Co-hear-ence and Electroacoustic Music

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Abstract: Whether we like it or not an inspection of electroacoustic music and its related studies currently uncovers an island landscape rather than one based upon larger land masses. This paper will suggest that there are several reasons why a less individualistic approach to musical creativity and scholarship might be beneficial to a great many people. After discussing how the notion of an "island mentality" has arisen, specific examples of composition approach and scholarship will be drawn upon to illustrate that we might not be as alone as we think. The paper's conclusion will concentrate on ways to allow individual research to coincide with greater co-hear-ence in the dynamic worlds of music and digital technology.

1) Introduction – Delineating our Field

Before launching into my talk, please allow me a brief moment to thank all of my hosts from NUCOM. I would especially like to acknowledge those involved in the organisation of this first musicological section of the symposium, not only for their friendly invitation, but also their warm welcome. In particular, my appreciation goes to Dr. Carlos Palombini for his time invested in the dialogue which led to the decision concerning what would be most appropriate for this important meeting.

I would like to start off by asking all of you some leading questions. Have we, with our vast interest in IT developments, allowed our dynamic technology to get the best of us, that is, taking the lead in many of our developments, be they in areas of hardware and, in particular, software development or in creative or even scholarly areas? This question is a bit rhetorical, but it does raise a similar question. Are our developments getting a bit out of hand? What I mean by this is the following: perhaps similar to debates in the areas of physics or mathematics, are we creating theoretical models that may never have an apparent application? Without pointing a finger, how many of you have attended conferences where virtually every paper seemed to be relevant primarily, if not solely, to the person or people delivering that paper?

Anyway, not to commence with too much misery, there *are* exceptions.

I am of the firm belief that, in terms of percentage, far too many researchers and artists are setting out on projects in relative if not total isolation. At least, that is how many feel they are working. I also intend to demonstrate that there is perhaps more cohesion to this work than meets the eye. I shall also attempt to prove that the worlds of electroacoustic

music will be better off when a higher percentage of those involved consciously attempt to establish greater coherence in their work (including the made-up notion of "co-hear-ence" for those involved with making the music).

Before embarking on this voyage, a few territorial boundaries need to be drawn. Although many remarks I shall make could also be applied to contemporary music in general as well as to other areas, I would like to restrict the discussion to what I shall call "electroacoustic music". Some call this, or something quite similar, "computer music" especially in the western hemisphere (excluding Canada as well as the United Kingdom where I work). Some do not use the term, electroacoustic music, in as broad a sense as I do. Debates concerning terminology are for another day or for one of the several mail bases where they are taking place as I speak. I define this term in the following fashion: *electroacoustic music* represents any music in which electricity has had some involvement in sound registration and/or production beyond that of simple microphone recording, amplification, performance of pre-set sounds on digital instruments or the "cleaning up" of older analog recordings. Innovative varieties of this music tend to focus on timbre as a key parameter of a work (often alongside spatial placement of sounds); this is in opposition to timbre being somewhat subsidiary to pitch (both in terms of melody and harmony) and rhythm in more traditional forms of music. Furthermore, electroacoustic music uses the sound as its unit value, not the note – although the note may of course be seen to be a sound. Electroacoustic music forms part of today's art music; it is equally prevalent in innovative forms of popular music including today's techno, in a good deal of music for film and television and in some computer games.

The musicology of electroacoustic music, our second term, will be used in a somewhat limited sense. It refers to the use of the (written) word and associated sound and/or image with the goal of facilitating a greater understanding of what is taking place in the music of the electroacoustic community. It involves the contextualisation of its subject matter, drawing links between a huge diversity of technological developments as well as musical artefacts and approaches. For the purposes of this discussion, the musicology of electroacoustic music is to be seen primarily as a separate entity to software and hardware development work and to the music itself. However, with the introduction of the word "holism" in the next section of this paper, the boundaries between artistic production, scholarly research and development should dissolve to an extent.

2) The "Island Mentality" *vs.* Holism

To continue with definitions of importance, two more terms are now to be introduced, the "island mentality" in all branches of electroacoustic music and the notion of holism. The former term is something I discovered once I moved to England having previously lived in the United States and on the European continent. The *island mentality* in our field of electroacoustic music refers to individuals or groups of collaborators working in relative or total isolation creating work without adequate contextualisation or an appropriate description of potential applicability in my view. Putting it fairly cruelly, it seems that much work takes place today within a traditional framework, that is, sponsored by élitist institutions – I am no exception! – allowing art or research or development for its own sake to thrive. As we will discover in a few minutes, please note that my remarks are

intentionally being overstated. Still, in a time many acknowledge to be post-modern, the work of individual potential geniuses seems a bit old fashioned. It seems, upon superficial investigation, as if we have completely missed the point of the adventurous sixties and seventies of the previous century, in which new forms or holism were sought in society.

This brings me to that other word, "holism" that perhaps identifies my age bracket. *Holism* is used when the whole of any entity is greater than the sum of its parts. If this sounds a bit obscure, let's investigate an example with which I feel particularly associated. I believe that the best dance and music collaboration is one where the music heightens the dance and vice-versa. That means that the music is not replaceable, or at least not easily replaced. It means that a second choreography is unlikely to work as well with the music as the original. It is with this in mind that my collaborations with dancers tend not to utilise existent music. When one does, the music must demonstrate the flexibility to be moulded to the dance and mould the dance at the same time.

