

An interview with Curtis Roads

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The following is an extract of a longer interview with Curtis Roads to appear in Computer Music Journal. The interviewer has chosen to focus almost exclusively on Roads as a composer, rather than on his work as a researcher, author, and historian in the field. Should the reader require more documentation on Road's publications and a general curriculum vitae, he or she may visit the web site www.create.ucsb.edu/~clang.

Robindoré: In a 1988 interview in *The New York Times*, the instrumental composer Olivier Messiaen gave his rather remarkable perspective on electro-acoustic music: "The ancient musical modes lasted for ten centuries, tonal music only a few centuries, three centuries really. Serial music lasted about fifty years. Aleatory music should last for a few days, Minimalism a couple of weeks. What will last longer, I believe, is electronic music, or electro-acoustic music. Some composers do this, some don't; I don't - but even for me it has changed music. I cannot hear the orchestra in the same way, for instance, because of electro-acoustic music. It has not yet given us new masterpieces, but it has given us new timbres." With the vantage point of a solid 30 years in the field, can you concur with Messiaen's opinion concerning the lasting nature of this genre? And has your perspective changed over those years or only been confirmed? And what of his comment that the field has not yet offered (as of 1988, that is) any "masterpieces" such as those yielded by Western art instrumental and choral music composers over the centuries?

Roads: What provocative questions! Olivier Messiaen encouraged new music to expand in multiple directions. In my classes, I play his *Fête des belles eaux* for six Ondes Martenots [electronic instruments], which he composed as a young man in 1937.

I would say that we live in a multicultural world, where the different genres and styles mentioned by Messiaen never die completely. Since one of the ways that music evolves is through combining styles into a new hybrid, the historical styles continue to serve as an important gene pool for future music.

In the 21st century, many factors align in favor of the electronic medium. In my view, we are in the midst of a golden age of electronic music composition, supported by strong technical and aesthetic momentum. Varèse's vision for the "liberation of sound" is our reality. In an imperfect world, I am very grateful for at least this.

As to the question of masterpieces, I would say that a masterpiece defines a genre or sets a standard for works that follow. The question of choosing masterpieces is tricky. What are the masterpieces for traditional acoustic instruments since 1950? The choice would have to be quite subjective.

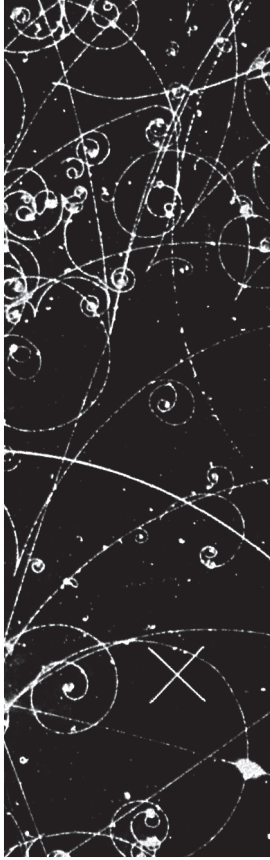
In any case, electronic music gives us more than new timbres; it offers new tools for organizing sound material. New materials and tools lead to fresh compositional strategies based on timbral mutations, spatial counterpoint, detailed control of complex sound masses, graphical sculpting of time-varying spectra, juxtapositions of virtual and real soundscapes, sound coalescence and disintegration, and interplay between the microsonic and the other time scales that cannot be realized by acoustic instruments. Listen to *Forbidden Planet* (1956) by Louis and Bebe Barron, which defined the genre of space music. Stockhausen's four-channel tape *Kontakte* (1960) created not only a fascinating sound world, but also defined a new musical code. Parmegiani's *De Natura Sonorum* (1975) is a tour-de-force of stylized musique concrète. Risset's *Sud* (1985) is another brilliant piece. Vaggione's music is obviously great. I could go on. I play a lot of music for my students.

I am reminded of a remark attributed to Richard Strauss, in which he supposedly said: "I am not a great composer, but I am a very good composer!" A number of very good composers are working today in the electronic medium, so I am confident that certain pieces of our time will be considered masterpieces in the future.

