

Ex libris

Trackings



Composers Speak with

RICHARD DUFALLO

New York Oxford
OXFORD UNIVERSITY PRESS
1989

TRACKING

so extravagantly
purely orchestral
the song, and then
pass through" the
poem be heard in
was done from the
I have understood
ity, as Lewis Car-

minutes.

works of mine—
I always think they
in they grow and
when I finally have
become a huge

continuity. I like my
crossword puzzle. I
ever.

Iannis Xenakis

BORN MAY 29, 1922, BRĂILA, RUMANIA

November 27, 1986

Paris

Today, about mid-day, near my hotel, I saw the student demonstrations begin at Montparnasse and continue down rue de Rennes. At first, just a few students appeared, then little by little banners appeared, then more students and very soon hundreds of students began passing by. I watched for about an hour and the numbers grew into the thousands. The basic issues of protest apparently have to do with a university bill proposed by the government, which would raise tuition costs and change entrance regulations, which they feel are elitist. However, what I found extremely fascinating was the aural experience. From these thousands of non-violent students came singing, union-chanting, and whistling, that made unified sound waves ripple down the rue de Rennes for blocks! The aural effect was absolutely thrilling! The only interruption or "punctuation" occurred when someone threw a bag of garbage from a window, which landed on the pavement with a dull sounding "plat." This produced an exchange of fist-shaking from the window to the crowd and back, accompanied by chaotic verbal declamations. A "rare event," if you want. It was fantastic!

My appointment with Xenakis was for 6:00 p.m. at his studio near place Figalle. Because of the demonstrations, Paris traffic was a mess and taxis at a premium. I arrived late. His one-room studio was stuffed with books and scores. There was a stand-up desk and a crowded seating area in the middle of the room.

Q Some time ago you were developing a system which you said would provide new possibilities for composition, teaching, and research. As I remember, it also had to do with exploring the creativity of children. What has happened to that idea?

A Yes. This is a system that we have developed over the last ten years here in Paris in my laboratory, CEMAMu (Centre d'Études de Mathématique et Automatique Musicales). The system is called UPIC (Unité Polyagogique Informatique du CEMAMu), and it's based on using a large, special drawing board. Anybody, even myself or you, or children, can draw lines or graphics with an electromagnetic ballpoint, and they are transformed by computer directly into sound, based on acoustics. Thus



bypassing the traditional steps of computer-assisted programming, perforated cards, etc. You can compose or do any training or pedagogy for the ear or for writing; because the writing is not the usual musical writing. It's a much more universal one, because it is with lines. For instance, a note that is held is just a horizontal line.

That's the linear aspect. How do you achieve the vertical?

The vertical aspect is for the pitches, exactly like when you write for an instrument: when you go up it's higher; when you go down, it's a lower sound.

And polyphony?

Polyphony, yes of course. Hundreds of lines at the same time. And you have to design also the elementary wave form which is first, approximation to the timbre. You can write sine waves or whatever curve you want. You can obtain a difference in the timbre and also the dynamics by designing the dynamic envelope. The interesting thing is that you can design, listen, and then start again . . . correct or throw away what you don't want.

Have you used it yourself?

Yes. I've used it for two pieces. One was written about ten years ago. That was because nobody else understood the method at the beginning of the UPIC system. So I wrote a piece which is called *Mycenes-A*. But, there is no synthesizer, or other source. It is only by drawing that you obtain the sound, directly.

And did you develop this by yourself?

Well, yes. I developed it and I have people working with me, programmers and electronic engineers. It is supported by the French Ministry of Culture. Inside the Ministry there is a special organization called Direction de la Musique, and they pay for these salaries and whatever.

Once the so-called piece is done, is there then a "memory" that can recall it?

You can store it on a digital tape or on an analog tape. Then you can play it back in concerts on speakers.

But the sound source is the computer?

The sound source is your drawing which is then translated by the computer into sound.

The sounds themselves are electronic sounds?