If this still sounds obscure, let me exemplify this notion with the work of a colleague and friend, Barry Truax. Although I dare not suggest that we all become the centipede Barry Truax represents, his ability to practice what he preaches and preach what he practices represents holism taken to the extreme. The hardware and software he has designed has come into existence based on a good deal of his theoretical work which in turn informs his composition. I could re-articulate this sentence in five other ways allowing the theoretical work or his artistic work to lead. What this means is that the three categories of work: artistic, developmental and musicological, introduced above, all play a role in his work.

Again, this ability to cover all aspects of one's work is neither necessary, nor suggested here. But there is a second aspect to Truax's work which might also be found to be exemplary. Each and every step he takes in the evolution of his career is documented with a clear contextualisation of how his work has been devised and how it fits into the greater landscape of electroacoustic, and in his case, soundscape composition. Furthermore, Truax has offered others in the electroacoustic music community ideas, references and tools for their own work. He has offered clear advice in terms of the potential applicability of his work throughout the last three decades.

Therefore, going back to the music and dance example, his development work heightens his research and artistic work and vice-versa.

This is an extreme case, but one that at least clarifies the notion of holism. I would suggest and will attempt to prove below that those in the electroacoustic music community who demonstrate sympathy with or awareness of holism will play a greater role than they might in achieving a greater coherence in our music and related studies. Those who are dedicated to holism, like myself, will play a significant part in reducing the island mentality from our electroacoustic landscape.

So what is wrong with the island mentality and who am I to claim this lack of coherence? Allow me to attempt to contextualise this before stating my somewhat extreme views.

Sociologists agree that a good deal of the final quartile of the twentieth century was one of individual initiative, coining terms like the "me era" and "no nonsense eighties" amongst others. I have seen this clearly in my own students' work throughout this period; the need to claim one's own territory, be it some form of musical language or procedure, or a personal stake in the areas of research and development.

Please pardon me for not naming the person in question in the following example. I will tell you that the person involved is one of Europe's leading thinkers and artists in the area of electroacoustic music and has been for decades. At the 1999 International Computer Music Conference in Beijing, I had a long chat with this old friend. He (by qualifying his gender, I am unfortunately not cutting down the field of possibilities by a significant margin) admitted to me that he wanted my feedback concerning his paper for, "I have received no feedback from anyone during the last five years of my project other than my direct collaborator".

Besides avoiding the sadness I felt when asked to provide this feedback, the more immediate thought that came to mind was: how much has all of this cost and why are there no evaluation methods of any sort applied in prolonging such projects? The work itself was highly interesting, be it somewhat difficult to comprehend at times, but there was something missing. Nowhere in the papers I read could I find the magic sentence that told me what I might be able to do with the researchers' findings. This was a mistake in my view. This lack of invitation to participate in a discourse is typical in our work. It is because of this that I do not attend as many conferences as I should, as I feel like an outsider during most concerts and presentations. No one wants me to truly enter his or her territory. Why is this?

As said, this has sociological reasons. Furthermore, our higher education systems seem to promote individuals' discovering their own originality which is a good thing. However, when this originality leads towards their claiming and partitioning off a stake of land in an area where theoretically a goldmine might be found, I consider this statistically to be a fairly weak scenario.

Certainly, there is nothing more gratifying than individual or small group achievement. As my life is divided between artistic and musicological work, I can support this feeling with ease. Still, the last thing I want to do is offer a work on a concert programme that will achieve the inevitable, "That was interesting" remark from anyone with whom I speak without any inquisitiveness as to what I had done and, more importantly, why I had done it. Similarly, being successful in publishing an article or book is no goal in itself. It is the debates that take place afterwards that count for me, as this means that my ideas, however weak or strong, have had an echo in terms of the development of my fields of interest. They therefore have a place in an holistic environment. I articulate which environment is appropriate as best I can in everything I publish as well as everything I compose.

It is my firm belief that many areas of electroacoustic music have become quite fragmented due to the island mentality. This fragmentation is made clear at events such as conferences and festivals, on radio broadcasts (other than those of truly popular

music). But things might be less fragmented if we: a) step back a bit from our own work, and b) become more involved with the contextualisation and applicability in this work, that is, become more holistic. These are the subjects of the rest of my talk.

3) From the Point of View of the Music

The first of two areas in which we will investigate how strong the island mentality is present is in the world of the music, itself. To spill the beans immediately, the situation is not as bad as it might seem. Although the drive to construct new models or languages of music continues in the naughties (the first decade of the century), there are clear cases of clustering, some obvious, some less so. I shall discuss four in some depth before glossing over a few other examples, concluding with remarks based on personal artistic experiences.

The "Bourges Sound" Let's begin with a fairly easy example, something I shall call the "Bourges sound", although I run the risk of alienating a number of people by using this expression. The annual festival at Bourges has been around for quite some time. It has brought together hundreds of electroacoustic musicians. This deserves great praise. What is particularly odd about this festival is how little public outside of those involved actually attend events. I shall return to questions of accessibility later. What is particularly interesting about the festival is that it attracts a great number of compositions that offer a certain amount of resemblance. Whether it is due to previous prize winners' works, or the fact that Bourges is located in France, I cannot say, but there is a particularly "French" sound to a number of works (although by no means all of them) that win prizes each summer.