Robindoré: You are more generous in your assessment than Messiaen. I wonder if his position could not partially be explained by the medium's preeminent capacity to capture and access nature itself, if you will. "For craft [ars] imitates nature..." (Leodiensis 1320) I don't mean simply recording natural sounds, but offering the means whereby one can mine and sculpt timbral and structural aggregates that can closely approximate nature's utterances, while still remaining a crystallized form of creative expression. The "imitation" of nature has, in fact, been many a composer's preoccupation for centuries, in Orient and Occident. And of course, 20th century visionaries such as Varèse and Xenakis were inspired by physical phenomena, and scientific and astronomical discoveries. Louise Varèse recalled of her husband, "He told me that once watching a display of the aurora borealis he felt an 'unbelievable exaltation – an indescribable sensation' and that as he watched those 'pulsating incandescent streamers of light' he 'not only saw but heard them'". Later he attempted to transcribe them. (Quoted in Mattis 1992). Continuing this lineage, perhaps one of the clearest contemporary examples is actually your own research in and compositional fathoming of the realm of microsound. The astounding works which have resulted yield textures and kinetic strategies which seem a sonic imagination of molecular and sub-atomic activity. And some of your titles, such as *Fluxon* (2002), echo Varèse's *Ionisation* and *Density 21.5* in their scientific tone.

Roads: Yes, I relate to Varèse's emotions. I recall a time several years ago on the East Coast when I lay on my back and watched rapid cloud formation and evaporation on a time scale of seconds. I love to watch how clouds emerge out of nothing, mutate through various degrees of transparency, merge with other wisps, and then dissolve into nonexistence. These natural processes are beautiful models for musical formation.

I am also inspired by images produced using bubble chambers and cloud chambers, which depict subatomic interactions. I am especially interested in the causal behavior they depict: the power of attraction and repulsion. I try to incorporate these forces in my



music. For example, in one movement of *Clang-tint* (1994), the macroform revolves around three points of attraction. Gravitating around one of these, over eighty short sounds transpire within a three-second period. One also sees in bubble chamber images the spectacular consequences of particle collisions. In my music, when certain sounds converge or collide, the musical texture immediately changes and can never be the same.

Robindoré: Your comments bring back to memory a beautiful quote of Arthur Koestler's:

Einstein's space is no closer to reality than Van Gogh's sky. The glory of science is not in a truth more absolute than the truth of Bach or Tolstoy, but in the act of creation itself. (Koestler 1964)

You have offered us some general principles, or rather elements from your inspirational palette. Speak to us, if you will, in more detail of the actual compositional processes and tools you employ, if this is not betraying the composer's "secret recipes." It would be valuable, I feel, for you to walk us through, for example, your poetically titled, *Volt air* (2003).

Roads: My job is to teach, so I have no technical secrets left! Quite the opposite: I evangelize techniques of sound production, transformation, and organization.

My approach to composition usually begins with the creation of raw source material—an exploratory and improvisatory process. Creating the source material is the most playful part of composition—a direct, uninhibited sensual experience of interaction with sound waves. At this stage there are no constraints. It is like playing an instrument, but both "playing" and "instrument" have expanded meanings in electronic music. For example, *Volt air* began as a collection of sound clouds generated by the Cloud Generator program. *Pictor alpha* (2003) started with pulsar trains generated by PulsarGenerator. To make the source material for *Thither* (work in progress), I played an Ondioline (an old electronic keyboard instrument) and recorded it on analog tape. My most recent piece, *Now* (2003) is the result of a second-order process, since it is based on a granulation of *Volt air, part III*. One could also consider a composition algorithm as a generator of source material (as did Xenakis). Indeed, I think of PulsarGenerator as sonic algorithmic composition system with an interactive graphical interface.

Sometimes an extramusical idea or emotion drives the work. For example, in *Nuage gris* (work-in-progress) the music is a direct reflection of a deeply-felt mood. *Tenth vortex* (2000) and *Eleventh vortex* (2001) are also the product of intense emotions. In *Clang-tint* (1994), each movement's sound and organization reflect a specific thematic subject.

The second phase of composition is the important phase of classifying and editing the source material. I divide the various sounds into types. Within each type I then organize the sounds by time scale (micro, sound object, meso). I am usually pruning the material at the same time, discarding some, and editing and transforming the rest.

Through this rather intense labor, I become intimately familiar with the material. I am imagining how it might organize itself into larger scale forms, and I start to plan the macroform. This is where the game becomes complicated. Before this point, I tend to work intuitively. To plan a macroform is to set a goal, so one has to shift to a rational problem-solving mode of thinking. In effect, the piece becomes a complicated jigsaw puzzle. It is as if each piece in the puzzle is a sound object with a potentially unique morphology. As I assemble the puzzle, certain objects appear to be natural matches: they fit in sequence or in parallel. Other objects seem out of place. How they will ultimately fit together is not evident at the beginning.

The difference between a conventional jigsaw puzzle and a composition is that one can construct new sound objects to fill in gaps, or transform existing objects so that they fit better. The more objects one constructs, however, the more combinatorial possibilities accumulate. The game of composition may slow down, as each object inserted carries additional implications, some of which can only be resolved by further editing.

