Gerard Pape [see Figure 1] was born in Brooklyn, New York, in 1955. He studied composition with George Cacioppo and William Albright and electronic music with George Wilson. Pape has composed more than 60 works for acoustic instruments, voices, and/or computer-generated sound. He has directed Les Ateliers UPIC, now known as CCMIX [Center for the Composition of Music Iannis Xenakis], since 1991. In addition to working as a composer, he holds a doctoral degree in clinical psychology from the University of Michigan and is a practicing Lacanian psychoanalyst. A catalogue of his works involving electronics is provided in Table 1. This interview was conducted on 4 February 2003 at CCMIX in Alfortville, France.

Makan: You have had a multifaceted career in computer music as a composer, teacher, and writer, as well as long-standing director of CCMIX. Beginning with the latter, you became director of CCMIX, formerly known as Les Ateliers UPIC, in 1991. Could you discuss your background in computer music and how it led to your work there?

Pape: My background in computer music began in the 1980s while I was studying at the University of Michigan at Ann Arbor. I was following the electronic music concerts there and taking classes in electronic music. The composer George Wilson, who was teaching at the University, felt that it was important that composers spend an entire year in the analog studio before moving on to the digital studio. The analog studio there, developed by Don Buchla, was quite elaborate. It had all kinds of great equipment that was very interesting to use but that elicited some of the frustration so common with those old machines, since they are all based on connecting hundreds of little patch cords. You learn very quickly that if you make patching mistakes, the results can be less than favorable.

One of the things that really fascinated me about electronic music, especially the experimental electronic music from the mid 1950s to the mid 1970s, was that many of the pieces seemed to have been made without a keyboard model in mind. I was a big fan of Xenakis’s pieces, as well as those of Stockhausen. What I heard inspired me to develop my own studio. The first tool I bought was an old Fairlight CMI 2. What I liked about this instrument was that it had a screen where you could draw the envelopes for the oscillators. In addition to being one of the earliest samplers, it had a real-time additive synthesis feature with which you could draw pitch and intensity envelopes for each of the oscillators.

But one of the most formative experiences of my early years in computer music began with the articles in Computer Music Journal on Xenakis and his UPIC [Unité Polyagogique Informatique du CEMAMu] system [Lohner 1986a, 1986b]. When I read about the idea of drawing a graphical score, of being able to create events that had nothing to do with keyboard events, I was really excited. The UPIC system seemed to have more to do with the kind of electronic music that I was drawn to than most other machines available at the time. It was at that point that I got Xenakis’s telephone number and called him up. I said that I had read the article about his UPIC system and that I would like to come to Paris to see it, if it was possible. I ended up taking a trip in 1987 to CEMAMu [Center of Education in Mathematics and Automation of Music], where I instantly fell in love with the UPIC system. So I decided to buy one for myself, which was really a crazy thing to do, because it cost US$ 50,000! I had to take out a loan. In 1989, the engineers from CEMAMu came to Ann Arbor to install the UPIC system in my studio. Also that year, I invited Xenakis to be the guest composer for the Twice Festival, of which I had been the co-director for a number of years. It was a particularly nice event, because George Crumb and he were there at the same time.

There was one problem with the UPIC system, which was its timbral limitations. It was fantastic to be able to design the sound through drawing, and it offered a tremendous amount of flexibility. But as far as timbre goes, you could draw a wave-

form, or sample one, but take only some cycles of it—not use the whole sample itself. So the results were not terribly rich. Then I came upon another machine called the Axcel, which was developed in the late 1980s in Quebec. It was an incredible technology at the time, a real-time additive synthesizer with a graphical interface. Instead of drawing with an electromagnetic pen, you drew with your finger on a surface. It was like the Fairlight, but much more sophisticated. You could put a sound into the Axcel, and it would resynthesize the sound, and then you could redraw all of the pitch and intensity envelopes as well as do other kinds of processing on the resynthesized sound. The Axcel had all of the possibility for making rich complex sounds that the UPIC didn’t seem to, but it lacked the compositional interface of the UPIC. I thought it would be fantastic if the two systems could communicate with each other, as they complemented each other perfectly. If the UPIC could control the Axcel, you could draw things and then hear them played via MIDI with the Axcel’s rich timbre. Vincent Lesbros did something similar with the Phonogramme program later on at the University of Paris VIII with a drawing program that sequenced MIDI synthesizer sounds [Lesbros 1996]. But it wasn’t feasible with the UPIC and the Axcel, because for one thing, the UPIC never had any MIDI functionality.

