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Iannis Xenakis and the “Real” of Musical Composition

My friend Iannis . . . who could pretend to be friends with such a man? A monument, a great genius—and yet, so human, and in so many ways, simple and modest. Each time I saw him, he greeted me with a hearty "Hello!" The question he posed most frequently to me was "Are you happy?"—a question that is difficult to answer.

I told him rashly, "I would like to work with you. I would like to collaborate with you." He responded, "But how can we work together? I don't want to influence you."

And so here I am, asked to write about how Xenakis influenced me. I suppose he wouldn't be happy about my writing this article. But I must admit it: he has influenced me, though not in the way that he feared he would.

The Composer's Responsibility To Be Free

Every day of his life, Xenakis tried as a composer to erase everything—to begin again as if he had never composed, as if no one had ever composed, as if each new piece were the first piece of music ever written.

The last time he came to Les Ateliers UPIC, the musicologist Harry Halbreich interviewed him in front of the students of our eight-month course about his views on music and his advice to young composers. His response: "I think composers today must be very free." Halbreich tried to get Xenakis to agree to the idea that constraints are necessary, that with freedom comes the necessity of constraint. Halbreich maintained that total freedom was the worst slavery of all. Xenakis would have none of it. He continued to maintain that composers must be free.

There is almost a contradiction in terms in the statement, "One must be free." It makes me think of the book by Erich Fromm, *Escape from Freedom* (1965), where the author describes the tendency of

the individual to abandon the responsibility of individual freedom by taking refuge in the opinions and actions sanctioned by the group. Why do we composers need to escape from freedom?

Freedom is terrifying. Absolute freedom implies absolute responsibility. You have no excuse. If your composition is bad, you can't blame your teacher or your performers. You are responsible for your creativity or lack of it. Before the blank page, there is a terrible anxiety. That blank page represents our potential being or our lack of it. To be, we must create. As composers, we have being only during the time when we are creating, and for Iannis Xenakis, that exigency to be totally free implies the responsibility to invent. We must be free so that we may invent new things. We can invent only when we do not cut ourselves off from our imagination, our inner creativity, which comes, in part, from the unconscious.

The Unconscious Source of Invention

Having access to our unconscious sources of invention and imagination is extremely difficult to maintain on an ongoing basis for, as the French psychoanalyst Jacques Lacan pointed out in *The Four Fundamental Concepts of Psychoanalysis* (1981), "The unconscious is what closes up again as soon as it has opened, in accordance with a temporal pulsation." This "temporal pulsation" of the unconscious is not something we can control. We must wait for the next aperiodic opening of the unconscious if we wish to remain inventive and not merely productive. Sometimes, when we are before the blank page, there is only the void—silence.

I had the strong impression that Iannis Xenakis himself was happy only when he was inventing. He kept on composing as long as he was physically and mentally able, but he was very self-critical. I recall a lecture he gave in 1989 at the University of Michigan in which he said, "I used to invent. Now I no longer invent." He was not happy with that, but in his absolute honesty, he had to admit it.

Of course, he was distinguished from most in that he could take no comfort in the fact that he had already invented so much—more than probably any other composer in the latter part of the 20th century. Yet, because Xenakis's view was that the composer's being relies on invention, when that stops, composers no longer feel they exist. For Xenakis, the moment of creative invention is a moment of "ek-stasis," that is, a going beyond the limits of the ego of the individual. That sublime moment of creative invention allows the composer to temporarily leave behind the petty qualities of the ego, the narcissistic desire to be hailed as a "great composer." Note that here I am distinguishing the psychoanalytic term "ego" from the term "subject" as Lacan did.

The Ego and the Subject

The term "ego" is not meant here to be taken as the composer's subjective singularity—what distinguishes one's experience from others. Rather, "ego" is meant to be seen as the part of the person that is defensive and takes refuge in images of self and others that are gratifying or flattering to the person's sense of mastery and invulnerability.

The "subject," on the other hand, is to be seen as the subject of language, the subject of the unconscious. For Lacan, the unconscious, itself, exists as a result of the primordial effects of language on the subject from infancy. This subject is quite evanescent, lacking in any substantive being. It is a subject that can only say, "I speak therefore I am." Lacan referred to it as the *être-parlant*, that is, the "speaking-being." The fragile being of the subject is to be distinguished, therefore, from the ego's imaginary pretensions of having a fixed and unified "ego-identity."

In 1992, I wanted to organize some concerts in Paris for Xenakis's 70th birthday. Iannis was angry with me, saying, "I don't agree with that sort of thing. It's the music that counts, not me." I assured him that I was organizing the concerts for his music, not to render homage to him personally. He accepted on that basis. He wanted it to be clear with me that, if flattering his ego was my game, he was not at all interested.

