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Array

Communications of the ICMA

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***ARRAY* is the triannual publication of the International Computer Music Association.**

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Editors' note

This issue is the first put out by the new editors Mara Helmuth and Jøran Rudi, and we would like to apologize for the delay. We would like to see the next issue be published in July/August, and have set the deadline for submissions to July 1st. Array does largely depend on the readers' submission for content material as well as profile, and we would like to see Array turn into a vigorous forum for debate and exchange.

We will attempt to develop a focus on one specific topic in each issue. In this issue we will address the gender issue, which was being raised again at ICMC 1997. Mara Helmuth has invited a number of female composers to describe their view on this issue, and the editors are eagerly waiting to read the response from the readership. In public music debate in Europe the gender issue is almost completely absent, but this debate seems very vigorous in North America. What the nature of this issue is in South America, Asia and Australia is unknown to us, and we would welcome reports and views from those parts of the world also in the next issue.

In the next issue we would like to open up a new window for views and narratives of a more personal nature dealing directly with *why* ICMA members are working with sound within the area of computer music, so far removed from commercial enterprise and the kind of limelight that satisfies the need for attention. We would like a wide array (no pun intended) of submissions for this issue - where cultural background should weigh in seriously within our motivation and what we remember to be significant experiences. We are certain that there are sizable differences as well as wide common ground.

We would also like to see Array filled with more submissions of papers on theoretical or academic topics, so that it can become more of a useful source of information for those active in the field. Suggestions for a web-based database with articles, reviews etc. are appreciated, and Array has been approached by an individual who wishes to create just such a database. But before we can go ahead with that, we need the authors' permissions allowing for electronic publication of the material on the Internet. Your ideas and input is welcome in this area, too.

With wishes for a civilized summer,

Mara Helmuth and Jøran Rudi

NOTICE TO CONTRIBUTORS

The deadline for submissions for the next issue of ARRAY, Vol. 18, No. 2, is July 1, 1998. All submissions to ARRAY must be in machine-readable form. You must submit items using E-mail or a floppy-disk (Mac or PC). If you submit anything solely as hard copy, it will not be considered for publication in ARRAY.

If you send a submission on floppy disk, send both as ASCII file and in the file format that your word-processor are using.

Please do not use any formatting other than italics and bold face. If you wish to include graphics with your submission, please do so in a standard and recognizable format. It is helpful if you can include a hard copy as well. If you would like your disk returned, please include an addressed return envelope.

ARRAY submissions on disk to:
Jøran Rudi
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P. O. Box 1137 Blindern
N-0317 Oslo

ARRAY electronic submissions to:
ARRAY-ed@notam.uio.no

E-mail submissions and inquiries will receive the quickest response.

Regional news

From Asia

«U.S.A./Japan Inter College Computer Music Festival» was held in Tokyo, Dec. 13-16, 1997. The festival was organized by Keio University Research Center for Arts Administration, NTT InterCommunication Center (ICC) and Information Processing Society of Japan SIG Music and Computer (SIGMUS), and supported by the American Embassy in Japan. Prof. Takayuki Rai of Kunitachi College of Music directed this big event. During the festival five paper sessions, eight concerts and two panel discussions were held. Many students participated from different universities including UC at San Diego, SUNY at Buffalo, NYU, Columbia University, Osaka University of Arts, Waseda University, Kunitachi College of Music, IAMUS in Gifu Keio University and Senzoku Gakuen University. Cort Lippe, Robert Rowe, Miller Puckette, Terry Pender and Rick Bassett were the guest professors and composers. Barry Moon, Luke DuBois and Joshua Fried were invited as the guest students of the festival.

After the festival Cort Lippe asked his students to write articles on the festival. The followings are their reports for each festival day.

- Shuji Hashimoto

Day 1, Saturday 13 December, 1997.
InterCommunication Center, Gallery D.

The conference got under way smoothly with two paper presentations. Miller Puckette, who lectures at UCSD, gave a progress report on his Pure Data software. This report included demonstrations of the current audio and video capabilities of the software. Following this, Kiyoshi Furukawa gave a report detailing his work at ZKM.

The first concert opened with three tape pieces. Keiichi Kitahara's «metamorphosis», was, as the title suggests, a study in spectral mutation. Kenji Yasaka's «Experiment 6» was a comfortable piece with familiar sounds and melodic ideas. Carlos Guedes' «Etudes» made good use of spectral mutation and various synthesis techniques. The final piece on the program was a collaboration between composer Akihisa Ohashi and guitarist Akinori Yamasaki entitled «BLUE». An SGI running MAX was used to transform the sounds of the guitar in real-time. This piece relied heavily on traditional Spanish guitar music for its motivic detail.

The second concert opened with Tonoko Koizumi's «ROU». This lighthearted theatrical piece involved visual images and taped sounds. Takeyoshi Mori's «Reverie» consisted of familiar sounds generated mostly on the SGI. In Sekiya Yamashita's «Bio Confuse» for Biomuse and tape it seemed the composer had pretty much lost control over his Biomuse. Chris Mercer's «Contraptionization I» made use of heavily processed «low-tech» sounds to create a highly complex texture. The final piece on the program was Shu Matsuda's «swing Till Dawn» for soprano saxophone and live computer system. In addition to live ISPW processing of the saxophone sounds, this piece featured a liquid crystal projector run from the SGI as an additional aid to the interaction between performer and computer.

- Barry Moon

Day 2, Sunday 14 December, 1997.
InterCommunication Center, Gallery D.

The second day of the USA/Japan InterCollege Computer Music Festival consisted of three hour-long concerts which presented a wide range of computer music by composers residing in Japan and the United States. The concerts were programmed well, with an excellent blend of compositions for tape alone, instrument(s) and electronics, and interactive performance. This review discusses in brief the day's thirteen musical offerings, concentrating on some of the more interesting student pieces, which demonstrated the plethora of possibilities for realizing electronic compositions.

The first piece of the day was an intercontinental "jam" session orchestrated by MasatakaGoto (Waseda University) using his RemoteGIG software which handles MIDI events over tcp/ip-based RMCP (Remote Media Control Protocol). Taking advantage of the long delay inherent in such events, the performance offered an interesting take on the call-and-response idiom, with Rick Bassett playing keyboards in Japan and Brad Garton and Perry Cook at the Columbia Computer Music Center in New York playing keyboards and Perry Cook's homemade MIDI controllers. Both sites were also hearing MIDI backing tracks composed by Mr. Goto. The performance was quite a success as it showed the promising future of Mr. Goto's software, which performed quite well given the inherent difficulties in streamlining and scheduling MIDI events over a network.

Masahumi Inohira's "Walking the Dog" was a suitably noisy tape piece written using MAX as an arbiter of melodic manipulation.

Ippei Ogura's "Assong for Microphone Inside the Body", performed by the composer, was an interesting if somewhat disorienting soundscape. The reviewer was not quite prepared for the subtlety with which the composer treated bodily sounds as sonic objects. The piece, as a result, was quite interesting.

The second concert began with the reviewer's piece "Richetta" for tape. Based on interviews of my grandmother presented in real-time with my voice eliminated and replaced with processed voice and guitar, providing a texture for my grandmother's narrative about her life's transitions from childhood to old age.

Ryutaro Mimura's "Echoes # Labyrintos Case-vita" for tape was an entertaining and repetitive soundscape piece that would have done well as a film soundtrack. The piece, which featured an array of signal-processed piano sounds, was played in conjunction with a simple blue-screen video projection and the composer wandering about the concert hall with helium balloons.

Jeff Ridenour's Improvisation for Contrabass and Electronics was an extremely involved piece, performed with great concentration by Keizo Mizoiri. The electronics, triggered by cues from the performer, responded in a variety of ways to the different techniques with which Mr. Mizoiri explored the timbre of his instrument.

The final concert of the day began with Robert Rowe's "Shells" for soprano saxophone and interactive music system. Dr. Rowe's Cypher software was used to expand thematically on Shintaro Yabe's saxophone performance, comprised of a mixture of notated and free material. The result was a fluid counterpoint of electronics, which expanded on the saxophone part as would a musically sensitive human accompanist.

Australian composer and SUNY Buffalo student Barry Moon's "Study for Voice and ISPW", sung by soprano Izumi Morikawa and based on a text from Shakespeare's Richard II, provided an excellent demonstration of the wide range of possibilities inherent in the signal processing of voice. The vocal performance was transformed by the processing routines into a quite elegant piece of music. The semantic implications resulting from the recycling of text fragments spatially and temporally lent a deeper layer of interest to the

attentive listener who followed the text.

On either side of Barry Moon's piece were two short tape pieces: "Silence" by Akira Sakaguchi and "Flowers for the scrambletape" by Masayuki Ienaga, both of which explored the transformative properties of signal processing when applied to simple, repetitive melodic fragments.

Joshua Fried's great performance of his piece "The Music Shoes" for "Shoes, Loops, and FM Radio" was one of the highlights of the conference. Taking looped samples of Japanese talk radio, Mr. Fried then looped and gated the samples by drumming on the heels of specially modified shoes. Mr. Fried delivered the performance with flair and utmost respect for the artistic viability of found sound. The language barrier made the piece all the more entertaining, as Mr. Fried was himself unaware of the words he was sampling in his performance.

The final piece of the day, rescheduled due to unexpected problems with the composer's Macintosh (something which should evoke the immediate sympathy of this newsletter's entire readership), was Rick Bassett's "Axe to Grind" for tenor saxophone, keyboards, and MAX accompaniment. Mr. Bassett's virtuosic keyboard playing, eclectic compositional style, and exceptional ear for orchestration are a joy to hear at any time, and this piece was no exception, accompanied as he was by Toru Morichika's saxophone. Mr. Bassett's keyboard part served the dual role of accompanying the saxophonist and controlling the level of processing and depth of orchestration which the computer added to the sax performance. The piece, which flowed quite well, showed off the computer's ability to aid, rather than restrict, improvisation.

- R. Luke DuBois

Day 3, Monday 15 December, 1997. Keio University, Mita Campus.

The day began at a frantic pace as the sleepy American contingent played road crew and loaded sound equipment into 518 Hall. Not surprisingly, the Japanese woman who was directing this activity had the strength of three American composers. Upon catching their breath, these weaklings staggered into the Conference Hall to hear three student paper presentations. Harry Castle, a student at UCSD, presented his paper entitled «Scotch, twice: convincing human/machine improvisation». Harry described the details of an interactive system called the «Penginstrument» he had programmed for his piece «Scotch, twice» on the Amiga 3000. We were treated to a realization of this highly interactive improvised piece on the following day. The next paper, entitled «I am trying to make sense of Signal Processing as a paradigm for composing» was presented by Luke DuBois, a student at Columbia. Luke's presentation helped us gain a greater understanding of the motives and techniques behind his electroacoustic compositions, with a focus on his piece «richetta for tape» heard the previous day. The next speaker, Yoriko Kojima, a Japanese native who is currently studying at Columbia, presented her paper entitled «Composer as computer musician». Yoriko described her experiences in composing her first electroacoustic piece «REMINISCENCE for tape». We were to hear the piece that evening.

After being treated to a fine lunch, it was time for the esteemed lecturers from the American universities to hit the podium. Terry Pender, who lectures at Columbia, presented his paper entitled «Performing Technology». Terry gave us many insights into his very personal relationship with computers and acoustic instruments. There was an obvious common thread running through the presentations from Columbia. They seem to prefer a highly personal, intuitive approach to the creation of electronic music over the deterministic approach made famous at Columbia by Davidovsky. Next, Cort Lippe, who lectures at SUNY at Buffalo, presented his paper entitled «Music for piano and computer». Lippe played examples from his piece «Music for piano and computer» at different stages of processing to give us an insightful layer cake description of the piece in the tradition of the marvelous chef, Julia Childs. Robert Rowe, who lectures at NYU, was the next faculty speaker. He discussed recent work on his «Flock of Words» and «Interactive Virtual Musicians» projects. Robert's presentation, which included video footage from both projects, detailed his pioneering efforts in designing Integrated Real-Time Music and Graphics Performance Systems.