But what do I mean by sounding particularly "French"? Ironically, what this means is highly predictable; it has to do with the country from which *musique concrète* came into being. Whether we call this music "acousmatic", "*concrète*" or even "electroacoustic" in the sense it is often used at the Groupe de Recherches Musicales in Paris, there is a certain allure that is founded upon the ethos of their early pioneering pieces, be it with fifty years of experience today. Many such works are of French or francophile origin, especially in Montréal. However, anglophone Canada has taken on this approach to an extent and many in the United Kingdom have as well as individuals in many corners of the globe.

Let's listen to a couple of examples and see if we can get a grasp of what this "Bourges sound" might be.

Sound examples here: Christian Zanési – (Métamkine CD single MKCD011) "Grand Bruit" (1995), Jonty Harrison – 3e Prix International Noroit (Noroit NOR3) "Unsound Objects" (1995), Robert Normandeau – (CD as Harrison) "Spleen" (1993).

It is interesting to note how the French Canadian, Normandeau is fusing this sound with that of other musical styles.

In 1994, I published an article entitled "The 'Something to Hold on to Factor' in Timbral Composition" (Contemporary Music Review, 10(2): 49–60). In this article, I suggested that to make music accessible, offering the listener something(s) to hold on to might be of some value and found a number of these things to hold on to based on multiple listenings to a large selection of recorded compositions. Without covering my other subjects too soon, some of the things to hold on to in this type of composition now follow. A) There is often a certain musical narrative or programmatic quality present, in many cases associated with the principle of radiophonic composition. B) Homogeneous and possibly contrasting heterogeneous sounds and textures are carefully sculpted in such works. C) The number of textures rarely exceeds four sound types at once. And, particularly in the case of the French, D) the presence of narration is a common factor guiding the flow of a work. Needless to mention, true musical surrealism was born in *musique concrète*. Therefore another category, E) the game involving reality and semblance of sounds real and abstract, recycled or re-presented is a key to many such works, is worthy of mention. This is a description known as a "broad brush" avoiding too much detail, but it is one that holds this corpus of music together. Many of these composers openly admit their allegiance to a "French" (or whatever qualifier) School. Others may discuss their pieces in complete isolation. The description above at least delineates a fairly substantial corpus of work that could be better accepted as belonging to a family of works, whatever name we finally give them. When I discuss electroacoustic music studies, I intend to emphasise how important it is that this indeed takes place.

Material –> Structure vs. Structure –> Material vs. Holism One other thing that holds the group of compositions together described above is the fact that, unlike most music made previously, electroacoustic music is very much determined by the materials used and how the materials can be manipulated, evolved. As a student of composition, I was taught that the art of music was one based on structures, traditional and those yet devised. The successful composer was someone who knew best how to fill in and develop the structures successfully.

Having worked with dancers for a good number of years, it is interesting to note how their education is quite opposite to that of musicians. Structure, putting it a bit rhetorically, is a necessary evil, often imposed by a musical composition. Few contemporary choreographers are known for building works around structure. Some employ structuring principles, but many others claim that the way they choreograph is based on the "organic" development of the materials they devise. This may lead to structure, but is not a goal *an sich*.

Ironically, the composers of the "Bourges sound" might be seen to be neo-choreographers as it were, developing pieces through the evolution of carefully recorded, synthesised and manipulated sound material. It is perhaps because of this – and the fact that composers are fairly clear about this *modus operandi* – that so few reasonable analyses have been made of this music. Analyses are more common in cases where structure or structuring principles are playing a leading role. Whether we call this formalised music (and we all know that material can be formalised, too), algorithmic composition or something similar, we are talking about another beast in general. This beast tends to come from many of our centres of higher education where quantifiable

aspects of music are easily articulated and marked. This needn't imply that the material is totally subservient or, worse still, replaceable, but it does imply a totally different approach to composition than those who are material moulders.

We have heard examples of works where it appears that the material is leading. I shall add one here by the British composer, Peter Bowcott where the entire piece is based on an unusual sound source.

Sound example here: Peter Bowcott – "Squashed Absence" (ca. 1991)

If you haven't guessed, that source was a squash ball.

The following example is one in which structuring principles have taken the lead.

Sound example here: Igor Lintz-Maués – El Ak Mus (Ha Ha CD1015) "Antes o Mundo não Existia" (1989).

Clearly this is a very different piece with highly differentiated use of materials, although that is by no means necessary. The fact that the material is so differentiated brings us to the heart of one of the great problems of electroacoustic music, the wealth of potential materials. Yet, given the fact that some algorithmic composition allows for different materials to be used in different versions, is there not a parallel to be found here with the use of the sonata and other forms in the contexts of highly diverse instrumentation? What I believe is important here, something which brings us back to the key goals of this paper, is that there seem to be very few feedback mechanisms, including perhaps aesthetic ones, to comment on the success of these structures as well as the use and development of materials. We seem to have a less sophisticated feedback mechanism in this still somewhat revolutionary music than we do for more established varieties. This makes sense, as the latter are established, but as long as these mechanisms (also true for a great deal of instrumental contemporary music) do not exist, both island mentality problems and marginalisation issues in terms of appreciation will continue. One thing is certain, there is more of an island mentality in this second category of compositions than in the first. I have no idea why this is so other than the fact that those unacquainted with electroacoustic music find it much easier to gain an appreciation for the former than the latter in most cases.

