
CHROMA 26-27

**Newsletter of the Australasian Computer Music Association, Inc. PO Box 284,
Fitzroy, Victoria, Australia 3065**

Double Issue Number 26-27 March 2000 ISSN 1034-8271

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EDITORIAL

Welcome to this bumper double issue of Chroma. It's a double issue because I was too busy to get issue 26 out last November on its own, and by the time February rolled around, we had enough material for two issues. Hence this double issue. It's also the first issue of Chroma to be released on the ACMA website simultaneously with its publication in paper form. If you're a paid-up member of ACMA, you'll be receiving this text printed on responsibly recycled, easy-on-the-eyes, pleasant, delightfully tactile tree by-products, and personally delivered to your home by a uniformed government agent. The rest of you can download it, put up with the world wide wait, and ruin your eyes with those glary screens. Can you think of a better incentive to join ACMA today?

The big news is that we have a **NEW WEBSITE**, (www.acma.asn.au) and a **NEW MAILING LIST**. With the criminal destruction of the La Trobe University Music Department, it became necessary to move our electronic locations. This was ably accomplished by Ian Whalley. Full details are at the end of this issue.

The big event for ACMA in 1999 was the incredibly successful Imaginary Space ACMA conference, held between July 7 - 10, at Victoria University of Wellington, and organized by the utterly heroic and totally unflappable John Young. All of us who attended that event owe John and his team a large vote of thanks for their services above and beyond the call of duty, and that's understating the case rather severely. To start off our issue, we have a lengthy review of the conference by Gordon Monro, and two shorter responses to it by Ian Kaminskyj and Terry McDermott. Then, to cap it off, we have a page of photos from the conference dinner, taken by Ian MacDonald with his new digital camera, and selected by yours truly. (Who says we're not at the cutting edge of new technologies?) Originally I wanted to put snappy captions under each photo in the manner of the nightclubbing mags, but my lawyer convinced me that, in the interests of avoiding libel suits, the photos should be anonymous. So they are. The guilty parties can recognise themselves, and have a good laugh, hopefully.

Andrew Lyons brings us an interview with one of the true pioneers of Australasian Computer Music, Ian Fredericks, and this is followed by Garth Paine's report from last year's Ars Electronica in Austria. There's also a report from Garth on the EuCuE concerts in Montreal, for which he curated the Australasian component, and his curator's note for those concerts. In his note, he mentions the disastrous state of Electro-Acoustic Music in the tertiary sector in Australia. This is a topic that should concern all of us, as we see the gradual de-institutionalisation of our discipline. Is Australia in the lead here? (Or, to paraphrase Chris Mann, are we being used yet again as an out-of-town tryout?) Will this phenomenon be seen worldwide? Or is it simply a case of short-sightedness on the part of Australian administrators and the educational establishment?

This issue also includes far too many reviews of new electronic and experimental CDs by yours truly.

When I asked for CDs to be sent for review a couple of issues back, I didn't anticipate getting over 160 of them! Reviewed here are 36 of the most interesting, or at least the ones that somehow managed to filter to the top of the pile by deadline time. I now have only about 125 CDs left to listen to. Lucky me.....

The issue continues with information on the next ACMA conference, interFACES, which will be held from July 5-8 at Queensland University of Technology, Brisbane (an institution which still very much supports music and technology), organised by the very capable Andrew Brown. Those who attended the last ACMA conference in Brisbane, in 1996, know that Andrew organises a pretty boppy show, and I'm sure that this year's conference will be just as enjoyable. Besides which, there's that wonderful Queensland winter weather.....

Immediately after the Wellington Conference, John Young and Co. gave a three day workshop for secondary school students in sound processing. We have a report from him on that event. Again, congratulations to all the crew in Wellington!

We also have some vital survival information for our Australian members regarding the introduction of the GST, the new Tax Deductions for Musicians ruling, and the new Pay As You Go tax deductions, all of which will radically affect computer music in Australia. The info we include is general information only, and is not legal advice and should not be relied on as such. Seek professional advice, take two Bex, have a cup of tea, and a quiet lie down.. -Warren Burt, editor

OOOPS!

Apologies to Marc Chesterman. In our last issue, some dumb proofreader (me) got the title of the article about his Never Look Up installation wrong. It should have been S(a/i)mple Music. Sorry, Marc! It won't happen again.

An acousmatic experience

Gordon Monro

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The 1999 Australasian Computer Music Association conference Imaginary Space was held on July 7-10 in the Music Department, Victoria University of Wellington. The conference was very ably organised by John Young and his team, and apart from the usual very welcome opportunity to find out what people in the region have been up to, there was an added bonus in the form of a concentrated exposure to "acousmatic" music. The keynote speaker was Jonty Harrison, one of the leaders of the British acousmatic school, and we heard more than a dozen pieces of acousmatic music in the concerts.

The conference extended over four days, with about 45 participants including one from the USA., two from Sweden and four from Britain. We had a keynote address, six paper sessions, a panel discussion, and no less than 12 concerts (including late night sessions).

Electroacoustic music is flourishing in New Zealand. There are at least four main centres (at which postgraduate study is available); from North to South, Auckland, Waikato, Wellington and Christchurch (apologies if I have omitted anyone). It has been suggested that this strong position is due in part to the fact that Douglas Lilburn, a leading New Zealand composer of the post-war period, was deeply involved in electronic music, but the present-day activity surely owes more to the energy and commitment of people like John Young.

What follows is a personal report on the conference, followed by my reactions to acousmatic music as

presented at the conference.

The keynote address - Jonty Harrison

Jonty Harrison and Denis Smalley are leaders of the British acousmatic school of electroacoustic composition, and have had an enormous interest through their numerous students. The distinguishing features of the British acousmatic school appear to be the acousmatic attitude and sound diffusion. Jonty discussed both of these in his keynote address, which I will now attempt to summarise.

Acousmatic music is a particular kind of tape music. To quote Jonty: "Acousmatic music on the whole continues the traditions of musique concrete and has inherited many of its concerns. It admits any sound as potential compositional material, frequently refers to acoustic phenomena and situations from everyday life and, most fundamentally of all, relies on perceptual realities rather than conceptual speculation to unlock the potential for musical discourse and musical structure from the inherent properties of the sound objects themselves - and the arbiter of this process is the ear."

An acousmatic piece, then, grows upwards from the sounds used in the piece, rather than downwards from an overall concept. Because acousmatic pieces grow upwards from the sounds, they represent a "qualitative" and "organic" approach to composition, according to Jonty, as opposed to the "quantitative" and "architectonic" thinking of much traditionally notated music, and also much electronic music.

Diffusion, in this context, is an electroacoustic performance art. It is the practice of taking a (typically) two-channel piece and playing it back on many more than two speakers, the performer manipulating the spatial distribution of sound in real time. Jonty considers that this approach represents an organic approach to space in opposition to an architectonic approach, where an 8-channel work (say) is played back over an 8-channel speaker system and all the spatial placing of sounds is worked out in advance.

Jonty discussed several kinds of space. The intrinsic qualities of a sound interact with our perceptual mechanisms to generate spatial implications. A soft sound may be perceived as distant; sounds can be perceived as "big" or "small"; we perceive pitch as "high" or "low". Also, when we record a sound, we capture the environment in which the sound occurs, so we are dealing with a real space which is different from the physical space in which the work is performed. The composer can play games by placing recorded sounds in other spaces to which they do not belong; Jonty calls this combination "surreal space".

Jonty's keynote address raised a lot of interesting issues. I have put a few comments at the end of this article.

The Concert Space

All the concerts were held in the Adam Concert Room, a squarish room with much wooden construction. The front of the room (as it was set up for the conference) was dominated by a two-manual pipe organ. The organisers did call for organ and tape pieces, but none were forthcoming, so the organ stared mutely at us throughout the proceedings. However, the concerts were lit by coloured lights which reflected prettily off the organ pipes.

The sound system was elaborate, fitting the emphasis on diffusion. There were 8 speakers placed in Jonty Harrison's "main 8" configuration: {front} (at either side of a small stage space), {front wide} (about 45 degrees to each side), {far} (to each side of the organ pipes and quite high up), and {rear} (two speakers behind the audience). Additionally there were two side speakers, an extra pair of speakers at the front intended for amplifying live performers, subwoofers, and an array of tweeters suspended over the heads of the audience!

Concerts

Over 60 works were presented in the concerts: approximately a dozen from each of New Zealand, Australia, Britain and North America, and smaller numbers from continental Europe and South America. There were no works directly from Asian countries, though there were some pieces from Chinese composers now working in the USA.

There were over 150 music submissions; John Young attributed this large number to the fact that the music submissions form was on the conference website. The people on the music jury were confronted with five CDs of two-minute extracts! The pieces selected were very varied, though within them the acousmatic pieces formed a distinct bloc.

There was a moderate number of pieces involving acoustic instruments, including three pieces for cello and tape. There were also two pieces for five or six part ensemble and tape. One of these was by the American composer Brian Bevelander, who was present at the conference, and was based on a letter written by an American Civil War soldier to whom the composer is related. It was a very effective piece. The piece *Dolor en Mi* for guitar and tape, by Mexican composer Rodrigo Sigal, was quite strange. It combined virtuosic guitar playing with conversations in English and Spanish, bits of folksong and other sounds on the tape. The piece stopped, we all applauded (including the sound diffusion person), and then the tape started up again with recorded applause and the piece went on to a new section. Despite the title and the program note, which begins "Pain as the source of so many things that we depend on each day...", most of the piece seemed quite cheerful to me.

Also among the live performances were two pieces by Australian composers who always come up with something original: Warren Burt and Greg Schiemer. Warren's piece (*Double Dachshund Memory Trace*) used a computer program imitating an analogue synthesizer. Greg's piece could only be presented in part, as it was a collaboration with Thorin Kerr and Sean Bridgeman, neither of whom could be present. What we heard was a live feedback piece using the Lake Huron audio workstation and timpani as resonators. (It is also the first time I have seen a kettledrum used as a mouse mat.)

Terry McDermott (Melbourne) presented a different form of live performance with his exstatic project, where Terry acts as a meta-disk-jockey, controlling a computer which in turn carries out real-time spatialisation and sound processing, using software written by Ross Bencina. The source material was tape music from many people. Unfortunately Terry's borrowed computer apparently had hardware problems, and after a little while it refused to play any more. This was one of only a few hardware failures: the playback of an 8-channel piece from a ProTools system had to be abandoned, and in another piece, the cello's A-string frayed into unusability. In these two cases the performances were rescheduled.

I will just mention a few of the 40 or so tape pieces, and I am leaving comments on the acousmatic pieces until later. The two Swedish composers present at the conference, Jens Hedman and Paulina Sundin, contributed an attractive jointly-composed piece described as a "musical tribute to Stockholm". John Elmsly's (NZ) piece *Soft Dawn over Whispering Island* made use of environmental and instrumental sounds, together with the resynthesised call of the kokako (an endangered blue-wattled crow).

The American composer Elaine Lillios' piece *Arturo* is based around an interview with a Tarot card reader. The words were ridiculous at times: The Tarot can predict death..., but the sounds were good and often related to card shuffling. Lo Yee On's (China/USA) piece *Portrait of Timbre as a Wind Wood Dove*, inspired by a poem of Gerard Manley Hopkins' called *Peace*, was largely abstract, but with discernible bird calls. Ian Whalley (NZ) was commissioned in Japan to write a piece for a general orchestra-concert-going audience which would be technically sophisticated but not "sound electronic". His solution to this difficult problem involved sampled sounds (crowds, drums) and also "instrumental" sounds produced by the Yamaha VL1 physical modelling instrument. I felt that these last sounds didn't quite work: they still felt a bit bland to me.

Two Australian pieces which are both parts of projected larger cycles are David Hirst's *Mon Dieu*, based on David's childhood associations with religion, including church-run cricket and tennis games, and

Anthony Hood's Humidity I, a piece based on cicada sounds, which as he says "dominate the sonic landscape" of a Sydney summer.

There were several videos, of which perhaps the most memorable was from Brigid Burke (Melbourne); it contained extraordinary images painted by Brigid, largely abstract, but with traces of eyes and faces. The sounds were mostly clarinet-derived, but I could hear parrots, dogs barking... The videos reinforced my opinion that sound plus video is a completely different artform from sound alone; adding images is not a solution to the "problem" of tape music.

Finally there was Australian Garth Paine's interactive installation, a space with microphones and speakers in which sounds made in the space were put through a granular process which was controlled by the movements of people in the room, using parameters such as grain density and amount of pitch shift. This worked well and was fun to play with.

Papers

There were 17 research papers and two studio reports in the conference proceedings, though not all of these were presented at the conference.

Approximately half of the papers had a substantial technical focus. Tim Kreger and Eduardo Miranda had papers about musical uses of cellular automata. Ian Kaminskyj talked about "tone signatures" of acoustic instruments in the context of automatic classification of instrument textures. Oliver Hancock talked about musical gestures generated by a simulation of a sandpile. My paper was on musical applications of the wavelet transform. Greg Schiemer presented three papers: two describing work done by his group on the Lake DSP project, and one describing a project involving his A4 MIDI Tool Box in collaborative performances with two Indian musicians. Greg produced the best metaphor of the conference: in describing how difficult it was to get complex code into the very small program memory of the A4 chip, he compared the endeavour to seeing how many Tongans would fit into a VW.

Although all of these papers were quite technical, they were generally oriented towards musical composition; indeed Ian Kaminskyj commented that he felt he was the only non-composer at the conference.

There was one psychoacoustic paper, Denzil Cabrera's reporting experiments on the perception of the volume of sounds as "big" or "small".

There were two compositional papers: Terry McDermott's paper described the exstatic project from both an artistic and a technical viewpoint, and Andrew Lyons talked about the philosophical underpinnings of his work Schwarzschild for sound and image.

There were several more general papers. Warren Burt discussed the conditions of performance of electroacoustic music in Australia. The British have been trying for 20 years to set up a National Centre for Electronic Music. (We learnt at the conference that funding is again not forthcoming.) The model of a large installation such as the Acousmonium of the Groupe de Recherche Musicales may not be the way to go. Warren called for the use of smaller, lighter and cheaper systems, enabling many smaller-scale performances, instead of putting enormous amounts of effort into one big concert.

There were two papers on musical analysis. Michael Norris contributed a thoughtful paper on possible future directions for the currently very undeveloped analysis of electroacoustic music. Mathew Adkins discussed acousmatic music; I will comment on his paper later.

Finally, in the last paper of the conference, John Elmsly gave an affectionate commentary on the electroacoustic work of John Rimmer, who recently retired from the University of Auckland after a long and distinguished career.

I had to miss most of the panel discussion. All I can report is that the perennial subject of audiences came up. Terry McDermott reported that the exstatic project did a performance in the chill-out room of a techno rave. Although much of the source material was similar to the pieces at conference concerts, and the audience was very different, Terry got an enthusiastic response.