Anyway, I was hired to direct Les Ateliers UPIC in 1991, so I decided to pack up the UPIC and my other equipment and move to Paris. What really helped me compositionally in the early 1990s was the exposure I had there to new possibilities of developing more complex, comprehensive models of sound. Based on some of these models, in part coming from Xenakis—but also from studying the music of composers such as Julio Estrada and Giacinto Scelsi—I started to use the UPIC system in ways that were quite different from the ways in which I or others had previously used it. These new sound-based models involved using the UPIC not to make complex graphic scores, but rather as a way to compose inside the sound. I started to make pieces where I would use all of the oscillators of the UPIC to make thick bands of single sounds, and then would compose very carefully what happened within a single thick band of sound. This helped me to create an evolving tone or timbre on the UPIC, as opposed to the sounds that were typical of the complex graphical approach.

Another extremely significant experience for me was my encounter with Curtis Roads, whom I met in 1992. He told me that he was going to be leaving IRCAM. He also told me about Computer Music Tutorial, the comprehensive book on computer music that he had been writing [Roads 1996]. I had the idea that we should design a course around Computer Music Tutorial, and so Curtis came to CCMIX and taught there starting in 1993. He was also conducting research on granular synthesis that resulted in his Cloud Generator program, which was created at CCMIX in collaboration with one of Curtis’s students, John Alexander. Thanks to Curtis, I learned a tremendous amount about microsound as well as granular synthesis, pulsar synthesis, etc. The experience for me was one of not just becoming aware of the expanding range of compositional techniques in computer music, but also of becoming aware of completely new ways of at looking at sound. This has certainly been a focus of the pedagogy that has been offered at CCMIX since then. That is, to effectively use the range of computer music tools that are available, you have to really understand sound as well as models for composition with sound.
Makan: Could you talk about the practicalities of CCMIX’s existence, such as how a computer music studio like CCMIX is reliant upon state funding?

Pape: CCMIX was co-founded under the name of Les Ateliers UPIC in 1985 by Xenakis and my predecessor, Alain Després, as a partner to the CEMAMu research center of Xenakis. Like CEMAMu, Les Ateliers UPIC, now CCMIX, has always been funded by a branch of the French Ministry of Culture that is dedicated to the support of centers involved in the creation of new music and related research. Our funding is roughly 60 percent from the Ministry and 40 percent from our own resources. We do need to raise some of our own money, which we do mainly through pedagogy. Before we moved the center to its current location in Alfortville, we had another source of support also. From 1991 to 1995, the studio was located in another suburb of Paris called Massy. The mayor of Massy at the time happened to be an enormous fan of Xenakis, so he was just pleased as could be to have the center of his hero located in his town! Unfortunately, toward the end of 1995, this mayor lost the election to a right-wing politician. The new mayor made short order of eliminating contemporary music in Massy. Not only was Les Ateliers UPIC in Massy, but the important contemporary music ensemble, l’Itinéraire, was also based there. Within a few weeks of taking office, the new mayor told us both that our services were no longer needed, and that we would have to leave.

Despite that situation, what is extraordinary about the cultural climate in general in France is that it encourages a center such as CCMIX to exist at all. In the United States, in the unlikely event that there were such a center, it would have to exist entirely outside the realm of public funding. It is interesting to consider the attitude of the French government with regard to culture and contemporary music, including computer music. The fact that a center such as CCMIX can exist without having to depend upon commercial activity is extraordinary in this day and age. So much in our culture has become exclusively commercial, and what is out there, in terms of art as well as most other things, has become almost exclusively a question of market-driven forces. But there still exist places in the world such as France that believe in supporting the notion of art that has no real “utility,” but that is understood as having a value despite widespread ideas to the contrary. I think that it is greatly to the credit of the French people.

So, the studio has been in Alfortville since 1996, and it looks like we’ll be moving by early 2004 to St. Denis, in the north of Paris. Thanks to the help of Horacio Vaggione, who is a composer member of CCMIX and professor of computer music at University of Paris VIII, we will be getting some space within a large center that is dedicated toward research that is owned by the University of Paris XIII.

The current name of our studio, CCMIX, was adopted in 2000; the name was changed to reflect two important ideas. The first reason was the changing orientation of the center, which no longer exists solely to promote the UPIC machine itself, as it did at the beginning, but to promote contemporary music composition and computer music more generally. The other reason was that I felt it was important before Xenakis died (he was quite sick at that point) to let him know that his work would not be forgotten—that it would be carried on in some way. Unfortunately, as a result of his illness, he had started to have a lot of doubts. He was feeling like maybe everything that he had done was not going to endure, that it was insignificant. I felt it was important to give him the message that this was far from the case.

