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Iannis Xenakis in Conversation: 30 May 1993  
Transcribed and edited by James Harley

This interview dates from a radio interview for the Canadian Broadcasting Corporation's flagship new music program, "Two New Hours" (2NH). The broadcasting team included David Jaeger, producer, Larry Lake, writer, and Richard Paul, host. Five pieces by Iannis Xenakis (IX) were broadcast during the course of the program, with the conversation taking place around the music. The performances were recorded during the Semaine Xenakis in Montreal, held 13–16 April 1993. The performers included Marc Couroux, piano (Evryali), D'Arcy Gray, percussion (Rebonds), the Nouvel Ensemble Moderne conducted by Lorraine Vaillancourt (Waarg), along with soloists Jacques Drouin, piano, and Julien Grégoire, percussion (Palimpsest), and André Moisan, bass clarinet (Échange). The text has been edited and rearranged (with approval) to enable the composer's thoughts to flow more smoothly outside of the original piece-oriented context. References to the musical content of the original program are still found, but the intent is that they should serve to illustrate more general observations and comments rather than provide the focus of the conversation.

EVRYALI

2NH From our Paris studio, I'm talking to Iannis Xenakis. Welcome to "Two New Hours."

IX Thank you.

2NH Mr Xenakis, you've been writing music for such a long time, why is Evryali, from 1973, only your second work for solo piano?

IX I don't know... perhaps because there are many wonderful piano pieces of the past. So, it was difficult for me to write. But I have also composed three pieces for piano and orchestra. (1)

2NH Is there something about the piano that you find you can't express yourself with?

IX Somehow, yes. The piano is much more abstract, for instance, than the orchestra. I have been more involved with the orchestra because of the many ways that you can make use of the sounds, especially massed sounds, large masses. This was much closer to what I wanted to do. The [12] piano, on the other hand, is closer to the fundamental set-theoretical approach to music. My first solo piece, Herma (1961), is of that kind. (2)

2NH What does the title Evryali mean, and how is it represented in the music?

IX Evryali is the name of Medusa, the same one that exists in the Far East, flying above the sea with its tongue stuck out. The piano

part is very difficult; when it was first performed, twenty years ago, everyone had difficulties playing it. Now there are a number of recordings of the piece that are quite good. (3)

2NH I understand that this was the first of your works to use what you call "arborescences." What are these?

IX You see, in traditional polyphonic music, the melodic patterns are detached from each other. I, on the other hand, thought about making a kind of complex sound from lines that start from a central branch and stem out from it. In this way, you produce other branches that then create a "bush." Of course, the piano is not so accurate for that kind of style because it does not have the linear continuity of the branches that are designed graphically. But that was a challenge, so I tried to do it.

2NH Evryali is extraordinarily complex, and pianists have had difficulties playing it. It also has a very percussive sound to it. Do you view the piano as a percussion instrument?

IX Not really, though sometimes that's true. It is very difficult to avoid the rhythmical impact of the piano because the sound is non-continuous, discrete. So you do obtain complex, or not so complex, rhythmical patterns from time to time, particularly if you ask the pianist to play forte.

2NH So the pianist could approach it in a percussive manner if they are playing forte?

IX They could, but you see, I also appeal to the intelligence of the performers. They have to understand what they are playing, and to like it; otherwise there is no point. The pianist undertaking such a difficult task as to play Evryali has to love it somehow. And I think this is what happens, because if they don't, they are not going to play it; there is no necessity for them to do so.

## REBONDS

2NH Mr Xenakis, we are going to hear another of your brilliant solo pieces. This one is for percussion, called Rebonds. It is one of a number of works you've written for the great French percussionist, Sylvio Gualda. Are many of your compositions written with specific artists in mind?

IX Yes, usually they approach me and ask if I would like to write something for them. And if their approach is sympathetic, and if I have time and am interested in the project, I do it, of course. My first piece for percussion was Persephassa for Les Percussions de Strasbourg. That was about twenty-five [13] years ago, in 1969. But there are solo pieces, too, which I have written for Sylvia Gualda. (4)

2NH Do you keep the personality and the abilities or limitations of the soloist in mind when you are writing a piece?