Acousmatic music

These are some personal comments on the British acousmatic music presented at the conference. I have had little contact with this area, and it was good to have a concentrated exposure to it. We were fortunate to have not only Jonty Harrison, but also three other British electroacoustic composers, Mathew Adkins, Robert Dow and Tom Williams. The first two are squarely in the acousmatic camp; Tom Williams has a somewhat different aesthetic.

The acousmatic approach originated in France and spread to Britain via Denis Smalley. It is alive and well in Wellington, thanks to John Young. It appears that the term "acousmatic" used to imply that the sounds used are selected for their sonic qualities only, without reference to whatever produced them. Thus the sound of a train was not intended to bring the concept of "train" into the mind of the listener, but simply to present an interesting combination of rhythm, texture and timbre. This is a radical move, and it was not sustained: when one hears the sound of a train in an acousmatic piece one is allowed to think of a train.

The sounds used are from everyday life: footsteps, trains, car doors (though one conference participant claimed to know which sound effects CD the car door slams came from). The sounds are often noisy, with sharp attacks, and retain these qualities under the transformations used. This certainly gives a "concrete" character to the works, but leads to overuse of what I think of as the "kitchen-sink gesture": a fast-moving noisy gesture which sounds as though the composer sampled everything within reach, including the kitchen sink. Not all the acousmatic pieces were like this, Jonty's own Streams being an honourable exception.

Inasmuch as the acousmatic pieces were "about" anything, they were about the contexts of the source sounds, and thus about everyday life: a train journey to work; the contents of the composer's kitchen cupboards. Sometimes the results were larger than life. The piece by David Shepherd (NZ) claimed to be about a day in the life of the composer, but it must have been quite a day: it sounded as though the composer had at least been shot at, blown up and kidnapped by aliens.

Apart from everyday life, the other concern of the acousmatic pieces, judging by the programme notes, was the relationship between the real and the unreal. "The boundaries between the real world and unreal worlds become blurred - eventually we begin to recognise the unknown." (Pete Stollery, programme note to Peel.)

With the exception of Graham Hadfield's piece Io (and arguably Francis Dhomont's piece Phonurgie, which used sounds from exotic cultures) there was a resolute exclusion of wider extra-musical references. One conference participant suggested that inasmuch as art music has neglected everyday life, the acousmatic composers are redressing the balance. One could also argue that we are deluding ourselves if we think that by calling a piece Io we understand anything about the moons of Jupiter, or that by referring to a text about the effects of war (as in my Lament over Jerusalem) we do anything for world peace. However, there does not seem to be anything political in the acousmatic rejection of wider contexts. Presumably, then, the focus on the mundane arises from using everyday sounds and "relying on perceptual realities rather than conceptual speculation". I have to say that I found it rather introverted, even claustrophobic.

This expression of introversion was strengthened by Mathew Adkins' paper "Acoustic Chains in Acousmatic Music". With considerable theoretical background, Mathew gave examples of similar sound sources, or similar (abstract) sounds, being used in different acousmatic pieces. If I understood correctly, a set of such similar sounds forms an "acousmatic chain", and hearing one member of the set is supposed

to evoke the other contexts in the set. Thus a new acousmatic work acquires "meaning" by reference to previous such works.

Diffusion is clearly an important and valuable part of the acousmatic genre, and it was fascinating to watch Jonty applying "vibrato", moving sliders rapidly, to enhance the effect of a choppy passage. Nonetheless, someone (I think it was Lea Collins) pointed out that Jonty's argument for diffusion was also an argument in favour of real-time signal processing: it seems inconsistent to fix every aspect of a piece except the actual diffusion.

Acousmatic music is a coherent genre with a well-established practice, and the exclusion of broad extra-musical concerns at least arises from a consistent approach to sound and to composition.

There is no theoretical reason for fixing every aspect of the piece except the diffusion, but there are good practical reasons for so doing, and when the diffusion is well done, which it was at Wellington, the results are very effective.

I agree with Jonty's assertion that sounds should be taken seriously, not just treated as placeholders in some abstract structure. The acousmatic approach is valuable. Nonetheless, in its pure form the acousmatic approach appears to me to be introverted and self-limiting. The acousmatic approach is valuable, but as part of a composer's toolkit, not the whole of it.

Of course, I may have missed the point completely.

Editor's note: Responses are welcome

CONFERENCE RECOLLECTIONS

Ian Kaminskyj

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It was great to catch up with people again, many of whom I hadn't seen since the last ACMA conference. The warm hospitality of John and all the crew at the university was fantastic. The concerts were really good, although I felt that there were probably too many; I didn't/couldn't attend them all; the schedule was just too demanding.

The paper sessions were of most interest to me. I felt I got some good feedback during my paper presentation and learnt a lot from other people's presentations.

The AGM passed some important resolutions; of most interest to me being the possible full refereeing of papers. Given the strong support of this concept by those who attended the AGM, I hope that next years ACMA conference proceeds along these lines.

Jonty's presentation was very interesting. I still feel that the concerts could be better accessible to the audience if:

- a) during each session, at least one composer got up and discussed their piece both before & after its performance and then fielded questions on it afterward, and
- b) a workshop was held to discuss the underlying software and hardware used to produce these pieces, and
- c) a CD was produced of a small selection of pieces which either came with the proceedings OR could be purchased for a nominal fee during the conference.

Terry McDermott

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It's been a while now since Imaginary Space, but from the perspective of a memory trace, one has the advantage of perhaps gauging the overall feel of the conference: a sort of a distillation of the 'Wellington Experience'. What was it for me? My strongest impression was related to the culture 'shock' (maybe 'buffeting' is a better word) of being in a country which was apparently similar to Australia in many ways, but with many subtle (but perhaps more significant) differences, which were to some extent manifest in the conference.

One strong impression was the aesthetic differences (and similarities) in the approach to presenting work. The Australians tended to do live interactive performances of electronic or algorithmic processes. Warren Burt used MIDI control of synth parameters, Greg Schiemer did a resonating drum skin feedback and real-time spatialisation thing, Tim Kreger had his real-time cellular automata controlling filtering, Garth Paine with his excellent Map 1 installation, and there was also me and my multi-channel DJ setup. The New Zealanders also did live work, but it was more instrumental with tape accompaniment, such as Miriama Young's Caul (clarinet & tape) and Lisa Meridan-Skipp's without a sound (percussion, piano, tape).

The northern hemisphere also had live instruments in some pieces (Diane Thome, Brian Bevelander, Rob Smith- all from the USA).

Of course the tape pieces far outweighed the number of pieces with live elements, and interestingly enough, it was a tape piece that moved me the most- Mists and Voices, Philip Brownlee's radiophonic-style interview with his grandmother. It was emotionally quite powerful, and delicately constructed.

There was always a live aspect to almost all the pieces, due to the fantastic sound-diffusion system- and I would have to say that Jonty Harrison's Streams used the eight channels to spectacular effect. Turn up the volume, Jonty.

I want to keep this short, so here is a brief list of other impressions of my stay in Wellington. Excellent coffee, brilliant musicianship, large range of beer on tap- (better than Australian beer), and the wind has a bit-depth of 24.



Ian Fredericks In Interview:

Ideas of an Australian Spatial Synthesis and Mixed Media Innovator.

Andrew D. Lyons

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Introduction

Ian Fredericks has played a prominent role in the development of Australian electronic music and mixed media composition since the mid-1970's. By establishing both the SEUSS electronic music studio at Sydney University in the early seventies, and the computer music and audio-visual composition and performance group with Martin Wesley-Smith in 1976, Ian helped pave the way for the generations of artists that have since explored this field.

This interview with Ian Fredericks took place in the Sydney Conservatorium of Music composition department on the 27th of October 1998. During the course of the interview he spoke at length in a relaxed way. Areas pertaining to spatial synthesis, synesthesia, and the spiritual potential of art were discussed. This interview consists mainly of quotes from Ian, with occasional introductory remarks by the author.

Technology and Aural Perception

"I think what is happening is that technology is putting us in control as artists of some pretty fundamental or primal perceptions. We have to move away from looking at sound in the sense of physics and more in the sense of what we perceive and how it effects our perception. With the spatial thing, why is it that we can hear sounds in this spherical space around us? It's a primal warning mechanism and it has extraordinary emotional implications to us as human beings."

"We've had it happen in watt concerts that people completely lose it as a result of the types of sound environments that we are creating. People have compared some of these experiences to hallucinatory experiences derived from drug usage, which is a mind blowing thought. To think that we can tap into a kind of hallucinatory mechanism without the person being in some altered state is to me what art should really be about: to explore this kind of perception at this kind of level. At the moment we have only had the barest inklings of this thing and to me its about getting away from this kind of corporeal thing and pursuing perceptions that are only controlled by what the mind can create." *Philosophy and Theology in Art*

"The function of high art in any culture is to provide a manifestation of the spiritual consciousness of that society. I'm not a religious person but I would say that music is the language of the expression of religion rather than a religion itself. Art is the language by which we express the spiritual vision of our society. Whether that's something like Aboriginal culture, where there actually isn't a separate word for music - they use the same word as they use for spiritualism or religion - their vision of the universe that they live in is described in the dreamtime and I think that their music and paintings reflect this vision. In the nineteenth century a lot of the imagery in European music was militarism and imperialism and so there were a lot of march styled musics. . . That was very much the reflection of a particular era and a particular sociopolitical consciousness at a particular time."

"What we have in the twentieth century is a complete break down of any kind of spiritual value and what we've ended up with is this pestilence of economic rationalism, which supposedly is a direct result of Marxism, which is possibly the greatest lie ever perpetrated in western history. Marx was a far more insightful philosopher than one such as John Howard who seems to think that everything relates to the unholy dollar."

"One of the reasons our civilisation is starting to break down is due to the fact that we don't have any spiritualism to guide us. You could almost be bold enough to say that one of the reasons that we have lost our spiritual way is that in the twentieth century is that we have lost our artistic way."

Art and Science

"Our seduction by rational logic and the positivism of philosophers like Karl Popper who attempted to relate everything down to what we now are beginning to realise in science to be a very limited

methodology by which to even begin to analyse the real physical world. It's the Newtonian or Cartesian way of empirical analysis. The Philosophers sold out to science some fifty years ago leaving only the Theologians to argue the spiritual case who are being unmercifully attacked by the scientists. Scientists shouldn't even venture into the world of theology because its totally out of their field. They haven't even got the language to talk in this sense."

"I think this whole business of sciences trying to look for proof of God is absolutely ridiculous. What does God have to do with science, or what does science know about God or anything. Science is too simplistic to even approach those kind of subjects. . . I started off as an analytical chemist when I left school and then went on to work at the Atomic Energy Commission as a numerical analyst which is what computer operators were called in those days. I worked for fifteen years in professional science and technology. One of the things that drove me away from that life was the short-sightedness I found in the philosophy of scientists. In those first years of my working life I was a real die hard scientist and I thought that science was the new religion. It wasn't until I got out of science that I realised how shallow science is. I think that new things like quantum theory and complexity theory are a good direction but there is still so much in the universe that is completely overlooked by science. Applying the tenets of science to art and music has tended to destroy it because it makes it too simple."

"If you look at a Schenkerian analysis of a piece of music you end up with something that doesn't talk about music so much as some kind of overly simplified theoretical structure that couldn't come near to describing any piece of music. In science we are only just beginning to realise to a large extent that with reductionism you begin to lose the essence of a thing in reduction and induction modelling. Often Scientists reduce things down to models then simulate the models and then make the mistake of believing that the model is the reality. In most cases the model doesn't have anything to do with the reality."

"We have a very simplistic model of music that we teach to our children. When you come to start trying to realise, using a computer, a note model you realise how much information isn't there. . . I am amused at times by the arguments that rage around the so-called complexists who seem to go to extraordinary lengths to include in their score specification for a piece directions for how it should be played as well as the music. If you compare the amount of information included in such scores to the amount of information that you have to give a computer, the so-called complexity is to me pretty simplistic."

Beginnings

Ian Fredericks has worked in the area of electro-acoustic music since the middle part of the 1970s. Many, if not most of his pieces have involved some visual component, and much of his composition has involved diffusion using multiple speaker arrays.

Martin Wesley-Smith

"Probably one of the people to most consistently work in the area was Martin Wesley-Smith. The way it started off with Martin, I think this is fair to say, was that he was interested in a multi-media idea rather than just something to go with the music. He was interested in combining the photographer's art with the musician's art in a concert situation. It wasn't just as something to look at while you listened to the music. It was always a real attempt on his part to do this interactive kind of thing. It wasn't film because the motion detracts from the music but rather an interest in the pristine still image. He worked with a number of photographic artists over the years. The guy he probably worked with the most was George Gittoes."

Wattamolla

"George Gittoes used to run the early Wattamolla multi-media concerts which involved photographic projections, cinematographers, dancers. George is a general visual artist, painter, photographer, etc. George was largely responsible for these things succeeding. There were about six of these elaborate

events from which the name watt was derived. It was a real community thing. These things had such a feel about them. There were a bunch of art professionals who ran the thing. The last one attracted about 10,000 people. The performance took place along a cliff top which dropped to a lagoon protected from the ocean by a thick sand dune. The audience crossed the lagoon to the sand dune in rowboats to see projections, dancers flying on fox wires, hanging from grappling ropes, climbing and hanging off things on the cliff top. The Wattamolla happenings took place annually from 1976 until 1982."

"There were two concert pieces that were drawn from the last couple of these. One was Martin's called Wattamolla Red and mine from the same year was Viable Alternative. Both are on the first watt CD. The visual components of these pieces were developed using slides of photographs taken at the Wattamolla concerts. This early stuff started our interest in that kind of thing."

"That was in no way an exercise where there was music and we were looking for something to go with the music. George treated the whole thing like a filmmaker would. It was an extraordinarily complex compositional exercise. We'd get a scene list and an approximate time of what each scene would take. Because of the size of the staging, and the nature of the radio communications that were being used, we were forced to create compositions that were open ended, waiting for cues to crossmix the tape tracks on the many decks that were being used. All the Wattamolla events were night time events. One night in a display of marvellous serendipity, a number of RAAF fighters flew low overhead with their lights all ablaze, on cue with the firing of a number of flares as part of the piece. To this day we don't know whether George actually organised it, but we've give him credit for it anyway."

SUESS and watt

"This was our beginning in the audio visual world. That was when watt actually started around 1976. It was Martin's idea to formulate the group. At the time I was studying at the main campus of The University of Sydney and Martin had just started lecturing at the Conservatorium. I met Martin when he used to come over to teach electronic music at the main campus. We hit it off musically and as friends right from then. One thing led to another and we just used to do things together."

"When I built the new studio at the Seymour Centre called SEUSS (Sydney University Experimental Sound Studio) which I ran for about fifteen years, I built the place and was the technician there while Martin was teaching. Eventually I took over the teaching. We had two studios, one at the Conservatorium and one at the Seymour Centre so we used to make a point of getting together once a year to do these watt concerts which were a combined effort between his studios and my studios. At the time these were the only two educational electronic studios in Sydney and were the focus of all such student activity."