Makan: In addition to your work in music, you are also a practicing psychoanalyst. Perhaps you could discuss the interrelationships between these major areas of your work, and how your work in psychology has affected your compositional ideas.

Pape: The study that I made of music and psychoanalysis was simultaneous. When I was an undergraduate, I started to really get interested in composing at the same time that I was delving into the study of psychology, in particular psychoanalysis. My initial idea was to do something that would involve music and film, though I was not sure exactly whether I wanted to be more of a film director, a composer, or some mixture of the two. I was playing around with the idea of making films in-
spired by psychoanalytic ideas that I had. At the time, I was doing work that involved films that were dreamlike in structure but that also were connected to musical references. Later, while doing a degree in clinical psychology at the University of Michigan, I continued to study music.

The most important element for me in the relationship between the two disciplines is that the kind of music that interests me has a strong impact on both the mind and the body. I am not interested in the kind of music that purports to be indifferent to music's impact on the listener's perception. What really brings music and psychoanalysis together for me is understanding something about why our musical perception is engaged or not, why we find music interesting or not. From Lacanian psychoanalysis, we know that each one of us has a unique way of finding satisfaction in the functioning of our minds and bodies—what Lacanian analysts call the person's *mode de jouir*. This unique way of deriving satisfaction that each of us has colors our fantasies and feelings about what is “objective reality” for us. For example, when we listen to a piece of music, it either corresponds to our objective criteria for music as “good” or “interesting” or it doesn’t. However, from a psychoanalytical perspective, behind what poses as an objective criteria may simply be our highly subjective way of finding satisfaction or not in any given piece of music. When we say that we like a piece of music, what we are really saying is that we enjoyed listening to it, that it gave us a certain satisfaction in our bodies and minds. That subjective reality may have little to do with the so-called objective reality of the piece as a series of physical sound events perceived as music. Frequently, music criticism comes down to critics's panning a piece because they found no satisfaction while listening to it. That is to say that they were unable to find in that piece of music the kind of experience in their minds and bodies that they like to have while listening to music.

In the case of musical composition, from a psychoanalytical point of view, one could say that in the act of composing that composers transcribe into music their own unique way of finding satisfaction. From this point of view, a musical composition is a kind of subjective “fantasy” wherein composers use their own unique creative musical skills to “transcribe” their satisfaction into sound. Composing is a *mode de jouir* for composers wherein the sublime object of their desire, that which they want the most and is missing for them, is given a semblance or imaginary representation as a musical composition. When the composer's “sublime sounds” are enacted into sound, if the performance is acceptable to the composer and, eventually, to the public as well, then the composer experiences satisfaction. This is owing to the successful enactment of the composer's fantasy of recovery of lost “sublime objects.” This fantasy of retrieving the lost “sublime objects” of one's imagination given semblance as “sublime sound” or musical composition is what gives satisfaction to the composer and, ideally, by proxy to the listener as well.

In my recent article about Xenakis (Pape 2002), I mentioned that one of the things that was striking about him was that he seemed to be someone that had used music almost as a way to cure himself. It was a direct way for him to work with the “Real,” as it is called in Lacanian terminology, of his own experience [Lacan 1998]. The Real is the register of experience that defies representation in image or in language. Lacan describes it as the impossible or the unbearable. It is the place in the psyche where there is a hole, not merely that something is lacking in the sense of being repressed or forgotten. It is that part of experience that cannot be symbolized—not within the realm of meaning—and yet the Real still has an effect on the level of the body. It is my hypothesis that the reason Xenakis’s music is so powerful for our perception is that we may share in his success in overcoming the Real of loss and suffering. He overcomes subjective loss and suffering via his musical compositions which directly represent his own rediscovered “sublime objects” in the form of very powerful and rich sounds that have a direct impact of satisfaction on our minds and on our bodies.

**Makan:** How has the idea that one's aesthetics and even motivations for composing are shaped by internal unknown forces applied to your own work?
Pape: I think the reasons why one composes are always a mystery. I’m not sure that composers can really explain why they compose. I think that it is a kind of need; we feel compelled to do it, and we don’t feel good unless we compose. For me, it is a mysterious process that goes on in between that desire to compose and then what actually comes out ultimately. It’s a very intuitive process that it is not preplanned in the sense of, “Ah, this is the kind of piece I’m going to write.” That doesn’t mean that I don’t go through all kinds of processes of organizing the material, but that comes afterwards. The thing that compels me to write in the first place is a bit mysterious. I don’t just write for the sake of writing, I have to feel like I’m ready to do it. I can go several months without doing anything compositionally, and then, all of a sudden, I’ll be really in to working intensively for a period of time. For me, there’s a kind of process that goes on that’s an internal process of preparation for a composition. Without even thinking about composing actively, something is going on that prepares me to start on something new. By the time I start on the piece, part of the interest is in finding out what exactly I will do, which I discover bit by bit as the work progresses.