After a short break, the faculty from the four institutions in the U.S. took part in a panel discussion chaired by Takayuki Rai, Director of the Sonology Department of the Kunitachi College of Music. The intended subject for discussion was «Interactive Computer Music Systems», about which panel members Terry Pender, Miller Puckette, Robert Rowe, and Cort Lippe are all, in their own way, experts. There was much talk about the future of software and hardware. Miller Puckette, who began the panel with a short demonstration of his PD software, was unusually energetic as he described, among other things, a possible new protocol called FUDI which would replace MIDI and utilize ethernet communications instead of the serial port. The crystal ball gazing which characterized this panel session turned sour towards the end when the topic of discussion was steered by a certain member of the audience towards music education. Although three of the four panel members are proud fathers, and obviously care deeply about the future of education, this topic seemed more appropriate to a conference of an entirely different nature.

Thankfully, Takayuki Rai managed to close the session before too much more could be said on the topic and it was time to head over to 518 Hall to hear the 6th concert of the conference. The concert opened with Shintaro Imai's «raremetals» for flute, percussion and ISPW. Shintaro, a student at Kunitachi, displayed an impressive level of virtuosity in ensemble writing and real-time signal processing techniques with this piece. He told me the next evening over a bottle of sake that it took three weeks to complete the piece, which, given it's clarity, is amazing. The next item on the program, «REMINISCENCE» for tape, had been discussed by the composer Yuriko Kojima earlier that day. The piece featured readings of the Greek poet Konstantine Kavafy, processed on the SGI and external signal processors. With this, her first electroacoustic composition, Yuriko shows a great deal of promise as a composer in the genre. The following piece, «Polemics» for piano and tape, composed by NYU student Carlos Delgado, was reminiscent of Davidovsky's Synchronisms in the close relationship between the tape part and the technically challenging piano part. Next up was Chris Penrose's «Dodohead» for DAT tape. Chris is the composer in residence at Keio University's Shonan-Fujisawa Campus. «Dodohead» explored semantic relationships between spurious concrete sounds in a style pioneered in Varese's «Poeme Electronique». Although many aspects of the piece were intended to be humorous, the humor was negated by the long duration of the work. The final item on the program was Erik O $BKB (J's «Marco Polo» for midi piano and ISPW. Erik sent MIDI data to the piano generated by an algorithm running in MAX. The sounds from the piano, which had no human performer, were processed on the ISPW. Some of the more striking details of this piece were the panning effects and the intimate, seemingly unsystematic piano writing.

Day 3 ended in the first of two trips to a nearby Chinese restaurant, where students and faculty from the U.S. and Japan reveled in good food, drinks and conversation.

- Barry Moon

Day 4, Tuesday 16 December, 1997. Keio University, Mita Campus.

Regional news

The fourth and final day of the conference consisted of two paper sessions, two concerts, and a panel discussion. The four papers presented were all informative and gave rise to interesting points of discussion. Joshua Fried discussed his current and past works and the compositional motivations that inspired them. Barry Moon followed with a presentation detailing his open-form score following technique as exhibited in his most recent real-time composition «Interact I.» The afternoon papers were equally interesting, beginning with a detailed description of the CAMUS (Computer Aided MUsic Synthesis) system developed by Azusa Umemoto/Mikinobu Utiyama/Atuo Kawai/Siino Tutomu. The system adds heuristic approaches to theory-based composition. The heuristic data is incorporated into knowledge bases that are applied towards note duration, chord progression, and pitch composition decisions.

The paper sessions concluded with a presentation by Axel Mulder describing his work with Sidney Fels and Kenji Mase. They have developed an experimental environment in which a virtual object is used as an input device for the editing of sound. The sound artist can literally sculpt sounds by changing attributes of the virtual object such as its shape, position and orientation. There is no tactile feedback, but the movement of hands is read and interpreted through Cybergloves (for handshape), and Polhemus Fastrak sensors (for hand orientation). They have written custom MAX objects that can be used to introduce movement information into a MAX patch. This presentation attracted a great deal of interest and engendered lively discussion. It was followed, appropriately enough, by a panel discussion on multimedia as it relates to computer music. The panel was chaired by Kazuo Uehara, and the panel included Joshua Fried, Barry Moon, Luke DuBois, Osamu Takashiro, Daisuke Hagimori, and myself (Harry Castle).

There were two concerts given this day as well, one in the early afternoon and another in the evening. The afternoon concert began with three tape pieces. The first, «AC2 (Inspired A-life)» for tape, was by Fumitake Onaka. The piece was generated algorithmically by drawing on artificial-life modelling methods, and was realized through Csound and Cmix. A-life is an ongoing area of study for the composer, and in this case it resulted in a timbrally rich and slowly unfolding work. Ayumu Kitawaki composed «OPUS 30» for hard-disk recorder, a piece which was also concerned largely with timbre. The composer generated all sounds by starting with instrumental sound sources and running them through a battery of effects until the original sound was largely indistinguishable. The work, as the previous piece, unfolded slowly and attempted to direct the listeners attention to the development and transformation of timbres throughout the piece. The third tape piece was «Pinger for tape,» by Motohiko Hibino, realized using Csound. «Pinger,» as described by the composer, is a «sound to perceive the size or shape of an object that we cannot see directly». This piece was also more timbrally than melodically oriented, and used spatialization to advantage. The music was spectrally lush and the tentative, intermittent panning of sounds created a palpable sense of searching and of physical space.

The next piece was «Cregg's Pipes for mandoin and tape,» by Terry Pender. Pender played mandolin along with a tape he created by layering samples of mandolin harmonics, played out of phase with each other. The melodic material was derived from a traditional Irish Reel and played at a much slower tempo. The piece developed beautifully, with the composer playing mandolin along with the tape as layer after layer revealed itself. The result was a wall of interlocking modal melodies reaching a fullness of density and then abating. The final piece on the concert was my own, «Scotch, twice,» for Disklavier piano and two performers. The piece is an improvised duet in which one player performs at the keyboard, and the other performs at a computer using custom software to selectively capture and transform fragments of any length played by the pianist. The computer performer then «plays» the transformed material back on the same Disklavier and the two improvisors must negotiate the same physical as well as aural space. The pianist for the performance was Joseph Pinzarrone, with myself at the computer.

The evening concert opened with a piece by Chiaki Mouri for violin (Teduka Satomi), piano (Ayako Sato), ISPW for sound, and SGI for graphics. The composition sought to explore issues of power and control by allowing the instrumentalists' playing (directed by a score) to influence the development of the piece, while simultaneously projecting a computer generated image of a mannequin whose movements were determined according to their playing. The piece was technologically ambitious and came off without a hitch. The ideas were expressed clearly and it was overall a very enjoyable performance. Tamami Tono gave a wonderful performance of her piece «dinergy 2,» for sho and live computer. Dinergy, meaning «growth over the limits» was an apt title for this piece. The composer played sho using circular breathing throughout, producing long tones straining beautifully against the electronic material. The electronic sounds complemented the sho and the overall effect was, as the composer hoped, to «fill the musical space with the rich ephemeral energy of life.»

Cort Lippe's «Music for piano and computer» was given a strong performance by Yoshiko Shibuya. The piece uses an ISPW to analyze the piano performance and in response trigger sound generation and computer processing of the piano. Lippe deploys an extensive range of DSP real-time signal processing techniques throughout the piece. They never stand out as «effects,» but instead naturally extend and complement the sounds from the piano. I have seen this work performed several times now and I continue to hear new things in it each time, and each of the performances, like this one, have been energetic and exciting. The final piece of the conference was an improvisation with Rick Bassett at piano, Terry Pender on mandolin, Cort Lippe on an ISPW, and Miller Puckette using his Pure Data software with GEM (by Mark Danks) to add a live graphical component. The energy brought to the stage by this group was infectious and the jam was enthusiastic and compelling. It was a high note on which to end a great four day event.

- Harry Castle

Announcements

Workshop on Constraint Techniques for Artistic Applications

August 25, 1998, Brighton, UK

The goal of this workshop is to study the application of constraint technologies in the artistic domain. Constraint technology makes it possible to declaratively state and efficiently solve problems either in numeric or symbolic domains. This technology is now mature enough to support the realization of large-scale applications. For artistic applications, constraints are therefore a key concept to develop high-level authoring systems, to be easily used by people with light or no computer science background. More precisely, the workshop will focus on identifying and investigating the specific conceptual and technological problems emerging from artistic applications when using constraints. Music is a particularly promising field in this respect (see e.g. automatic harmonization systems). The long tradition of workshops in Music and AI (e.g., AAAI-88, IJCAI-89, ECAI-90, ECAI-92, AAAI-94, IJCAI-95 and IJCAI 97), shows that there is a growing community of researchers interested in musical applications of AI. This trend is further supported by advances in multimedia systems, and growing interest in subjective and artistic aspects of human activity. Although this workshop will continue this series, it will focus on constraint technology and broaden the application field to other artistic domains, such as graphics and visual arts.

Contributions in both music and graphical/ animation domains will considered, provided they put emphasis on how the artistic content and the semantic of the domain influence or reveal limitations of the underlying constraint technology, rather than on technical issues only.

The workshop will address content issues and its goals are to :

Identify the scientific technical issues of constraint programming relevant with regards to these applications.
Establish fruitful links between applications in different artistic domains.
Provide an opportunity to gather researchers interested in artistic applications on constraints.

We solicit papers on all aspects described above. Topics of interest include, but are not restricted to the following :

Ontologies and languages for constraint applications in the artistic domain
Constraint solving techniques on multimedia domains
Representation of time in artistic constraint systems
The notion of an artistic constraint problem (e.g precomposition)
Modeling subjective aspects with constraints
Automatic harmonization systems
Reactive aspects and user interaction
Dynamic maintenance of solutions

Submission procedure

Papers (up to 15 pages) should be sent electronically to the contact person before April 1, 1998. Acceptance and revision notices will be e-mailed by May 1, 1998. Revised papers (up to 15 pages) must be submitted by June 1, 1998, so that the proceedings can be distributed at the workshop. Submission and coordination of all aspects of the meeting will be through the Internet. Electronic submissions using Postscript format are preferred (please make sure that the postscript file prints well before submitting it). Alternatively, abstracts (2-4 pages) describing ongoing research are welcome. We plan to publish the workshop proceedings in a book format, or as a special issue of a specialized journal after the conference. In this case, authors will have the opportunity to revise and extend their contributions.

Schedule

This will be a one day workshop, containing around 10 short presentations or demos (20 minutes each), and time for discussion during 3 panels on emerging common concerns.

1 April 1998 Deadline for proposals
1 May 1998 Notifications of acceptance
1 June 1998 Camera-ready workshop notes and other information
24 Aug 1998 Workshop at ECAI-98

This call is also available at :
http://www.csl.sony.fr/Music/Events/CallECAI98.html

Workshop Organizing Committee:
Philippe Codognet, INRIA / Sony CSL
Gerard Assayag, Ircam
Camilo Ruda, University Javeriana de Cali Colciencias

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First COST-G6 Workshop on Digital Audio Effects (DAFX98)

November 19-21, 1998, Barcelona, Spain

ANNOUNCEMENT AND CALL FOR PAPERS

The Audiovisual Institute of the Pompeu Fabra University of Barcelona organizes the First Workshop on Digital Audio Effects, DAFX98, which will be held in Barcelona (Spain) from November 19th to the 21st, 1998.

The workshop is sponsored by the G6 action of the European Cooperation in the Field of Scientific and Technical Research (COST) framework.

Scope:

DAFX98 is an international meeting of researchers interested in the theory and practice of digital processing techniques for the transformation of sounds in music and audio applications.

DAFX98 will include tutorials and presentations of the most recent developments with the goal of giving both an overview of the field and an in-depth discussion of current research. DAFX98 is a place for the presentation of examples, particular applications, software, and hardware.

Topics:

Topics to be covered include, but are not limited to:

Time and frequency domain processing
Filters
Modulation
Delays
Reverberation
3D Sound (Stereo Enhancement, Decorrelation Techniques, HRTFs)
Time-/Frequency Scaling (Time-Domain, Frequency-Domain)
Spectral Processing (Vocoders, Models for Resynthesis,
Morphing)
Nonlinear Processing (Dynamics, Exciters, Distortion)
Audio coding
Hardware implementations

Announcements, cont.