IX Not really. I have to write the music that is integral to my own concerns. But usually, the performers who approach me are very skillful and technically able, so I don't really have to worry if they will be able to play something or not. I am sure that they are going to do it properly, after a while.

2NH How important is virtuosity? Do you write works to be showpieces, or is the virtuosity just incidental to the music?

IX Yes, virtuosity is just part of the music. I think it is necessary to the meaning of the music, to the mind, or intelligence, of the piece. This is how I work. I don't write in order to be like Paganini, for instance. I always have in mind the necessity of the music itself.

2NH But the performer virtuosity is necessary in order to express those musical ideas, is that right?

IX Well, yes, but they are original ideas, I hope. And when you are not used to the things you are doing, it is more difficult. After a while --- this is what performers tell me --- one month or two months or two years, they get used to the piece and they like it and can play it. At the beginning it may be very difficult, and sometimes even good performers are discouraged by the difficulty of the music. But after a while, if they stick to it, they arrive at the point where they can perform it properly.

2NH Percussion seems to play a large part in your music. You have several pieces featuring percussion, in solo, chamber, or ensemble contexts. (5) Does it have a special place in your musical aesthetic?

IX Yes, that could be, though I am not sure why. It is true that I have been very impressed by the drumming of India, for instance. I think that it is one of the most important percussion traditions. But I have also heard Japanese percussion, African too, and I was attracted by that music. There is a whole world of percussion music, and perhaps that is why I was interested in doing something too.

2NH How would you describe the structure of Rebonds? I know that it is in two movements and you have a choice of which you play first.

IX There are two different pieces making up Rebonds. In one, there is an increasing density of sounds or rhythms. You see, in music, when you are composing or listening, part of the past engages you in the future. This can become tedious, but if you go too far away from what you are expecting at any given moment, then it becomes too far removed and you can't make sense of it. So you have to stay between some limits. As a composer, you learn this by experience, by working and thinking, until it becomes a kind of unconscious feeling and action.

## INTERLUDE

2NH Mr Xenakis, you have lived in France since 1947. Do you consider yourself French, or Greek, or perhaps both?

IX When I came here to Paris, I wanted to go on to the United States, because I had relatives there. But I liked it in Paris, and I stayed. I did leave for a few years, between 1967 and 1972, when I was teaching at Indiana University in Bloomington. I have also traveled a great deal, all over the world.

2NH What about the Greek side. How much of Iannis Xenakis is still Greek?

IX I don't really know. I grew up with a strong interest in ancient Greece, particularly of the fifth century BC. Recently, I went to Delphi for a conference with mathematicians and other researchers. For the first time I was depressed that so much of Delphi has disappeared, vanished. It was plundered by all sorts of conquerors, the Christians, even by the Greeks themselves. It's a great pity. So, it must mean I still belong to that time. But I am also very keen on Japanese culture, the Noh theatre, for instance, which I am sure is very close to ancient Greek theatre. There are also places like Java, where the music is very important, with the pelog scale, and so on. So you see, I am dispersed all over the earth.

2NH You are an internationalist.

IX Yes. I think that what happens in places like Cambodia, where people are fighting each other, is something ridiculous; it's worthless. But there is no way to have peace between groups of people who want to fight each other over misunderstandings. Of course, when I walk in Paris on the sidewalk, and there are people that shove me out of the way, I become furious. Or in the metro, when someone squeezes in on top of me, I hate that too. But this is the human condition, and we are not yet educated enough to get rid of those terrible things which are part of our nature.

2NH I'd like to talk about the role of mathematics in your music. Much has been made of this aspect of your music. But I'm wondering, how big of a role does it play these days?

IX Well, I am not really a mathematician. I studied at the Polytechnic in Athens as an engineer. That is how I got to work with Le Corbusier for several years. But the mathematics that I use are rather basic, together with principles of logic. I think that I organized many things with mathematics because it was a natural tendency for me, given my training. I also wanted to escape from tradition. I like the music of Brahms, for instance, but I could not write like him. I couldn't write like Schoenberg, either, or Messiaen. So I tried to find another way, and this is why I worked so much with logic, mathematics, and the computer.