No. The sounds come from the design that you have done.

What kind of sounds?

That depends.

Artificial sounding sounds?

Yes, rather. But you can also imitate instrumental sounds or voice.

Beyond your use of it for your own composition, you say that it can be used as a pedagogical aid for teaching students.

Students or children. We went to many places in France, in centers, in

conservatories, and abroad also, in Holland, Germany, Portugal, Greece, and in Japan.

- RD And was it stimulating for the children?
- IX I think so. They were very . . . how do you say . . . enraptured? Because it's like a game. I noticed that with children of five or six, they have imagination, but they have no milestones, structures in their mind, in order to organize things. They have to be helped somehow by monitors or by teachers. When they reach nine or maybe twelve years old, they are much freer and they are not yet under the influence of what they have heard from the mass media, radio, disks, TV, etc. They can adapt very quickly and show their inventiveness. Whereas, when they are older, let's say fifteen or sixteen, they are already "made." That is, they are distorted. Even so, students who are training to be physicists and in technology have also used the system. They made some music with a certain originality, but usually tried to do what they knew. Like conservatory students. Instead of reacting in a very new way to a different tool.
- RD That would be an interesting new generation of young people if it were universally accepted. Is that what your aim is?
- IX It is a basis to learn music, to teach music, and also to make music which is closer to the human mind; because you have only your hand to use. You don't need to be a computer scientist to do programming, you don't need that. You don't even need to be a trained musician. What you need is to have some ear, some mind, and fingers.
- RD Is there a visual image they try for, or are they just reacting to the sound they hear?
- IX In the beginning they try to do designs, nice designs. If they are children they use the imagery of houses or cats or suns. But then they have the immediate response from the machine and they start listening more carefully to what they design. That is, they adapt the design to the actual effect. It depends on the intelligence.
- RD Do you think that people would begin to understand your music better if they would be trained in this way?
- IX They could understand any music better, I think. For instance, you can design a chorale of Bach; and if it's properly designed, you can play it back. You have a Bach chorale with whatever timbre you want. Because you have designed it.
- RD So, in other words, it doesn't rule out using the past.
- IX The past is to be performed by performers who have devoted lots of study over the years. But in this case, you have a direct transformation from the score into sound without going through any intermediate machine, like the human machine . . . the orchestra. I don't say it's better. There is much work to be done, because the refinement of instru-

mental
will co
RD Are the
by this
IX Oh, ye
using t
Julio E
Harley
RD How n
IX Today
France
another
Muscu
will be
organiz
there i
bourg
Univer
RD That's
ten year
with it
IX I don't
workin
nizatio
Now
tional
RD It's an
IX Techn
of the
was in
becaus
could
happe
RD Is it a
aspect
compu
this p
them.
be a v
IX Absol
do mu
lem be
in pro

land, Germany, Portugal,

say . . . enraptured? Because
 en of five or six, they have
 structures in their mind, in-
 elped somehow by monitors
 aybe twelve years old, they
 the influence of what they
 s, TV, etc. They can adapt
 . Whereas, when they are
 eady "made." That is, they
 ing to be physicists and in-
 made some music with a
 what they knew. Like con-
 ery new way to a different

of young people if it were

also to make music which
 ve only your hand to use.
 o programming, you don't
 musician. What you need

just reacting to the sound

esigns. If they are children
 s. But then they have this
 they start listening more
 apt the design to the aural

erstand your music better

nk. For instance, you can
 designed, you can play it
 rimbre you want. Because

e past.

ho have devoted lots of
 e a direct transformation
 rough any intermediate
 estra. I don't say it's bet-
 he refinement of instru-

mental color is not yet achieved or realized by the technology. But it will come in the near future.

ID Are there more mature students or young composers that are fascinated by this process?

X Oh, yes. There are several composers who have done compositions using this system, like François Bernard Mâche, Jean Claude Eloy, like Julio Estrada from Mexico, like Wilfried Lentsch from Germany, Jim Harley from Canada.