Software implementations
Miscellaneous

SCIENTIFIC COMMITTEE

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SUBMISSIONS

We invite submissions of papers and tutorials in all aspects of digital audio effects.

Relevant dates:
April 30st 1998: deadline for submission of abstracts
June 30th 1998: notification of acceptance of abstracts
September 15th 1998: camera ready papers due

Submissions should be sent by email to: dafx98@iua.upf.es

The official language is English. All submissions are subject to peer review. The accepted contributions will be published in the Proceedings of the Workshop.

There are two formats for presentation:

Paper:
4 pages (A4) in the Proceedings, about 20 minutes for presentation

Tutorial:
8 pages (A4) in the Proceedings, about 30 minutes for presentation

As part of the submission include the following items, in the specified order:

1) Author Names and electronic contact information. Corresponding author first, followed by all other authors, on separate lines.
2) Contact information for first author only. Address, Phone, FAX.
3) Submission Type. Choose one of: Paper or Tutorial.
4) Title of Paper.
5) Keywords (5 maximum). These will be used to generate the master index to the proceedings.
6) Content Area. This will be used to help route submissions to the appropriate reviewers. Select one from previous topics, or denote as «other: your own content area».
7) Resources required for paper presentation. Choose from this list: CD, DAT, Audio Cassette, Video: VHS-PAL, Overhead Projector, Slide Projector, Computer(s): Type and Configuration, Other.
8) Abstract describing the paper. This should be written in English and of at most 500 words for Paper Submissions and 700 for Tutorial Submissions.

More detailed information including registration, travel, accommodation information and a preliminary program will appear on the workshop web site: http://www.iua.upf.es/daf98

CONTACT INFORMATION:

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5th Brazilian Symposium on Computer Music

August 3 - August 5, 1998,
Belo Horizonte - Brazil
http://www.nics.unicamp.br/sbcm/

SECOND CALL FOR PAPERS, COMPOSITIONS AND TUTORIAL PROPOSALS
- extended deadlines -

The Symposium:

The fifth Brazilian Symposium on Computer Music will be held in Belo Horizonte, during the 14th Annual Congress of SBC (Brazilian Computer Society) from August 3 to August 5. The symposium is organized by NUCOM, the Computer Music interest group of SBC.

Scope:

The Brasilian Symposium aims at presenting the ongoing research on musical applications of computer science. The previous symposia had given a significant contribution in the improvement of the interchange among Latin America researchers and artists, and their counterparts worldwide.

This year we are making special emphasis on the issues involving the use of supercomputing technology in musical applications. Given the power of today's high-performance computing architectures, one could reasonably expect a significant increase in the quality of synthesized sounds and in «real-time» composition and performance applications.

Topics of Interest:

The special theme of the conference is:

«super and parallel computing applied to music»

The other topics to be covered include, but are not limited

Acoustics and Audio Diffusion
Audio Hardware
Audio Signal Processing
Sound Synthesis
Restoration of Audio Documents
Artificial Intelligence
Psychoacoustics and Cognitive Modeling
Computer Aided Music Analysis
Computer Aided Musical Education
Interactive Performance Systems
Music data structures and representation
Music Notation, Printing and optica recognition
Systems and Languages for Composition

Important Dates:

April 10, 1998 - Deadline for postage of compositions
April 30, 1998 - Deadline for postage of papers
May 18, 1998 - Notification of acceptance
June 16, 1998 - Final camera-ready

Symposium chair

Mauricio Loureiro
Federal University of Minas Gerais, Brazil

Program Comittee

Gerard Assayag, IRCAM, France
Aluizio Arcela, University of Brasilia, Brazil
Marcio Brandao, University of Edinburgh, UK
Furio Damiani, State University of Campinas, Brazil
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Geber Ramalho (chair), Federal University of Pernambuco, Brazil
Xavier Serra, IUA-Pompeu Fabra University, Spain

Music Composition Comittee

Celso Aguiar, CCRMA, USA
Jorge Antunes, University of Brasilia, Brazil
Silvio Ferraz, PUC-SP, Brazil
Sergio Freire (chairman), Federal University of Minas Gerais, Brazil
Craig Harris, Leonardo Electronic Almanac

Paper Submissions

The papers describing conclusive or ongoing research must be submitted
in a preliminary version containing up to 8 pages.

Send the article by email written in portuguese or english in ASCII format (without accentuation), PostScript, HTML, or indicate a URL where the
whole document can be accessed.

Music Submissions

Music submissions should be sent via air mail to the official symposium
address (see below) in the following formats:
Tape music: submit audio (DAT or CD)
Music for tape and instrument(s) : submit the tape part (DAT or CD) and score, or a full recording of the piece
Interactive music: submit a version of the piece in DAT or CD
Algorithmic instrumental music: submit the score and a recording of the piece
Music and Image: submit the piece (or a version of it) in videotape (VHS, color system NTSC), and optionally also a digital version of the audio part

The works are expected to be created by means of a non-trivial use of computer technology. Every submission must include also a brief program note/biography, and a short text about technical aspects involved in the creation of the piece. These texts (in english and/or portuguese) are to be sent also by e-mail (ascii format, without accents), WITHIN the deadline, to sbcm98@sbc.org.br. Submissions missing any of these requirements will not be considered.

Remarks:
Pieces not exceeding 8 minutes are preferred. The works must have not been performed in earlier Brazilian Symposia, and the date of creation shall not be previous to 1994. Selected works which require the use of network, and/or additional costs with performers and special equipment will NOT have their performance automatically assured by the Symposium, that, nevertheless, will try to work out solutions for their creation. (A preliminary consult to chairman about availability of resources is advisable) Pieces conceived for more than two channels have to be submitted in a 2-channel version. The submitted works become part of the NUCOM Audio Archive (for consulting purposes only), unless the composer writes expressly against it.

Inquiries

The web page (http://www.sbc.org.br/sbc98) provides further information about the symposium. Others inquiries regarding any aspect of the symposium may be sent via internet (sbcm98@sbc.org.br) or surface mail at the following address:

V Simposio Brasileiro de Computacao & M sica
Escola de Musica
Universidade Federal de Minas Gerais
Av. Antonio Carlos 6627
31270-901 Belo Horizonte, MG - Brasil
Tel: +55-31-499 4724 (CPMC-UFMG)
Fax: +55-31-499 4720 (UFMG)

POSITION ANNOUNCEMENT
BROWN UNIVERSITY DEPARTMENT OF MUSIC

The Department of Music at Brown University announces a position at the level of visiting assistant professor. The term of this appointment, which begins in September 1998, will be for one year. The contract is not renewable. We seek a composer with a strong specialization in computer music capable of teaching courses in composition and theory with distinction and enhancing the intellectual life of the department. The responsibilities for this position include teaching two courses each semester, directing undergraduate independent studies projects, and taking an active role in the administration of the MacColl Studio for Electronic Music. Applicants must have completed an advanced degree (M.A., M.F.A., Ph.D., or D.M.A.) in composition and demonstrate successful teaching experience at the university level.

Deadline for receipt of applications and all supporting materials is March 1, 1998. Applicants should send a letter describing their experience and interests together with a curriculum vitae, samples of compositions, graduate school transcripts, and five letters of recommendation to:

Professor Gerald Shapiro
Chair, Search Committee
Department of Music
Brown University
Box 1924
Providence, RI 02912

Brown offers the B.A. in music, the M.A. in music (with concentrations in composition and ethnomusicology), and the Ph.D. in music (with a concentration in ethnomusicology). The Department of Music, with a faculty of eleven supported by professional library and technical staff as well as some twenty instructors in applied music, enrolls about a dozen graduate students, thirty undergraduate majors, and more than a thousand general students annually. It supports an Appalachian string band, Balinese gamelan angklung, chamber music groups, chorus, Ghanaian drumming group, jazz bands, orchestra, Trinidadian steel band, wind symphony, and a resident string quartet. Its technical resources include the MacColl Studio for Electronic Music and a University Multimedia Lab. The Orwig Music Library houses the Koetting Ethnomusicology Archive and the Neiman Archive of Sound Recordings. Among the Special Collections of the John Hay Library are the Harris Collection of American Poetry and Plays, which includes over 17,000 musical works from the 17th century to the present, and a collection of more than 500,000 pieces of sheet music.

Brown University is an Affirmative Action/ Equal Employment Opportunity employer.

Announcements, cont.

Cinema per l'Orecchio / Cinema for the Ear
Series of texts and hypertexts for music and technology

edited by Alessandro Cipriani
Contempo Edizioni

A Csound Primer and more!

a new book by
Riccardo Bianchini - Alessandro Cipriani

Il Suono Virtuale / Virtual Sound
Csound for PC and MAC

A tutorial on sound synthesis and processing, including theory and its applications: the ultimate Csound tutorial

Index Csound: what it is and how it works - Additive synthesis - Subtractive synthesis - Flow charts - Stereo and control signals, vibrato, tremolo - Digital audio - Sampled sounds and their processing - Analysis and resynthesis - Using MIDI files - MIDI controls and real time - AM and ring modulation - FM -Global variables, echo, reverb, chorus, flanger, phaser, convolution - DNL and vector synthesis - Granular synthesis - Physical Modeling synthesis - Csound as a programming language Appendix: Wcshell - A primer in math and trigonometry.

Readings: Controlling Real-Time Csound with MAX (M.Giri)- Score Generation with other programming languages - Csound for Linux (N.Bernardini) and other readings by A.Di Scipio and E. Giordani

Now available in Italian, and later (September 1998) in English by ConTempo

Index, introduction, preface (by James Dashow) and first chapter (in Italian) online: http://www.axnet.it/contempo

For info:
ConTempo sas - Via Sorelle Marchisio, 16 - Roma - tel. e fax 06-355.02.025
email: contempo@wmail.axnet.it

CMI-99
Conference on Musical Imagery

The International Society for Systematic and Comparative Musicology will arrange its sixth international conference at the University of Oslo, Section for Musicology, June 17 - 20, 1999, with musical imagery as its theme.

Musical imagery can be defined as our capacity for imagining musical sound in the absence of a directly audible sound source, meaning that we can recall and reexperience or even invent new musical sound through our «inner ear». We would like to see a broad scope of approaches to this theme, as may be suggested by the following sub-topics: - Elements of auditory imagery in music (pitch, melody, harmony, timbre, dynamics, rhythm, textures, etc.)
- Auditory imagery in language and other sonic events - The epistemology of musical imagery
- Musical imagery and event imagery
- Cross-modality and musical imagery
- Performance and musical imagery
- Mental practice and musical imagery
- Oral traditions and musical imagery
- Theories of consciousness and musical imagery - Neurological aspects of musical imagery - Schema theory and musical imagery
- Musical analysis and musical imagery
- Musical imagery and representations of musical sound in mind and machine - Musical imagery and conceptual spaces
- Guided visual imagery

Researchers are invited to submit extended abstracts (min. 400, max. 800 words) by no later than December 31, 1998. Submissions by e-mail are encouraged, but submissions may be made either by paper copy or by e-mail to the following address:

CMI-99
Section for Musicology
University of Oslo
P. B. 1017 Blindern
0315 Oslo
Norway
Fax: (+47)22854763
e-mail: r.i.godoy@imt.uio.no

Further details are posted at the conference website: http://www.hf.uio.no/imt/CMI-99/

FESTIVAL ELEKTROKOMPLEX
EUROPEAN CONFERENCE ON ELECTROACOUSTIC MUSIC 1998
INTERNATIONAL ROSTRUM OF ELECTROACOUSTIC MUSIC-UNESCO

June 29 - July 5, 1998, Vienna

The Austrian Society for Electroacoustic Music (GEM), the International Music Centre (IMZ) and the Austrian Broadcasting Corporation (ORF) in cooperation with the International Music Council of UNESCO, the Herbert von Karajan Centrum and the Music Information Center Austria (MICA) will hold a comprehensive event in the Summer of 1998 in Vienna.

It will include 8 concerts with the loudspeaker orchestra Acousmonium of the French Groupe de Recherches Musicales, a conference, an exhibition, UNESCO's International Rostrum of Electroacoustic Music and the General Assembly of the NICE - New International Community of Electroacoustic Music.

The main theme of the conference is «audience / music», a reflection on the dissemination of the electroacoustic music at the end of the 20th century. Further, the main organizations for this form of art in Europe will be invited to share information, including historical aspects and institutional presentations, in the context of an exhibition.