Makan: When you get to that point, do you find that any of your compositional decisions are influenced by your extra-musical work, specifically in psychoanalysis?

Pape: It’s never a direct correlation. I might discover after the fact that I’ve done something that might have a connection in some way, but it’s not the starting idea. For me, music is about working with sound, and not with working with verbal ideas. The effect of the psychoanalysis is more or less indirect in the sense that my experience with psychoanalysis necessarily affects who I am at any given point in my life. There are effects that can be found in my music. For the last twelve years, since I’ve been in France, I have been in and studied Lacanian psychoanalysis, which is different than the psychoanalysis that is practiced in the United States. The music that I have composed since I’ve been here, as a result of that new psychoanalytic experience, is somehow quite different than the music I composed before. I can’t tell you why exactly it’s different, but it is different.

Makan: Has your approach to psychoanalysis changed as your music has grown? Is there a corollary relationship in that direction as well?

Pape: Well, the two have grown together. At the same time that I came here and was learning more about Lacanian psychoanalysis, I also met a composer who has had a great deal of influence on me. I am talking about the Mexican composer Julio Estrada. He is a composer who himself was influenced by the process of being in psychoanalysis, so that his own music pays a great deal of attention to what he called “sound fantasies.” Instead of verbal or image-related fantasies, these are fantasies that go on inside the head of the composer and take the form of sequences of sounds. In his own music as well as in the music that he tries to help other composers bring forth from themselves, there is a kind of psychoanalytic-like process in which the work focuses on an elaboration of sounds that the composer imagines internally. Mr. Estrada has developed a whole set of techniques for transcribing the sound that one hears in one’s imagination into a kind of extended notation that can be played by instrumentalists, or that could be played with the help of the computer [Estrada 2002].

In getting to know the compositional approach of Julio Estrada, what has gone hand in hand with my Lacanian psychoanalytic experience is an increased confidence in the importance of paying deeper attention to what goes on inside oneself as a source of creativity. The most important message of Mr. Estrada is not to try to compose by virtue of pre-formulated ideas, preset forms, or what people have told you is a good way to compose. Instead, look inside yourself and find what makes you unique as a composer and what is the unique quality of the sound fantasy that occurs in you.

Makan: You have described your basic “compositional space,” if it can be called that, as a somewhat broad one in which sound is the primary material that you experience, and then structure in
some way. What means have you found to navigate within this sound continuum? Is part of the appeal of using dramatic texts, something that you have done in several recent works, that they afford a way of moving into the sound and structuring it?

Pape: Absolutely. I work a lot with dramatic texts, and am particularly interested in new forms of music theater, or opera, if you want to use that term. There is a way in which sound can give an extra dimension to words. For me, words by themselves lack three-dimensionality. I find that language in general is something that is so thoroughly symbolized and ritualized, something that comes to us in great part from others. When a child is born, language is already there—even before the child is born. An idea of Lacan that I find very striking is the idea that, even before birth, a child is “spoken” by others. For example, this child is going to have this name, be like this, or do that. An anticipated destiny is often already constructed before the child has even come into the world. Language is not necessarily the domain in which I find the most freedom. In sound, there is more creative freedom than there is in language for me. Nonetheless, I’m interested in the work of some people who have tried to use language in a different kind of way, such as those who have tried to extend language or use it in a new way.

My interest in Antonin Artaud is an example. Artaud, as writer, was trying to cure himself of language, paradoxically, by writing. He had to learn to write in a way that would use language, and at the same time, language, literally, was the ground source of all his suffering. He was suffering all the time from the effects of language, a language that he experienced as a kind of parasite in his body. In general, for psychotic subjects, especially schizophrenics, language is real and not symbolic. When psychotic people hear voices, they have the experience of being “spoken” by others. Psychotic subjects are literally at the mercy of other people’s words. Artaud, especially in his last works, tried to invent a new kind of language that would allow him to directly express the Real of his suffering in a way that ordinary language did not permit, a new kind of language that would put a limit on his unbearable suffering. In some of his last writings, there is a writing of syllables that are completely outside the domain of meaning and that are intended as a pure sounding of his suffering body. At times when he did readings of his works, he had a special dramatic way of putting his whole suffering body into his voice. Hearing a recording of Artaud’s voice was one of the reasons that I became interested in the particulars of the stage production that he did for his play Les Cenci (Artaud 1978). He was already in 1935 to make use not just of language as conveyor of meaning, but of language as sound as well as other types of nonlinguistic sounds that were not music either. His use of sound was quite total in a sense. In the play, actors were instructed to declaim the text in a unique way. You can still hear this powerful technique of declamation, which Artaud invented in some of the recordings that he made for Radio France. His method of working with other types of nonlinguistic sound led to the first use of musique concrète in the theater. In Les Cenci, he worked with the composer Roger Désormière. Artaud had him make recordings of church bells and storms. He also had four Ondes Martenots placed in the four corners of the hall. He really wanted to put the audience into the midst of this tragic, stormy, dramatic experience in every way: linguistically, sonically, through the lighting, décor, everything. I am currently working on an operatic version of Les Cenci where my goal is to pick up where Artaud left off, that is, to use today’s means to give the audience the total experience for which Artaud was searching.