ID How many machines like this exist? Are they only in France?

X Today there are about seven or eight machines. Most of them are in France. Two are in my laboratory. Two others are in La Villette, and another will be installed there in January, which is where the Scientific Museum is located and also where a conservatory will be built. So there will be three there, belonging to an organization that is inspired by my organization, and which also organizes workshops everywhere. Then there is another one that is being installed at the University of Strasbourg in the Musicology Department. There is another one at the Paris University and then there is one in Athens.

ID That's an extraordinary development. You say that this project is about ten years old. Is there one pupil that is now ten years older and has stuck with it, like a violinist practicing?

X I don't know. There are some American students, composers, who are working on that aspect. We are not a conservatory or a training organization. No, we are doing this, and composers can use it if they wish. Now maybe at La Villette they will start doing systematic compositional and pedagogical research.

ID It's an incredibly new branch of technology in the world.

X Technology of today, that is, computer science, has put into the hands of the composer or musician a kind of writing, much like when writing was invented 4000 or 5000 years ago. It was a completely new era, because people could transmit their thought, but also themselves. They could, by writing and erasing, consolidate and think better. This is now happening because of the technology of today.

ID Is it also a hope that it will go beyond the sort of library or collection aspect of computers? I have two young boys that have gone through computer classes, and they were bored stiff. Because once they learned this present method of using the computer, it wasn't so interesting for them. It's not easy to be inventive or truly creative with it. Might this be a way of stimulating the artistic side?

X Absolutely, yes. In other centers like in France or the States, where they do music on computers, they are stymied because of that interface problem between the user, that is, the musician or the child, and the difficulty in programming. Even the gadgets that they use produce the same dif-

ficulty. So they are stuck or they produce very uninteresting results, because the quality level and the possibilities are narrow. I don't say that that will not improve in the future, but for the time being this is the case.

RD Besides yourself and UPIC, are there any other leaders in this domain?

IX Not yet, because the idea to base composition on design is the original thought. And most of the other people have not conceived that. They do some drawing, but in a very narrow and limited way. They don't use the whole capacity of the human brain to have an interaction between the design and the sound. Which you do when you write music on a score in the traditional way. But in that case, you have to train yourself for years to know the writing and also to understand what you are reading. In this case, the same thing exists . . . that is, you are designing, but the interaction is almost immediate, that is the difference.

RD I imagine that the designing aspect has great fascination for you, from your background as an architect. Would there be any use for the word "poetic" in this music?

IX Well, poetic . . . when there is an artistic standard. Then it can be poetic, in that sense.

RD So that part doesn't change.

IX No. It depends on the skill and the imagination of the user, always. But it makes things easier to express one's imagination.

RD What about the cost of this machine or system?

IX The price is relatively high, because it's like the cost of three professional stereo tape recorders.

RD Who builds it? Is there a company?

IX No, we build it. From here and there, taking parts that exist on the market. For instance, the board exists on the market. The only thing is that it's very expensive. People who use such a board are in industry, designing, for example, cars or architectural things. It's a limited market, so it costs a lot. Other devices that are bought, like "bugs" or components, are much cheaper.

RD "Bugs"?

IX When I say "bugs," those are transistors, and all those kinds of logic circuitry, which are very cheap today. They are astonishingly cheap, although they are very complex, because they are used by millions of people now in the small personal computers.

RD I could imagine that Japan would be fascinated by this whole project.

IX Well, yes. They invited us to come. Maybe they would like to have such a system in Japan. They are building a center in Fukushima, where every year there is a kind of international symposium about art and technology and science. I have been there twice. I think that the relationship between the visual and the hand that makes the design, and the brain, is a fundamental wave of the future, for anything . . . instead of having

a keyboard together, do, but the message and the mind.

RD It's interesting. Have you a system?

IX In that analogical hand, some very

RD In the system you are using, Rasche

IX Yes, completely

RD Can you describe it?