As the puzzle takes shape on higher time scale of meso structure, the trial-and-error process of montage, of rearrangement and refinement, should lead to the illusion that the puzzle could be solved in only one way. Of course, there is no perfect solution. One is not obliged to fit all the original source material into the puzzle. The puzzle is solved when I say it is, and the solution is not necessarily final. A composition is never perfectly formed, and it can always be remixed or regranulated. Even great works have stray threads or they could have been solved slightly differently. They are human products. It makes no sense to talk of a perfect solution to a compositional puzzle: perfect according to what criteria?

Robindoré: What have you found to be the particular compositional challenges germane to working with microsound? Aren't you consistently faced with the old adage of not seeing the forest for the trees – i.e., not hearing the morphologies for the particles? This is certainly the impression that many auditors get when listening to a variety of works in the genre. It's almost a type of sonic uncertainty principle, akin to Heisenberg's! As if the more precisely you portray a sound particle in audible space, the more unsure you are of its trajectory or musical dimension – is it a grain or is it a wave! Or is it that microsound, to some degree, commands its own forms, where more traditional notions of musical architecture are replaced with the sheer sonic delight of textured globules and their interplay?

Roads: I do not see new sound material as replacing old material but rather augmenting the catalog of available material. Material and form have always been related. Microsonic materials and procedures tend to shift the aesthetic focus toward fluid morphologies. The flowing structures that we can create with microsound do not necessarily resemble the usual angular forms of musical architecture. To the contrary, they tend

toward liquidic or cloudlike structures.

The question for the composer is: how can I articulate trends on various time scales within an evolving process? Intervals (metrical beats and pitched tones) may emerge, but they are not the indispensable grid. There is rather an interplay between intervallic and nonintervallic material. Within these flowing structures, the quality of particle density—which determines the transparency of the material—takes on prime importance. An increase in density induces fusion. It lifts a cloud of sound particles into the foreground, while a decrease in density causes evaporation, dissolving a continuous sound band into a pointillist rhythm or vaporous background texture. Keeping density constant, a change in the characteristics of the particles themselves induces mutation, an open-ended transformation.

Pieces like *Tenth vortex*, *Eleventh vortex*, *Sculptor* (2001), *Fluxon*, *Nanomorphosis* (2003) and *Now* are all based on filtered granulation processes. By contrast, I see *Pictor alpha* as a traditional piece of melodic music spawned by a repeating melodic cell.

Robindoré: How did you personally traverse the electroacoustic path to microsound? Was it a compositional imperative, a theoretically inviting domain, or both?

Roads: It came out of my first encounter with Xenakis, at his short course at Indiana University in May of 1972. He presented the theory of Markovian stochastic music, in which is embedded the idea of granular synthesis. His book *Formalized Music* describes a theory of granular synthesis in some detail, and points out its relation to the work on “sound quanta” by the physicist Dennis Gabor in the 1940s. So in 1974, when I first obtained access to a computer that could synthesize sound, I tried to implement granular synthesis. When I heard the sounds coming out of the computer it was obvious that this would have major consequences in the future. Yet it took twenty years for technology to evolve to the point where I could explore the full range of these techniques in composition. Even so, I consider myself fortunate when I compare the experience of Varèse, who was so far ahead of his time.

Robindoré: Since we are in the domain of composition, will you speak to us of your earlier years as a composer—what works had a profound impact on you. In discovering a composer’s identity, it is often revealing to learn of his or her musical affinities. And then beyond affinity, it is the choice of a few pieces which have permeated musical thought-processes and brought about a core change in perception. And within these pieces, finding the epiphanic moments where the music is transparent to the underlying thought. I think the point is that compositional integrity is to be constantly alert to identify these moments in others’ as well as (hopefully) one’s own works, in order to more consistently attain the standard Iannis Xenakis was referring to when he wrote:

Art, and above all, music has a fundamental function,...it must aim towards a total exaltation in which the individual mingles, losing his consciousness in a truth immediate, rare, enormous, and perfect. If a

work of art succeeds in this undertaking even for a single moment, it attains its goal. (Xenakis 1992).

Roads: Yes, I very much like that quotation, with its emphasis on the experience of art. Great music comes in many forms. Certainly in my youth I was strongly affected by all kinds of external trends. I tried different instruments and played in various styles. Obviously at the age of 21, Xenakis's thought had an impact on me. The sound of the early electronic music and musique concrète remains a strong point of reference. But at a certain point one matures. One finds a path. My path is to explore certain uncharted territories of sound and sound organization. I am very happy to be on this path. I can see a few people who are out there with me exploring this land, Horacio Vaggione for example. Through a telescope I can see Luc Ferrari and others off in the distance exploring other interesting terrains.

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