorh* (1966) to perceiving an anamorphosis, that is, an object that appears radically different depending on one's perspective.[65] Repeated listens from different perspectives allow the listener, even though they may be initially disoriented, to create an enormously complex mental image of the piece by means of their powers of perception and reason. Thus, the sublime in Xenakis's work comes full circle. While acknowledging Lyotard's inhuman at the very lowest level, Xenakis guides the listener and seeks to create in his music an alternative humanism to that of the bourgeois Enlightenment that so appalled Kundera.

60 Di Scipio, 2001, p. 72.
61 Xenakis, 1992, p. vii.
62 Delalande and Gayou, 2001, p. 36.
63 Hervé, 2001, p. 99. My translation.
64 Di Scipio, 2001, p. 82.
65 Delalande and Gayou, 2001, p. 36.

At the very opening of *Formalized Music*, Xenakis states that if a work of art succeeds in causing an individual to lose "his consciousness in a truth, immediate, rare, enormous, and perfect [...] even for a single moment, it attains its goal."[66] Kundera recalls that his experience of listening to Xenakis after 1968 helped him to realize that everything that exists, even that which is most familiar, even his own nation, can also not exist. The music of Xenakis proved to be both a catalyst and a balm for these feelings: "his music reconciled me to the inevitability of endings."[67] What is that but the postmodern sublime? Lyotard asks, "what else remains as 'politics' except resistance?" Resistance to the inhuman in the form of development, which he assigns to "the tasks of writing, thinking, literature, arts, to venture to bear witness to it," by channeling the other inhuman within each of us.[68] I think it is clear that, at least in the case of Kundera's encounter with his music, Xenakis accomplished his own goals and those of Lyotard.

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66 Xenakis, 1992, p. 1.
67 Kundera, 2010, p. 76.
68 Lyotard, 1991, p. 7.

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