"There has been no real solution to the overall problem of visuals overpowering the audio material in multi-media performance and to a certain degree no real research done into it - in our experience anyway. In most cases in our work in watt the idea has been the combination of the photographer's art with musician's art, often within the context of a sociopolitical statement."

"Its fair to say that these pieces are attempting a combination at a philosophical level rather than at a pure artistic level. One of the things that I think are important if we are going to go down the road of a highly combined thing is that the visual images must be totally abstract. I think as soon as you have an image that is an recognisable image, you immediately start to put on some kind of a heavy sociopolitical thing. It immediately casts the work into that vein."

Spatial Synthesis "When I started to get Spatial Synthesis happening properly back in the SUESS studio on the main campus, the first sounds I synthesised were a music sequence done with an old ARP Odyssey back in '77. I did this thing in four channels. I'd built some panning equipment and a distance fader so I was simulating distance effects and four channel panning. The distance fader was based on a model drawn up by John Chowning first published in the Journal of the Acoustical Engineering Society in 1972 where he described a computational model for doing spatial sound synthesis. I devised a set of

analogue equipment based on his model that incorporated a four channel panning device and a distance fader that used a set of four filters coupled together each controlling a different aspect that achieved the spatialisation."

"One of the faders controlled the level of the audio signal, for example, while the others generated voltage control signals one of which was used on a digital delay device for simulating Doppler shift. There was a voltage controlled filter built into this device that simulated the effect of high frequency attenuation due to distance. I also controlled, as illustrated in the Chowning paper, the relative values of what he called Global reverberation."

Synesthesia

"What happened with this was that it was so effective and so stunning that what I perceived when I first got it going, was that I didn't hear something, I saw something, I could see this thing that moved and changed shape and colour from a deep brown then a yellow and eventually it exploded into the room and became extremely red and then disappeared out the back of the room. This was something you saw - not something you heard. So I actually asked a number of people to come down and listen to this thing and tell me what they perceived and every one talked about what they saw, which I thought was amazing. This was back in 1977. This is what led to the piece Some Quiet Graveyard. This was my first experience of this effect which you called synesthesia."

"What interests me at this stage of my life is some kind of a visual art form that takes the same kind of structure as the audible art form; namely temporal. One of the reasons for why we see music as being a highly elusive or high art is because of its temporal nature. You can't pin it down. I intend to do a fuller discussion of this in my PhD thesis. This first started to occur to me in the context of the idea of visual music, which as far as I know is just my term. What visual music means to me is this kind of thing, which comes from this internal thing which I get in my mind. I often have this experience. As a composer one develops this ability to hear sound structures and musical structures before you actually write them down. What I find actually happens a lot is that this process of hearing them is very strongly related to a visual process so that one is inclined to say that I can see the sound or I can see the music. Its very hard to describe this but a very simplistic example of this that I've experienced is sort of like an amorphous mass that expands and contracts, it has specific colours - it might be green or something - and this I see as a sound structure and not as a visual structure."

"It doesn't come with a sense of place. Its very much an abstract thing that exists in a non-space: like music. It doesn't have any form. As a mass it would seem to belong in a space, but it doesn't seem to belong in a space but rather just seems to glide in and out of my psychic space as it were. What I am trying to do with these things is to devise ways of realising these structures. When I am actually writing music I actually work a lot in this way. I get some weird sound structure that floats into my mind and then I might spend weeks, months, sometimes even years trying to realise these things. When it comes back off the speaker to me, then I know I'm not insane. It's that kind of exercise."

Some Quiet Graveyard

In the handbook for the 1989 release of "The Australian Anthology of Music on Disc," Some Quiet Graveyard is described thus: "Some Quiet Graveyard was inspired by thoughts of the awesomeness of the universe. Hanging raggedly off an insignificant star in a minor galaxy somewhere on the outskirts of the universe is a minor planet which on a cosmic time scale can at best be considered 'some quiet graveyard'":

Beyond the moon
Beyond the darkness
Starkness
One small cloud of dust
Just

Some Quiet Graveyard
Beyond the speed of light.

Performance

"The piece Some Quiet Graveyard, which was the first piece where I really consciously set out to map a visual thing to a musical thing, didn't really start until 1983. We were just starting to be able to do meaningful computer based sound synthesis without having access to large and expensive computer installations. Some Quiet Graveyard was done with an instrument I built using an Apple 2 computer. It was performed in a watt concert at the downstairs theatre in the Seymour Centre. For the watt concerts in those days, the downstairs theatre would be booked for a week. There would be a massive amount of audio equipment. We'd spend two days setting up the gear and then have two days for rehearsals and then have performances between the Thursday and Saturday evenings."

"For the performance of Some Quiet Graveyard there was a four track recording performed using a four channel desk. The way the piece was realised musically was with this instrument I built, as I said, in an Apple 2 computer running a sound board called a Mountain Valley Sound Card. I built some control devices for this one of which used a foot pedal to control the volume envelope. There was a drumming percussive aspect of the piece performed by tapping my other foot and a joystick was used to control the timbre and the distance fader device I had built. I then had to spend a number of weeks learning how to play it. It ended up being very expressive in terms of its sound synthesis techniques. It would have been too messy to perform live. Anyway there were a number of parts. There were four or five percussive parts and two lead type parts."

Theoretical Basis and Realisation

"There was some work done at Stanford in the late 70's by John Gray who showed that it was possible to synthesise any continuous musical type timbre using only three harmonics. Using five harmonics only skilled listeners could hear the difference and using seven harmonics, nobody could tell the difference. So I built this instrument based on three harmonics that ran on the Apple 2 computer. The joystick controlled the relative values of the three harmonics. When it was back towards me I got all of the fundamental, as I moved it forward I got the second or third harmonics and mixtures thereof. Every sound on this piece; all the percussive sounds, all the long sounds, fast high pitched sounds; were created using this instrument before being spatially manipulated. I had to learn to play the instrument in different ways in order to create different timbres."

Programmatic Content

"Visually the music came first. The programmatic concept of Some Quiet Graveyard was a vision of planet earth as being Some Quiet Graveyard. The piece had cosmic proportions. The visuals for the piece used photographs of stars. What I wanted was some kind of correlation between something that was happening in the music and something that was happening in the visual presentation apart from this programmatic kind of level. So it occurred to me to use the Maxwellian light formula. This equation explained how to simulate any colour in the spectrum by adding together RGB values and was developed in the late nineteenth century by the physicist Maxwell."

Maxwellian Formulae

"What he showed was that if you took the relative intensities of these monochromatic colours and mixed them so that the sum of their values was always equal to one, what you get is an infinite number of hues. This is obviously used in television and computer monitors now. So here was an equation in real physics that described light and colour that was identical to this one that described sound timbre. So colour and sound timbre should be mapped absolutely precisely with these three components. The only way we had of doing this colour trick was with three slide b+w slide projectors that had glass rgb (red-green-blue) filters. It was controlled using this system we were using for multiple slide shows at the time - the

Clearlight system. This is where I brought Martin Wesley-Smith into the project, because he had the expertise in using this computer generated thing. It was too difficult to get the tracking, visual thing happening in real time so we set ourselves up in one of the studios at the Conservatorium with the slide projection system and listened to the music and programmed the slide projection stuff by feel and improvising. The whole piece came together using this wonderful counterpoint between timbres, colours and image changes. As with all artistic exercises as distinct from scientific exercises, once you start to write the piece, it starts to talk to you and tell you what it needs. It all has the basic underlying consistency of all having come from the same basic theory."

Projection System

"The lighting system was run by a Clearlight system that Martin established at the Conservatorium which utilised an Apple 2 based system that generated a set of control voltages that were used to control thyristors in the various slide projectors. It was quite a common system used back in the 80's for multiple slide projections. Martin's system incorporated nine projectors. It has been used for an enormous number of pieces in the context of watt concerts."

Audience Response

"After the performance of the Some Quiet Graveyard piece many people were saying that the trouble with the piece was that they couldn't remember hearing the music of the piece because the visual material was so strong. But a very interesting thing happened here, I watched the video piece time and time again and couldn't quite agree with this criticism. I set up a little experiment where a group of us watched the piece and agreed that the visual image was incredibly strong and totally dominant. What we did then was to turn the music off and just watch the visual image. After a very short period of time, like thirty seconds, people started to get bored with just watching the image. The point about the piece with the music was that you didn't get bored. The piece was about twelve minutes long and you were just captivated with this whole experience."

"I really think that what was happening was that the music was in fact dominant but it goes in at a subliminal level. This is why in this piece and in other pieces that you totally lose track of time. I used to ask people to estimate how long they thought the piece was taking and I'd get all sorts of answers, mostly much shorter than what the piece was actually taking."

"I find this very exciting because to me the function of art in Western society these days, is partly to confuse, as it were, our conscious mind and let us live in this subconscious thing for a few minutes, which is the same mechanism as in meditation. I think that if a piece can confuse the rational mind by this combination of visual images and aural information so that you are not really conscious of what's happening, but rather taking this in on a subliminal subconscious level, it's enormously exciting."

Conclusion

Ian's work has made an incredible contribution to the development of Australian electronic music. Besides his various technical innovations there can be no doubt that his vision, conception and execution has served to bring a great source of inspiration to all who have been involved within the community over the last twenty years. Ian's current projects include the development of the 'Ians Muse' sonic and spatial synthesis software and the development of new musical works. When Ian's current doctoral research is complete, his thesis will no doubt provide the most thorough description and evaluation of his life's work and the ideas on which it has been based.

Ars Electronica 99 LifeScience Linz, Austria, September 4-9, 1999

Garth Paine

OVERVIEW

The focus of Ars Electronica 99, as the title LifeScience suggests was an exploration of the scientific and sociological issues surrounding this new area of scientific exploration.

Ars Electronica 99 followed its usual form of being divided into three inter-dependant sections: -

Symposium

-Exhibition

-Prix Ars Exhibition

These events were spread between the -ARS Electronica Centre

-Bruckner Haus

-OK Centrum fŸŸr Gegenwartskunst

-OMV Klangpark situated directly outside Bruckner Haus.

There were also concerts and daily sound dispersions held in the OMV Klangpark situated directly outside Bruckner Haus.

Due to the number and scope of presentations at Ars Electronica 99, this report does not attempt to be comprehensive, rather it reflects on a few exhibited works and symposium presentations that were of particular interest to the writer.

SYMPOSIUM

The Ars Electronica 99 LifeScience Symposium ran over two days, September 05-06, 1999. A wide selection of speakers, whose professional activity is directly engaged with the area of bio-engineering, presented papers. Presentations ranged in subject area from the technical specifics of developing synthetic genetic material, to the ramifications in political and social sciences, to sociologists discussing the impacts of contemporary science on the functioning of our society. A few artists spoke in the symposium, but their input was not the primary rationale.

The focus-operandi for this symposium (in-line with the tradition of Ars Electronica) is the creation of a forum in which leading experts in the field outline and discuss the issues and current practice of the scientific genre being examined as a means of creating a platform for artists to become informed and familiar with the scientific practice. Bio-engineering has become "big business". The discussion that occurred at the symposium was driven by a scepticism for the commercial mandate. Discussion was further driven by a community fear (shared by most of those present) with regard to the uncertain long term affect of released genetically engineered crops, foods and other commodities upon the global environment. Aspects of this discussion included the potential for these technologies to be abused both as a way of breeding a super race, as a way of creating a new "genetic" underclass, and as a way of extending and preserving the life of the rich (who will be able to purchase the bio-engineered products) at the expense of the poor.

Dr Dorothy Nelkin outlined some of the implications of considering a human being as a deterministic collection of DNA. A scenario explored in the film Barraka. What would be the implications of humans being regarded as simply a readout of their DNA make up? She considered there to be four main areas of examination: 1. Gene Therapy

2. Cloning

3. Behavioural Genetics

4. Apathetic approach to dangers

Some of the other questions she raised were:

would make the decisions about what/who would be cloned?

- cloning - men are unnecessary

- If you sin the first time - clone and try again
 - The founding fathers of the USA could be cloned to form a live theme park.
- Could there be factory sales of genetic seconds??

She argued that writers (journalists etc) exploit genetic engineering to support a dominant worldview. Writers lay the foundation of public opinion. However, they are merely disseminating and amplifying information carefully packaged and presented by scientists keen to promote research very early in its development in order to raise the large amounts of capital required to continue the research. Scientists are magnifying their cutting edge advantage in an attempt to prove superiority in the field. The science is shaped and partly driven by public opinion, which is in turn driven by reductionist views of the media driven publicity campaigns. The role of the analyst is to draw attention to complexity - non-deterministic views. The necessity for society to consider the issues pertaining to bio-engineering and the life-sciences from the perspective of complexity rather than reductionism was reinforced by most of the speakers from sociological backgrounds.

Dr Bruno Latour pointed out that the current debate is based solely on a consideration of risk and danger - "if there is no danger to these technologies, should they be able to proceed?" he pointed out that this was a completely inappropriate basis for informed discussion. Other speakers also discussed the nature of information dissemination in a climate of fear of the risks and dangers.

EXHIBITIONS

The Ars Electronica 99 exhibitions were spread between four venues:

- ARS Electronica Centre
- Bruckner Haus
- OK Centrum fŸŸr Gegenwartskunst
- OMV Klangpark situated directly outside Bruckner Haus.

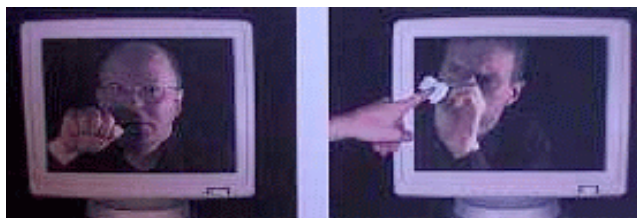
I will outline only a few selected works from each venue, as the scope of the entire exhibition forms the basis of several books published by Ars Electronica, and is therefore beyond the scope of this report.

ARS Electronica Centre

The ARS Electronica Centre housed a number of substantial installations, many of which were developed in collaboration or realised at the Ars Electronica FutureLab. The CAVE resides within the centre and was the venue for installations by Simon Penny, Peter Kogler, Franz Pomassl, and Dan Sandin. Attendance at any of the CAVE installations was by ticket. I didn't attend any of them.

Other works of note within the Ars Electronica centre were:

Video Place and I Met-a-Morph by Myron Krueger Myron Krueger states, "Videoplace explores the relationship between human and machine as an aesthetic dimension rather than as an engineering problem. ... The goal of Videoplace was not to create an art work that happened to be interactive, but to raise interactivity itself to the level of an art medium."