IX The first system was New York, by Mehta

and another one in Tokyo.

RD They are very comfortable seats, and did a study

Sluchin for the

RD It is interesting, also, as

IX I wrote a Festival was for another best in dedicat

will be is for the

January content

RD Your content

IX Yes, I think perhaps

RD Your content

IX Yes, I think perhaps

RD Your content

IX Yes, I think perhaps

interesting results,
I don't say that
being this is the

in this domain?
is the original
ceived that. They
. They don't use
interaction between
write music on a
to train yourself
that you are read-
re designing, but
nce.

on for you, from
use for the word

it can be poetic,

user, always. But

of three profes-

hat exist on the
The only thing is
are in industry,
s a limited mar-
e "bugs" or com-

se kinds of logic
onishingly cheap,
ed by millions of

whole project.
like to have such
ima, where every
art and technol-
the relationship
n, and the brain,
instead of having

a keyboard and a program or whatever, like the MIDI system that puts together all sorts of synthesizers and other devices. That is very easy to do, but you have to remember all sorts of things with the keys and the meaning of the keys, what they activate; whereas when you design and see what you have done, that is the closest to the human mind.

RD It's interesting that you make the parallel between that and writing. Have you applied some of your other theories of probability, etc., to this system? Can you do that, too?

IX In that machine? No . . . not for the time being. I hope to add some analogic or stochastic functions or transformations to what is done by hand, so that anybody could use them just by pointing out or defining some very elementary parameters.

RD In the meantime, you have to battle with traditional instruments, and you are now battling with saxophones. You are writing a piece for the Rascher Quartet.

IX Yes, correct. This year I composed six compositions.

RD Can you speak about those?

IX The first one, *Keqrops*, is for piano and orchestra and was premiered in New York about ten days ago by the New York Philharmonic, Zubin Mehta conducting, with a wonderful pianist, Roger Woodward. I wrote another piece for orchestra called *Horos*, which was premiered in Tokyo, commissioned by the Suntory Foundation. Suntory is an industry of Japanese whiskey, a whiskey which is quite good, I must say! They also built an important auditorium in Tokyo, with about 2000 seats, with good acoustics, but less interesting architecturally. Then I did a short piece for trombone solo, for my friend the trombonist Benny Sluchin. It will be premiered in the States at the International Association for Trombone.

RD It is incredible how these organizations develop! There is one for tubas also, and for clarinets. . . .

IX I wrote another piece for the Xenakis ensemble, from the Middleburg Festival in the south of Holland, that was founded by Ad Van't Veer. It was for him and the harpsichordist Elizabeth Chojnakca. I wrote another piece for the Arditti String Quartet, with piano . . . they are the best in Europe. They play a lot of contemporary music and are very dedicated people. Claude Helffer will be the pianist in this piece, and it will be premiered next year in December. The last piece I can speak of is for the Ensemble Intercontemporain which Boulez will premiere next January in Paris. It is for the tenth anniversary of the Ensemble Intercontemporain. That makes six, doesn't it?

RD Your direction is unique. Do you feel that your music has evolved?

IX Yes, I think so. From what I hear from the people who listen to it, and perhaps from myself, it is changing.