The Composer's Unending Quest for Being

Also in 1992, for those same birthday concerts, I wrote a composition dedicated to Xenakis entitled *X-Stasis*. This work was subtitled "Between the Eternal and the Unknown." When I explained to Xenakis that this piece was inspired by his music because it was a synthesis of the absolutely new (the "unknown") with a mastery of form that could be found in all the great musics of the past (the "eternal"), he wasn't happy. He responded, "Always the dinosaurs." He meant that there is no resting on the laurels of the past. The absolute radical nature of the composer's position is that the composer's being exists literally only while inventing/composing and that, otherwise, the composer has no pretense of being anything, neither at the moment that the composer's own music is being played nor by the music's historical reference to music of the past. Xenakis told me, "You know, I hate going to concerts. I don't even like to listen to my music. I guess the only thing I really like is composing music."

In 1991, not long after I moved to Paris to become Director of Les Ateliers UPIC, Xenakis came to the UPIC studios to listen to his new work, *Gendy3*. If there is one work from his late period that proves he was still inventive, it is that piece. Even knowing Xenakis's other electronic compositions, I was not prepared for the shock of hearing that piece. When I learned of how it was composed, I was even more amazed.

Gendy3 is the music of pure becoming of which Iannis Xenakis had always dreamed. It is the music of the "demi-urge," the Greek god responsible for the creative coming-to-be of the universe—being out of nothingness. No before, no after. The music generated by the GENDYN program comes to be out of no pre-existing materials. There are no "preset" instruments (a notion we find already in Xenakis's UPIC system). There is only a computer program that rewrites waveforms according to the exigencies of stochastic mathematical functions. One doesn't know until it is calculated, until the sound sounds, what it will be. A perfect analogy is to be found there between the

birth of the sound and the coming into being of the composer.

Only, is it really the composer coming into existence or not? The GENDYN program is set up so that, once it is set into motion, the result is automatic. The same concept of automation is found in the name of Xenakis's research center (founded in 1972), CEMAMu—Centre d'Etudes de Mathématiques et Automatique Musicales (Center for the Study of Mathematics and Automation in Music). Xenakis had always wanted to write music where the ego of the composer would disappear, but not music where the composer's "Real" should disappear from composition. What Real is that?

The Ego and the Real

To understand Xenakis's position regarding the composer's ego and the "Real," it is helpful once again to refer to Lacanian psychoanalytic theory. The ego is formed in childhood, and it is reformed in adulthood, in part by identification with certain ideal ego images of the "Other." Therefore, the trap for student composers is to identify themselves with certain "master" composers of the past or present, to try to imitate them to give their own egos substance by identifying with the master's ego. Lacan warned about a possible false end of a psychoanalysis wherein the patient terminates his analysis by identifying with (that is, trying to be like) the "strong ego" of his analyst, which he takes to be an "ideal ego" worthy to put on, much as one puts on a costume or a mask. In a similar fashion, one could warn the pupils of a "master composer" of the trap of trying to end their studies by identifying with the "masterful" ego of their teacher, that is, by accepting too much compositional influence from the master. This would be a case of the young composer's accepting being a composer as only a semblance. Here, "Being" is only an imaginary copy of the master's ego.

What is meant, in contrast, by a music that comes out of the composer's Real? First, one must define the notion of the Real, a difficult Lacanian concept. In brief, the Real is the register of psychic representation that resists giving it a fixed verbal

meaning or "truth," either subjective or objective. The Real is to be distinguished from "reality," which is perfectly able to be represented as the sum of commonly held beliefs about what is "true" about the world, truths that may or may not be maintained to be true later on in history but which, for a given period in time, are considered to be "reality" (for example, when people were convinced that the world was flat, this was considered common sense "reality"). The Real is not a shared common reality; there is a unique Real for each subject, and it is the sum total effect on the psychic structure of all of one's formative experiences, verbal and non-verbal. The Real as impossible resists the subject's efforts to acknowledge it or to represent it adequately in words. (This is one of the reasons, no doubt, that music has a particular power to evoke the Real at a non-verbal, corporal level.) The Real appears as a hole in subjective experience which, nonetheless, leaves its traces as a "writing on the body" of the subject present in enigmatic experiences such as inexplicable emotions or non-organically based bodily symptoms, subjective experiences that are painfully discontinuous with the ego's imaginary conception of itself as strong and masterful.