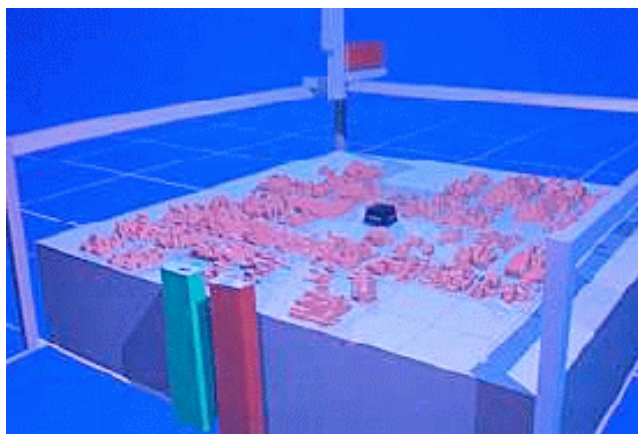


Touchscreen

Touchscreen by Anna Anders (picture above) was an imaginative use re-assessment of the way in which we interface with a computer through a touch screen. In this case a character inside the screen would ask the user to touch the screen at a certain point. The user would be berated for not doing as asked, and

praised with affection on occasions when the user responded as requested. This work an immediate, direct and engaging sense of interactivity. The artist states "Touchscreen focuses exclusively on touch, the pleasure of physical contact, playing a wide range of variations on the theme of types of behaviour and expectations displayed by the users of interactive installations."

Motion Picture by Emely Weil "Motion picture could be compared to a frottage of a three dimensional space. A video camera - a spontaneous expressive interface to the computer - is used as an entry device. The interaction with this work is a playful process during the course of which the visitors' movements "rub" an image of the installation space onto the monitor screen. The result is a picture of movement in the space over time, exposures of spatial and temporal changes in a single, dynamic image"



Web City

There were two major installations using robotics controlled over the internet which allowed internet users to build a city and tend a garden.

Bruckner Haus

Bruckner Haus housed the openX displays, and the installation Multiple Dwellings which became a performance on the first night. The theatres within Bruckner Haus were also the location for the LifeScience Symposium, and a concert by the Michael Nyman Band. Michael Nyman was the composer in residence at Ars Electronica 99. He worked with a group of young sound artists to make material for the Klangpark Project, a project inspired by the idea of a sound cloud that would claim the public space of the park on the edge of the Danube. In so doing it was to "develop an adequate, mutually comprehensible vocabulary of musical expressions related to the culturally and geographically defined Danube region in light of changing forms of that which is 'public'.

The musicians involved in this project were: Michael Nyman (UK), Robert Warby (UK), Fadi Dorninger (A), Robin Rimbaud aka Scanner (UK), Sam Auinger (A), Rupert Huber (A), Gordan Paunovic (FRY),



Klangpark

Joachim Schnaitter (A), Markus Decker (A), and Hubert Hawel (A). Sound material was played through the large outdoor public address system from 8am to 11pm on September 7-9. I spent some time each day listening to this music, but found it largely unfulfilling. The majority of the sound was rooted in the beat based club culture, and showed little sensitivity for the textural and timbral qualities of the location recordings used in many of the collages.

Ars Electronica 99 shifted its musical focus this year from the more traditional practice of electroacoustic music to the more recent beat based digital musics. This is reflected also in the Prix Ars where the Golden Nica for Digital Musics was awarded to Aphex Twin (Richard James) for a the music video Come to Daddy. The Prizes of Distinction were awarded to the MEGO label which focuses on distributing primarily DJ based sound works. The other Distinction was awarded to Ikue Mori, who has made a career out of innovative use of drum machines in live performance. I am interested to note this distinct shift towards "beat" based musics, but am equally puzzled as a composer as to why this has occurred in a manner that is exclusive of the electroacoustic music that is still practiced widely today, and in which lies the heritage of the technologies and the compositional techniques inherent in beat based music.

OK Centrum

OK Centrum fŸŸr Gegenwartskunst housed a number of installation works. These works were largely works which had been awarded prizes or recommendations in the Prix Ars. The most interesting of these from my perspective were:

Genesis by Eduardo Kac. Genesis is described as exploring "the intricate relationships between biology, belief systems, information technology, dialogical interaction, ethics and the internet." Kac developed an "artists gene, a synthetic gene that does not exist in nature" by converting a passage from Genesis in the Bible into DNA based pairs. This was achieved by subjecting the written text to morse code and then applying an arbitrary code to convert the morse code (dots and dashes) into a DNA structure.

Interestingly when this process was complete, the artificial DNA formed a complete and proper DNA structure requiring no additions or alterations. This "Artists DNA" was synthesised and inserted into bacteria, which were placed in a Petrie dish to mutate and placed on display at Ars Electronica 99. The mutated DNA was to be translated back to English verse at the end of the exhibition, "providing a glimpse into the processes of transgenic interbacterial communication". I found this piece to be a succinct encapsulation of the focus of Ars Electronica 99. More information can be found at

<http://www.ekac.org/geninfo.html>.

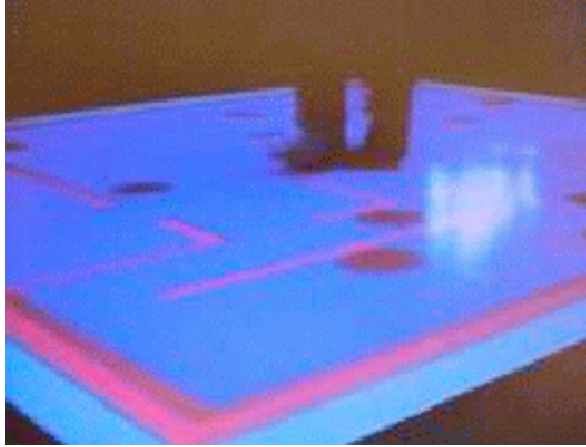
Soundcreatures by Kouichirou Eto / canon ARTLAB. This work consisted of three robots moving, apparently randomly, within a contained space. The robots made small "beeping" sounds formed by simple on-board oscillators. The sounding patterns were generated through communication with a web page that controlled each robot individually. Those with access to the web page could alter the pattern of



Soundcreatures

sounding pitches. When in close proximity to another robot, the robots exchange certain elements of their sound data. This mutation of sound data causes a slow evolution of the sound material. In addition to the internet control there were two "infection" zones where those present could call up certain commands like "octave higher". These commands would be projected into the space within a tightly bordered area. When a robot entered this area, the command would be transmitted to the robot, changing the sound material. This piece was amusing to play with, and clearly draws together a number of different technologies, but I found it only operated on that level. No social statement was apparent within the work.

metaFIELD MAZE by Bill Keays and Ron MacNeil was another work that was fun to interact with. It consisted of a 12 x 12 foot floor space that represented a virtual maze game. The game is based on a well known hand held game where the player must move a small ball through a maze to the exit



metaFIELD MAZE

without allowing the ball to fall through any of the holes in the board. The maze (generated in realtime on an SGI 02) was projected onto the floor as a three dimensional model. The ball moved in the direction of tilt, caused by the position and movement of the person on the interactive floor. The creators state their objectives in making this interactive model as follows: "it should be suitable to interactive art or game applications; it should have the ability of accommodating both solo and collaborative activities; it should involve the kinaesthetic input of the users; it should have a low threshold of engagement. Movement tracking within the interactive floor space is achieved using a video camera and custom software known as Glimpser. This work was great fun, and had many eager participants.

Augmented Reality Fiction by Stefan Schemat and collaborators (too many to name here). This work was a sound based piece which required the user to walk through the streets carrying a small computer and a Global Positioning System (GPS). Their objective is to create a new narrative medium, in which it is possible to represent the stories connected with a certain place directly on the location. The energy and speed of movement of the user are taken into account in controlling the interactive sound event. This gives the user the ability to control the way in which the narrative unfolds. The sounds are rendered in 3D, making it possible for a voice, a character from the past for instance, to lead the user through the immediate environment. This work has a huge potential both for commercial tourist applications, and in the more immediate application of this development collective, the creation of a new narrative medium that engages in a very real way with the built environment, and the qualitative way in which the person engages with that environment.

Overall Impressions

My experience of Ars Electronica 99 was a stimulating one. A festival/symposium of this nature is invaluable in fostering relationships with other artists working in a similar area, facing similar artistic and technical challenges. I was not as impressed as I had expected to be with the installation pieces on exhibition at the festival. I felt they were primarily focussed on image generation. The screen was the primary mechanism for both content delivery and interaction. I felt the interfacing with most of the work placed the user in a relatively passive role. The works were not largely immersive. I felt sound was often neglected as a tool for engaging the user in the world of the interactive. Those works that did use sound as a primary interface were, in my opinion more successful at achieving a rewarding level of interaction. There were however very few works that utilised sound in this way, and fewer works where the primary medium of the work was sound. As a composer and sound artist, I found this a little disappointing, but not inconsistent with other interactive media events.

I feel there is still far too much focus on the technical limitations the current technology presents us, including new ways to generate media efficient imaging and rendering processes at the expense of true

interactivity with the user. The current interactive media paradigm where the user selects predefined finite events is I hope short lived. I believe we must address interactivity as an ongoing stream of events in which the user engages and through that engagement causes a variation in the stream, but does not start or stop finite pre-defined events. The most successful installations I saw were addressing the user interface/experience in this way.

I was invited to address the CUIDAD meeting which was held in Linz to coincide with the Ars Electronica 99. CUIDAD is a European Working Group coordinated by IRCAM (Centre Georges Pompidou) in order to gather all institutions, industrials and users interested in the content processing of music. The Ars Electronica meeting was focused on the topic of Control And Interaction. A number of researchers from throughout Europe presented their work on gesture recognition and its applications to music creation and processing (see attached meeting outline). I presented a paper outlining the work I have been doing in the area of interactive virtual environments, and showed a ten minute video documenting my installation piece MAP1. This presentation was received with much interest, generating invitations to explore the possibilities of presenting and developing work at both IRCAM (Paris), and the University of York (UK). These offers will be pursued in the course of the next year.

EuCuE Report

Garth Paine

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For all those who contributed to the EuCuE concert call for works in the last Chroma - thank you. I received far more work than I had expected, and more than could be played in a single concert; However, all the pieces submitted were performed in 2 concerts in the EuCuE Series XVIII at Concordia University, Montreal, Canada. Congratulations must go to all the composers, as the feedback from Canada was that the Australian music was an extremely positive listening experience.

Following is my curators note for the program

**EuCuE Series XVIII at Concordia University,
Montreal, Canada.**

**Australian Electroacoustic Music
Curated by Garth Paine**

Curators Note:

Curating this concert was an interesting undertaking. When one issues a call for submissions there is no way of knowing what will ensue. On this occasion the majority of works came from two different tiers of experience; those who have only recently finished university study, and those who completed their undergraduate degrees within the last ten to fifteen years. It was surprising not to receive much input from the older generation, who might be regarded as the more established figures in this genre in Australia.

This pattern of response possibly parallels a quiet decimation of the academic infrastructure for teaching Electroacoustic/Electronic/Acoustic music within Australia. The principle teaching institutions are either being shut down, Latrobe University Music Department being a primary example, or have had the lectureship associated with this artform discontinued. Little value seems to have been placed on the importance of the aural aesthetic, as the visual sense becomes more and more predominant in our society. Courses taught within universities are becoming more tightly focussed on vocational training with little or no time allocated to experimentation, and with web authors and video editors being regarded as

sufficiently skilled in the audio arena to teach the skills required, which are defined purely in technical terms.

I raise this point within this context of a concert on the other side of the world both as a warning, but also as a way of highlighting the extraordinary commitment the composers, whose works you hear in this concert have to the genre. None of these composers work within institutions. They have found ways of resourcing their work (both time and equipment) outside of the usual institution base. In Australia this is becoming the norm.

There are both positive and negative aspects to this developing pattern. On the one hand, working outside the institutions encourages a purely individualistic approach to both process and product. The purpose of creating becomes liberated from any external requirements, and so the composer is at liberty to experiment with "broader brush strokes". The down side of working outside the institutions is the cost of resourcing one's art practice. The individual composer becomes responsible for the purchasing and maintenance of all the equipment required to record source material, edit and manipulate that material, synthesis sounds, compile and master the finished work. Equipment has advanced immeasurably in the last ten years. It is now possible for the electroacoustic composer to have a powerful, high quality system sitting on a desk. Programs like MAX/MSP and Supercollider to mention but a few have, in parallel with substantial leaps in desktop computing power, revolutionised the ability of the independent composer to create and manipulate audio signals in realtime.

The evolution of technologies has created the groundwork for independent composers to create sophisticated electroacoustic works outside of the institutionalised resources. With the current pattern of decimation of the teaching and studio resources within the institutions, we should be very grateful that such technological advances have arrived at this point in history. The result is the work you hear in this concert program. Enjoy !!



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MINI REVIEWS BY WARREN BURT

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Those wanting to hear some new experimental and/or computer music don't face a shortage of new releases - there's actually a glut of new material out there. Unfortunately, it's often hard to find. Your credit card on the internet is often the best way to get many new computer music records. That, and the handful of specialist shops that handle the stuff. Two sources I can recommend are Electronic Music Foundation (www.emf.org), based in Albany, NY, USA, and Synaesthesia Records (www.synrecords.com), based in Melbourne. They both seem to be able to track down most of the stuff listed here. In some cases, it will be best to deal direct with the composer. In those cases their contact details are given in the review.

JOHN CAGE: BIRDCAGE (EMF CD 013 from Electronic Music Foundation <http://www.emf.org>). Despite his reputation as a pioneering figure in electronic music, the major electronic works of John

Cage have been hard to get. Of these, only Cartridge Music (1961), Roaratorio (1979), Williams Mix (1952), and Variations IV (1967) are currently easily available on CD. Birdcage (1973) is the product of three intense days of work by Cage and Joel Chadabe, in which tapes of birds, environmental sounds, and Cage chanting his own Mureau (1971) were subjected to electronic fragmentation and processing. The result is 12 tapes to be played on 8 tape recorders through 8 loudspeakers in "a space in which people are free to move and birds to fly." This stereo realization reveals the timbral richness and challenging structure of the result. I find the result fascinating, beautiful, and at times, just plain goofy. Your opinions may differ, but Birdcage is indisputably an important work, both on its own, and as a part of Cage's evolution from the complex to the simple which was occurring just at the time this work was composed.

VARIOUS: ROADS TO CHAOS (SP9603 from Soundprints, 48 Talent Crescent, Weston, Ontario, M9M 2N4 Canada.) One of the most fashionable developments in mathematics in the 90s was the rise and rise of chaos theory. Many composers, including yours truly, responded to its siren song and plunged in to see if there was anything musically useful in it. This CD is a most delightful compilation of 12 pieces by 11 composers, produced by Bruno de Gazio. It has works for electronic sounds as well as acoustic instruments, and the electronic sounds cover the gamut from instrumental samples to tiny self-playing circuits. The cast list includes Gustav Ciamaga, Heinz-Josef Florian, Ron Fein, Kirk Corey, Karl Mohr, Karlheinz Essl, Gordon Monro, James Harley, Robert Del Buono, Martin Guertner, as well as Bruno himself. Every piece has something to offer. In fact, I would happily play this CD to people as an interesting introduction to what was going on in music and technology generally, even if they had no interest whatever in chaos.