2NH Now you say you are not a mathematician, but I do understand that you are an architect. Is that correct?

IX Actually, I am a qualified engineer, but I did work as an architect for ten years. (6)

[15]

2NH How has your architectural experience helped your music? Are there similarities between designing buildings and writing music?

IX Yes, there are some similarities, but only up to a point. You have the visual aspect of architecture and the aural aspect of music, and they are just not the same thing. Sight is more important for survival, since the eyes are in front of the face. And the ears, which are behind them, are not as crucial. This is why sound has a tendency to be more abstract. And it is true, for instance, that Pythagoras worked on mathematical problems more because of the properties of sound than of geometry.

2NH Mr Xenakis, how important do you feel it is to experiment and to stretch the boundaries in music today?

IX Well, there are now many paths possible, especially because of the introduction of electronics and computers, allowing you to do all sorts of things that you could not even have imagined possible ten or twenty years earlier. In my book, *Formalized Music*,<sup>(7)</sup> I introduced some programming, how to produce a different kind of music with the help of the computer. So, this is one path. With a symphony orchestra, on the other hand, I think there are also things to be done, provided that you escape from the traditional structures of polyphony and so forth. In recent years, I have been trying to organize my orchestral material keeping in mind the interest of the sounds themselves, not just the melodic patterns. I have done this by combining many instruments to create one sound, and by finding different ways for the sounds for to be combined and to follow on from each other. This is another path for experimentation.

2NI I You have also used non-repetitive scales. What are these like, and how do they function?

IX Well, the problem of scales is something very general. It is perhaps one of the first combinatorial efforts that humanity undertook thousands of years ago to put some order in what they were doing and to enrich it. I have discovered that there are some fundamental intervals that exist in music all over the world. For instance, the perfect fourth exists in the traditional music of Japan, but also in Europe, where the fourth (or fifth) is closely connected to tonal music. This interval also formed the basis of music from ancient Greece, as you will see if you read Aristoxenos. So, there are many such things that demand the kind of approach I have tried to adopt in formulating my theory of scales, or sieves. I wrote a computer program and you can create, control, and manipulate various scale formations. This work is published in the revised

edition of Formalized Music.

2NH How does this relate to the concept of pitch-class? That's the notion that all notes of the same name are treated as being equivalent.

IX The first thing that you have to do is to understand how to create scales, which are not necessarily octaviating scales, that is, where every octave, or twelve notes, you have the same sounds. In fact, the scales can be dispersed over the whole range of pitches. When you have, let's say, an interval in the middle of the range of the piano, you hear it in a certain [16] way. But if you play it in the very high range, or very low, the same interval sounds quite different. This means that you have to pay close attention to the acoustical aspects of the intervals of your scale across its whole range.

#### PALIMPSEST

2NH We are now going to hear your 1979 ensemble work, Palimpsest. This is a term used to describe a manuscript that has been reused; that is, one text layered on top of another. How does the title relate to the music?

IX Oh, I was interested in the title because our life is like that. You scratch the older things, and on top of that you write new ones, or supposedly new. That is, parts of yourself are old, fossilized, and other parts are trying to escape and do something new. But the new elements are still related to the older ones, as a negation, or perhaps as a progression. This piece, like all the others, is made the same way. On this occasion, I used the word "palimpsest," but it's really a general situation.

2NH So it's a concept that refers more to the linear dimension of time rather than a physical layering of music. I shouldn't be looking to strip layers away to find the structure or architecture of the piece, then?

IX You know, time is what musicians use in order to express things. Stravinsky used to say that everything is time, but it's not true. There are many things in music that are not time. For instance, the relationship between the intervals' sound outside of time. That's an important idea that a composer has to bear in mind.

2NH Now, Palimpsest is a piece for two soloists, piano and percussion, and there are nine other players. Is it structured like a concerto?

IX No it is not. The piano has the same importance as the other instruments. The percussion sounds somewhat apart from the ensemble because its timbre is so different. But it acts as an addition, not as a solo part, though it's true the player must be very skillful to play the piece.