But to coin a trendy term, there is a third way, one that has come into being due to the birth of electroacoustic music, namely a more holistic work where aspects of structure and material are born of the same compositional principles. Such work represents new ways of approaching structure and material and call for new musical paradigms to be developed. Perhaps the key approach associated with this third way is that of the many composers employing granular synthesis techniques in their work. Let's listen to an example.

Sound example here: Barry Truax – Digital Soundcapes (Wergo CD 2017-50) "Riverrun" (1986: 3 short fragments from a ca. 20' work suggesting tidal development).

Although I doubt this third way will ever replace either of the others, it does represent a leap forward in musical thought. Those applying this concept should share their ideas even more actively than they already have done.

The Notion of "Layering" in Electroacoustic Composition Contrapuntal composition is by no means new, nor particularly unique to any music I am discussing today. What is interesting is the diversity of new forms of horizontal approaches to composition which have come into existence in recent decades.

When I discuss my views of inadequacies of music education, particularly within the field of electroacoustic music, one of my hobby horses is the often-found separation of art music and popular music histories. I am often told that they have nothing to do with each other and, despite the fact that some digital instruments are common to both, they should be kept apart. I disagree.

Remembering our definition of electroacoustic music, much of today's and yesteryear's popular music does not fit within the definition. A good deal of its experimental forms do and even some very popular ones including today's techno. What fascinates me about the success of a good deal of this music is the control of how many sound layers musicians believe their listeners are able to soak in at any given moment. Let's listen to two highly dissimilar examples.

Sound examples here: Graham Lewis and Bruce C. Gilbert – Dome (Dome Records, Dome 1) "Ampnoise" and Denis Smalley – Impacts intérieurs (empreintes Digitales iMED 9209-CD) "Valley Flow (1991/92: example from the latter half of the work).

These may sound quite different. They are based on the same generative principle of layering based on a clearly identifiable set of sound materials. In fact, I am of the belief that these examples represent one of the most successful formulae for electroacoustic composition in general. Although it might be said that this is very difficult to conclude in an area as diverse as electroacoustic music, nevertheless layering offers something very tangible to hold on to and allows listeners access to the detail of a work.

I am certain beyond a shadow of a doubt that these musicians are unlikely to ever meet, but I believe it would be truly interesting to create more opportunities for "art" and "pop" musicians to get together and discuss focused subjects like this one. Perhaps here, too, another form of holism might evolve.

Studio vs. Live or Interactive Music-making This fourth category is quickly reaching retirement age, but before it does, it still has a clear *raison d'être*. Although I know of few experimental pop musicians who would qualify to join the "French School", several would qualify for the material or structure debate. Similar to the case of "layering", electroacoustic art music and popular music truly share another compositional approach, namely the difference between those who thrive in the studio and those who thrive on stage. Stating the obvious, some in both worlds do both well, but this talk has been prepared to identify clusters.

This category is by no means new. In the early days of electronic music, as it was then called, there were people who were associated with "live electronics" and those who were associated with the toil of the analog studio. The former group consisted in people who had an interest in improvisation and somehow also had a knack for creating "real-time" electronic instruments. The latter group had to learn all of the tools of the electronic music trade, spending months creating the six minute work.

Today, there are people involved with interactive (human or digitally-based) musical environments, DJs not being the least important, and those who spend hours on their machines (hours, no longer months) dealing with the minutiae of sound and structure. A psychologist would most likely classify these people as less spontaneous than the interactive artists.

I would now like to play two examples to demonstrate the difference in sound result in pop music, but before I do so, I should state that all the "Bourges sound" examples qualify as studio examples and a number of MIDI-based pieces are very much of the real-time sort. (One aside I must share with you at this point concerns this notion of real-time, one also close to retirement. Some systems calculate faster than real-time, where does that leave us?) .

Sound examples here: The Chemical Brothers – Surrender (Virgin Records XDUSTCD4) "Under the Influence": studio recording; idem – Live at the Social (Heavenly Records HVNLP13CD) "Introduction" + "Meat Beat Manifesto – Cutman"; live mix.

I can imagine that we all can hear that the difference between concentration on detail and electroacoustic virtuosity in a club situation is no different than the other examples; it is the subject matter and listeners' public which are.

I would like to suggest, again, that studio-based and live or interactive artists should find commonality in their wares and share them, particularly across genre boundaries as this would lead to a much more open aesthetic environment than the somewhat provincial one in which many of us work.

A Few Final Examples There is no need to attempt the impossible, listing those areas of electroacoustic music where several are working, mainly independently, where common issues might be pooled. It is clear that those interested in soundscape composition do meet and share their views. I believe that those involved with granular approaches to sound generation and organisation do as well. It is those areas of material, structuring, even terminology in general where more cohesion could be useful.