AMANDA STEWART: I/T SELECTED POEMS (Split #005 - CD and Book set from Split Records; PO Box 445; Potts Point, NSW 2011. splitrec@ozemail.com.au) This one has been years in the making. It's an elegant CD and Book set of Amanda Stewart's solo work in sound, visual, concrete, political, and text-based poetry, covering a period of 16 years from 1981 - 1997. Those who know Amanda's virtuosic work in the Machine for Making Sense will be delighted at the intensity, clarity, and focus which pervades her solo work as well. Those who don't know her work will be amazed to discover a major voice in Australian composition. This CD/Book is clearly in the must-have category, both from the musical and literary points of view. Buy it NOW.

HERBERT BRUN: LANGUAGE, MESSAGE, DRUMMAGE (EMF CD 00614); **WAYFARING SOUNDS** (EMF CD 00624); **MUTATIS MUTANDIS** (EMF CD 00634); **SAWDUST** (EMF CD 0064). (Four CDs from Electronic Music Foundation. <http://www.emf.org>) Herbert Brun is more than just a composer of computer music - he is, in large measure, the current representative of a dissident Germanic tradition which views art as an ethical and moral force, rather than as just the play of sense perceptions. His views are no facile modernism, easily knocked down by the Sancho Panzas of contemporary critical theory, but constitute one of the most rigorous bodies of challenging intellectual engagement going today. So what is his music like? Diverse and rigorous is the answer. On these four CDs (and really, you should own the complete set) are most of his works, ranging from his neoclassical Five Pieces for Piano, op. 1 (1940) to his 1997 work for viola and tape, on stilts among ducks, which combines intricacy and seriousness, sarcasm and whimsy. His Project Sawdust pieces, which involved programming computer sounds from the waveform up, and observing and exploring the results, take up a complete CD to themselves. These pieces are some of the crunchiest, rasiest sounding music ever composed, and Brun makes the point that there is a profound political difference between composing a situation, or a set of rules, and observing the result; and composing every element of a piece with total control every step of the way. These pieces definitely are the result of the former, experimental attitude. There are a number of classic pieces on these CDs as well. Generations of electronic musicians have been raised on Brun's Futility 1964, with its alternation of advanced sounds and fragments of a nihilist text; and early algorithmic classics Non Sequitur VI (1966) and Soniferous Loops (1964), both for instrumental ensemble and tape. These four CDs, which cover almost half a century of uncompromising questing by one of our era's most penetrating minds, are simply essential listening.

ELWYN DENNIS: FUNDAMENTALS (custom CD from Elwyn Dennis; clouds@netconnect.com.au or c/o Post Office, Stawell West, Vic. 3380, Australia.) Elwyn Dennis is a composer familiar to listeners to ABC-Classic-FM's "Listening Room" program. Aside from that, though, his work has received far too little exposure, which is a pity, because he's one of the most interesting and engaging of Australian contemporary composers. There is a strong current of ecological and philosophical thought in his work, which mostly consists of pieces made with sounds recorded on his property south of Stawell, near Victoria's Grampian (Garriwerd) Ranges. His program notes sum up the thoughts behind these seven compelling works composed in 1996 and 97. "This music gives voice to a reality independent of our species prejudices, our cultural metaphors, our sensory limitations. It refers to structures that are too vast, too slow or ones that are too minute, too quick for us to experience directly. That we must relate to these structures is becoming clear. Our lives depend on them, though we behave as though that were not true...So this work began with the sounds of natural circumstance, tapped the timbres arising from indigenous organization, registered the sequences, the spaces, the times, and the events of the bush because they are accurate, complete, independent but also because they are compelling. We too arise from the system; with an applicable aesthetic we might orchestrate our destiny rather than endure it."

EDWARD KELLEY: KKKOMPUTOR (custom CD from Edward Kelley; PO Box 2443; Fitzroy Business Centre, Vic. 3065, Australia. email: elephantpiss@yahoo.com) Low-tech analog synth riffs, grungy, gritty sounds, irreverent humour, and an inability to take any sacred cow seriously are the hallmarks of this debut CD from Edward Kelley. The musical textures are fascinating and ornate, and often feature a combination of squelchy, resonant filter sounds with more bare raw-waveform timbres. Both "abstract" and repetitive rhythmic textures are used here. The spirit of subversion is never far beneath the surface of this music. For example, the drum riff and scratchy filter texture that start off the second track suddenly disappear and leave us with just a bare descending sloppily played three-dyad riff. It takes real courage in these days of po-faced high intellectual seriousness in both the "art music" and "pop" spheres (do those terms mean anything anymore?) to be so blatantly simplistic, and the return of the drum riff and the filter texture do nothing to assure us that they will hang around when they finally do return. The third track is an interesting exercise in building up a musical texture from nothing. Starting with a sparse static-like sound, other elements, a low glissando, a set of high raw-waveform notes, a rhythmic riff made with resonant filter overloads, are gradually added. But the hinted at climax never comes, as each layer self-destructs or mutates in an unexpected way. This is music that is marked by both a withering sarcasm AND a sense of fascination with the ornate beauty of sound. In spite of the sarcasm that oozes from almost every riff, Kelley makes quite engaging work with real musicality and moments of sensitivity and beauty.

DAVID TOLLEY: PASSING MINIATURES (Sound Installation on 3 CDs (That Performance Project TPP 1004) from Charles Nodrum Gallery, 267 Church St. Richmond, Vic. 3121, Australia. Email: c.nodrum@bigpond.com or from Spring Works Audio Visual; PO Box 237, Clifton Hill, Vic. 3068, Australia. Email: dudadae@bigpond.com) Well known for his work in improvised music with both bass and electronics, David Tolley has here produced an installation designed to be played in three rooms on three CD players (each on random shuffle play) and 6 loudspeakers, one sound system per room. The material on the CDs comes from earlier recordings of spontaneous performances with Brigid Burke, Carolyn Connors, Garry Costello, Dur-e Dara, Simone de Haan, Stuart Favilla, Graeme Leak, Nadjia Kostich, Roger Pell and Ren Walters, among others. These are combined, mixed, and edited into self-sufficient compositions each under one minute in duration. Forty three miniatures were then placed on each of the three CDs, along with an equal number of silent tracks. The individual compositions are dense, often consisting of several layers, and each having a unique shape. The CDs can be listened to on their own - each miniature is well worth hearing for its own sake, or combined in any form desired. When set up in your house as a three station installation with the relevant equipment, they do indeed provide a quite wonderful listening experience of random interaction and layering, perceived in various relationships of distance. This may result in ambient music, but its an ambient music with bite.

BART HOPKIN: ORBITONES, SPOON HARPS & BELLOWPHONES (CD with attached Book (CD 3610) from Ellipsis Arts, PO Box 305, Roslyn, NY 11576 USA. Email: Ellliarts@aol.com) Bart

Hopkin, editor of the late lamented journal *Experimental Musical Instruments* has produced here a second coffee table volume of looks at builders of unique musical instruments. Like the first volume in the series *Gravikords*, *Whirlies*, and *Pyrophones* the book is CD sized, and forms an oversized case for the CD. Within the pages of this volume are musicians from both "high" and "low" cultures, and everywhere in between; simple uses of found objects, and elegantly crafted sculptural and musical objects. Historically, John Cage's prepared piano is covered, along with Bill Colvig and Lou Harrison's American Gamelan. The found instruments of the fabulously successful British Stomp group are shown here, and Australia's own Colin Offord gets some richly deserved coverage, as do the magnificent long-string instruments of Ellen Fullman. Ela Lamblin's huge and elegant *Sculptaurals* are covered in detail, along with the immensely physical stiltophones of the Belgian *Les Phones* group. From Brazil comes *Uakti*, a quartet of composer/ instrument makers, who make an extremely engaging, lively music, and electronica fans will be please to see *Ars Electronica* winner Richard James' use of samplers and the like covered here as well. If you want to introduce some of your "I don't like contemporary music" friends to an extremely user-friendly collection of serious and lively musical eccentricities, you couldn't do better than this collection. Only the most stodgy of purists, be they from academia, or the commercial recording industry, could resist the charm of this toe-tapping collection.

STELARC & RAINER LINZ: FRACTAL FLESH (NMA CD 9902 from NMA Publications; PO Box 5034, Burnley, Vic. 3121 Australia) Stelarc and Rainer Linz have been performing interactive body-based electronic performances for over a decade. The most recent phase of this has involved the use of body sensors providing information to midi translation devices, which in turn control digital synthesizers. Additionally, they've developed a means of scanning the Internet for sound files, which can also be inserted into the performances. In some of the performances, remote audiences can see a map of Stelarc's body over the net, and by pressing certain spots on the map, can cause a low voltage to stimulate one of his muscles, forcing him to move involuntarily. These movements are then detected by the sensors, and the control signals resulting from this tell the digital synths what to do. So here we have a remote control performance system where the actions of several dispersed audience members produce sound in ways such that none of them can be aware of the totality of their actions, and that further, is mediated by the way Stelarc responds to the signals they apply to his body. This is systems composition of either an elegant and refined, or a frightening kind, depending on your orientation. I tend to favour the elegant and refined interpretation, but I can understand others, with a greater emotional investment in the notion of individual control and autonomy, being a bit puzzled by it. This CD consists of 8 excerpts from various live performances. The electronic sounds are fairly unprocessed (Rainer doesn't use all that many instrumental samples), often pretty crunchy, and they match the mechanical sounds of Stelarc's prosthetic third arm device. Additionally, in some of the *Parasite* tracks, various found sounds pulled off the Internet are mixed in. Track four, from the Pittsburgh performance, is fairly heavily techno-oriented, because that's what the majority of sound files the search engine found on the Internet that day were. In track five, another *Parasite* performance, the irregular clicks and pulses coming from Stelarc's body nicely subvert the regular rhythms of the found-object techno music fragments. It's a fascinating CD, one that repays a number of listenings. Highly recommended.

ERNIE ALTHOFF: HELIOSONICS (NMA CD 9904 from NMA Publications, PO Box 5034, Burnley, Vic. 3121 Australia) In 1998 and 99, Ernie Althoff, composer and sound sculptor extraordinaire, made a series of 26 solar powered sound sculptures. Each one was small (less than 60 cm. tall, made of lightweight portable materials (aluminium, wood, bamboo, and a small solar cell and electric motor), and was designed to be able to be assembled and installed quickly. The idea was to be able to do small scale installations in public spaces quickly and efficiently. The composition of the entire set of 26 was done on orchestral lines. That is, sounds were divided into families - metal/wood/other, high/medium/low, continuous/ sporadic. Additionally, the compositional logic (how it played music, with what pitches, in what kinds of rhythms) of each machine was carefully considered. The result is a family of sound making resources (and beautiful visual objects) that can be assembled in a large number of ways and contexts. The CD also features a 12 page full-colour booklet, with beautiful photos and extensive notes on the sculptures and the music. The booklet is a work of art in itself. All of the tracks on the CD are compositions featuring some subset of the orchestra, with the exception of the last track, *Sun*

Music 26", which uses all of the machines. These compositions are recorded in a variety of outdoor locations. Some are sparse, and others are thick. Those who have heard one or two of Ernie's installations before, and think they have a total understanding of his sonic world will be amazed at the variety of sonic textures and rhythms here. On hearing Sun Music 26, a local composer of orchestral music was heard to say, "That's the piece I've been wanting to write for years." While many of us struggle along with our computer simulations of chaos and physical systems, Ernie is out there with the real thing, the unpredictability of physical systems and the real world, making a music that is both intricate and complex, and yet open and calming as well.

LEO KUPPER: WAYS OF THE VOICE (Pogus CD 21018-2) New York based record producer (and composer) Al Margolis is dedicated to bringing lesser known and historical electronic music figures to light. He has already produced CDs of early works of Pauline Oliveros (Pogus 21012-2), Rune Lindblad (Pogus 21011-2 & Pogus 21014-2) and others. His most recent release is a CD of collaborative pieces between Belgian composer Leo Kupper and Brazilian singer/ improviser Anna Maria Kieffer. The collaborations, which span a 16 year period, use Kieffer's amazing voice as material for further elaboration (mostly using granular synthesis techniques) and also for the lovely melodic quality of her voice. The work deals with many aspects of Brazilian culture, from popular prayers, set for two voices and vocal fragments in the first piece, thru the sounds of the rainforest, used in Anamak and Annazone, the second and fourth pieces, to an electronic fragmentation and reconstruction of her voice in Amkea, the third piece, of which the third movement Recit 2 has some ravishing vocal textures and treatments. The musical material of Anamak additionally, derives from Kieffer's research into the music of the indigenous peoples of Brazil. An absorbing, beautiful, and extremely listener-friendly album.

ROBERT PAREDES: FORGETTING AND REMEMBERING (Innova CD 528

<http://www.composersforum.org>) Those with long memories will probably recall Robert Paredes' years in Australia (1984-86) with fondness. As a composer, performer, and musical thinker, he had a great impact on the Melbourne scene. While here, he produced, with the help of the ABC, a remarkable tape work for 7 clarinets, called Forgetting and Remembering, in which each day for a week, he recorded a 30 minute clarinet improvisation on to one track of an 8 track tape. Each subsequent recording was made without having listened to any whole (or part) of any previous recording in order that he might be able to access the past solely through memory. The result is a strong statement of an experimental aesthetic in which the overall sound of a piece is the result of the processes used to produce it, as well as the result of any moment-to-moment decisions the composer might make. Later, in Iowa City (where he still lives), he produced an incredible series of seventeen electronic works, entitled (Speakers), which further explore ideas of process, physicality, and a penetrating inquiry into the nature of performance and composition. As well as Forgetting and Remembering, this long overdue CD has the last of this series: #17 (Speakers): [in every moment {of} decay}..., a half-hour work for "the sounds of analog electronics, clarinet, tenor sax, kalimba and assorted noise makers in which "decay"... informs the music at levels large and small." It's a large, absorbing, and dense work, which builds energy only to give way to a steady-state energy, which to me sounds like one of the longest slow releases of energy I've ever heard in a piece. Paredes work continues to be, after all these years, intense, probing, and unique.

ROBERT ASHLEY: YOUR MONEY MY LIFE GOODBYE.(Lovely Music CD LCD 1005

<http://www.lovely.com>) There are other people working in the field of contemporary opera and music theatre, but in my opinion, none of them combine technology, theatre and conceptual thought with the adroitness of Robert Ashley. Over the years he has produced an amazing stream of music theatre works, each of which has its own unique identity. His latest release from Lovely Music is the 1998 Your Money My Life Goodbye, a satirical and sordid tale of the mysterious death in prison of a Ms. Ona, a disgraced financier, whose husband (very much alive) is a spy. This is an absolutely amazing opera. No one but Ashley would have the audacity to construct an entire opera (more than an hour long) on a single repeating rhythm and an incredibly slowly changing pulsing chord progression. But he does, and it works, and the results are absolutely rivetting. The electronic timbres (except for the voices, all the sound material is electronic) are worth listening to in their own right - Ashley uses the most commercial of electronic equipment, but produces results that would pleasantly surprise people from both the

commercial record production world and the "avant-garde" academic computer music world.