2NH So how do the piano and percussion interact with the other instruments?

IX Ah, I can't tell you that. It's in the music!

Échange

2NH Mr Xenakis, we are also going to hear a work that you wrote for the famous Dutch bass clarinetist, Harry Sparnaay. How much did his abilities influence you in writing Échange?

IX Well, he gave me a recording of the range of the instrument, and the various things that can be done with the bass clarinet. So, I took advantage of that, although I did not use all his repertoire of sounds. When I start writing a piece, there has to be a kind of necessity in what I am doing, [17] otherwise it just doesn't work for me. So, my own compositional necessities did not draw upon all the materials that he gave me.

2NH How has your music evolved over the years? Do you see any changes?

IX I can't really tell you that. You see, I do not have the objectivity to understand what I am doing in that sense. When I hear things I have done from the past again, by chance, I try to understand them, because they seem different, somehow. That process is very good for me, for developing my judgment for the decisions I have to make as a composer. You see, a person has many layers, such as the conscious and subconscious. The subconscious is like being under the earth, and you try to get whatever it is out from there through a small hole. But you have to stay on top and judge if what is coming out is interesting for what you are doing at the time. If it is not, then you have to take a baseball bat and push it back down through the hole again. You can only let come out whatever is interesting for what you are doing, and it is only you who can make this judgment; nobody else can give it to you. No man, no woman, no saint, no god. You should be responsible for what you do, absolutely, and that detachment and skepticism is the most difficult part of being a composer, I think.

2NH In Échange, is there any sort of mathematical basis to the work at all?

IX Well, all my works have some sort of mathematical approach, although sometimes it's very diffused. You do not have equations that are used for such or such purpose in such and such part of it. That would defeat much of the music. My experience is that if you try to use mathematical rules or equations as they are, you are not doing music at all. In that case, it would be better for you to become a mathematician and discover some new theorems!

2NH Well, lots of composers do use mathematics as a compositional tool. You do not do that any more?

IX No, I don't want to. I'm afraid that it interferes with the freedom of the music itself.

2NH Is Échange more like a concerto? Certainly, the bass clarinet is not the most familiar and common instrument.

I X Yes, it's more like a concerto, because the soloist has a part which is more important than the other performers of the ensemble.

WAARG

2NH Mr Xenakis, first of all, tell me about the title of this next work, Waarg.

IX Well, "waarg" is a word that is very old, from Greece. I used it because it's akin to the word "work." It comes from the same Indo-European root, and is related to "erg" and "ergon." In German, it is similar to "werk" and in English to "work." That's all.

[18]

2NH What were the circumstances in writing Waarg, and how would you describe the music?

IX I wrote it for the London Sinfonietta, and I like that music better than other pieces.

2NH Why?

IX I think the orchestration is interesting; perhaps different would be a better way to put it. When I say orchestration I mean the sounds themselves, and the changes from one to another. In Waarg these are less conventional, I think.

2NH How do you treat the ensemble in this piece? There are no soloists, am I correct?

IX I use the instruments, the performers, in a kind of a homogenous way, always having in mind the music itself. One kind of sound or instrument might be more important at a certain moment, but that is exceptional. It really is more of an ensemble piece, like true chamber music.

FINAL THOUGHTS

2NH Mr Xenakis, you are regarded as one of the greatest composers and musical innovators of the twentieth century. Could you do me a favor and look back over the musical art of the century as you see it?

IX Yes, I can try, but it's very personal; I'm not a historian. For me, the century started with the nineteenth-century music that I heard on the radio as a child. And then, later, I heard concerts of music of the twentieth century. I discovered Debussy and Ravel, and



I thought that their music was very close to ancient Greek music as I could imagine it at that time. And then I discovered Stravinsky and especially Bartok. After that, I heard 12-tone serial music, like Schoenberg, which interested me because of the theoretical approach of the music. The change of approach that serial music introduced was very important in the minds of composers. The only thing that I didn't like so much about Schoenberg was his aesthetic, which was very close to a kind of exasperated German romanticism. But his theoretical approach was certainly quite interesting. Another influence was Messiaen, his imagination and his freedom in using all kinds of things. He also had a kind of mathematical mind, in his ways of combining different elements. So, that was the situation in the fifties.