Xenakis and Cage

Regarding the composer's ego and Real, Xenakis's aesthetic position is not like that of John Cage. Whereas Cage also wanted the composer's ego to disappear from the compositional process (after 1952) to free one's music from one's likes or dislikes (that is, pre-compositional prejudices), he also wanted to compose a music that was expressionless. (Recall the statement, "I have nothing to say and I am saying it," from his "Lecture on Nothing" published in *Silence*, 1961.) This decision on Cage's part precluded composing a music based on the Real of his own experience. He abdicated subjective choice in favor of allowing the I-Ching to decide for him. Cage explained that he decided to compose in this way because he wanted to let "sound be itself." This appears, however, not to be the only reason for his decision. Cage also wanted to make a

music devoid of personal emotion, because, for example, when he tried to compose sad music, he said that people laughed. People were unable to understand what he was trying to express in his music; therefore, Cage decided to eliminate all subjective expression from his music. His music would then express nothing of his intimate Real, which would remain private and protected from ridicule, a defense that did not protect Cage from a certain number of concerts where he encountered the Real of the audience's ridicule and aggression, nonetheless.

Xenakis's music, in contrast to Cage's, is openly and powerfully expressive. It is clear that Xenakis's music tries to evoke the Real of his own subjective experience, drawing highly on past experiences, traumatic and non-traumatic. Despite his imagination's finding inspiration by analogy from mathematics, or the sciences, Xenakis's music is far from being a "subject-less" music, as is that of Cage. On the other hand, Xenakis's music is equally opposite in conception to the "sentimental" music of the Romantics or neo-Romantics. The Xenakian music of the Real hides behind no nostalgic concepts of longing for the lost beauty of the past. Xenakis's music is not afraid to touch on the Real of a Universe that is for him both overwhelming in its blind forces of power and intensity and totally indifferent in its cosmic cruelty towards humankind, a mere speck of dust in the infinite, as Pascal pointed out in his *Pensées* (sobering thoughts that were partial sources of inspiration and reflection for Xenakis while composing *La Légende d'Eer* of 1977).

In Quest of a Lost Real: The GENDYN Program

What then do we make of the GENDYN program, a late invention of Xenakis that points in the direction of "automatic" writing? Does this program imply a renunciation of the Real on Xenakis's part? On the contrary, I believe that Xenakis turned to GENDYN to stimulate the rediscovery of a lost Real in his music—to find his lost invention. Xenakis's method was to use a program that would partially override the limitations of his ego's inability

to reinvent itself, while at the same time not renouncing expression and compositional responsibility. The idea behind the GENDYN program is that the free, autonomous evolution of the music itself—its non-deterministic, probabilistic character—takes the place of the micro-formal choices usually made by the composer. At this micro-formal level, Xenakis remained open to the surprise of his program's results—results that he couldn't completely predict or control. However, the composer's responsibility is not removed from the process. It is still up to the composer to choose the desired numerical values for the program's various parameters (values that greatly affect the sounding result) and then to select what are the most "interesting" sequences from among a potentially large quantity of results generated. The composer must then arrange these chosen sequences into a satisfying musical macro-form, as Xenakis did for his two late electroacoustic works, *Gendy3* and *S.709*.

Gendy3 and *S.709* are works that have no real endings: they just stop. Here we have Xenakis's view of death: death is no grand finale, and at some point, we just stop being. The same is true of our creativity. When the unconscious opens, we compose, we invent, we "are." Music flows out within us and without us for a while, and then it stops. Our being ceases to flow, and we die once again as creators. A composer's career could be seen as a series of little deaths and little births. Each time composers overcome the blank page, they come to be, and they are once again alive. They transcend that which is dead and lifeless within. Composers exist through their creative work, their capacities for invention with sound.

In banishing one's ego while maintaining the responsibility to invent one's music anew, to represent the Real of one's experience in sound, the composer attains an "ek-stasis" through musical composition. This "ek-stasis" allows composers to become the vehicle of sound within themselves. This sublime sound that composers hear in their imaginations and which is the object-cause of their desire to compose is rich and unpredictable; it comes to be and it transforms itself in unexpected ways, and then it is lost again. It disappears into the same nothingness from which it came.

I learned a lot from Iannis Xenakis, and I have been influenced by him, but not in the way that he feared. That is, I do not imitate his music. He influenced me to believe that, if I am worthy from time to time to consider myself a composer, it is only because I can sometimes invent. He taught me that I must find my own path, that where the blank page was, there my music and I, myself, must come to be. I will now give an example of a musical work that typifies my own approach to what I call sound-based composition and the Real that it represents.

Le Fleuve du Désir VI (for 8 violas)

Le Fleuve du Désir VI (for 8 violas) is concerned with the evolution in time of different sound structures. It is conceived on multiple levels of perceptual structure.