This event, 50 years after the birth of the musique concrete, is meant as a party for the electroacoustic music in Europe, and an upbeat for a desired world event in 1999.

DEADLINE FOR SUBMISSIONS: March 15, 1998

For information contact:
GEM -The Austrian Society for Electroacoustic Music
Music Information Center Austria
Stiftgasse 29
A-1070 Vienna
Fax: +43-1-521 04 49
Tel. +43-1-521 04 42
<mica@mica.at> or
<lintz.maues.igor@magnet.at>

Participation in the Rostrum:
The International Rostrum of Electroacoustic Music is an event organized by the International Music Council of UNESCO with participation of broadcasting organizations around the world. Interested organizations should write directly to:
International Music Council / UNESCO
1, rue Miollis
F-75732 Paris Cedex 15
Fax: +33-1-43 06 87 98
<imc_cim@compuserve.com>

ELEKTROKOMPLEX
(program preview, please be aware of eventual changes)

Monday, June 29
9 am, radio: Welcome breakfast to the participants of the International
Rostrum of Electroacoustic Music
10 am to 7 pm, radio studio 1: Rostrum (closed session)

Tuesday, June 30
9 am to 7 pm, radio studio 1: Rostrum (closed session)
10 am to 2 pm, MICA (Music Information

Center Austria): General assembly of the New International Community of Electroacoustic Music (NICE) (closed session)
After 12 am, MICA: Registration of participants of the European Conference on Electroacoustic Music 1998
7.30 pm, MICA: Welcome reception, opening of the exhibition

Wednesday, July 1
9 am to 7 pm, radio studio 1: Rostrum (closed session)
10 am, Herbert von Karajan Centrum: Opening of the conference
10 am to 1 pm, Conference session I. Theme: Trends, directions of electroacoustic music in Europe (aesthetics)
Afternoon, MICA: reserved for special meetings
7.30 pm, radio concert hall: Concert I
9 pm, radio concert hall: Concert II

Thursday, July 2
9 am to 10 am, radio studio 1: Rostrum (closed session)
10 am to 1 pm, Herbert von Karajan Centrum: Conference session II. Theme: Electroacoustic music, radio and new communication media. With participation of the broadcasting companies represented at the Rostrum.
Afternoon, Herbert von Karajan Centrum: Announcement of the chosen compositions of the Rostrum
7.30 pm, radio concert hall: Concert III
9 pm, radio concert hall: Concert IV

Friday, July 3
10 am to 1 pm, Herbert von Karajan Centrum: Conference session III.
Theme:
Electroacoustic music, recording industry and new diffusion media Afternoon, MICA: Meeting about documentation and information regarding electroacoustic music (closed session)
7.30 pm, radio concert hall: Concert V
9 pm, radio concert hall: Concert VI

Saturday, July 4
10 am to 1 pm, Herbert von Karajan Centrum: Conference IV. Theme:
Nurturing electroacoustic music (production, education and development)
1 pm: Closing of the conference
Afternoon, MICA: reserved for special meetings
7.30 pm, radio concert hall: Concert VII
9 pm, radio concert hall: Concert VIII
10.30 pm: Farewell dinner

Sunday, July 5
MICA: Reserved for discussion of future projects

CALL FOR PROPOSALS AND MUSIC
JIM'98, Journées d'Informatique Musicale

The JIM aims to gather researchers in computer music and musicians who use computers as a means of expression or as a tool for composition, in order to present the most advanced researches and their development prospects.

They are organised by CNRS-LMA (Daniel Arfib) and the Atelier d'Exploration Harmonique (AEH) with the help of ADERIM. JIM '98 will happen this year in a residence at the Agelonde Center in la Londe-les-Maures in the south of France along the mediterranean sea. This site is situated nearby the railway station of Toulon and Hyères and also nearby the airport of Hyères. This will allow a good conviviality in superb suroundings. The price will be in accordance with all budgets.

Call for papers

JIM'98 call for papers concerning all the domains covers during the last JIMs:

* Formalization and representation of musical structures
* Formalization and modelling of musical knowledge
* Environments and languages for musical composition
* Automatic composing and arrangement systems
* Tools for musical analysis
* Musical editing and publishing systems
* Optical score recognition softwares
* Musical performance modelling and simulation
* Software and hardware interfaces for musical performance
* Sound synthesis systems and environments
* Musical instruments modelling
* Signal analysis and processing systems
* Sound spatialisation and acoustic modelling
* Software and hardware systems for interactive music
* Automatic recognition and extraction of musical parameters
* Musical perception modelling and simulation
* Normalization, archiving and transmission of musical information
* Real-time systems and protocols for computer music
* Reports from musical research centers

with two new themes for this year:

* digital audio effects
* alternative tunings

Proposals will be examined by a paper selection committee. Proceedings will be published. Articles must be sent before Feb 15th at the following adress:

JIM'98
Daniel ARFIB
CNRS-LMA
31, Chemin Joseph Aiguier
13402 Marseille Cedex 20

Every propostion for video, tapes, dance aso is welcome, especially for the afternoon sessions intermede.

Call for music works

The theme for the evening concert this year is: «the use of microtonality in new music». JIM'98 call for music works that use microtonality (just intonation, alternative tunings). Authors have to send a cassette, a DAT or a CD accompanied with a written document specifying the title, its length and the tuning system used. A committee will select the best propositions in this domain

* deadline for submission: March 1st 1998
* mailing adress:
  Atelier d'Exploration Harmonique
  les Camails
  83340 Le Thoronet
  tel: 0033-494-73-87-78

JIM' 98 Organisation:

* scientific: Daniel ARFIB, CNRS-LMA, Marseille (13)
* musical: Jacques DUDON, Atelier d'Exploration Harmonique, Le Thoronet (83)

JIM supervision committee

* Marc Chemillier (Université de Caen)
* Myriam Desainte-Catherine (Université Bordeaux 1)
* Yann Orlarey (Grame, Lyon)
* François Pachet (CSL, Sony)
* Marie-Hélène Serra (IRCAM)

JIM98 (journees d'informatique musicale)
Daniel ARFIB
CNRS-LMA
31 chemin Joseph Aiguier
13402 Marseille Cedex 20
tel: (0033)-491-16-42-10
fax: (0033)-491-22-08-75
email: JIM98@lma.cnrs-mrs.fr

Announcements, cont.

Computer Support for the Compositional Process

March 9 - 10, 1998, Limerick, Ireland

2 day workshop to be held at:

Centre for Computational Musicology and Computer Music,
Dept. of Computer Science and Information Systems,
University of Limerick, Ireland

http://www.csis.ul.ie/ccmcm

Invited Speakers

Guy Brown: Modelling the perceptual organisation of music.
Antonio Camurri: Interactive systems and composition.
Richard Orton: TBA
Peter Todd: Putting Psychology into Models of Composition.
Trevor Wishart: Electronic Composition.

The Centre for Computational Musicology in the University of Limerick is running a two day workshop on computer support for the compositional process. The aim of the workshop is look at the relationship between computer technology and computational models of musical processes. Traditional musics are deeply meshed with structural conventions and the use of sound. Instruments are the result of evolutions of preference and value. But "physical" instruments are limited in that not all music cannot be played on them all. The advent of electronic technologies - sound synthesis and computers has upended this relationship. Composers can realise concepts with no reference to instrument makers. The range of sounds and the many ways of organizing them raises new challenges for the musician and composer.

1) The range of sounds that can be produced makes the process of finding and manipulating particular sounds potentially more time consuming and difficult.

2) Sound production is separated from the gestural interactions involved in playing traditional musical instruments. This means that composers can produce sounds uninhibited by gestural feedback - however, this means that production is also potentially separated from very deep cognitive structuring.

The aim of this workshop is to present and discuss state of the art developments in sound synthesis and computer support of composition and their relationship to our conception of musical process and cognition.

Organizers:
Niall Griffith: niall.griffith@ul.ie 00 353 (0)61 202785
Paschall De Paor: paschall.depaor@ul.ie 00 353 (0)61 202782
Donncha O'Maidin: donncha.omaidin@ul.ie 00 353 (0)61 202705

Local Organisation:
Gemma Ryan: gemma.ryan@ul.ie
Tel: 00 353 (0)61 202730
Fax: 00 353 (0)61 330876

There will be a nominal workshop registration fee of 10 Irish Punts,(5 IRP for registered students).

Paris, December 24, 1997
IRCAM (Institute for Research and Coordination Acoustic / Music associated to the Georges Pompidou Center in Paris, France), just accepted to distribute MSP, a real-time DSP software developed by David Zicarelli.

MSP

MSP (Max Signal Processing) is an extension of MAX, invented at IRCAM and distributed by Opcode Systems, Palo Alto, California. Developped from Miller Puckette's Pure Data software and based on ideas in IRCAM's FTS, MSP is a set of MAX external objects allowing a large number of Signal Processing operations for the first time on the Macintosh. This development was planned in 1993-94 when David Zicarelli came to work at IRCAM but could not be achieved due to processor power limitations.

IRCAM will distribute MSP through Internet and on CD-ROM printed every 6 months for its Forum members. The public price for MSP is the same as from David Zicarelli site : 1800 French Francs (US$ 300). Informations on MSP and download site is : http://www.ircam.fr/msp

IRCAM Forum Special Offer

IRCAM wishes to share its 20 years long DSP expertise to a larger musical community. For this reason, IRCAM will offer to its MSP customers, a special 50% discount on the Forum Real-time group annual membership. The Forum currently gathers close to 1.000 IRCAM software users. This membership includes access to : - FTS, developped by the IRCAM's Real-time team. With its graphical Java, fully TCL scriptable editor, it represents a powerful, multi-platform real-time DSP environment. It is currently available on Silicon Graphics stations and soon on Linux for the PC, Rhapsody for Macintosh and other platforms. MSP users may use an FTS compatibility mode (version 0.26) and then run their patches on several powerful platforms. - Unique musical applications like the ´ Jimmies ª, Spat (IRCAM Spatialisateur), PAFs (formant synthesis), granular synthesis, additive synthesis, etc... - technical support and animation services (hot line, biannual software workshops, Internet lists, ForumNet ftp server)

This offer will be limited in time. FTS, MSP and IRCAM's new real-time applications will be presented during the next Forum workshops on April 1 to 3, 1998 in Paris. Informations on these workshops and on the Forum are available at :
http://www.ircam.fr/forum

July 13 - 31, 1998
Digital Soundscapes Computer Music Workshops in Crested Butte.

The Center for Experimental Music and Intermedia (CEMI) at the University of North Texas is offering four computer music workshops in scenic Crested Butte, Colorado. Enjoy intensive workshops in Csound, KYMA, MAX, and Algorithmic Composition amidst the beauty of the Rocky Mountains. The workshops offered include:

Software Synthesis With Csound—July 13-17, Jon Christopher Nelson, Instructor

Real-Time Synthesis With KYMA—July 18-21, Phil Winsor, Instructor

Interactive MIDI Programming With MAX—July 23-26, Jon Christopher Nelson, Instructor

Algorithmic Composition Workshop—July 27-31, Phil Winsor, Instructor

Each workshop will be limited to 15 participants to ensure adequate access to the computer music workstations. The workshop fees are $750 for one workshop, $1400 for two workshops, $1900 for three workshops, and $2250 for all four workshops. Reduced rate housing and partial scholarships may be available for students. For additional workshop information please point your browser to our web site at http://www.music.unt.edu/CEMI/

To apply, send a letter of intent along with a brief biographical statement by March 1, 1998 to:

Jon Christopher Nelson, Director
Center for Experimental Music and Intermedia

UNT College of Music
Denton, TX 76203
ph. (940) 369-7531
jnelson@sndart.cemi.unt.edu
http://www.music.unt.edu/CEMI

NICE inititive

Konrad Boehmer of the NICE is carrying out an international survey about the current situation of royalties/author rights/copyright for electroacoustic music. He circulates a 3-page questionnaire with a cover letter, and asks that material should be forwarded to all composers. The forms and should be returned to him, as well as comments, suggestions, etc.