Why do I believe in this so passionately? I don't really care whether composers work themselves into total obscurity, although I do believe that a good deal of work has deserved a better lot than it has received during our "Kleenex Era" (use once and throw away – a term I gladly borrow from Maurice Fleuret). It is access, that is, winning audiences, that is most musicians' greatest problem, which brings us back to the islands …

Perhaps all of this has to do with our attempting to create our individual niche. Is this synonymous with success these days? What does this word, "success", mean anymore in an era where the combination of immortality and music has died? I believe that in today's world success has more to do with communication and community than marketing or attempting to achieve the redundant "masterwork" status.

My Own Work Being given the honour of delivering this keynote talk, I feel that I am obligated to demonstrate whether I practice what I preach. I have tried to do so. Sometimes I have failed; sometimes I have succeeded. What is certain is that I have not found the ideal formula yet, although I feel I am closing in on it! Since the beginning of my career, I identified that experimental music on its own – that's what I called it then – was more or less destined to be marginal. I therefore joined forces with artists in other media, especially dance, theatre and video as well as installation artists, reaching out to very large audiences, but not as the sole or central artist in each production. I have been accused of putting water in my wine. This has not been the case. I *have* put water in the wine of the success formula in traditional terms, for in reaching these greater audiences, and in my own modest way, having that audience expect unusual sound design in cross-arts contexts, I have made a more structural mark than a personal one. This achievement was very satisfying until I realised that I was becoming an international gypsy leaving this modest mark hither and thither, but not creating a continuity of expectation in any particular city or venue. I therefore decided to establish – on a much smaller scale than I was used to – my own groups. The goal of these groups was to be able to create pieces that were flexible enough to be moulded to the specific circumstances of performance, combining studio work and live interaction.

The first of these ventures was a duo called *La Zététique* with the highly talented composer-performer Jos Zwaanenburg, known for his live electronic extended flute techniques. We had great pleasure in collectively devising works, but found, after five years that our streamlined performance still was too close to the traditional concert practice we were attempting to modernise. We were trained musicians at the end of the day.

This led to the birth of my current company, *Idée Fixe* – Experimental Sound and Movement Theatre, of which I am artistic director. This is a cross-arts company which collectively devises work normally involving a good deal of technology. Furthermore, as the company makes series of works based on an everyday theme – a day in the life, the contents of a house or a flat, the joys and perils of travel – we also work with groups in a variety of communities (e.g., youth, elderly or disabled groups). In such cases we collectively make pieces on the same theme either to be performed back to back with our own work or to be fully integrated with the company's work. This time-intensive work is extremely successful in terms of making innovative art (the term I use these days) more accessible to people of any age, background or ability both in the sense of enjoyment or even participation. We do not take top of the line computer systems into community youth centres as this would have a highly alienating effect, leaving people desirous to continue doing something after a residency without the means to do so. I have to admit that it is hard to combine this idealistic, important work with my other responsibilities, but Idée Fixe represents something many of us should be doing as company members are

constantly evaluated in terms of our intention and reception by professional and other interested parties alike. Suffice to say that Idée Fixe could never have evolved without the pioneering work of Boal. In this way a wide audience and a wider "user's group" can be developed.

I will ask your further indulgence while I discuss two final examples. I have always been interested in what is known as text-sound poetry and have often used spoken text as part of my musical works. These final examples both have to do with Brazil as I have learned a lesson from the last time I was here in the 90s which I am applying now. During my last visit several of my works were performed in various festivals and venues around the country. It was thrilling to see how many people attend contemporary music concerts in this country. I honestly had never seen anything like it. In Belo Horizonte, I performed my best-known piece entitled "Rock's Music" which is solely based on the texts of Gertrude Stein (Stein = rock in German). I announced beforehand in Portuguese that the piece involved texts in English, mostly unintelligible, sometimes offering a bit of sense or nonsense for those listening carefully. I also made it clear that it was a piece of music based on the sounds of these wonderful texts I had recomposed in a live voice + stereo recording score. After performing about two minutes of this twelve minute piece someone got up in the rear of the hall and started shouting that if I could read that bit of Portuguese I should do the entire piece in Portuguese as well. Suffice to say that there was much screaming and the person in question was hauled away. I finished my piece and received a huge ovation. The public clearly appreciated my sticking with it under those unusual circumstances.

My Portuguese has not improved, much to my sadness, but the piece you will be hearing during this week has been especially made for Brazil. I am commencing on a suite of pieces entitled "You Don't Say". This expression is ambiguous. There is the known cliché, you don't say, which means "do you really mean that?". But as I am interested in the musical properties of speech, this also means that it is not about saying, it is about sounding. The piece "Telenovela" which I have made for this occasion does involve me speaking, again in English, during part of its performance, but its main material consists of two made up conversations from a possible telenovela episode. Being true to a period called post-modern which should have ended long ago, "You Don't Say" concentrates on the deconstruction of the conversations. As I state in my programme note: "Do conversations become more musical, the less sense they make? I, for one, have no preference". I will leave it to you to decide whether there's music in a telenovela text or whether I should have stuck to English after all. My application of technology here is by no means sophisticated. My goal is, instead, to make something with an entry point for anyone. Returning to our main subject, if asked what the context is of the composition and how other composers could apply a similar approach, I could easily speak to you as long on that subject as I am on this much broader one. In this way, I believe there is both an evident context (this can be used in the plural concerning many pieces) within which this new work belongs and that its relatively simple composition procedures could easily be put to entirely different uses by other musicians.