On the micro-level of perception, there are eight trajectories or paths of change of sound parameters in time: pitch, vibrato, amplitude, bow accentuation, bow position, bow color, bow speed, and bow pressure.

On the meso-level, which is the level of perceived resultant timbre or net harmonic structure, the piece moves between the de-tuned unison tone to the harmonic series to the cluster to the noise to the unstable noise, and then back to the harmonic series, the de-tuned unison tone, and finally at the very end, the perfect unison tone in octaves. This level of the work is equivalent to harmonic modulation, as in traditional tonal music.

The macro-level of the piece is the level of order and disorder, but here it is conceived perceptually, not mathematically. On a formal level, the piece moves from order to disorder and back to order. However, what is perceivable to the listener are order and disorder at the levels of "intra-section" and inter-section transitions.

Some micro-transitions are smooth, continuous, and thus orderly for the ear, and some micro-transitions are discontinuous (that is, not smooth) and jump from one discrete value to another without gradually connecting the scalar points. These are "intra-section" transitions from order to disorder.

However, the level of "catastrophe" or chaotic perceptual transition occurs at a middle level—that is, at inter-sections. Between the first two sections of the piece, transitions are smooth and gradual, but between sections three and four, there is an abrupt transition to chaos. As turbulence sets in, changes lose their smooth, continuous quality and become perceptually unexpected or jarring.

In sections five and six, as the sound becomes ever more disorderly and unpredictable, gradually disintegrating into unstable noise, one has perceptual chaos proper—that is, sound that is simultaneously continuous and discontinuous. These are regions of perceptual contradictions: impossible and unstable combinations of order and disorder. The transition back to order, between sections six and seven, is again chaotic, because there can be no smooth transition between unstable noise and an orderly sound structure such as the harmonic series. At the end of the work, between sections seven and eight, there is again a smooth transition between the harmonic series and the de-tuned unison gradually coming to rest.

The inspiration for *Le Fleuve* began with the observation of various kinds of fluids: rivers, water boiling in a pan, and a fluid of a different sort, what Freud called "libido," which is the mythological fluid that he used to describe the ebb and flow of human desire. My "river of desire" was, thus, inspired by fluid flow, real and fantasized. That is, it was not a tone poem that would describe in realistic detail the flow of a natural river, but, rather, a river of sound that would flow as my musical imagination would require.

The macro-form of my "river of desire" came to me as a kind of fantasy of a river as a sound substance in free transformation. My sound-river starts out cold and icy—almost immobile. It takes awhile for it to melt and to flow more freely. This sound-river, which for a certain time seems to evolve slowly, smoothly, and continuously, all of a sudden takes an unexpected, turbulent turn. It begins to boil, becoming chaotic. When the energy becomes too great, it disintegrates into steam. However, the cooling off of the steam causes a re-condensation into a more orderly sound structure. A moment of rest and contentment is reached as my sound-river fantasy ends.

Conclusions

In my anxiety before the great imperative to invent that I have accepted from Xenakis, I learned to take full responsibility for my own music and my own ideas. Xenakis showed me a potential method for how a composer might come to be. Still, there is a Scylla and Charybdis to be avoided if one really wants to be an inventive composer. On the one hand, we must avoid getting trapped in the ego's desire to be a "master" composer with a fixed language that justifies considering oneself a "great" composer, an artist whose being is assured once and for all. On the other hand, we must avoid the trap of being a follower of some great "master," not to succumb to the illusion that, by accepting a master composer's influence, the anxiety of the question, "To be or not to be?" can be avoided. This is the academic composer's attempt to avoid the anxiety of finding one's own invention by supporting one's music on the "solid" historical base of a dead master's inventions, a sort of attempt to attain being by proxy.

To conclude, Xenakis taught that composers must accept total responsibility for their total freedom if they are to invent, that is, if they are to become composers in their own right. In my own search to compose in the richest way possible with

the structure of sound itself, I have asked myself, "How can I come to be, or not, by the vehicle of my sound-based compositions?" I accept that my own being is at stake when I strive to invent in each new composition. Each new work is an attempt at a renewal of my own being, a being that I would call "being-sound." This "being-sound" is a transcription in sound of the Real of my own experience. This "being-sound" gives no permanent sense of being, because each new work can only result in a kind of temporary success at attaining being.

A portion of the Real, a fragment of verbally indescribable experience, may resound there, but I cannot capture this Real once and for all. Like Sisyphus, I am forced to push the rock of my endless pursuit of this "being-sound" up the hill again and again in order to re-invent my music and, thus, to once again try to come to be for a while.

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