The aim of this is to make an international effort (lobby?) to improve the miserable situation of royalties paid :-) for all performances of electroacoustic pieces. It is requested the *utmost detailed* response of in order to (make an effort to) improve this situation. Each composer should describe the situation of ea/cm in his/her performing rights society.

All interested composers can contact him:
boehmer@koncon.nl

Faculty Vacancy
University of Illinois at Urbana-Champaign
School of Music
Composition-Theory Division

Proposed Starting Date: August 21, 1998

Duties:
Teach theory courses for music majors at the undergraduate and graduate levels. Composers applying for the position may consider the teaching of composition an integral part of the position. The candidate selected must also be prepared to contribute in a secondary area such as new music performance, concert and ensemble direction, 20th century analysis, music cognition, music acoustics and psychoacoustics.

Rank and Salary: Assistant Professor, full-time tenure-track position with entry-level salary.

Qualifications: Demonstrated intellectual and creative accomplishments and demonstrated excellence as a teacher required. Preference may be given to individuals whose work complements that of the present Composition-Theory faculty. Earned Doctorate expected although equivalent professional experience will be considered.

Application Please refer to Search # 5890. Send a letter of application with Curriculum Vitae and two samples of creative work, and arrange to have 3-5 letters of recommendation sent to:

James Scott, Director
School of Music
University of Illinois
1114 W. Nevada
Urbana, IL 61801
Telephone: 217-244-2676

Deadline: For full consideration, applications should be postmarked no later than February 13, 1998. Interviews may take place before the deadline, but no final decisions will be made until after February 13, 1998.

The University of Illinois is an Affirmative Action, Equal Opportunity Employer. Applications from women and minority candidates are especially encouraged.

Paris, January 7, 1997

IRCAM (Institute for Research and Coordination Acoustic / Music associated to the Georges Pompidou Center in Paris, France), is making available a new version of its Audio Analysis and Editing tool for Unix workstations called Xspect developped for the research needs of IRCAM's Analysis/Synthesis team headed by Xavier Rodet.

Xspect

Xspect is a graphical program used for sound signal display, analysis and editing. Developed for the needs of the analysis / synthesis research at IRCAM, it enables precise and extensible sound manipulation. Xspect is written in Motif/Xwindow and is currently available for Silicon Graphics Irix System and Digital Alpha. A Linux version is in beta development and should be available this year.

Xspect proved to be useful and reliable for intensive DSP and music projects such as the Farinelli castrato voice reconstruction (Movie and record published in 1995). It has the following features : - AIFF and IRCAM sound formats, plus any custom formats - short and float machine independent signal representations - easy comparison of signals, multiple channels, spectrum display near the signal or in independent windows - automatic synchronisation of actions between multiple views - loading, editing, manipulation and display of breakpoint functions to be used as envelopes.

Xspect is a research tool provided without upgrade plans or technical support (out of FORUM IRCAM). It has been presented at ICMC 1997 in Thessaloniki and is now exceptionally priced at US$ 200 for research and education.

Information on Xspect is available at :
http://www.ircam.fr/xspect

Documentation on Xspect is available at:
http://www.ircam.fr/equipes/analyse-synthese/xspect/index-e.html

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Articles/statements

GENDER AND COMPUTER MUSIC

After some heated moments in an ICMA general meeting in '92 when the subject of commissions for women was brought up, and feeling my own annoyance with being one of a few women in the room at these events, I was asked to write something on gender and computer music for ARRAY by former editor Brad Garton. A number of women responded, and the discussion was interesting for all of us. This collection was reprinted or responded to in other journals and newsletters.

In 1998, where are we? Are women getting equal opportunities in computer music studios today? If men are «from Mars» and women «from Venus», do communication problems come up in teaching, or understanding each other's music? When even defining sexual harassment is controversial, and gender issues are so sensitive that often we avoid them in discussion, can we break the ice and learn to understand each other?

I very much appreciate the energy and care that went into writing the following essay by Bonnie Miksch and responses by Pauline Oliveros, Elizabeth Hoffman, Karen Kahn, Mary Roberts, Laurie Spiegel, Akemi Ishijima, Natasha Barrett and Titi Adam. Also I appreciate the input from people who contributed ideas on the subject in my programming and computer music classes, in particular Michael Barnhart. I chose the following women for diversity in geographical location and experience. There are others who should be asked. I often deliberately did not ask those who have written on gender before, in order to present new views. Rather than look at statistical studies, this forum is for individuals' views. For the initial discussion, to get away from categorizations of content based on perceptions of the writer's gender, I chose only women to participate. I would like this to be a starting point for more discussion in future issues or on the website, by both men and women.

Thoughts on interpreting the responses: First, I find it interesting, and encouraging, that younger women in general report fewer problems. Second, I caution readers against assuming that because a woman from a particular studio voices criticism, it necessarily means that the particular studio has more problems than another, for this reason - if one feels free enough to make criticisms, it can mean that the studio environment is healthier than places where a woman does not feel comfortable enough to make criticisms. There were women who refused to respond at all, some explicitly because of worries about consequences for their careers.

The spirit in which these are presented is that we can all learn how to communicate and promote equality better, and it is in fact all of our responsibilities to ensure that women and men have equal opportunities in the field. There are universes of music never to be heard because of wasted lives in the past, and as Pauline Oliveros commented to me, «Most important now is the active participation of women in the field to make up for lost time and talent.»

- Mara Helmuth - University of Cincinnati

Gender and Computer Music

The field of music composition does not treat men and women as equals, and as a result gender issues persist. Music by women has been under-represented, under-played, and under-funded. Women composers have lacked compositional resources, female role models, and encouragement from male mentors and colleagues. As a group, we have sat through countless lectures on the music of the (male) musical canon, we have felt conspicuously female at conferences and seminars filled with men, we have been denied jobs and tenure, and we have faced sexual harassment from men in our field.

Nevertheless, in spite of these inequities, women continue to create music. For most of us, it is quite simply what we must do. I believe that our presence has the potential to greatly enrich the world of composition. But, sadly, this potential is limited due to the small number of us who choose to persevere. The problem seems cyclical: if more women become successful in composition, more women are likely to try, but, presently, relatively few women pursue composition. How can we break this self-perpetuating cycle which holds women back? These are some of the issues facing women in composition, and when we consider the field of computer music, other gender issues surface. The addition of technology creates a new set of factors that concern women. These factors include the learning process itself as well as the resources required for computer music. Because most composers learn skills in computer music from direct contact with an instructor and facilities of a college or university, the environment encountered in academia is the most pertinent to my discussion. Learning the craft of computer music requires a more personal student to teacher relationship from the outset. The initial technical obstacles can be large, and most composers approaching the computer for the first time will require extra attention and encouragement from a readily approachable and accessible instructor. At times, the student may even assume the role of an apprentice. Thus, the professor can be more vital to a given student's development than composition teachers generally are. This may be an intimidating thing to realize as teachers, but we must accept what this opportunity entails. When our influence as teachers increases, we must become more aware of issues of diversity in our classes and personal interactions with students. How can we create an atmosphere which will counteract the imbalance between men and women in the studio? Often men and women approach learning differently. How can we allow these differences to coexist peacefully?

Fear of technology remains one of the largest gender obstacles to overcome in the studio. Some women enter the classroom with a disadvantage from years of discouragement in technical fields, sciences, and math. Female students are more likely to feel intimidated and often remain quiet in class while male students ask questions unapologetically. Also, female students frequently need to feel completely secure with equipment or software before beginning the creative process while men tend to be risk takers, more likely to experiment with programs or processes of which they lack a clear understanding. In the field of computer music where initial success usually depends more on doing than knowing the masculine approach may have its benefits.

The environment or studio where the learning takes place is of profound importance to the new student of computer music. Unlike a class in counterpoint or analysis in which the student brings work home, the study of computer music requires outside time spent in the studio itself. As a result, questions of equity in the work space are extremely important. How is time on the computers allocated? Is this space free of sexual harassment? Is the overall atmosphere (created by the users themselves) inviting or adversarial to women? In the past (and to a lesser extent in the present), women composers have been denied important resources such as access to public performances and large ensembles, and as a result their music has been restricted to certain genres. We must be certain not to make this mistake with technology.

We cannot underestimate the need for female role models who hold influential academic positions in computer music. Not only will this encourage more participation from female

students, it will also provide a much needed diversity among a relatively homogenous (white, male) faculty. Any institution that seeks diversity among its students and yet fails to hire or give tenure to women does not understand what a commitment to diversity entails. Without the voices of women and other minorities, academia will remain a stifling conformity, unprepared to tackle critical issues outside its incestuous walls.

On a more optimistic note, I would like to suggest that for some women the field of computer music has been kinder than composition at large. After all, the computer can be a completely objective partner, and freedom from dependency on others for performances can help women avoid prejudice. But perhaps more importantly, the nature of computer music is experimental, and in such a climate one meets many compatriots who are equally eager to concern themselves with social issues relevant to composition. Finally, please consider the importance of these issues in light of racial and class-related inequities. All those who lack representation lack a voice.

- Bonnie Miksch - University of Cincinnati

The issues and problems identified in Bonnie Miksch's essay are very real. Even though I have achieved some visibility and recognition in my life time as a composer I have experienced all of the difficulties Bonnie mentions during the course of my career. I am encouraged though to see such an essay that was unthinkable at the outset of my interest in composition which began at age 16. It is truly wonderful to find women breaking their silence - speaking out against such oppression in the field. There were no gender and music studies when I began to compose in 1951. The women's movement surfaced twenty years later in the 1970's. Much progress has been made. Even so a great deal of work remains to be done to gain balance and equality between women and men in music. Music remains the most conservative of the arts with institutionalized sexism. The time is right now for women to vocally specify exactly what they need in order to gain access and the skills to use tools for composition within appropriate environments. Music is one of the most powerful forces and resources on earth for change. Women need to participate in music and use their sensibilities creatively for the benefit of humanity.

- Pauline Oliveros

The problems Bonnie describes are real and perhaps encouraged by long-standing societal norms. But they no longer exist in every school environment. It is not reasonable to generalize about an entire group (men or women) based on particular personal incidents. The lacuna regarding scholarship on women composers is being addressed in academia. So long as we are still thinking about composers as «men» or «women» we all have these large issues to overcome.

- Elizabeth Hoffman - University of Minnesota

When reading Bonnie Miksch's article, I am impressed with the argument she makes for the role of women in computer music, and the social implications of the minority of women in the field. Bonnie makes some strong points in focusing on the academies, where the discrimination is most obvious.

What impressed me is that when the teacher-student and apprentice-instructor relationships are described, a big power issue leaps out and hits you. The whole fight for feminism and equality in general is against the white male in the business suit telling you what to do. To commit to music composition, especially computer music, you have to put aside prejudices in class and power and just be willing to learn. If you are a student in an unfriendly compositional environment, the chances of finding another minority in the same position is slim to none. Either you brave it or you drop out. Yes, as Bonnie says, the problem is cyclical, but it also works backward - the more women are seen dropping out of compositional fields, the more are going to drop out because of loss of hope of an equal environment. Too many colleges and universities do not understand how important it is to be learning in an equal power environment. The advantages to this are enormous - especially when you realize a female student is more likely to approach another female for help in a technological field. As Bonnie introduces in the beginning of her article, this applies to music theory as well. The minority of women in the field is frightening. We may rebel against the fact that women were excluded from music history up until the last half of this century, but we still are not going to go into the history books in complete seriousness for a while. At Columbia University, the school I attend, there is only one female professor in the music department. Even the math and computer science departments have better representation. When Bonnie asks for professors to «become more aware of issues of diversity in (their) classes,» I see it as an idealist plea. If a department doesn't care enough to present itself as diverse, what does this say to the student body?

When Bonnie brings up the idea that the computer music studio needs to be examined for its safety and equality, I think an important point is missed. She is speaking in assumption that it is the department and professor's responsibility to maintain this safety. However, there are a couple other influences in this area, notably the attitudes and feelings of the other students to the female minority. Although the professor does have a role in initially setting up the situation, as women we can easily visualize the «in the studio at 12 AM situation» where we are the only minority in the studio late at night surrounded by people we are uncomfortable with. Our peers, depending on the group, may or may not be silently thinking «Oh, that's the woman who always has to ask questions,» or «Wow, I am here late at night alone with this woman.» The situations sound funny out of context, but believe me, it happens. It makes things really uncomfortable for the female composer who just wants to get her work done, without being conscious 100% of the time that she is female and a minority and that some people are not comfortable with her presence.