ELIANE RADIGUE: TRILOGIE DE LA MORT (XI119 - 3 CD set from Experimental Intermedia, 224 Centre St. New York, NY 10013 USA) One of the hidden treasures of contemporary French music is Eliane Radigue. She has not followed any of the fashions of the past 50 years in French music, and as a result, has been thoroughly marginalised, finding many more performance opportunities outside France than in it. I was at Mills College in Oakland, Ca. in late 1998, while she was in residence, and the respect that was shown for her there was highly gratifying to see. This three CD set is of her masterwork, a three hour piece realized between 1985 and 1993. Each of the three CDs encompasses a long, slowly evolving drone piece, based on ideas from The Tibetan Book of the Dead. The entire piece was made on an Arp modular synthesizer - the control Radigue exercises over her 20 year old machine is phenomenal. To quote David Behrman, "In her music we traverse vast spaces, we hover over strangely textured plains, we dive into dim caverns, we listen to our own internal voices. There is a feeling of time having almost stopped. The textures and pulsations are unearthly but intimate...She has discovered things in electronic sound which powerfully affect our psyches".

COLUMBIA PRINCETON ELECTRONIC MUSIC CENTER: 1961-1973 (NEW WORLD RECORDS CD 80521-2. New World Records, 701 Seventh Ave., New York, NY 10036 USA.

<http://www.newworldrecords.org>) Those familiar with the magnificent, pioneering electronic works of Milton Babbitt might be forgiven for thinking that the Columbia-Princeton Electronic Music Center, especially in its early days, had a "house style." As this album shows, nothing could be further from the truth. Composers working there produced music in a wide variety of styles, including the diatonic flurries of Charles Dodge's The Earth's Magnetic Field, the gravelly playing with vocal loops of Ingram Marshall's Cortez, the delicate textures of Ilhan Mimaroglu's Prelude No. 8 (To the memory of Edgard Varese) and the jagged free atonal textures of Bulent Arel and Daria Semegen's Out of Into. Also included are two quite lovely solo pieces from Arel and Semegen. The CD also comes with a quite extensive booklet by Alice Shields, whose engaging Dance Piece No. 3 and darkly expressionist Study for Voice and Tape complete the CD. Like me, you might buy this CD because you feel you should have it for historical interest. However, also like me, you might find that it's a real good listen even without the weight of "history" behind it.

DAVID DOTY: UNCOMMON PRACTICE: Selected Compositions 1984-1995 (Syntonic Records SN63:32 Syntonic Records, 1039-L164 El Monte Ave. Mountain View, CA. 94040;

<http://www.syntonic-rec.com>) David Doty is well known in the world of alternative tuning as the editor of 1/1 - The Journal of the Just Intonation Network. What may not be known is that he is a deeply serious composer of considerable talent, with unusual harmonic and melodic gifts. This is a CD of melodic and tonal music made with various computer music systems over an 11 year period. Computer systems were used for their ability to change tuning instantly, and to make available ensembles that would otherwise be impossible to get together. As he says, "This is music that, in the best of all possible worlds, might be performed on acoustic instruments by highly skilled performers." Now that we've scared off the "granular synthesis (pick your own technique here) or nothing" purists, let me say that this is an extremely engaging album that draws on many sources - world music, folk music, garage bands, etc., but that its main interest is tuning. That is, it investigates the harmonic and melodic resources available with extended just intonation. In some cases, such as Fake Irish Music, the result can hardly be heard, on a casual listening - the music is just purer sounding than it would be on 12 tone instruments. In other cases, such as Fake Greek Music the result is immediately hearable, even to the casual ear - the extended harmonies of that piece having a piquancy that's simply not possible with normal tuning. And the polyrhythms of the neo-prog rock (I love inventing descriptive terms, don't you?) Paradigms Lost set my toes tapping more than once. In most of the pieces, just intonation is used to make very pure "normal" harmonies which then twist, turn, and modulate in the most unexpected ways. This is music to be listened to carefully, savouring the quality of a sudden harmonic twist, the feeling of being subtly and gently launched into an unsuspected harmonic territory. In Bodhisattvas in Berkeley? - Mu!, Doty reverses his normal hierarchy - here the intervals of modulation are foregrounded, making a quite dissonant and striking texture, at times reminiscent of Japanese Gagaku. This piece, a memorial to Jim

Horton (one of the unsung heroes of small systems computer music) is my favourite piece on the CD, but all of them are well worth hearing, and savouring, especially for those with a taste for gourmet intonation.

GARY VERKADE: WINDED - with compositions by KENNETH GABURO, WARREN BURT & PHILIP BLACKBURN (Innova 524 <http://www.composersforum.org>)

MUSICWORKS 75 - with compositions by KENNETH GABURO, HOPE LEE, LINDA TILLERY, PAULINE OLIVEROS, & SCOTT JOHNSON (Musicworks, 179 Richmond St. W. Toronto, Ont.

Canada M5V 1V3; <http://www.musicworks-mag.com>) (Some people might consider my writing of this review - in which I have a piece on one of the CDs, and was involved in producing the other, to be a conflict of interest. If you're among them - yeah,yeah! Don't read any further. Otherwise, read on. :-))

Kenneth Gaburo was one of the masters of experimental composition in the late 20th century.

Unfortunately, his work has been incredibly difficult to find. Finally, this situation, with the assistance of a small band of dedicated people (yours truly included) is being remedied. The above two CDs, which contain material previously unavailable, are now augmented by a just-released third CD, of Gaburo's works for tape solo, released on Pogus. Over his career, Gaburo began 11 pieces for instruments and tape - the Antiphony series - of which eight (1-4, 6, 8- 10) were completed. Antiphony X (Winded) for organ and tape is the last in the series, and it's an undisputed masterpiece. A complex, searing half hour of high energy organ and tape sounds, its performed with incredible energy by Gary Verkade, a virtuoso of the first rank. Also on the CD are two other pieces, both made by students of Gaburo, yours truly, and Philip Blackburn, and both of which are, in their own different ways, as uncompromising as Gaburo's piece. Both of these pieces also deal with the sound of Gaburo's voice, in homage to his concern with the voice as the primal expressive mark of individual being. In all modesty, I think the pieces by myself and Philip Blackburn are pretty good, but the real reason you'll find this CD essential to own is Antiphony X, one of the high points of experimental music composition in the 1990s.

Does anyone out there, by now, still not know about Musicworks? Originating in Toronto, it's just about the most informative new music publication around. Every issue is crammed with articles, reviews, interviews, and each issue comes with a CD. I find it absolutely essential reading, devouring every word of every issue. If you aren't already a subscriber to Musicworks, you should be. In the current issue, #75, there is an extensive interview with Philip Blackburn and myself about Kenneth Gaburo, which provides a lot of information about him. The treasure in this issue, though, are the four previously unreleased Gaburo works contained on the CD. Of those, Antiphony II (Variations on a Poem of Cavafy) will be of most interest to readers of Chroma. This is a recording of a live performance of a piece for 16 voice choir and two channel tape from 1962. The quality of the tape is a bit distorted, but nonetheless, the essence of the piece comes across well. The relation of the choir to the tape is complex, and virtuosic. This is a more relaxed piece than Antiphony X, but not any less serious. The CD also contains a few minutes of the Hiroshima Day 1987 Andrew McLennan - ABC - Kenneth Gaburo collaboration Testimony, which, 13 years later, emerges as a moving document of people's refusal to accept the way that the military and governments were viewing them (as expendible). Also on the CD are several other pieces of interest to computer music makers and fans - Hope Lee's lovely Voices in Time for chamber ensemble and tape; Pauline Oliveros on accordion and live computer processing with Pauline's Solo; and Scott Johnson's witty Listen, for sampled voices and instruments, in which the vocal contours of a simple, common phrase are developed for a rock/jazz based ensemble.

RICHARD MAXFIELD & HAROLD BUDD: THE OAK OF THE GOLDEN DREAMS (New World Records CD 80555-2 New World Records, 701 Seventh Ave. New York, NY 10036 USA. <http://www.newworldrecords.org>) Richard Maxfield (1927-1969) was one of the true pioneers of electronic music. Harold Budd, now better known for his ravishing ambient music projects, has a far more varied musical past than one might suspect. This CD is a reissue of two classic solo LPs which appeared on the even-then hard-to-get Advance Recordings label. The first, of Maxfield's music, has four very different pieces, all of which are prophetic in their own way. His Pastoral Symphony from 1960 is vintage early analog electronics, exciting music made well before the advent of voltage control. Bacchanale (1963) is one of the purest expressions of Fluxus in music, with its mixes of world music

(recordings supplied by Henry Cowell!), improvisations and beat poetry readings all juxtaposed. Piano Concert for David Tudor (1961) is an extremely dark and sparse piece, influenced by Cage, but with its own clear voice. Amazing Grace (1960) is probably the first tape piece using loops of a Black American English. Its more popular descendents include Steve Reich's Come Out and It's Gonna Rain. Harold Budd's encounter with the Buchla Synthesizer in 1970 produced some extremely minimal, but gritty and hard edged works. The Oak of the Golden Dreams (1970) is 19 minutes of modal improvisation over a raw sawtooth electronic drone. I get the feeling that Budd was using the Buchla touch keyboard for this piece. On this keyboard, you could trigger off notes simply by sliding your fingers over its surface, resulting in "sheets of sound" (ala Coltrane!). This is quite a different way of performing than depressing notes on a keyboard, and produces different musical results. Coeur D'Orr (1969) is a piece for improvising saxophone and tape. The tape is two tracks of sustained chords on an organ, and saxophonist Charles Orena makes extended modal melodies, again, sheets of sound, within the harmonic world of the drone. This piece is probably the first in which Budd discovers his ability to put together ravishing worlds of timbre. Again, another CD that is valuable both for its historical nature and for the lovely music it has.

GARTH PAINE: ESCAPE VELOCITY (custom CD from Activated Space - Garth Paine; 30 Moodie St. Carnegie, Vic. 3163 Australia <http://www.activatedspace.com.au>) Garth Paine has been composer with the interactive dance and technology troupe Company in Space for several years, and has produced a number of pieces of music and interactive environments for them. "Escape Velocity" is the music he produced for their 1998 show of the same name. In that show, the dancers' movements frequently triggered off sounds, or seemed to, and the music was a mix of technological sounds (modems, telemetry, etc.) and breath / body sounds, as well as electronic sounds, in keeping with the science-fiction / romanticization-of-new- technology theme of the work. I thought the music worked wonderfully with the show, and was curious as to how the music component would stand up on its own, without visual support. My questions are now answered. The music works very well as a CD listening experience. It's theatrical music, full of dramatic gestures, mesmeric in its combining of many simultaneous layers of samples. It reminded me of very sophisticated radio art, in fact, because the referential nature of many of the sounds seemed to constantly be suggesting fragments of some hidden narrative. Although the piece originated in a dance production, regular rhythms are mostly avoided, appearing only in the 5th and 11th tracks to any great extent. Some of the juxtapositions are quite poignant, such as a long section of just close- miked breathing followed by an episode of machine sounds. In another context, this might be obvious, but in this context, it works quite well. Whether you've seen Company in Space's work or not, you'll be most impressed by Garth's work on this CD.

DARRIN VERHAGEN: P3 (CD Single from Dorobo Limited Editions, PO Box 1040, Fern Tree Gully, Vic. 3156 Australia dorobo@werple.net.au) P3 is the latest project from composer and record producer Darrin Verhagen. It's a 21 minute CD single with 5 tracks, which was originally commissioned by John Crawford for his ABC New Music Australia radio program. The work has a unique form. The first two tracks feature shakuhachi samples of quite seductive timbre, alternating with digital spikes and artifacts which are quite jarring. Do not adjust your CD player - it's functioning quite properly, though the first time through, you might question this. These digital spikes, according to Darrin, are meant to serve the same function as the breath sounds, and abrupt attacks do in traditional shakuhachi music: to serve as a disruptive force to concentrate the attention, and to make a contrast between moments of calm and moments of severity. At the beginning of the third track is a short high energy noise section, which is a preparation for the long, hallucinatory, very beautiful and quiet 4th and 5th tracks. The last track was made with real time digital processing of a track from a previous CD of his, and sounds very bell-like, having the kind of delicate instability that Darrin aims for in his work. And the work has a sequel - on completing the work, Darrin gave all the sound files to Adelaide-based Matthew Thomas, who made a completely different work from them. I haven't heard any work quite like this - it's unique, and quite engaging. Darrin says there are only 5 - 10 copies left of this collector's CD, so if you want one, contact him quickly at the above email address.

tENTATIVELY, a cONVENIENCE: SPEECH DEFECT SYNTHESIS KIT and LOST IN

TRANSLATION (WITH BEN OPIE) (cassettes (Speech Defect: tape 17) (Lost In Translation: tape 16) from Widemouth Tapes, 3809 Melwood AveNue, Pittsburgh, PA 15213, NUsa anon@fyi.net) Sometimes humour conceals work of great sensitivity and interest. Sometimes wild humour forms an integral part of work of quite profound importance. Ladeez and gennelmen' - for your amazement - in this corner, I present the man with his brain tattoed on the outside of his head, tENTATIVELY, a cONVENIENCE, practicing promotextual, sprocket scientist, composer, instrument builder, improviser, event organizer and conceptual artist par excellance. Many people simply regard him as a clown, and those without a sense of humour may even regard him as a nuisance. But his subversive nature produces work that is simultaneously silly and profound, side-splittingly funny and very beautiful. These two self-produced cassettes document only a portion of his extremely prolific output of the past few years. The advent of affordable computer music systems has meant that his work has taken a turn for the technological of late, and his unique imagination has ranged widely over the field. Speech Defect Synthesis Kit, performed by tENT and friends under the name of 'Patanational Homonymphonemiacs, is listed as "Proudly setting Speech Synthesis back 350 years to the time of Georg Philipp Harsdorffer (not to mention even further back to Giordano Bruno)", and the description may be accurate. What he did was to record samples of phonemes from cheap computer speech synthesizers on to samplers, and then played sequences with these phonemes to produce words with them. These sequences were then traced and used to drive other sounds, producing an accompaniment to the computer words that sometimes compliments and sometimes overshadows them. The results are immediately funny, both on the surface, and, in a deeper, structural sense. Can a structure be funny in its own right? You bet it can! And suddenly, in the midst of all the zaniness, there are pieces that are just beautiful. And sometimes amazingly austere, such as Story of a Fructiferous Society, a 38 minute piece that takes up the bulk of side 2. This has to be the most uncompromisingly single-minded piece I've heard since Walter Marchetti's 1965 classic La Caccia (an LP on the Italian Cramps label). First time thru, I thought Story was going to drive me nuts. Second time thru, it was sort of interesting. Now I love it, and put it on as a more aggressive form of ambient music. Lost in Translation adds to cheap speech synthesis the charms (that is, the inadequacies) of language translation programs. The liner notes to the cassette detail the process used to process both Spanish and English Latin American texts back and forth between the programs. The sound on the tape is a processing of those liner notes mixed with a collage of the many Latin American music sources used, which are also subjected to similar de- and re- generative processes. This is one of the most "perfectly compleat" self-referential conceptual sound works I know. Also worth noting from tENT's recent output is his Bogus Piano Concerto - A Year and A Day on the Funny Farm available from him on his first CD. This is a piece which uses midi-files of the Romantic piano repertoire, among other things, to assemble what might possibly be the last piano concerto you'll ever need to own. If you have a good sense of humour, and aren't afraid to see your sacred cows turned into metaphorical hamburger, tENETATIVELY, a cONVENIENCE is an artist whose work you should get to know.