Artaud, himself, was devastated by the failure of Les Cenci; not long after its relative critical and financial failure, he went mad. He went off to visit the Indians in Mexico and took peyote, which de-structured him even further. He went to Ireland thinking that he had the cane of St. Patrick and he was going to be casting out the serpents. After that, he was sent back to France and put into an asylum for many years. There he was given many electro-shocks and was so thoroughly psychotic for most of those years that he couldn’t write at all. It wasn’t until he could recover his capacity to write that he
was able to use his writing to help treat himself—to use writing to put a limit on his unbounded and unbearable suffering.

Makan: What is the appeal for the use of electronics for you, given the desire to use the creative process as a curative one, and simultaneously as a quest for invention?

Pape: To me, the use of electronics and the computer is simply an opening to the vastest realm of unexplored territory imaginable. Compared to traditional instruments and voices, there is an enormous potential with the computer to discover new things. I think that we are only at the very beginning, the creative potential is so great. In some ways, we’re still too close to traditional acoustic music to really exploit this potential in a way that we are only beginning to imagine. A hundred years from now, the music that will be based on over a century of technological development will be extraordinarily different than the music of today. It is partially a question of a change of consciousness with regard to music itself. For electronic music or computer music as we know it today to still be perceived as music, it has to make reference in some way to what we already know as the music of the past. There is little music made with the computer or with electronics that I have heard that evokes the idea of a music that is so totally new that there is a real break with what came before. More often than not, computer or electronic music is in a clear continuity with what has come before, even though its means may be different. There are other things that could come about with this technology in the future that are still difficult for us to imagine.

The computer is an incredible tool in that it offers so many possibilities, but it’s also a frustrating tool in the sense that it tells you nothing at all. It’s so open that it can go in any direction imaginable, which is not true of classical instruments. Even if one uses classical instruments in new or extended ways, one is still conditioned by hundreds of years of their use and history. With the computer, this is not the case; ultimately, the limitation with the computer is only the limitation of the imagination itself. Perhaps our imagination is not yet open enough or vast enough to know exactly what to do to exceed our limitations. I think that this is one of the reasons why someone like Xenakis was interested in a program like the Gendyn program; he wanted to be surprised. He wanted to do something in which he had some control over the process, but in which the results would go beyond what he could possibly imagine. The question of how to use one’s imagination but not be constrained by its limitations is a central one in regard to the use of the computer in creating music.

Makan: What are some of the ways that you have used the computer both as a way of generating sound, and as a way of structuring sound? For instance, in your strictly acoustic writing, does computer technology play a part in the compositional process?

Pape: It has definitely had a big impact on the pieces that I write which don’t use the computer directly. I wrote in 1993 a piece called Two Electroacoustic Songs. The first of these two songs has no electroacoustic part at all, but I still call it an electroacoustic song, because the electronics and computer represent a whole way of thinking about sound, the openness with which one approaches sound, and the ways in which sound can be transformed. Even in such instances where the computer is not used directly, I am frequently incorporating things that I have gained from my explorations with sound systems such as UPIC and Kyma, or more recently with the new computer program Stochos. The more that you learn about sound, the more that you realize that, while you can do fantastic things with the computer, you can also do wonderful things without the computer that are thoroughly informed by what you have learned from the computer about sound. It doesn’t necessarily have to be an algorithmic composition, either. It could be simply an approach to composition that assumes a model of sound that is influenced by an experience with electronics or the computer in which sounds can have completely unpredictable kinds of evolutions or interactions. With this sort of model, there is a sense of contin-
ual discovery. It's like a journey in which you don't quite know what you are going to find when you turn a corner: when you finally do see it or hear it, it is startling because it is new and a bit beyond what you could predict or imagine.

**Makan:** Given the sense that there is so much yet to discover, how do you approach the issue of having perhaps too much freedom?