4) From the Point of View of Electroacoustic Music Studies

To jump right to the heart of the matter, the situation with regards to electroacoustic music studies is worse than in terms of the music. Here one would have to observe the work from a very great distance to make links that researchers and developers often do not make themselves. This is, unfortunately, no trivial exercise.

I do not believe that we need to investigate either how this has come about or why it is so. I also am not here to go out of my way to criticise as that does no one any good. What I would like to demonstrate is that the combination of contextualisation with the search for applicability will clearly help in solving this problem. I also intend to demonstrate that the inclusion of evaluation within our various studies will assist in the success of projects' linkage as well as their own clarity.

Hardware and Software Development Actually this is the one subject that goes beyond the realm of this paper, but I do believe a few remarks may prove helpful. One of the thrilling things these days is how generous many colleagues have become in terms of sharing their wares. This is one of the most exciting aspects of today's age. What troubles me is, both in presentations as well as pulling software off the internet, that I am told what something does, but not what it might be used for. This implies that the fact that something does something might be in itself sufficient. I often have to comment on remarks like this to my own students or those where I am external examiner. What these people do may be, in itself, complete, but when I don't know what I can do with it or why it needed developing in the first place, I tend not to be completely satisfied.

I have often joked about the ultimate fractal, neural net composer as I am unsure whether fractals or any other extra-musical information are that useful to music. What I do know is that talented composers seem to be able to apply these things creatively if they have the vision and ability to do so. Iannis Xenakis did not need number or set theory to compose his works as he had already defined his sound universe. They did turn out to be useful tools to him and others once this was clarified. Therefore, his theory can, in fact, appear weaker than his work. This is so until it is clear how the theory is applied in his work, that is, it does not run it. Instead it is used as a tool, perhaps an efficiency tool. This is in contrast to those people who have, for whatever reason, allowed technology to lead art.

I suppose what I am attempting to point out is that development for development's sake may lead to something extraordinary, but probability is against it. Therefore defining applicability as best one can is my suggestion here. When an engineer is doing the designing and feels incapable of describing application, an artist should be brought in to discuss and test it. Here is our first example of the advantage of evaluation.

One exciting aspect of hardware and software today that I would like to mention is the convergence of the commercial and non-commercial markets. I openly admit I could not live without Pro Tools or its equivalent for the way I play with sound. But this commercial product does not serve my purposes and therefore a variety of programmes, commercial and freeware or shareware, supplement this centrepiece of my work. Pro Tools was clearly originally intended for the pop recording studio. Isn't it odd how it is also useful for someone so far away from their key market? The more we can understand and identify with what is available, the more user groups will be able to share

experiences, no matter how "obscure" the hardware or software tool involved. Fortunately, this is currently growing quite rapidly. In this way, another type of island clusters will evolve.

Other Applied or Theoretical Concerns This, and the following area, history, are where I feel more coherence is truly needed. As an editor of an international journal, "Organised Sound", I can tell you how difficult it is to get together just six or seven articles on any given theme. Once we succeed in reaching this number, the articles sometimes offer absolutely no links despite our request. You could charge me and my colleagues for not facilitating these links, but then the articles would be partially ours in all cases, which is by no means our desire. It just seems that the "island mentality" is alive and well in electroacoustic music studies.

I would like to have you look at a slightly updated list that I have used in the past of subject areas in what I have called "systematic electroacoustic musicology".

• new theories concerning sonic art
• categorisation of sounds (micro- and macro-levels)
• families of approaches/works
• sound (re)synthesis
• sound manipulation
• the morphology of sounds
• spectral analysis
• new instruments
• interactivity/performance interfaces
• new protocols for digital control of sound
• new approaches to performance (contexts)
• multimedia
• sound and space/acoustics
• new notations/representations
• new approaches to analysis
• ordering of sounds (micro-level)
• ordering of larger electroacoustic musical entities (macro-level)
• artificial intelligence
• modes of listening/perception
• psychoacoustics/cognition
• archiving information
• aesthetics/philosophy/criticism
• etc., etc.

Of course it is no particular achievement to come up with this complete list, if we were to go one step further and subdivide each category, the problems would identify themselves very quickly. The number of subdivisions would often illustrate the island mentality syndrome in its most radical form.

Although I do not believe that most people involved in these areas – and you do not have any idea how important you and your work are – are consciously attempting to be élitist.

Nonetheless, this common attitude of working in isolation unfortunately usually comes across as such to me. It is with this in mind that this conference's musicology subgroup is such a welcome step … even if the musicology of computer or electroacoustic music is so unbelievably huge.

Many of you will feel that email bulletin boards with a theme of common interest are solving the question, but how often have you been disappointed by them? I realise how new and relatively untested the concept is, but until we can refine these lists to focused subjects, we will end up with the superficial or piecemeal discussion groups we currently have. The infrastructure for more exchange is getting better on a daily basis. Let's take more advantage of this.