Reading Bonnie's article made me realize an important fact: That we women composers often think that we are alone in our uneasiness, that no one else understands our fear of speaking in class, asking a peer for help, or hoping that someone understands our music. Although there are some great men teaching in the computer music world, we find that as we move into other circles the situation is unbearable. Not only do «all those who lack representation lack a voice,» but they often lose faith in their silence, and add to the numbers of women discouraged enough to give up their art in the academic world.

- Karen Kahn - Columbia University

My feelings about sexual harassment and the inequities that the Academy presents to marginalized composers mostly make me feel tired. I almost instantly think of what Mary Daly called beta: the tedious, time-consuming mind consuming foreground junk that wastes my energy because I have to think about it and expend my tired energy to fight it. Even though some folks find extra energy in fighting the fight I always become exhausted by the fight. I long for the transformative energy that I see women getting out of bucking the odds. And some times I can imagine feeling that way, most the time I just want to get my work done and have some energy left over to tend to my creative spirits. After all, my ultimate longing is to find myself absorbed in my work.

I have to say that I've been inspired lately by women who can manage to keep their spirits up amidst extreme odds. I'm inspired by the concentration I see women toting around this

male-identified world. I theorize that because women are so good at multi-tasking that when they do get a chance to sit down (or leap up!) to do their creative work the energy available is a particularly transformative force. This force is often a type of quiet concentration, a quiet powerful voice, a voice that often goes unheard, but can really shake things up if anybody listens. With women who work with electroacoustic systems I see outstanding ideas coming about that are so unidentified with what can possibly be seen by the Academy as acceptable I often have to shout out with laughter and stand about scratching my head and saying to myself: how did that woman ever dream up anything so fantastic as:

- placing that mic at that spot to capture that bizzaro-beautiful sound, or
- making that specific combination of files so that unimaginable spectrum occurs, or
- making the most caring-brilliant observation about some sound so that I'll never listen to anything with the same ears ever again.

And I think: of course it's available for women to be excellent composers, it's just the Academy that tells me that I should be surprised by female-excellence. Because the Academy has a history of not supporting women composers I am still stuck in a-mazement mode when it comes to good female identified work. I wonder why I should be surprised - but I have to say that I like being surprised and astounded - I like seeing women do good work. I think that I'll make my surprises into celebrations from now on - just to carry on the positive feelings I get - just to transform this energy into a fight that hopefully won't take up too much of my energy.

- Mary Roberts - Moorhead State University

An Independent Composer's Mind Riffing:

1~~~

Over the years I have seen many writings about gender and music, particularly computer music, that focus on perceived problems of inequality. It is undeniable that there have existed and still exist biases against categories of individuals (women, ethnic groups, etc.) and that such biases affect the ability of individuals within such groups to realize creative works. But I've been going back and forth on how I regard this question over the years, and at present I am again leaning away from the premise that in such an extremely individuality-based field as music, much has been gained or can be by thinking in these categorical terms.

Such categories as gender obviously can be productive conceptual tools for increasing the justice, fairness and equality of opportunity for occupations in which individuality plays a considerably lesser role than in any creative art, occupations in which workers are relatively interchangeable and professional skills are highly standardized. But in a creative art, it is exactly in the ways that we differ from each other, do not fit existing situations comfortably, defy preconceptions, and cannot be dealt with in any standardized manner that we find our greatest strengths as individual artists. Such characteristics constitute our personal entropy or information content, our individual non-redundancy with others, and the content of such differences can reveal our greatest potential value to our art and to society.

These are usually qualities for which we can expect and must endure disapproval, rejection, or misunderstanding, sometime briefly, sometimes long-term. Part of learning an art is accepting and using the discomfort this kind of not fitting in often brings. (I don't mean being different or disruptive for the sake of newness or variety or to get attention, but the uncovering of differentness through honesty.)

Each composer is a special case, a unique phenomenon trying to persist and function in unique and changing circumstances. There simply is no consistent effective way to teach or to learn to compose well or to build a musical career - for individuals of either gender. And in music, as in other creative arts, standard methods do not exist and cannot be taught for achieving consistently high quality work output, attaining economic viability, or establishing a professional reputation. These must be individually figured out and custom contrived by each person, makeshift, for oneself.

2~~~

It is important to ask why, and in what kinds of situations, control of any kind of artistic or creative activity is held by someone other than the person doing the actual creative work. For example, much of Bonnie Miksch's essay pertains to academia, where departmental shared studios are still common. The shared studio model, like the orchestra before it, puts under centralized control the allocation of a single resource needed by a whole community. This provides a prime example of the kind of power center where favoritism and other misuse of control are possible, but where this potential for abuse can be countered by technological means.

Outside of academia, power structures topologically similar to the academic shared studio model have long been found around other centrally allocated scarce shared musical resources used by composers. These include large performance ensembles, virtuosi, publishers, record companies, recording studios, concert series, grants, commissions, patrons, et cetera. Their potentials for unfairness may be based on systems of monopoly, centralization, bureaucracy, or elitisms of expertise, wealth or seniority. But many of these are now rapidly losing their power due to a technological revolution that provides composers with alternative means of both sonic realization and musical distribution.

We have just entered an era of very powerful inexpensive ubiquitous sound producing personal computers, affordable single-user systems capable of generating commercial quality audio in real time without additional hardware. This immensely increased (and still increasing) accessibility of sophisticated sonic technology provides freedom to take a musical idea all the way from mental impulse to sharable sound and even through mass distribution to the public's ears without requiring the participation, sponsorship or even the acceptance of any established power figure, social hierarchy, leadership, institution, backer or other authority figure. Composing is now (as only writing, of the arts, used to be) something an individual can do alone, in private, quite independently, without anyone else's involvement or approval.

This is a far cry from even a very few years ago, when an orchestra or a large expensive computer music studio (both extremely scarce resources relative to composer demand for them, and almost invariably under institutional control) was necessary to turn any but the simplest musical idea into audible sound. And as communications technology also increasingly allows more egalitarian and direct individual access to means of sound distribution, audiences can select what they like without intermediation too. (Will they decide what to listen to by its creator's gender? I don't think so.)

Computer music exists as we now know it partly because technology is useful for building alternate routes around bottlenecks and improving the match of supply with demand. Any of us can try to develop further technological improvements to get around additional problems, and the set of addressable problems includes not just sound and its structures but power and its politics as well.

The availability to individuals of powerful music realization tools without the intermediary involvement of institutions may significantly alter the sociopolitics of music educa-

tion as it has been doing in the non-academic musical world. Institutions of musical education will remain places of learning, study and research, but they may no longer hold power over individuals by controlling, monopolizing, or allocating access to scarce expensive tools of sonic exploration and realization. In that case, students and individual faculty could experience significantly more independence and freedom.

Today's computers are actively sabotaging exactly the kinds of power structures their predecessors were propping up only a few years ago.

3~~~

We should also ask whether the university model might in itself be counterproductive for individual musical education and expression, in part because it may foster a tendency to think in terms of just the kinds of general categories of people the «gender» concept typifies, rather than emphasizing the customized development of problem solving methods within unique individuals for specific situations, aptitudes, skill sets, and personal aesthetic tendencies.

Our present educational system (schools and classrooms et al) is based on an industrial era model designed to mass produce standardized educations for growing populations. Its present form developed over the past two hundred years in parallel with the factory system. Most schools are therefore designed to deal with students in groups, not as one-of-a-kinds, as were one-on-one tutorial methods, apprenticeships, or true independent study from books or by direct practise.

An expectable cultural bias of any such group-based social architecture would be to foster the conceptual use of grouping terms and categorization schemes (such as «gender») and to rely on them in decision-making.

4~~~

Bonnie Miksch's essay also invites us to ask why more women do not take greater advantage of the opportunity, power and freedom they do have. This is a very good question, although it can be asked about men as well.

5~~~

Bonnie hit on something important when she said that «the computer can be a completely objective partner». Yes. Machines are impartial. Computers free us to go the entire distance from imagination to actually playing a finished work for people without being vulnerable to the prejudices of other human beings. A computer's output is governed by its user's abilities, not by any aspect of that user's identity.

Computers also let us work on our music in private, so we can experiment more freely, make more mistakes, take more risks. One is freer to focus on musical problems such as aesthetic vision, compositional process, style, structure or form, on emotional ones like self-consciousness or lack of confidence, on cognitive skills such as memory and concentration, or on finding a way to do something technically that has never been done before.

These are all problems and learning processes that have to be handled individually, that are often dealt with alone, that are not exclusive to either gender, and that can be all too easily neglected if one's view is focussed away from sound and self, in a search for something external that could be preventing progress.

Gender is an attractive concept in part because it is a simplifying concept. It can also be an oversimplifying and even distracting concept.

6~~~

For much of the past two decades, since leaving Bell Labs and acquiring a prototype Apple II computer in the late 1970's, I've worked mostly with relatively inexpensive personal computers, hoping to help make computer musical tools more widely accessible, to increase individual creative-expressive power, to make musical opportunity and ability more equally available to all who want them regardless of traditional criteria for judging musical potential, and to make music easier to enjoy doing.

I see my own gender's problems as a subset of the broader concerns of traditional musical elitism and exclusivity. I believe that making music has always been more difficult than it needs to be, that many more of those who want to could make their own music, and that far too many people who love music give up.

For any who may wonder, yes I too have had at least my share of gender bias problems. However, I suspect that gender-based concepts can only deal with the tip of a far larger elitism iceberg. I do not contend that gender discussion is pointless. But after witnessing decades of dialogues devoted to equal treatment of categories of individuals differentiated by entirely non-musical criteria (e.g. gender), I am not convinced of any category-based model's usefulness for problems of overwhelmingly individualistic pursuits such as the arts.

I realize that this writing could be taken by some readers as my copping out on my fellow women composers, but I hope that most will see that I am just trying to turn over some very heavily trodden down stuff so that light can hit it in new places.

This is a field whose archetypal mindset used to be that of doing what was impossible, finding altogether new solutions to problems that had never even been formulated before, and defying or at least disregarding the status quo's prejudices against the most fundamental premises of what we undertook. As I read what others write about discrimination, difficulty and fear, I find myself looking for more of that old spirit of computer music.

- Laurie Spiegel

Note: See also my 1981 Ear Magazine article «Comments on Common Complaints», written during an earlier visit to this pole of my personal oscillation on the gender-and-music question. It can be found at: http://www.dorsai.org/~spiegel/

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My background

I have always been interested in science as well as music, and ended up having experience of both. I studied applied chemistry at a Japanese university and music in several Swedish and British academic institutions. This combination of interests led me along a rather unusual path. Here I am, a Japanese composer working with computers and living thousands of miles from home. Though this puts me into a small minority, this does not disturb me. I just do what I have been wanting to do all along. When you are immersed in something worthwhile, you are content and do not look into how you may be disregarded by others. For that matter you only fight obstacles when you notice some kind of injustice, such as unfair discrimination.
This may be dangerous as it may be too late to change the situation if you wait till it hits you. But I am not a warrior who goes out to search and destroy. I am a composer, - full stop. Nor is this necessarily a lonely pursuit. Not only are there kindred spirits but there are nowadays ways of communication such as the Web, which allows you to present yourself and your work without hindrance.

I turn now to some of the points raised in Bonnie's article.

Harassment

It may surprise you, but I have never experienced sexual harassment in the studio, neither in the UK nor in Sweden. In Japan there certainly used to be discrimination as well as sexual intimidation experienced by female

students, particularly those studying technical subjects. In the male dominated climate, there would be unequal treatment of women in all kinds of ways, e.g., stricter criteria for admission, limitation in the choice of research subjects, restricted professional careers, etc., as well as a perception of women primarily as sex objects. All this tended to be carefully hidden in the male-dominated faculty. It may also be that people behaving in this way were not really aware of what they were doing. As far as I was concerned I chose to ignore such behaviour. I simply did not think it was worth spending my energy converting people. Time would take care of that in due course. But remember, this was ten years ago. I understand that the situation in Japan has been changing if only slowly.