**Pape:** I feel it's important to combine absolute freedom with the discovery of new kinds of forms. It is important for composers to discover forms that are appropriate for the evolution of sound as substance. In some of my pieces, I have used natural and mathematical models that suggested interesting ideas about macro-form and processes of change. Such models can give a kind of framework to our freedom. Certainly the framework could also come from a dramatic form or the use of a text. The key is to have an overall structure or generative form with which to work. Otherwise, you can end up with just a succession of sounds strung together. I find this problem to be a great trap with computer music, because you can make any sound that you want. To me, composing is more than that; it is the idea of organizing sound. Edgard Varèse's definition of music as organized sound is particularly relevant to electroacoustic composition with the computer or without.

In contrast to this idea is the attitude of someone like John Cage, who advocates letting the sound just be itself, just having one interesting sound follow another. Cage criticized Varèse's sounds as sounding too much like Varèse and not like themselves. This position that Cage takes regarding sound is quite consistent with his beliefs, especially considering his Zen-inspired philosophy that you should be open to whatever is there in front of you, and just let that thing be without imposing yourself on it in any way.

While I respect Cage's stance and his music, his idea just to "let the sounds be themselves" doesn't fit for me with what I feel to be the real potential in using sound itself as a primary material for composition. There are countless musical forms that one could discover to make sounds develop in very interesting directions in a composition that remains to be invented. I am quite convinced that, just as was the case with tonal music—where the forms that were adopted grew naturally out of the material itself—there are also all kinds of musical forms that remain to be invented that will grow naturally out of sound itself as material. We have to take seriously the need to create musical forms for sound-based composition that are directly, or by way of analogy, related to the structure of sound itself in some organic way. I think that the best of computer and electronic music has an organic quality to its form, though not in the way that traditional music does.

Computer music has its own kinds of rules and logic that, for me, have to do with the logic of composing with and transforming sound itself as material. Computer music does of course share one important feature with older musics: the fundamental concern in both cases has to do with structuring time. If we don't structure time in a way that works formally at all time levels, macro to micro, then it becomes apparent that something is wrong with our composition. We feel that the form is not quite working. The question remains: "How does one make forms that organize time in a way that works, that is, that are logical for our minds and perceptually interesting for our bodies?"

**Makan:** How do you feel the technological nature of our culture has affected our collective perception of time and, by extension, contemporary music?

**Pape:** One of the problems that contemporary music, and perhaps some forms of computer music as well, have with the public is that the experience of time that people are used to in contemporary life is not necessarily the same experience of time needed to appreciate such music. Take, for example, the way that time is structured in a news broadcast or an MTV music video; it’s extremely rapid and compact. Everything has to be conveyed with a frenetic pacing in which the maximum information and stimulation are presented in the shortest possible amount of time. We have no time, apparently, to listen in a slower way. Music that requires listening over a longer period of time therefore becomes difficult for people, or even impossible to find satisfaction in or tolerate. This is also the case with
music that requires what I would call a longer perceptual time. For example, a piece itself might be relatively short in overall duration, but because of an extremely slow rate of change, the listener’s rate of perception needs to slow down accordingly for the piece to be appreciated, that is, for the listener to find interest and satisfaction. People who have been deeply conditioned by the frenzied, impacted sense of contemporary time often have little patience for such “slow” pieces. I wonder where the place today is for not only music with a “slow” internal clock speed, but for any type of art that requires people to slow down their perception, because everything in the contemporary world’s collective mode de jouir is entirely to the contrary.

Makan: Maybe you could talk a bit about the relationship between time perception and the structure of some of your compositions. For instance, I am thinking about your setting of Samuel Beckett’s *A Piece of Monologue*. Could you compare the sense of time and temporal progression in your piece to a recitation of the monologue itself?

Pape: When I composed *Monologue*, I hadn’t ever seen a production of it, so I wasn’t exactly sure how it would be done as a spoken piece. When I finally saw a filmed production of the piece, it struck me that the pacing that I used was quite similar. Probably my piece would have had more or less the same length as the filmed or a staged version of *A Piece of Monologue* if it weren’t for the fact that in addition to the text, there are also some electronic interludes in my piece. I wonder where the place today is for not only music with a “slow” internal clock speed, but for any type of art that requires people to slow down their perception, because everything in the contemporary world’s collective mode de jouir is entirely to the contrary. I have no idea if, had Beckett heard what I did, he would like it or not. I originally wrote this piece after Samuel Beckett’s death as an homage to him. The whole idea of the piece is to create a portrait of Beckett. *A Piece of Monologue* is one of those late texts of Beckett that is fairly autobiographical in the sense that it strongly evokes Beckett’s own experience. That’s what I wanted the voice and the electronic music to do: to evoke that experience.