Before moving on, I do want to spend a moment discussing feedback and evaluation, as it is particularly relevant in terms of the current discussion. Something I do not understand, when reading article submissions or even working my way through doctoral dissertations, is how rarely anyone asks for and is provided with feedback in *any* phase of one's research. Just as in any composition, and we must remember that music is an art of communication, be it one that does not always communicate the same thing to anyone, I believe that a researcher does have an intention when embarking upon and when publishing results of any given project. If this is the case, which I indeed hope, then why not establish whether that which is intended is indeed being received. Furthermore, if we are able to do this – and believe me, it is possible – why can't we investigate what the relevance is of our work as seen through others' eyes. Granted, not everyone can speak on a given subject with the same authority, and this must always be taken into account when dealing with evaluation; still, it is possible to gain insight into the success and pertinence of a project through outside feedback. I believe that it is the rare project that does *not* deserve this kind of procedure. I always apply it in my own research and music as I shall discuss shortly. The notion of an action research model, a term taken from education studies, has been highly documented and defines various alternative methods of gaining evaluative feedback in each and every phase of a given research project. Although the jargon of education studies may seem foreign to many of us, the goals and means are in fact common to both areas.

Even Approaches to History I can imagine for those of you who at one time have studied the history of our music that you most likely studied only the art music side, or for a chosen few, only the popular music side. Few were treated with a holistic diet of history. This rather silly problem is in itself not all that exciting, but it is symptomatic of something much more dangerous. As our community is becoming increasingly diverse and certain individuals are still exhibiting the island mentality, at least to some extent, we are losing touch with the cohesion of this music. This subject should be as much of interest to systematic musicologists – can they be separated from any other kind of musicologist? – as to historians. Have we reached a point of supersaturation in this art, where no cohesion can be brought other than one dictated by the technology used? I doubt it.

I am thrilled to see an increasing number of people studying aspects of electroacoustic music where an issue is being treated with respect to several composers' work. This

represents attempts to pull things together. The "something to hold on to" project was just one such case. This appears in shrill contrast with those historical studies still attempting to prove one of the original pioneers' points of what this music might or is supposed to be. The well-known CEC list has often debated which variant of Parisian 1950s terminology was right then and why. I, for one, would like to leave the traditional visionaries in peace and investigate which of those, or other terms, are appropriate today. We work to an extent without an appropriate vocabulary for this music, impoverished in comparison with those dealing with the music of notes. As long as we are talking about the cookbook (that is, the "how", not the "why") of the making of electroacoustic music, we are fine, but as soon as we talk about what we hear, we rely on the work of very few individuals. Without this vocabulary, achieving a re-evaluation of electroacoustic music, including its developments within the entirety of late twentieth century and early twenty-first century music, will be extremely difficult. Yet this re-evaluation is exactly what is needed.

History does not end fifty or one hundred years ago. We do not need to digest and re-digest the past before being able to gain what is called an historical perspective. Although interpretations of history may evolve as arguments and counter-arguments evolve, we can still attempt to understand our music and its context, even if "the ink is still wet". This knowledge will help tie things together within electroacoustic music, enabling a greater understanding for those within the community and those on the outside who just might like to join it.

And What about the Interface with Society? This subject is very dear to my heart and represents a co-hear-ence question too often disregarded. As a matter of fact, I believe that the key to co-hear-ence can be found in the study of the impact of and relationship to society this relatively young and extremely here and now sort of music is having. I call this the ethnomusicology of electroacoustic music.

A good many types of emancipation have taken place in the last century, not the least of which took place in music. It is not the invention of the twelve tone row that was to change music history; it was the discovery that the sound could be the unit value in certain forms of musical expression. In consequence, the extreme changes in terms of technology, especially in recent decades, would also take their toll as far as music is concerned. But are we truly aware of its significance or its potential significance?

Furthermore, in our contemporary world, multi-culturalism has had its ups and downs in the last one hundred years, particularly in terms of music. What impact has electroacoustic music had in terms of this subject? I await the first major treatise in this area.

This fascinating subject, that is the cultural dimension of electroacoustic music, is like a black hole, yet seems so crucial in terms of our understandings of the potential of this music in an ever-changing world. Electroacoustic music clearly involves the relationship between human and machine, but it still involves the relationship between maker and "taker". Once we better understand the rules of electroacoustic music-making and the impact in terms of reception, we will be much better equipped to help individuals retreat

from their isolated islands. I sincerely hope that, alongside the developing field of acoustic and electroacoustic communication, much more work will be undertaken in this area in the coming years. If we are all involved with designing and studying this music, what about connecting with our (potential) users?

My Own Research Experiences and Current Projects As in the case of creative music work, I would like to spend a few paragraphs on my work as a musicologist. I am not doing this to advertise my wares, but instead to illustrate how I am attempting to employ the concepts I am sharing with you today.

Holism has played a role in my work in many of its forms. First and foremost, my music-making has informed my research; the converse is true without a doubt. In fact, the methodology in terms of my research projects oddly resembles that of my work as an artist. What happened to that image I had as a child of the artist wearing a beret sipping delicious coffee on a Parisian sidewalk?