As regards Europe, and I can only speak of northern Europe, there is generally a greater recognition that it is important to treat people equally. This may at times be a matter of political correctness. People in the UK, at any rate in academic circles, do not manifest obvious discrimination against women, whether in general conversation, staff appointments, or concert programming. This is not to say that such attitudes do not exist in the minds of people. But in their overt behaviour prejudices seem to be very much kept at bay. Be that as it may, I think there is a positive move towards sexual equality and awareness, at least in academia.

One other observation I would like to make in connection with Bonnie's article. The need for a successful female role model rather puzzles me. Firstly, what does success really mean? Success in terms of holding a post in an academic institution? Success in terms of money? Success in terms of research? Or, success in terms of composition? As far as I am concerned it is only the latter that counts. As to the necessity of having a role model I have my doubts too. Are we trying to produce «successful» female composers «en masse» through the glamour of the role model's «success,» whatever that may mean? No! What we need are good teachers. Inspiring students may be one of their functions, but even more important is the way they respect and further the potential of each individual student in their care.

I much appreciated Bonnie's stimulating article and the opportunity it gave me to reflect on important issues.

- Akemi Ishijima - City University

Over the past year I have noticed many postings on email discussion groups concerning women in music and gender issues. Up until this time I made the decision to keep my own views silent. However, because Bonnie's essay raises so many issues I believe to be untrue, I feel it appropriate to elaborate.

In the past, society has minoritised the presence of not only women composers, but also their position in many other aspects of science and art. However, in the present time, to maintain this claim is on the whole untrue, in both instrumental music, computer music and combined art-forms. Women may be less active in these fields, and investigating the reasons for this may be of interest. Nevertheless, as a composer, I am interested in creating music, and the fact that I am a female creating music has never been an issue.

Concerning the subject of concert programming, I thoroughly believe that concert organisers should programme the "best" music: in other words, works excelling in the qualities appropriate to the occasion, and not to feel politically correct by including a token work by a female composer, which may be unsuitable, and ultimately counter-productive. It has never been important to me whether I were listening to a work by a male or female composer - I simply listen to the music.

To resume specific relevance to Bonnie's essay, I do not agree, nor have experienced, that as a woman composer I have lacked compositional resources or encouragement any different to my male colleagues, even though the studios where I have worked are under constant demand 365 days a year.

I have no female role-models, but this has never caused a problem, although I acknowledge a lack of role-model may cause confidence problems for some aspiring students. However, it is the quality of instruction that is important. I have also been in the position of feeling, as a female, conspicuous at conferences and in some studios, but have never been made to feel unwelcome, or treated in any way different as a person, or in relation to the quality of my work..

When driven by the urge to compose, both male and female composers work unusual studio hours and face the same security risks as in any other everyday situation. I have never experienced sexual harassment.

In Bonnie's essay, the idea that men and women approach technology in different ways may be true. This can cause problems in early stages of learning and can be approached in a way that is alienating to some composers - both male and female. Maintaining focus on the music and not on the computer application, may for many be an easier "way in". In other words, a classic case of emphasising the "Music" and not "Computer" in the term in "computer music". Furthermore, this allows each composer to explore their own voice, as opposed to feeling restrictions are imposed by the available technology in the studio where they work..

To summarise, gender issues are interesting when part of the compositional process, just has any other non-gender related compositional methodology. The issue of potentially minoritising women composers is a separate discussion, which in my experience is untrue and furthermore, on the whole, unrelated to the act of composition and learning. Value judgements over quality and taste will always be present, and I have faith that there is very little prejudice against music by women composers in the current age of Western music. From personal experience, when driven by the need to compose, exerting energy into the fact that I am a female composer is irrelevant to both the compositional process, and number of performances my work will receive.

- Natasha Barrett

First of all, Chaos was created and afterwards Ghaia (Earth, female goddess) and Eros (love, male god) were born. The first divine couple of Greek Mythology was Uranus (heaven, the son of Ghaia) and Ghaia (Earth). Their union gave the first dynasty of Greek Gods. These twelve Gods, six males and six females, were representing the different qualities of the human nature.

One of these gods was Apollo, the god of Arts (music, poetry and dance). His mother was Lito (the personalization of the night). He was born on the island of Delos (Delos in Greek means the limbid one). He won the snake Python (the symbol of the darkness) on a fight. Apollo's life represents the victory of light (live, joy, creation) against darkness (fear, pain, oblivion, lie, quarrel, death).

In antiquity Art and Religion were united in a ceremonial way. They were both trying to explain the mystery of our existence, they were both working together under the same mission that was to unite humans with their creator-god, the Nature.

At the end of the 20th century, Art is totally separated from religion or any kind of ideals. Concerts, theater performances etc. are isolated social events exclusively referred to a special audience. A piece of art is a product that the consumer can choose among all the other products.

Nowadays, Art is far away from the human

needs and fulfills only its applied role, which is to decorate our collapsed social system that has no respect even for our vivid environment, for our planet, for the Earth.

In a few years, in the field of arts and music composition (and computer music as well), men and women will be finally treated as equals but in my opinion both will be unable to create. Materialism will have made men and women completely equal, less creative, but more productive. And who knows, through human cloning, we will be able to create humans with predetermined quantities of male and female characteristics!!!!

Maybe human civilization will have to return back to its prime element, back to Chaos, and create through the birth of Ghaia (Earth, female goddess) and Eros (Love, male god) a new Big Bang.

P.S. A masterpiece is appreciated by everybody. A mediocre piece is appreciated in light of issues (social status, public relationships and genders) that are not related to the essence of the piece per se.

- Titi Adam - Athens, Greece

Do you have any comments to, or opinions about, the above?

Sends them to:

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Christophe Charles: Systems of (de)composition 1998-02

With the development of computer and satellite, we have now to think over our vocabulary, especially this which qualifies artistic forms and categories, because the system of distinction hitherto has already lost its value. Music as other forms of art have to get out of their shackles. «Informel» or «Action Painting» appeared because of modern Man's doubt in front of the rigidity of stone architecture and the necessity to double-lock the doors. It is necessary to give back some life to the closed and immutable form by providing it possibilities of movement and opening out. The achieved form and the perfection of the art work causes it to loose its freshness.

This is the aim of kinetic/optical art, which refuses in principle to be seen and to show itself twice the same way. The moving work of art provides a plurality of aspects in a given time; it plays sometimes with the possibilities of diffusion and refraction of light, so that every of its morphological aspects contain a certain part of unpredictability. The sculptures which have a most undetermined form are those which are made of gas or liquid. In the tradition of the fountains and dancing waters of the European garden, or the cascades of the Japanese garden, some artists arm themselves with a stock of scientific knowledge in order to initiate procedures of transformation, where the unpredictability of form defines, rather than an object of contemplation, a contemplation without object.

Not only the work of art, but the artist himself has to earn his freedom by «forgetting his responsibility» toward the perfection of his work. He must free himself from the dependency on a restrictive designation, and has to keep the possibility to use anything, that is, to be a sculptor as well as a cook or a gardener. The freedom of the form of the art work produces then an other type of relation with its audience, who is no more forced to cling to his chair and listen passively without sneezing. In the music of John Cage and his emulators, we have to prick up our ear, to discover and to reconstruct the music work by and for ourself. To compose, to perform and to listen are three different actions, and the quality of indetermination defines for each of them a necessary and particular effort to accomplish.

From the 18th Century, the world of European music has applied itself to develop «authoritarian» system of composition which order to the orchestra to function like an army, under the conductor's baton. In the case of a Beethoven symphony, where some schemes are repeated tens of times in a few minutes, the listener feels that there is no possible deviation. Thanks to personalities like Cage, the situation changes: the American composer decides suddenly that all parameters which define the acoustic element: timber, pitch, intensity, duration-that is, the local time (the duration of a punctual sound event) and consequently the global time (the duration of the composition or the concert in its whole-can equally be subject to indetermination. These elements are sometimes left to the appreciation of the musicians, who have then to restore a freedom which frightens them. In fact, undetermined music prevents from forehearing or foreseeing. But undetermined music has no pretension: because he cannot predict what is going to happen, the composer admits that he is a listener just like everybody else. This is not a resignation, this is a lesson of humility. But Cage has been often accused to sacrifice too much for the Orient.

The arts which are described here search not for the control of the viewer/ listener and of the performer, but for his/her freedom. The viewer/listener remains free to move and to create free associations, in both material and spiritual sense: no imposed directions. This freedom has been experimented in cinema or theater: in the works of poet and dramatist Terayama Shuji, indetermination characterizes not so much the images themselves-which are most of the time strange symbols used to criticize particular aspects of Japanese culture-but rather the author's ideas on theater and cinema as a social model.

They are in this sense not far from those of Cage, who also defined his works as social models: no government-conductor stands in the center of the orchestra, and no author imposes to the performers to play exactly what he has written.

Terayama's works are «machines which provoke imagination», and only 50% of their contents is shown. The 50% left are to imagine and reconstruct by the viewer. Video artist Nakajima Kou uses another word: «work in progress», which form extends in present and future. His work «My Life» is conceived to happen on a period of a hundred years-that is, of an undetermined length-without paying attention to the death of its author. Nakajima has already built his own «Video Sanctuary», where visitors will be able to look at his works even after his death-let's remember John Cage's word: «I don't worry about the future of music: there will still be sounds after I die». The other films of Nakajima are all parts of a big tree which grows constantly, the author should be present or not. One could understand them as metaphors of the fundamental, necessary and coexisting elements of the universe. Nakaya Fujiko, who is well-known for her fog sculptures and fog environments also pays much attention to natural

phenomenon: she makes them happen, or observes them, but once the process has begun, she doesn't intervene anymore. The «thing» happens by itself and interactions between the works and the environment are a source of contemplation. The results are unforeseeable, as the weather is.

Such works realize the idea of «interpenetration without obstruction» («Bougai naki sougo shintou», which Cage borrowed from Suzuki Daisetsu) between different techniques and the different expressive impulse. Instead of a reference to the ideal of the artwork as a closed totality, these works show a poly-artistic openness toward a perpetually destabilizing decentralization. There is no center anymore, but the orbiting of a plurality of mobile and multifunctional centrations, which accept without trouble the generalized digitalization: the condition is that the «achieved» work which remains always flexible and adapting to its context, is able to simulate the continuity of a network.

2- (De)compositions

The (de)compositions I have been creating since 1986 follow the principles described above. They are based on the listening of soundscapes and their recording on magnetic tapes, in order to be edited and mixed with music instruments sounds: piano («Kalkutta Kreis», 1986) or bells («Unter den Linden» or «Silo», 1987), flutes or synthesizers, in order to create analogies and counterpoint of timbers. In some cases, found materials (stones, pieces of wood, etc.) are used instead of music instruments, and resonate in their environment; the recording intends then to reproduce their «shadow»-or echo-, that is, their spatial dimension («Der Hirt auf dem Felsen», 1986).

In the case of «Kalkutta Kreis», the recordings of the different places have been edited according to the dynamic of their structure: each part thus features a special tension. The first unit features mainly urban sounds: English cabs, motorbikes, horns and crows. The second unit introduces «organic life»: birds and human voices come from the gardens, the river and the markets . The trains horns of the South Eastern Railways in the fourth unit represent «speed». The wind of the fourth unit gives the feeling of «time», and the Indian Ocean of the fifth unit recalls «Eternity». The whole structure goes from «Urbanity» to «Eternity», but doesn't intend to order things or to determine any kind of hierarchy between them-it is possible to change the order of the parts. The sounds appear according to an arbitrary global rhythm, which is repeated as a long loop: as soon as it ends, it is ready to start again.

The edited soundscapes part of «Kalkutta Kreis» has been mixed together with a piano piece, named «Dialectic Chords», where the main idea is to play a (group of) sound(s), and to wait until it has disappeared. The next sound is determined by measuring the release of the preceding one. Once mixed together, the sounds of the piano appear as a counterpoint with some elements of the Indian soundscapes: the difference of timbre gives them another dimension, and lets them appear more clearly.

«Der Hirt auf dem Felsen» (1986) is divided in four sections corresponding to four different acoustic spaces. In the port of Hamburg, the sounds of pieces of wood and their echo on the surrounding walls were recorded one by one. The second part was taken on the Frioul Island of Marseille, where stones where hit in a large space providing a lot of echo. Hand claps were recorded in the Catacombs of Paris, and the last part features the reverberated sounds of the wooden chairs of five churches of the center of Hamburg. The counterpoint to these different spatial sounds is given by a drone of a flute and a bowed electric bass based on breath.