MARY LEE ROBERTS: 6 COMPOSITIONS (Open Space CD 9; Open Space; 29 Sycamore Drive; Red Hook, NY 12571, USA <http://www.the-open-space.org>) Mary Lee Roberts is a composer whose work is grounded in a love of nature and an interest in psychological process. This new CD of hers contains five computer pieces, and one chamber work for instruments and voice. Some of the computer work is narrative, in an oblique sort of way, and some of it is abstract. An example of the narrative work is Eusebio Consumed, which deals with an imaginary analysis by Sigmund Freud of Schumann's Eusebius! Granular textures, harmonic and inharmonic spectra, slowed down voices and music boxes follow each other with an almost impressionist sense of harmony and structure. Even without the programmatic context, it's a solid piece - with it, the sounds have a richer environment to resonate in. Things Fall Apart is a piece that pulls apart a vocal sound, juxtaposing granulation, long time-stretches, digital clicks, etc. to produce a haunting sense of a voice being gradually disembodied. Many of the pieces feature textures of inharmonic partials which have a kind of disturbing rumble underneath them - I was especially struck by this in Winter Cranes. Crossing the Salmon, a setting of a text Roberts wrote while in the Salmon River country of central Idaho, is a lovely dialogue between a soprano and an instrumental ensemble. Although there are similarities between this work and the computer works (in ideas of timbral matching, harmonic choice, etc.) what impresses me most is the sheer difference in

sound between Roberts' computer work and her instrumental writing. It's as if the works came from two different worlds, and maybe (as more and more of us involved in computer music have less and less to do with the world of classical music performance) they do. White Writing, Roberts' most recent work on the CD, uses a varied palette - lush drone-like textures alternate with what sound like short wave sounds and the voices of some favourite late-night radio talk show hosts. Roberts is a composer whose work is well worth getting to know, and while you're at it, you might check out the other CD, book, and magazine releases from Open Space, the brainchild of Benjamin Boretz. It's got some of the most intellectually challenging writing and thinking about music around.

HENRY GWIAZDA: noTnoTesnoTrhyThms (innova 505 <http://www.composersforum.org>) To say that Henry Gwiazda makes collages is a bit like saying the Beethoven is a composer who uses tonality. Gwiazda makes the most elegant collage work I know. The quality of sounds used are stunning, the choices of when and where to place sounds, both spatially and structurally, are immaculate, and the works are both immediately engaging, and continually fascinating on repeated hearings. This CD contains 7 works of his, written between 1989 and 1995. Additionally, the last two works on the CD use virtual audio, so that, if you take the time to set up your listening environment properly, you'll hear the sound in amazing 3D definition. I resisted doing this for months, but when I finally did it (moving speakers is hard work!), I was amazed. I had been cynical about the possibilities of virtual audio before this, but buzzingreynold'sdreamland, Gwiazda's speaker-oriented virtual audio piece, convinced me about the compositional possibilities of this technology. This is a piece in which space is used compositionally. The beauty of the collages in the first part of the CD, such as the stunning **MANEATINGCHIPSLISTENINGTOAVIOLIN**, is here greatly augmented and extended by the ability to place each sound in a 3D world in front of, and, in some cases, behind the listener, and to give each sound its own trajectory in space. And he does it without the need for multi-speaker sound systems. It's true that the effect can only be heard by one person at a time, but that's how most CD listening takes place anyway. The headphones-only virtual audio piece **thefLuteintheworLdthefLuteistheworLd** features the electronic flute playing of Ann LaBerge, and creates a mesmeric textured world of sonic memory. In all the works, in fact, the quality of sound, from incredibly close miked sounds (which remind me of the glow of hyper-realistic airbrush paintings), which almost breathe on you, to almost inaudible distant wisps and shards of sound, does much to create the incredibly attractive surface of this music, and the sense that we're observing a kind of interior world of sound, where someone's psychological state is being delineated. And even though there are plenty of "musical" sounds in this collage-based work, Gwiazda manages to pull off the trick (at least to my ears) of not letting them dominate the texture - they truly do become just other elements in his overall texture, no more or less important than the "environmental" sounds that he also uses. As such, this work poses a challenge, I hope, to those who would create a rigid distinction between the worlds of "music" and "sound" composition. If you're at all attracted to the contemporary extensions of the "musique concrete" aesthetic, you should become acquainted with this CD.

SEVER TIPEI: RAW CUTS: (CD from Sever Tipei, University of Illinois; 2136 Music Building; 1114 West Nevada Street; Urbana, IL 61801 USA s-tipei@uiuc.edu) Sever Tipei, born in 1943 in Romania, has taught at the University of Illinois for a number of years, developing a series of computer software tools of great complexity and sophistication. This CD is entirely devoted to his work, and consists mostly of pieces for voices and/or acoustic instruments, composed with the aid of a computer, one piece for voices and tape, and some remarkable "samples" of an ongoing, potentially infinite series of computer pieces. The CD opens with the pleasantly sparse "Many Worlds" for percussion ensemble, written with Tipei's MP1 program, in which five percussionists start in unison and gradually split into five independent streams. This is followed by the hair-raising "Curses" for speaking voice (Tipei himself), three female backing singers and computer generated tape. The text here is a remarkable Romanian poem written in 1927 by Tudor Arghezi, which is a series of frightening maledictions. Tipei performs it with gusto, in a Mayakovskyan style. Obviously, the futurist style of poetic declamation of the 1920s was not limited to Russia alone, but was present all throughout Eastern Europe (Arghezi in Romania; Attila Jozsef in Hungary, etc.). Tipei is also a pianist of considerable gifts, and he plays two pieces of his, "Lament" (1980) and "King's Nap" (1994). The former is a farewell to the "irrecoverable past", and has

sections of both modal and 12-tone harmony. In this piece, Tipei seems to be saying that both the world of modal folk-influenced music AND the world of musical modernism are in the past, and that it's time to move on. The solo computer work here, "A.N.L.-folds" is a piece which could potentially go on forever. Made with Tipei's DIASS program, each version of the piece (all of which are 2:26) has the same form, but all the details are completely different in each pass. The five versions enclosed on this CD are not for public performance. Tipei wants each version of the piece to be performed only once - as he says, he wants to underscore "the desire to distance himself from the production of "art objects" and to stress the ephemeral quality of any musical activity" - so if you want to publically perform the piece, you can email him, and he'll send you some custom made versions. The sounds in the pieces are wonderful - his DIASS system makes incredibly rich sounds which evolve in delightfully unpredictable ways. I was delighted with the A.N.L.-folds I heard back in 1997 at the first Sonic Residues festival in Melbourne, and with these new outputs, I continue to be impressed.

ANDREW CZINK: ESCAPE VELOCITY (earsay 98002 - earsay productions; #308 - 720 Sixth St.; New Westminster, BC Canada V3L 3C5 <http://www.earsay.com>) Andrew Czink is known to some of us as a composer of extremely dense computer pieces, in which hundreds of tracks of sound are mixed together. This CD, however, is a collection of solo piano works, performed by Czink himself. And what a pianist! The playing is rhythmic, pulse-oriented, and precise. But this is not a "minimalist" album (whatever that means anymore...) - the textures are driving, complex, and continually darting in one direction or another. Still, there will be stretches where Czink deals with loops and repetition, but not in ways you might expect. I dislike emotionally descriptive terms for music, generally, but to me, there's just a feeling of optimism to this music, and at times, such as in "Mind's Rose", the third track, even a feeling of ecstasy. Various harmonic worlds are visited, an Indonesian mode in "Paranoid Toetap" (track 5), dense clusters in another track, tonal references in yet another, but the music is unified and coherent, and Czink's playing is exhilarating.

SUSAN FRYKBERG: ASTONISHING SENSE (OF BEING TAKEN OVER BY SOMETHING FAR GREATER THAN ME) (earsay es 98003 - earsay productions; #308 - 720 Sixth St.; New Westminster, BC Canada V3L 3C5 <http://www.earsay.com>) New Zealander Susan Frykberg spent many years in Vancouver before returning to New Zealand. Her work includes, in her words, "a number of "environments" in which stories (often mythological) of women's lives are the "context" for her music." This is true of all the works on this CD, and gives it a unique conceptual flavour. That is, this CD can be listened to for its narrative content, or it can be listened to for its sonic qualities (her command of granular synthesis and other techniques is impressive), or for the interaction of the two. As well, the CD is a showcase for two of the best extended-vocals performers on the North American West Coast - Kate Hammett-Vaughan and DB Boyko. Mother Too, the opening work, is a tour de force for Hammett-Vaughan, whose exceptional multiphonics were the highlight of the piece for me. Insect Life is another piece for voice and tape. In this piece, Frykberg has the vocalist attempt to match environmental sounds. DB Boyko's performance here is rivetting. Birth / Rebirth Bearing Me is more of a pure computer piece. Granular synthesis is used to deconstruct Frykberg's own voice speaking the phrase Born in Hastings. The textures are quite engaging - it's clearly granular synthesis being used, but I never got the sense that I was listening to a technological cliché. The most serious parts of the CD are three pieces from Frykberg's ongoing Audio Birth Project, where she interviews herself and her mother on the process of giving birth. The pieces on this CD are Margaret, for tape alone; Astonishing Sense of Being Taken Over by Something Far Greater Than Me for violin and tape (Margaret's voice again forms the basis for part of the tape part); and I Didn't Think Much About It for piano and tape, and featuring the voice of Frykberg's mother Pat. The violin part in Astonishing Sense is lovely. Superbly played by Nancy di Novo, it emerges from sonic textures, and soars above them. It's a very Romantic piece - its honestly emotional and heartfelt, without using conservative forms or idioms. Andrew Czink's piano playing in I Didn't Think Much About It is also impressive. He matches the quality of the fragmented granular textures on the tape with the greatest of ease. I found the three pieces from the Audio Birth Project on this CD to be musically intriguing and emotionally satisfying, and I look forward to more. The CD concludes on a lighter note - the trans-continental Sue and Kathy Telecompose Across the Country, a piece composed on, or maybe that should be, in spite of, the Internet with Montreal composer Kathy

Kennedy. There are recordings of Frykberg and Kennedy's voices in the piece, as well as them being played (in a radio-drama sense) by DB Boyko and Kate Hammett-Vaughan. Machine sounds, fax sounds, printer sounds, and texts that lament the technical difficulties of working with the funky and inadequate early Internet form the substance of the piece. I got many a knowing chuckle out of this piece. Frykberg is a talented composer and a great story-teller. I look forward to more of her work.

ANNEA LOCKWOOD: BREAKING THE SURFACE (Lovely Music LCD 2082

<http://www.lovely.com>) Annea Lockwood, originally from New Zealand, but based in the USA since the mid-70s, continues to be one of the most far-reaching conceptual thinkers in contemporary music. This is a very profound CD, and it's also one that's extremely hard listening. It demands exact attention if its qualities are to be appreciated. There are only two pieces on the CD, each 25 minutes long, and each for a male voice with accompaniment of environmental sounds. Both pieces concern transformations; in the first, the transformation of consciousness that takes place in shamanism, in the second, the transformation of death. Duende, the first work, is a 1997 collaboration between vocalist / improviser Thomas Buckner and Lockwood. In this work, Lockwood recorded the sounds Buckner had developed for his own use in his improvising, and structured them on tape, making a kind of improvising score for him. Buckner has a fine operatic baritone - he features prominently in many of Robert Ashley's operas - but the extended vocal techniques used in this piece are an much more complex and exciting than anything I've heard him do previously. He says that each run-through of the piece, practice or performance, has been a transforming experience for him, and I can hear, on the basis of this sparse and striking performance, how that must be the case. Delta Run, from 1979-81, is a collaboration between the late sculptor Walter Wincha and Lockwood. On the day before his death in 1979, at age 30, Wincha talked to Lockwood about his attitudes to his upcoming death. The serenity and acceptance in his voice are extremely moving, as he talks, often with extreme difficulty, about his feelings. Accompanying this are the gentlest of environmental sounds, breath sounds, rain, etc. In another context, these long environmental stretches might be questioned, but here, they establish the pace of communication, one that is slowing down gradually, to an inevitable ceasing. At the conclusion of this CD, with its voyages into shamanic and the near-death states, I was deeply moved. I still have only one comment on this CD: a soft, hushed, "wow".

PAUL PANHUYSEN and THE GALVANOS: LOST FOR WORDS (Table of the Elements TOE-

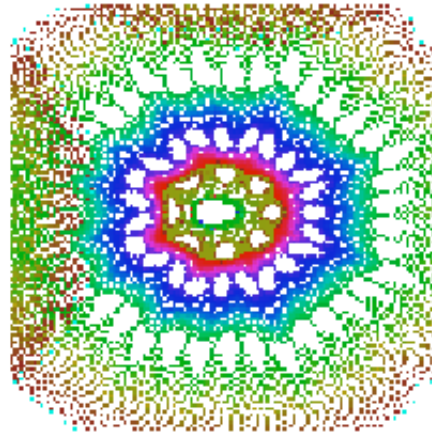
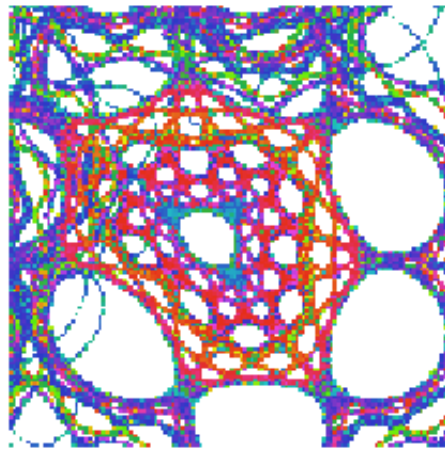
CD-45 <http://www.tableoftheelements.com>) Paul Panhuysen is well known as one of Europe's chief sound sculptors and musical installation artists. For 20 years, he also ran Het Apollohuis, a very influential art and music performance space in Eindhoven, The Netherlands. His work is very influenced by both Pythagorean thinking (especially in its use of number proportions in both the visual and sound aspects of his pieces) and also by the Fluxus movement, with its insistence on pared down minimalist structure. The Galvanos in the title of this CD refers to 9 galvanometers normally used in electro-cardiographs. Here, the output of a sound amplifier is connected to the inputs of the galvanometer. At the base of the pointer of the galvanometer, Panhuysen attaches a two metre long steel string, which is itself attached to the middle of a long string, effectively dividing the string in half and creating a duochord. There are 9 of these galvanometer - string - long string devices, which are fed by five stereo cassette recorders. Additionally the 9 strings are tuned to a fundamental and a harmonic and a subharmonic pentatonic scale. The overall result is a very elegant series of resonant filters, which transform any sound put into them to a great degree. Unlike much of Panhuysen's music, which can be fairly noisy (as witness his CD Engines in Power and Love, which is him performing a whole battery of rock effects pedals which are processing the sounds of a whole fleet of dot-matrix printers), the sound of this device is lush, and gorgeous. The sound is not unlike that of the comb filters in AudioMulch, for example, but somehow richer, probably due to the "imperfections" of the physical devices Panhuysen is using. The CD consists of 11 tracks in which various sounds are processed through the galvanometers / strings. Some of these are vocal, some are previous pieces of his, and some are live performances with his performance ensemble, the Maciunas ensemble (named for Fluxus founder George Maciunas). Although all the pieces have a certain family resemblance (this is a CD devoted to one experimental instrument, after all) the pieces also each have their own distinct character. The first piece, for example, Stalin, takes an old 78rpm record of the leader and teacher giving a speech in 1937. Stalin's melodious and persuasive voice becomes absolutely beautiful music here. It's like watching a picture of some fundamental evil being

transformed into a gorgeous graphic with PhotoShop. AiDA, on the other hand, takes a recording of a 30 year old polyrhythmic minimal piano piece of Panhuysen's and processes that. The piece used only the notes A and D, and the rhythms interact with the resonant frequencies to create a drone of great rhythmic life. Birds processes the sound of the KanaryGrandBand, Panhuysen's aviary full of free-improvising canaries and finches. (He has also made a CD of musical interactions of the Maciunas Ensemble and the KGB. For those who smile indulgently at such an idea, a single hearing of that CD will establish that there IS something remarkable going on between the birds and the musicians. And the knowledge that Panhuysen's father was a reknowned ornithologist should show that his work with these birds is no romantic new-age nature-music-with-animals fantasy.) The most surprising track for me is Clock. In this, a multi-track, polyrhythmic recording of a 1695 clock is processed through the wires. Repeating melodies galore result, ringing the harmonics of the various strings in wonderful ways. As an introduction to the work of someone I consider to be one of the most important (and most overlooked) composers working in Europe today, this CD is great. But even just on its own, its engaging and fascinating listening.