- RD You seem to defy evolution because of the many primary principles that you are always applying.
- IX Ah! The principles might be everlasting, but how you address them, that is different. That is the music, the final result. Now when I am asked for program notes, I say I don't have any. This is because I don't want to influence people. I say, music is made to be listened to and not to be described. Because any verbal description fails. When I was young, I used to write program notes which were rather scientific, concerning some of the principles that I applied to pieces. But the critics and the public were misled. They thought *that* was the music. They thought it was just a kind of mathematical music or a cold music, instead of carefully listening to it. Except for a few compositions, I never used only mathematical reasoning or techniques to compose. For instance, in 1954 I introduced the "mass" concept of sounds, with many glissandi, in *Metastasis*, long before other composers were taken by it. That piece produced a scandal when Hans Rosbaud conducted it in Donaueschingen. And it was the same two years later with *Pithoprakta*, conducted by Hermann Scherchen in Munich.
- RD Just a footnote about the glissandi issue. I talked to Ligeti recently and I asked him about this issue, since Stockhausen had claimed to be the first to have used it. Ligeti said, "I can assure you that it was Xenakis who did the first piece with glissandi in this manner in 1954." In any case, concerning composition, often it has been said that you are basically in the absolute. You say that you don't *only* use theory. When you don't use theory, Iannis, where does that "other thing" come from?
- IX I think that, after a while, when you have thought a lot and gotten used to the theoretical means you have developed, it becomes second nature to you. You don't even need to calculate. It's almost automatic. Which is both a bad and a good thing at the same time. Bad because you are like being caught in a kind of web that you have created for yourself. On the other hand, it gives you a much wider sense of things that way. For instance, for many years I have worked to produce some kind of structure, stochastic or whatever. Now, I know what it means, musically. I am further away. I can see it, I mean I can hear it. I can understand it. . . . Therefore, I can put that together with the other structures, and have on a higher level a kind of vision of things, and therefore a vision of the architecture of a piece.
- RD Do you feel that many composers have used aspects of your music as an aid for their composition?
- IX Well, yes, mentally, and the sonic aspect, as you mentioned, the glissandi. Many people, the Polish School and others, have taken, let's say, the superficial aspects, not how it was built, and used them. Picasso used to say that you take so much time to create something, you create that with your guts. Then it's there and anybody can use it, because it is

finished.
ally, bec
things.

have to
don't lik
this is a
having c
also tea
capacity o
or what

RD This sys
bad mus

IX Yes, of c
ple sayin
future. V
impositi
when it
develop
all the te
their sci
already
logic an
matics .

so on an
architect
against a
busier, w
whelmin
came als
Schoenbe
Although
before hi
instance,
who was
no reason
scale. Th
That was
that it w
thought;
And in
which de
of the im
1954, a r
years late

finished, it's "ready-made." That is what happens. I don't teach personally, because what does teaching mean? It means to push the pupil to do things. That I can do. But when he shows what he is doing, and you have to correct and try to influence and to impose on his personality, I don't like that. I prefer that he would react in his own proper way. And this is also my experience. I think that there is no difference between having a teacher and listening to music . . . to good music. Good music also teaches. That is the best teacher, and if you don't have the perspicacity or the intelligence or the ear to understand what has been done or what is being done; then all the worse for you.

RD This systematic thinking that came out of Darmstadt produced a lot of bad music.

IX Yes, of course. Because it was a kind of Fascism. I remember some people saying back in the '50s that even jazz would be serial music in the future. Which was absolutely wrong. It was exactly at the height of the imposition made by that music in Darmstadt and other places in Europe when it collapsed. Suddenly it collapsed. Serial thought as Schoenberg developed or devised it, I think is very interesting. It somehow linked all the tendencies of other sciences and human thought to try to purify their science from language and what they were doing. This had started already in the 19th century in mathematics and logic. With Boole in logic and the revolution of Hilbert and the German School in mathematics . . . and other people, Cantor in the theory of "set theory," and so on and so forth. That was a very important trend. In painting and architecture also, you find at the turn of the century a kind of reaction against all "decoration" . . . in architecture with Gropius and Le Corbusier, with the Dutch School, and that was a purification from an overwhelming tradition. The same in painting, with Abstract painting that came also from that kind of direction, to start something different; and Schoenberg was deeply involved, at least sentimentally, with this trend. Although the serial system didn't start exactly with him, it started before him, with the dodecaphony of Hauer and even other people. For instance, there is an absolutely unknown composer, a Professor Loquin, who was at the Conservatory of Bordeaux in 1895, who said there was no reason why we shouldn't have a specific hierarchy of the tones of the scale. Therefore, the twelve notes should be on the same, equal level. That was the kind of thing that was starting at that time. But to declare that it was the *only* way is incompatible with another, more general thought; which is the, let's say, "deterministic" vs. "indeterministic." And in indeterminism, you find "probabilities," probabilistic logic, which deals with "masses" that I used, or with "rare events." As a result of the impasse in serial music, as well as other causes, I originated, in 1954, a music constructed from the principle of indeterminism; two years later I named it "Stochastic Music."