Makan: Let’s move on to your projects-in-progress, one piece based on Clive Barker’s novel *Weaveworld* and another based on Antonin Artaud’s play *Les Cenci*. In the case of the latter, you are working with a complete text, whereas in the case of the *Weaveworld* project, you are dealing with an adaptation of the novel. How are these texts influencing the development and structure of the pieces?

Pape: I have been working on *Weaveworld* for ten years now. The only part of it that I’ve actually completed to my satisfaction is the one scene that is recorded on the CD called *Battle*. In this piece, I am interested in going beyond just telling the story, such as by just creating a condensed version of the novel. The same is true with the Artaud project. As a play, *Les Cenci* is perfectly performable. What I am more interested in with both projects is to get to the essence of what the authors were addressing. In the case of *Les Cenci*, the text itself is only a small part of the overall experience, a sort of “jumping-off” point. Some people have criticized the play on the basis that the text by itself does not constitute a good play. If you expect the text of *Les Cenci* to stand on its own strictly as literature, that may be true. But the text is meant to be only one element of a total experience. One of the reasons why I make so many indications as to the changing timbre of the voice, changing emotions of the voice, and other changes in the character of the sound, is that I believe that musical expression needs to say more than what words alone can say. Words can only go so far as conveyors of universal sense or meaning; the sonic way in which people say, sing, or declaim words can add whole other layers, much in the way that poetry can evoke far more than it actually says by its sound as well as its sense.

By developing the purely sonic aspect of language, words can take on a kind of three-dimensionality. We can evoke feelings and experiences that go beyond the strict meanings of a text by transformations of pitch, intensity, and timbre that add layers of evocation to the original text’s syntactical meaning. In *Monologue*, perhaps...
Beckett might not have been happy with my setting, because in general he wanted people to deliver his texts in what he described as a colorless kind of way. I disagree, though: I feel that his texts are full of color, even if that color could be described as shades of gray or black. To go back to something you asked before about the connections between music and psychoanalysis, something that I have learned from psychoanalysis is that words are not primarily a source of communication or symbolization. They are primordially speaking a source of intense satisfaction for speaking subjects. When people speak, they speak for all kinds of reasons that have little to do with just conveying a message or information. I think this idea can be strongly conveyed by treating text as both sound and sense simultaneously.

Makan: A lot of your discussion of composition and of music has been directed toward the future of music. You’ve written about the idea of how concert halls and sonic spaces should reflect musical material in a way that is not yet possible but could become so some time in the future. Could you describe what a music of the future would be, for you?

Pape: I feel that a music of the future wouldn’t just be music as we know it now. I think that the closest models that we have for such a future music come from the field of virtual reality. There is too much separation between the audience and the music in traditional concert halls. The limitation lies in this two-dimensional space, which has been up to now the norm for the public’s experience. Up to this point, when we go into a concert hall or a cinema, all of what we are going to experience is compressed into a flat, two-dimensional space in the sense that it is contained within a limited frontal visual and aural frame. I am not the first to point this out. What is worse is that we localize the sound and image as coming from a source that we know full well is not real and, thus, we can easily distance ourselves from it.

This is not the same as our experience of sound and image in everyday life. In our daily lives where we are interacting with others, or having various types of experiences, it is not a situation of us over here and some localized thing that we are experiencing over there. For an experience to be real, it must seem indivisible from what is around us. A real experience has no psychological separation from the space of its perceiver. We are in the same space as the event itself. Real events are not some ritualized, stylized thing that we call a concert or “art.” I imagine a situation wherein the experience of music, as well as the space that surrounds it, takes on a three-dimensionality so that, paradoxically, even if created by way of virtual reality techniques, it is perceived as totally real by the spectator.

The closest thing that I’ve seen to this idea is in the form of some of the inventive uses of visual technologies that you can find in a place like Futuroscope, a park in the south of France that is the French answer to EuroDisney. There are a series of exhibit buildings that house extraordinary visual technologies of various sorts. It might seem silly, but when you experience a dinosaur as being one foot from your nose even though you know that it can’t be true, that is impressive. There are other exhibits in this park that have the same strong impact—very vivid experiences that are so real that you can’t put too much distance in your experiential space between yourself and the things that you are seeing or hearing. It really makes you ask yourself: what does it mean for a human being for something to be real?