TOM FRYER: THE PATH WITH THE HEART (CD from Tom Fryer

<http://www.netSPACE.net.au/~tomfryer>) In the previous issue of Chroma, we had an article by Tom Fryer, describing his guitar-controlled computer music system. Those wanting to hear him take the system through its paces should consult this disc, recorded in 1996, when Tom was living in Amsterdam. In each of the 11 tracks, different aspects of the system are used, but there's an overall consistency of approach and style. Mostly, the playing is rapidly changing and intricate. The rapidly evolving stream-of-consciousness playing of free improvisers is here extended into the world of computer sound. The first track features guitar sounds triggering off washes of electronic tones, complex textures metamorphosing into suspended drones, in which subharmonic scales abound. The coda of this track is one the Futurists would have been proud of. For a lot of the tracks, the guitar is used mainly as a controller - it's the physicality of its playing that influences the music, not the sounds its strings make, but in some of the tracks, such as Stroking the Rubber Tulip, the balance between the guitar and electronics is just about equal. Flood My Calyx is a wild collage of stretched voice samples and other electronic sounds. It's very funny, but the textures also kept reminding me that it is perhaps the free improvisation tradition where the most complex music of today is happening, and not in the scores of various post-serial composers. Not all the pieces are fast and furious. One Smart Cookie and Your New Frog both are slower, more contemplative pieces which work with one (more harmonically based) texture for their durations. Cookie is quite mellow, but the Frog drone has an extremely high harmonic content, which makes it not restful at all, but quite gritty. Tom's live performances are a delight - he has a fine sense of performance and theatricality. Even without his visual presence though, his music is fun to listen to. And for those wanting to hear how he has developed his use of the system since 1996, Live on Planet Earth is a more recent CD (also available from Tom) which has four extended tracks of playing from 1998 & 1999 solo performances at Melbourne's Theatre of the Ordinary and Planet Cafe.

Enough reviews already! One could spend 8 hours a day just listening to and reviewing the flood of new CDs coming out from experimental and technological musicians of all sorts. There are a whole bunch of post-modern academics who, for the past 20 years, have kept writing about the "death of the avant-garde". On the basis of all these new CDs, which I can barely keep up with (and there are at least 125 OTHER new CDs in my in-tray, as yet unlistened to..) I can honestly say I have ABSOLUTELY no idea of what they can POSSIBLY be on about!



ACMA SOUNDSCAPE COURSE AT VICTORIA UNIVERSITY OF WELLINGTON

JohnYoung

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For three consecutive nights in July (14-16), twelve secondary students from the Wellington region were invited to participate in the Soundscape workshop in electroacoustic composition in the Victoria University Electroacoustic Music Studios. The workshop was made possible with funding from Creative New Zealand. The opportunities for students to explore the sound manipulation potential of computers still seems to be unnecessarily limited. While MIDI sequencing and computer-based music notation are fairly widely appreciated, the potential of audio processing in sound design is less understood. A number of the students on the Soundscape course were familiar with ideas of audio processing, but mostly through their own home computer systems and web searching. The idea for this workshop was to give students a concentrated experience of digital audio processing, and the mixing of material developed into a final group work. The group met for three hours each evening under the guidance of Jonty Harrison, Michael Norris, Philip Brownlee, Miriama Young and John Young. The first evening was given to sampling sounds from objects brought by the participants (all of which were excellent), and then some initial processing of sounds in studios and at workstations (in groups of three). The second evening allowed for more intensive work at sound design and processing. On the final evening all of the material created was brought together, auditioned, selected and mixed into the final composition, entitled 'reverbtwelve'. Software used included Hyperprism PPC, Soundhack, Soundmaker and Pro Tools TDM.

One of the most interesting things about the groups of students was their strong ability to focus on their listening. All, for instance, showed they that understood the way that they were being encouraged to

listen for interesting resonance and spectral shape within the sound-objects that we recorded, and all were impressive in their ability (and desire) to focus on developing and crafting sounds to their satisfaction, rather than quickly changing tools for novelty value. In the future we will probably plan a longer course, to give students more time to focus on materials and methods, and to allow for the possibility of works created individually, or in smaller groups. Teachers could also be included in such workshops. We would also like to give more demonstrations of techniques used by tutors, and to look towards public presentation of music composed in the course.

interFACES

Australasian Computer Music Conference 2000

Wednesday 5 July to Saturday 8 July 2000

Calls for Participation

- Introduction
- Calls for Works
- Calls for Papers
- Calls for Artist Talks and Workshops
- Registration Procedure
- Submission Instructions
- Contact Details

Introduction

interFACES will be a conference which focuses upon the relationships between artists and audiences, and between musicians and computers. It will be a forum to explore research, development, and practical application of computers in music making, with particular attention to computer-assisted composition, interactive performance, the artist and audience, and commercialisation and globalisation. The conference will include concerts, paper sessions, artist talks, and workshops. Submissions for participation in these activities are now sought.

Calls for Works

Submission for works for performance in concerts as part of the ACOMC 2000 are now requested.

Computer music is neither a style nor a genre; it is simply music for which the use of a computer is necessary - or at least central - to its genesis. This encompasses computation of electro-acoustic sonic material as well as the computation of a score. Computer music can be instrumental, vocal, or electro-acoustic. Generating musical scores by computer is generally known as algorithmic composition or computer-aided composition (after ICOMC 2000, with thanks).

ACOMC 2000 welcomes submissions of recorded, acoustic, and mixed works with any combination of electronic and acoustic elements. Play back formats available will include CD, DAT, Mini Disc, and quadraphonic pieces in ADAT, DA88 and Pro Tools formats. A concert featuring acousmatic sound projection will be held and composers/performers wishing to specifically work in that forum should indicate their preference in the submission.

The availability of acoustic performers for works is limited and performance of works is subject to availability of required resources. Modest acoustic performance requirements are encouraged.

The Concert Panel prefers submissions of entire completed works for consideration, however, outlines and abstracts of partially completed works will also be considered.

Submission Deadline

By Friday March 31, 2000

Submission Form

The submission form is available online at www.acma.asn.au

Call for Papers

Abstracts for conference papers for peer review and publication in the conference proceedings are requested.

Topics for papers include but are not limited to:

- Computer assisted composition and software development
- Interactive performance and alternative controllers
- The artist and audiences
- Commercialisation, globalisation and computer music

Submission instructions are detailed below.

Submission Deadline

Friday March 31, 2000 (e-mail timestamp)

Submission Form

The submission form is available at www.acma.asn.au. See below for paper submission instructions.

Artist Talks and Workshops

Finally, we wish to explicitly encourage opportunities for artists to discuss previous, ongoing or developing projects, with particular emphasis on projects that relate to the conference themes.

These presentations will not be peer reviewed. Abstracts only will be published in the conference proceedings. Audio and or video recordings of the presentations may be included in the conference CD ROM along with any appropriate computer files.

An artist talk will be a short presentation given during the conference in a manner similar to a formal paper presentation. A workshop will be an extended presentation run prior to, or after, the conference and may or may not entail a fee for attendees.

Submission Deadline

An abstract of the talk or workshop should be submitted by Friday April 28, 2000 (e-mail timestamp)

Submission Form

The submission form is available at www.acma.asn.au. See below for paper submission instructions.

Registration Procedure

Early Registration (post marked by Friday April 28, 2000)

ACMA Member AUD\$170.00

Non-Member AUD\$190.00

Student /unemployed AUD\$90.00

Conference dinner (not included in registration) AUD\$30.00

Normal Registration (post marked by Friday June 30, 2000)

ACMA Member AUD\$200.00

Non-Member AUD\$220.00

Student/unemployed AUD\$110.00

Conference dinner (not included in registration) AUD\$30.00

On-Site Registration

ACMA Member AUD\$220.00
Non-Member AUD\$240.00
Student/unemployed AUD\$130.00
Conference dinner (not included in registration) AUD\$30.00

Pre-/post-conference Artist Talks & Workshops

ACMA Member AUD\$TBA
Non-Member AUD\$TBA

All payments due in Australian dollars. There are numerous WWW Sites with up-to-the-nanosecond exchange rates: try Yahoo Finance Currency Converter

Registration fees include ACOMC 2000 Proceedings, the ACOMC 2000 Conference CD ROM, lunches and refreshments, and admission to all concerts, paper sessions, poster sessions, and demonstrations. Additional fees may apply for Workshops.

Submission Instructions

The submission form is available at acma.asn.au Please include all of the following information:

1. Author names and e-mail contact information

Example:

Horwood, Daniel

dp.horwood@student.qut.edu.au

2. Additional contact information for first author

Example:

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3. Submission type

One of the following:

-Paper (7-8 pages in Proceedings and 30 minutes presentation time, including discussion)

-Studio Report (2-3 pages in Proceedings and 10 minutes presentation time)

-Artist Talks (500 word abstract in Proceedings and 30 minutes presentation time including discussion)

-Workshop (500 word abstract)

4. Title

Example:

"The creation of sentient musical phrases through probabilistic processes applied to MIDI data."

5. Keywords

Max. 5, delimited by semicolons Example:

Artificial Intelligence; MIDI; Gesture Capture; Probability; Composition

6. Content Area

This will be used to choose appropriate readers. Select one from the topic list. Example:

Other: The role of chance in emergent intelligent behaviour.

7. Resources required for presentation

In particular:

- CD, DAT, Audio Cassette
- Video (VHS: NTSC, PAL; DVD)
- Overhead Projector; Slide Projector
- Computer[s]: Type and min. configuration
- Anything else

Please be as specific as you can. This will assist us in making your presentation run as smoothly as possible.

8. Abstract

Not to exceed 500 words. Do not sneak in references to yourself in the abstract; the jury process is anonymous.

Contact Details

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www.academy.qut.edu.au/music/browna

NEW WEBSITE!

www.acma.asn.au

ACMA has a new website. Maintained by Ian Whalley (musik@waikato.ac.nz), it has all the up-to-date information about ACMA events. It also has Chroma 24, 25, and this issue as both pdf and html files. Applications for membership in ACMA can be found there too! Many thanks to Ian for his hard work on this.

NEW DISCUSSION LIST!

acma-l

acma-l is a listserv discussion group hosted by the Department of Music at the University of Waikato (Hamilton, New Zealand) for the Australasian Computer Music Association . It acts as a forum for discussion amongst participants throughout Australasia and beyond. ACMA membership includes composers, performers, educators, researchers, computer scientists and others with an interest any aspect of the many forms of electronic music. Currently you do not need to be a member to subscribe to the list.

To subscribe to acma-l:

Send an e-mail to listproc@list.waikato.ac.nz and, in the text of your message (not the subject line),

write:

subscribe acma-l your email address

To leave acma-l:

Send an e-mail to listproc@list.waikato.ac.nz and, in the text of your message (not the subject line), write:

unsubscribe acma-l your email address

To avoid complication, do not use an email signature when subscribing/unsubscribing.

The ACMA Committee for 1999/2000

President: David Worrall

Vice President: Andrew Brown

Secretary: Terry McDermott

Treasurer: Garth Paine

Publications Officer/Public Officer: Warren Burt

GST WARNING!

With the GST being introduced in Australia on 1 July, it becomes vital for composers of computer music to know how it affects them. With the de-institutionalisation of computer music in Australia mentioned earlier, fewer and fewer of our members are supporting themselves as teachers. Hence, knowledge of how the tax changes will affect the independent composer (usually considered as just another variety of independent contractor by the government) is vital.

1) THE GST

From 1 July, most things we use will be subject to the 10% Goods & Services Tax. The old Wholesale Sales Tax will disappear, leaving some goods marginally cheaper, the politicians tell us. (Yeah, yeah!) If you already have a Sales Tax exemption, that will disappear on 1 July. Everyone has to pay the GST. However, if you register for a GST number, you can claim back GST you pay on goods directly related to your earnings. If you don't register for a GST number you can't do this.

2) DEDUCTIONS FOR MUSICIANS

Additionally, the Australian Tax Office (ATO) has made a special ruling about admissible tax deductions for musicians. The ruling's reference number is TR 95/20. It's available from www.ato.gov.au/pub/cat.index.htm, then click on Occupational Rulings, the Performing Arts. (Thanks, Dick Letts)

3) ABN-PAYG

The most alarming tax news of all concerns the little discussed "Pay As You Go" scheme also to be introduced on 1 July. Under this scheme, any work you do as an independent contractor will attract a

PAYG withholding tax of 48.5% unless you are registered for an Australian Business Number and quote that number on all invoices for the work done. So in addition to registering for a GST number, you may also have to register for an ABN number as well. The Australia Council's Information Bulletin #6 from 28 January 2000 details this. Their website is www.ozco.gov.au.

4) ATO WEBSITES

Some light on all this may be had at the ATO's websites at www.taxreform.ato.gov.au and www.gststartup.gov.au or call the Tax Reform Hotline on 13 24 78.

-Warren Burt