of rare events,
cedures . . .

ch is the main
happen in this
repetition of
thing. We are
tries to retain,
t of the past is
or generations
y for an abso-
repetition. So
have so many
not much per-
of course, geo-
rom what we
million years
e, that is, the
iversity which
enters, which
f the universe.
ly one aspect
really, in fact.
at the serialists
way, but that

ied to produce
. For instance,
ell. Otherwise,
akes. And the
omatically, or
o wonder that
der that these
s the mistake.

composer?
ould influence
ays, "Why am
nd why don't
on that music
oes that, then
ning less orig-
ercially speak-
general. So he
ecause of that

commercial pressure. I think that the duty of an artist, his endeavor, is to be independent of those kinds of pressures. Otherwise, why does he write?

RD Why do you compose?

IX I compose because . . . well, I could have done other things in my life, too. I was interested in many things. But then finally I decided to do music, essentially. And I decided to do that because I thought I would be less unhappy doing music than doing other things. That's it. There is no other reason.

RD That's a good answer! I've done quite a number of your works. You were present when I did the world premiere of *Anemoessa* as well as the North American premieres of *Syrmos* and *Anaktoria* and you heard my performance of *Erikhthon*. I also did *Empreintes*, *Pithoprakta*, *Pollakta Dhina*, the music you wrote for the Aeschylus *Oresteia* and I recorded *Akrata* for Columbia Records.

IX *Anemoessa* was not performed again. That was the only performance. Maybe it is bad music.

RD I don't think so myself. . . . What are the similarities or the dissimilarities in these works that I mentioned, or is it too vast a subject?

IX I can point out some dissimilarities, because they stem from a theoretical basis which is different. For instance, *Syrmos* was written in 1959. I wrote it when I was struggling with "quanta" of sounds and Markov "chains," and the meaning of all that. *Akrata* was the result of another theoretical study that I did which was based on "group theory." I wrote other pieces similarly based, like *Nomos Alpha*, for solo cello, which I wrote for Siegfried Palm; and *Nomos Gamma*, for orchestra scattered throughout the audience. *Oresteia* was a completely different thing.

RD Well, you were dealing with a staged production of the Aeschylus play.

IX That was one thing. The reason why I wrote it that way was because I was trying to reinvent the music of that time, with my poor means. That is, from the fifth century B.C. we have had absolutely no trace of this music anywhere, except for some theories which came later.

RD But if anybody had it in his genes, it would be someone like you.

IX Maybe. I don't know. In any case, I put my genes on the table and I tried to write the music!

RD And what about *Erikhthon*, which I remember doing with the pianist, Geoffrey Madge.

IX *Erikhthon* was based on another idea of "bushes" or lines of sound. Traditional polyphony is based on one melodic pattern which is repeated or imitated; or, like in a fugue, there is a subject and a countersubject which is different, and then you plot with them. Instead of just having one line, I used a variety of lines at the same time. That's why I call it a "bush" or arborescence. A "bush" is what you find in nature, like a tree, and it is made out of many branches that overlap, or there are

diverging or converging branches, etc. If you take that as a new object, then you can rotate and impose on it various dramatic transformations, that is, in the pitch versus time domain. So that was the basis for *Erikhthon*, for piano and orchestra.