Evaluation and feedback have often played and now always plays a role in both research and artistic endeavour. This talk has been read by other parties before being presented to you. Suffice to say that I was put in my place more than once during its preparation. All published articles are "auditioned" beforehand and, where relevant, feedback is sought during the devising or proposal stage and throughout any particular project. It is with this in mind that I often prefer to work in groups in any research project as evaluation then takes place constantly from within. But that is not enough. An outside eye is necessary in terms of gaining evidence that what is clear for me or for us is also clear to someone else. Furthermore, given the huge amount of information concerning electroacoustic music, often seemingly hidden, outsiders can make me aware of texts or music I should have consulted.

That's important in terms of my practising what I preach. But how am I attempting to deal with these islands?

After a number of years, and many of you will be familiar with this, of management and bureaucracy taking over my life, I was invited to become a Research Professor at De Montfort University last September. This University (formerly Leicester Polytechnic) has gained renown for its work in cross-arts and innovative musical practices. Recently it was decided that music would focus on music technology. After joining my new colleagues, it was decided to name all new courses after our research group, the Music, Technology and Innovation Research Group. Degrees at all levels will be offered in Music, Technology and Innovation in the future.

This is how the research group defines itself: "To investigate praxis in musical innovation (practice being informed by theory and vice-versa), particularly in the following areas:
- sonic arts/electroacoustic music (including interdisciplinary art work)
- applications of music technology
- acoustic and electroacoustic communication
- popular music
supported by a commitment to:

> • access (e.g., reaching and involving both new/alternative musical
> communities)
> • appropriate studies in musicology"

Members in Leicester include Andrew Hugill, John Richards and myself. Visitors attached to De Montfort University include the composer Howard Skempton and Barry Truax. We intend to increase this base with an increase of staff members, young and established researchers/composers within the foreseeable future.

We are currently involved with three major projects which I would like to introduce to you briefly.

1) Electroacoustic Music Studies: an International Resource Centre – This project would perhaps best be located in a department of library studies in an ideal world, but we are not in the luxury position of having that much support in our field. It is our belief that finding out about software and hardware developments is in general somewhat easier than keeping up with musicological developments. With this in mind, an international consortium has been set up to investigate the ideal form of an international resource centre that would be housed in the Centre for Technology and the Arts at De Montfort University. Currently, colleagues in France, Germany, Canada and the United States are working with me on this system design. We will seek funding for implementation next year. This would allow us at least a reference system to where materials are, and whenever possible, also permit users to gain direct access to them, whether they are in text, image and/or audio format. In this way information will be pooled and people will have a better opportunity to see what others are producing in their area.

2) Updating and Expanding the Musicology of Electroacoustic Music –This ambitious five year project intends to answer a number of questions posed above. Not only will the notion of a holistic electroacoustic music history be investigated in the form of an online learning package, we will also be investigating a number of theoretical as well as cultural questions in the coming years. For example, all things going well, an attempt to create, at long last, a tangible solfège of the sound object will be undertaken in the coming months. This will have musical, musicological and pedagogical implications if we succeed. Furthermore, questions concerning interdisciplinarity in electroacoustic music will be investigated with the goal to identify and describe new paradigms that are arising in our field. Cultural questions will include our joining ongoing work in the World Soundscape Project as well as our initiating work concerning reception of innovative forms of electroacoustic music, both within the popular and art music worlds.

3) New Musical Communities: collectively creating music on the World Wide Web – This project, led by Andrew Hugill, has arisen from his recent composition, "Symphony for Cornwall" commissioned by the Arts Council of England and undertaken with youths in primary schools in Cornwall as well as with the Bournemouth Sinfonietta. After visits to schools around the county, Andrew set up a website for the sharing of information, both sound recordings as well as a "composition diary" throughout the making of this piece and beyond. Children contributed recordings of a variety of sound sources, listened to them and fed back their views. Based on this exchange, several of these were used in this composition; several also influenced the composition for the large chamber orchestra. Hugill's ideal is for a more collective and accessible approach to composition to become

commonplace on the internet. In the meantime, he has excited hundreds of children who all attended the finished product at Cornwall's main concert venue. It will come as a surprise to very few, that many of these young people knew more about the relevant technology than their teachers and had more affinity with this type of music-making than their elders. Is it not time that the music curriculum changed for people of all ages? I bet there would be more coherence if we were all more aware.

I would also like to add that most postgraduates are investigating music-making and research simultaneously in a chosen field. These range from hip-hop to applications of randomness in pop music to new analytical tools increasing understanding of methods of performance of free jazz to those more closely associated with the electroacoustic art music community.

The Moral to the Story
I realise how much has been covered in this talk. Yet the breadth of our area demands it. Until we can sit together in focused group discussions, whether on site or virtual ones, we must create more paths to connect our islands. Island clusters are a minimum standard to be able to move forward. However, I am not requesting anyone to join a group for the sake of it. However, one should ensure that *potential* links are communicated through a clearly articulated statement of the expected relevance of any research one is pursuing in computer music including creative work. If we do so in the future, I will be able to end such tirades and concentrate on telling a tale about a well-connected, focused field in the not too distant future.