Varèse, too, was an influence. His approach was acoustical, or at least he used to say so. I don't know if that was really true, but I think it probably was. I'm not sure if he could imagine it in a conscious way. I remember that after a dinner with Varèse, Le Corbusier said that it was he himself who had invented "canned music" (*musique en conserves*). Afterward, Varèse was furious because he thought that Le Corbusier was trying to say that he had invented the music that later became *musique concrète*. It was very funny. This was at the time of *Déserts*, which Hermann Scherchen conducted in Paris in 1954.

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After that, there have been many quite interesting composers, in Germany, England, Canada, the United States, Japan. Fundamentally, though, I think that new ideas are lacking. So, we don't know where we are going for the time being. I don't think there is any well-defined path, fortunately, because art would be defeated absolutely if that was the case. Not only in music, but in architecture, and everything else.

2NH So you don't see any trends happening in the near future?

IX No, I don't think so. The use of computers will become more and more important because they will be less expensive and also because they represent a fantastic amount of possibilities. This will impose an orientation which is not yet possible to describe, but it will have an increasing influence in the domain of artistic thought. Not only in music, but also in other domains, like architecture, painting, and so on. The other direction, which seems to also be important, is in the area of popular music. These musicians use instruments that are very easy to play and are produced by large companies. There is a tendency for the radio or television to put serious music in a corner and to present more and more the music that is produced with these electronic instruments. I think that this form of music depends on the way that information gets to the people, that is, through TV. The educational programs in the schools are also very important. You see, being illiterate is something common today, even in countries like the United States. It's a fight, of course, and this fight has ups and downs. We are now in a

down period. Education, not only of how to read or count, but also what to see and how to hear, is very important. In high schools, for instance, there is no architecture taught at all. I don't see why not!

2NH As you said, the technology for music is coming to people in their home through a computer or through television. Do you see this as a positive element in young people's musical education?

IX I think it could be positive, provided they don't use the computers only to play games.

2NH Iannis Xenakis, thank you very much. No doubt, when we are looking to the future for musical innovation, we'll look to you!

IX Thank you.

## NOTES

(1) Synaphai, 1969; Erikhthon, 1974; Keqrops, 1986.

(2) Herma is constructed from three large pitch sets, their complements, and the summation of all three, the form being a representation of all the possible combinations, set into a temporal frame, one after another.

(3) Available recordings include: Claude Helffer (Auvidis Montaigne 782005), Yuji Takahashi (Denon CD 1052), Kagako Matsunaga (Vienna Modern Masters VMM 2014), and Aki Takahashi (mode 80).

(4) Xenakis wrote Psappha (1975) and Rebonds (1988) for Gualda. He also wrote two duos for harpsichord and percussion for Elisabeth Chojnacka and Gualda: Komboi" (1980), and Oophaa (1989). Gualda is paired with baritone Spyros Sakkas in Ais (1980), with orchestra, Cassandra (1987), and La Déesse Athena (1992), with ensemble, these last two forming additions to Oresteia, originally dating from 1966.

(5) In addition to those works already mentioned there are: Dmaathen (1976) for oboe and percussion; [20] Pléiades (1978) for six percussion; Idmen (1985) for choir and six percussion; Okho (1989) for three percussion; Zythos (1996) for trombone and six percussion; and 0-Mega (1997) for solo percussion and ensemble.

(6) Xenakis worked with Le Corbusier on the design for the monastery of La Tourette, and the large-scale urban project of Chandigarh. He designed and oversaw much of the work for the Philips Pavilion at the Brussels World Fair in 1958. Since then, he has worked on his multimedia "polytopes," completed a few small architectural projects, and written various texts which are collected in Musique. Architecture (revised edn, Paris: Casterman, 1976).

(7) First published in English in 1971. A revised edition was issued in 1992 by Pendragon Press.

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[18] NH -> 2NH  
[19] Athèna -> Athena