- RD When I did it, my imagery for that was "vein-like." It was like veins.
- IX A vein is a tree-like structure, absolutely.
- RD I remember having the idea I was inside the blood vessels!
- IX That's very good! Very good image. It's the same.
- RD I even told the musicians to try to believe that they were inside their blood vessels.
- IX They didn't agree, probably.
- RD Well, they thought it was funny. But what about *Polla ta Dhina* where you use children? The children's voices sound so pure.
- IX Ah, yes. Scherchen asked me to write a piece for the Stuttgart Festival of Popular Classic Music, in which he conducted Ravel's *La Valse*. I told him, "I cannot write 'light' music. And he said, 'Never mind. Write whatever you want.'" So, I took a hymn from Sophocles about Man—how wonderful and terrible Man is, because he can do fantastic things, but he can also destroy and produce destruction. I took that and made the orchestra part; and in order to bring out the meaning of this text, not in a solemn way but in an absolute way. I chose children, because children are fresh, they are innocent. So, I put into their mouths the text of Sophocles sung on one note.
- RD Could we speak about your use of primarily Greek titles for most of your pieces? Is that because of your background or do you find them more descriptive? They don't *mean* anything in terms of the music, do they?
- IX Sometimes they are like a simile. For instance, *Syrmos* means a continuation of something, like a train, which is the case with Markov "chains," it's a train of events. *Akrata* means pure. Why pure? Because it's based on some basic structures of mine, the group structures, which have been worked out and investigated by psychologists like Piaget, for instance, who did that with his own children. He discovered the evolution of this mind structure in children from six or seven years old up to twelve years old. After that we stop. We have the same structure, it doesn't change anymore.
- RD And *Anemoessa*, for choir and orchestra? You said the title translates, "full of wind."
- RD *Anemoessa* was a much more distant kind of impression. I don't know . . . it's also a matter of phonetics.
- RD Well, the phonetics were vowels, as I remember. I can't say it sounded like the wind howling or some other obvious image, no, but I suppose you do conjure some aspect of what wind is. However, if I was not told that the title means "full of wind," I don't know that it *means* anything.

IX I
v
RD J
n
IX I:
RD V
b
IX J
a
RD I:
n
a:
IX P
h.
T
so
te
th
th
ac
te
th
th
ar
RD Ju
IX Co
la:
de
is
th
leg
wi
RD Ye
no
IX Ye
to

- IX It shouldn't *mean* anything, it's just the shape maybe, the way that the wind moves or behaves or exists in continuity.
- RD I remember one tape piece of yours, *Bohor*, in New York at the Whitney Museum, and it literally blew out the place.
- IX It was too loud.
- RD Well, the ceiling was terribly low. You say *Bohor* can be played on a beach?
- IX I played it on a beach in Royan at night, and we had some fireworks afterwards.
- RD It has been said that in your work there is no cleavage between musical material and musical organization. Can you speak about your sense of architecture in music and your sense of reasoning?
- IX Perhaps what I could say is, that the various directions, orientations I had in my research did not stem from each other; but they were parallel. They converge finally because of how you put them together, much the same as how we usually live. Sometimes you think in a very logical pattern, trying to demonstrate things; sometimes you can take the same thing as a revelation, saying, "This is it!" There is no explanation of that. And you live with this. You suddenly have ideas and you act according to those ideas. Sometimes you are reasonable and say, "I have to do that because . . ." And you act that way. So I can say, therefore, the problem of architecture in music is to bind together these things so that the result is self-sufficient on every level, and not made out of bits and pieces.
- RD Just one last thing. Do you consciously avoid our past musical tradition?
- IX Consciously . . . not in a systematic way. Sometimes the musical translation of what I do theoretically looks like something that has been done in the past. But that is fortuitous, and my personal determination is not to use, as many other composers have, citations and things like that. I don't like that. I think that my involvement in music, my privilege and also my duty, is to try and do something different. Otherwise, what the hell! The others have done much better than me in the past.
- RD You are interested in something beyond the reach of what we know now—like making a leap forward?
- IX Yes, I like to do that. I don't say that I achieve that, but it is what I try to do.