People talk about suspending disbelief, but most of the time we really don’t suspend our disbelief. We know quite well that what we are seeing on the screen, or on the concert stage, is not at all the same thing as real life. There need to be new ways of presenting music or visual experiences so that the audience can’t give itself the message that art is only a semblance of reality. The experience of art needs to become ever more vivid, exciting, and real on every level. This idea is quite different, nonetheless, than simply saying that what we really need to stimulate us is nothing more than experiences that are louder or faster or flashier, although that has perhaps stood in for the kind of real experience that is lacking, the Real that I mentioned. One of
The reasons why many young people don't want to go to classical music concerts is that they find it boring and too far removed from their Real. In a rock concert or techno concert, there are lots of things going on with lights, and the sound is extremely loud. It's extremely stimulating to the point where the sound itself has a direct impact on the body of the perceiver. I think that such a vivid experience can also be achieved with other kinds of music too, but with different means that are just

Table 1. Catalogue of works involving electronics

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<th>Year</th>
<th>Work Description</th>
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| 1982 | *Triple Requiem* for multiple tapes and turntables  
*Soundbook* for instruments and live electronics |
| 1983 | *Tableaux* for acoustic and electronic instruments |
| 1983–1984 | *Ivan and Rena*, music drama for reciter, three vocal soloists, orchestra, and tape; text by Gerard Pape |
| 1984 | *Dreamwake* for tape; texts by Gerard Pape  
*Resonance* for tape  
*In Memoriam: George Cacioppo* for eight trombones, two percussionists, and tape  
*Recordare* for soprano recorder, live electronics, and tape  
*X-Stasis* for ensemble and tape |
| 1985 | *Cosmos*, symphony for large orchestra and tape |
| 1986 | *La Tristesse de la Lune* for baritone, soprano (pre-recorded), and tape; poem by Charles Baudelaire  
*Cerberus* for organ and tape |
| 1989 | *That Burning Thing* for flute and tape |
| 1990 | *A little girl dreams of taking the veil*, surrealistic opera for tape and slides; texts and slides by Max Ernst |
| 1992 | *Prélude Electronique* for tape  
*Variations Varensiennes* for tape  
*X-Stasis* for ensemble and tape |
| 1993 | *Two Electro-Acoustic Songs* for soprano, flute, and tape; poems by Dahlia Ravicovitch |
| 1994 | *Le Fleuve du Désir II* for UPIC-generated tape  
*Le Fleuve du Désir III* for string quartet and tape  
*Le Fleuve du Désir IV* for violin, tape, and live electronics  
*Le Fleuve du Désir V* for violin, tape, and live electronics  
*Le Fleuve du Désir VI* for viola, tape, and live electronics  
*Le Fleuve du Désir VII* for cello, tape, and live electronics  
*Le Fleuve du Désir VIII* for contrabass, tape, and live electronics |
| 1995 | *Monologue*, chamber opera based on Samuel Beckett's play, for bass voice and eight-channel tape |
| 1996 | *Battle* for four vocal soloists and tape; text by Clive Barker  
*Makbénach I* for saxophone, ensemble, and tape  
*Makbénach III* for saxophone, live electronics, and tape |
| 1997 | *Feu Toujours Vivant* for large orchestra and four samplers  
*Makbénach IV* for trombone, live electronics, and tape |
| 1998 | *Funeral Sentences* for two sopranos, percussionist, and live electronics  
*Aquarelles* for bass horn doubling clarinet, tape, and live electronics  
*Mon Autre Peau*, installation for 20-channel tape and DVD (based on paintings by Ana-Paula Portilla with digital video by Anney Bonney, texts by Ana-Paula Portilla, Parmenides, and the Upanishads) |
| 2000 | *Tantric Transformations* for eight-channel tape and digital video; video by Anney Bonney |
| 2001 | *Les Cenci*, opera in four acts, for seven vocal soloists, orchestra of 24 flutes, three percussionists, tape, and live electronics (work in progress, based on the play by Antonin Artaud)  
*The Ecstasy of St. Theresa (homage to Bernini)* for nine mixed voices and live electronics; text by St. Theresa of Avila |
| 2002 | *Clouds* for six-channel tape |

*Makan*
beginning to be imagined. This idea of “ever more real” extends past the current conception of interactivity in virtual art. Another kind of interactivity could be found in works that really immerse the audience within a powerful experience which as it is unfolding is real, not just a semblance for its public—not that one becomes a character in the show or plays along with the music, but that one is somehow fully there and involved with what is occurring mentally and physically.

When the necessary technological and imaginative resources are fully available to composers and artists, the potential for such types of works to give audiences a fully immersive total experience, such as Artaud imagined, could help forge a deeper link between art and the individual subject’s Real. It remains to be seen if humans in the future can stand or crave an experience that is so real that it removes all possibility of experiencing an artistic performance as a mere semblance of reality.

References