The interaction between the sound of bells slowed down four times and the sound of a grain silo transformed by the autumn wind is at the basis of composition «Silo» (1986). This piece has been «recycled» as a drone for many other recorded or live pieces. In this composition, the different sounds were mixed without any special effect, but it is difficult to tell when the bells turn to sound like a silo, or when the silo becomes a bell.

These three pieces described above have become models for the compositions which have been later developed. The form of «Kalkutta Kreis» gave birth to the «next point» form, while «Der Hirt auf dem Felsen» announce a more static form which doesn't intend to show a development through the composition: the four parts (which become six or eight according to the version) are autonomous and show different aspects of the phenomena of echo in different environments.

«Silo» is a drone which doesn't intend to expand or transform, and is thus even closer to the «undirected» compositions which have been produced since 1995.

3- «Next point»

Although «Kalkutta Kreis» follows a rigid construction based on an Indian Tal (3-3-3-4-3), the first three parts are not only the expression of three different «moods» (urbanity, organicity, technical speed): they are constructed so that some elements announce or recall other ones. In further developments, the processes of the appearance of sounds are gradually formalized. One of them consists in the following pattern: in a sound sequence , some elements are amplified little by little and are prolonged so that they give birth to a new sequence («next point»), in which new elements appear and develop, completing or contrasting with the former elements, which go disappearing little by little. The composition is thus in constant recycling movement.

The name «Next point» was suggested by Danish composer Henning Christiansen in 1992 when he heard prototypes of the two compositions which have been later published on the CD «let it hold itself up» (Gallery HAM, Nagoya, 1993). In his first works, Christiansen had conceived different composition methods, among them «Perspective Constructions» (1963), and «Next Point» (1964). «In Henning Christiansen's case, this meant to reduce sounds, and by way of repetition and small variations, produce simple structures that he analyzed anew by a method of symmetry, reversing the material back into itself in every conceivable combination. In doing this, he was not only interested in the auditory, but also in the visual elements of the music. The graphic aspects of the manuscript took on the same importance as the intonation of sound» (Niko Tenten, «Sound in Motion», in «Pick up on Henning Christiansen», 1992, p. 11).

Christiansen mentioned then the «next point principle» which seems to be inherent in the «let it hold itself up» pieces. Christiansen wrote about the pieces: «I want to name this art of construction: next point principle. This is a principle of form where you introduce a new sound in order to open on new possibilities. The length makes the whole a symphony, it becomes symphonic. One also gets «dragged» from beginning to end, when hearing it all, and following you through it» (1992-02-07).

The compositions featured in the «let it hold itself up» CD are originally quadraphonic (4 channel)-when performing them, the mixing panel in at the center of the concert-hall, surrounded by the audience, itself surrounded by at least four loudspeakers. The pieces are thus to be perceived in both time and space. On the CD, they have been reduced to a stereophonic (2 channel) version, which cannot reproduce the original conditions of the concert. The sounds of the first part (20 minutes) were sampled from voices of boiled eggs and coffee vendors of Calcutta-Howrah Station, of the monks of Todaiji (Nara, Japan) and of ice-cream vendors in Hangzhou (China). Some sounds have been borrowed from Henning

Christiansen's compositions («Kreuzmusik-Fluxid Behandlung» op. 189, «Klopfen» op. 20) with his authorization, and have been altered and filtered in order to be used in a new context. The last violin phrase comes from the very end of the first movement of Jean Sibelius' 4th Symphony. The second part (40 minutes) has been produced with an Akai S-1000 sampler, and has also been recorded directly from the mixing panel without overdub. Sound samples have been recorded in many different places, in particular in Japan for the flutes (nohkan, yokobue) and at the Jaganath Market of Puri (Bengal). The melodies which are heard at the end of the composition are popular songs of the indigenes of the Timor Islands, who were killed by the Indonesian Army in October 1991 (this composition was created live with musician Takeda Kenichi on New-Year's eve of 1992, in homage to the victims of 1991).

«Deposition Yokohama» (52 minutes), which mode of presentation («undirected installation») will be described hereafter, is also based on a «next point»- like principle. The composition features about 11 main parts of different lengths, according to a dynamic of tension and release, crescendo and decrescendo. The first crescendo (0"00" -ca. 15"00"), from insects singing to urban sounds, opens on the voice of late Demetrio Stratos filtered by the space of Gallery HAM through the use of re-recording. The second long crescendo begins with flutes and dogs barking and leads to the amplified voices of crowded Tokyo. The third crescendo uses Christiansen's «Ror» (sound of the pipe used in «Klopfen») and some parts of «Der Hirt auf dem Felsen» before ending on the Sibelius violin. This composition has been released on a CD, which has been then divided by ID points in 23 parts of exactly 2 minutes, without direct relation to the content of the music. The ID points define nevertheless a new «ready-made» structure into the original structure of the music. The two minutes parts can be thus renamed after the fields which have been newly determined, and played in a random order-in the shuffle mode of a CD player.

Although one can feel a kind of development in which different parts follow one another, these compositions are not based on any kind of story board: they are conceived to be looped and heard continuously, and the order of appearance of the different parts can be changed, for example using the shuffle mode when playing a CD. They don't intend to «tell» anything to the listener, to impose him to listen to a particular ordered development. The audience remains free to listen to the sounds of the environment, and is sometimes led to pay more attention to the sounds which are not featured in the composition. The sounds of the environment happening in real time are in this sense «invited» to be heard simultaneously. The condition for such a phenomena to happen is that each sound of the composition stands for itself, and no one sound covers or eliminates another. The possibility to make «all sounds» audible is realized through the use of specific time structures.

4- «undirected»

At the beginning of the book «For the Birds», John Cage speaks about the idea of method, which is linked with the ideas of structure, form and material, as he had conceived them from the time he had studied with Arnold Schoenberg. He defines method as the procedure a composer uses to discover which sound should follow which other one in a particular sequence. About Schoenberg and Dodecaphony, Cage speaks about «walking with the right foot, then the left one, then the right one, then the left one» (p.28). A method supposes a selection, where one decides that one sound cannot follow any other one, but can only follow a particular family of sounds, in some case only one sound. From the moment he began to use chance operations, Cage gradually abandoned the ideas of method, form and material, and kept only structure, that is, measure of time. Time measure also disappears with 0"00" (1962), the second silence piece after 4"33". In the Eighties, the «Number Pieces» which feature the technique of «time brackets» have soft, or mobile structures. There is no structure apriori, and thus no more method, because the succession of several sounds has no importance anymore: we enjoy a total harmony, a pantonality, where any sound can meet any other sound.

Compared to the «next point» music, the «undirected» works explore further on the limits of intention (desire) and non-intention (chance), as they make an extensive use of random programs of the computer which triggers music instruments, here a synthesizer-sampler. These works invite to perceive and become conscious of layers of reality that are often forgotten, for example those which appears during moments of silence, that is, when no sound is played in the music. They are conceived as living environments which establish particular relations between fundamental elements: the sounds, the spaces, the media technology and the audience, and realize the idea of «interpenetration without obstruction» more clearly than the «next point» works. On the level of time and space structure, sounds appear independently, apart from any global structure which should intentionally impose on them an arbitrary hierarchy. Sounds' autonomy in time is sustained by their spatiality: the specific display of the loudspeakers makes possible a spatial perception of sounds as architecture, environment, or soundscape.

The technical system consists in a sampler-synthesizer and a computer. All parameters of the synthesizer can be controlled numerically by the computer program, which number values subject to automatic and/or manual variations. The quantity of numbers which inter-modify themselves is high enough so that their combination provokes unattended phenomena. Each program's parameters are determined according to the characteristics of sound samples which are used in the program. Because of hardware limitation, the samples have to be repeated a certain amount of times, and the program has to be conceived so that the sound samples can be heard and repeated in the most adequate range of variations. For example, one sound will «sound» better according to a certain range of pitches, duration, or other parameters. The setting of the program will then take in consideration this particular range. During the performance of a work, the parameters modifying the characteristics of the sound are left under the control of the computer. What the computer cannot control is the general volume and balance, and the length of the parts and of the whole, because it is not (yet) able to «perceive» exactly enough its environment-it is able to a certain extent, but the human performer is still probably more capable to assume such a task.

The «environment» consists in several elements, which form a whole by being together and reacting to each other. One is the real space in which the music is heard, its architectural, climatic, etc., that is, physical characteristics . In this space are standing, walking or sitting the listeners, who react to the music in very different ways. These reactions confer to each sound a particular space, which is real as well as abstract, and the perception of each listener is also modified by this particular space. The «environment» is on another hand the conditions of creation of the composition, which is for instance a command from an institutional or private party. It has to fit conditions such as conceptual elements, for example in the case of a collaboration with other artists: choreographer, painter, architect, etc. It has sometimes to fit more general conditions such as the historical, political , social or economical situation.

According to such premises, I realized several installations and sound works. The installation «Deposition Yokohama» was presented at the Yokohama Museum in 1995, and used the CD described above. It had to fit not only the real space, but also-and mainly-the political and administrative conditions which are specific to a Japanese museum institution. Technically speaking, six loudspeakers were set with an infrared sensor sensible to the movements of visitors in a 200 square-meters space. The sound is electrically

Articles/statements, cont.

transmitted to the loudspeaker when the sensor is activated, that is, when someone or something moves around it. By walking in the space, the visitor can thus experiment different angles of hearing, different ways of superimposing the music, and different sound spaces. The global composition is thus closely linked to the presence and the movements of the listeners, and is thus realized as plural and «undirected».

The first «undirected» project was then presented as a development of «Deposition Yokohama» in Kyoto (Pig Nose Gallery, 1995). This installation used six speakers set on the floor and the ceiling, and six infrared sensors in order to control a K-2000 synthesizer-sampler through a Macintosh computer loaded with Max and a MIDI trigger. The sensors produce impulses which are transformed in MIDI signals. These signals are routed through the computer program and sent to the synthesizer, causing parameters of pitch, velocity, effects and various controllers to change. The audience reacts to the sounds and moves around. These movements produce variations in sound and light, and cause the sensors to produce new impulses. Moving in the space provokes thus a kind of entropy in the computer system: complex combinations of parameters of the K-2000 programs and combinations of the programs themselves are produced. Thanks to the panning possibilities of the K-2000, the sounds move from one speaker to the other, according to the position of the visitor who creates her /his own sound-space, resulting sometimes in phenomena of displacement of the perception.

Compositions which have been realized for «statics» (published by CCI Recordings/Ikeda Ryoji, 1995) and «In Memoriam Gilles Deleuze» (published by Mille Plateaux, 1996) are developments of the Kyoto installation: the computer chooses the parameters of 22 sounds («statics») or 48 sounds («Deleuze»), so that their combinations don't appear twice. The resulting music does not seem to progress. Sounds are displayed at random/by chance in time, and the freedom of the listener is thus realized: he can listen when he likes to, without being feared to have lost something. In such conditions, he/she should become conscious of his/her entire responsibility of enjoying the present time of his /her listening performance.

5-About «undirected 1986-1996» (Mille Plateaux MP33)

«undirected 1986-1996» is a 60 minutes CD-ROM which features compositions produced since 1986, like «Kalkutta Kreis». Two layers of these compositions are mixed together with the «undirected» programs of the Macintosh/ K-2000 system. The ROM part consists in a Max patch which is used in the composition process, as well as audio (AIFF), visual (PICT) and text documents. An interview by Martin Conrads (Berlin) was made for a "contd" radio program on February 2, 1997, and is probably still available at:

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Reviews

CD reviews

Electro-Acoustic
by Leo Kupper

Pogus Productions 1996, Brooklyn NY,
POGUS21009-2

This disc provides an intriguing survey of some of the musical output of the Belgian composer, Leo Kupper, with four works, interestingly presented in reverse chronological order. I say 'interestingly', because the programming reveals no trace of any aging of the earlier works; neither artisitic aging—or sense of moving back into the composer's past—nor technological aging. There is simply no feeling of datedness in any of these pieces—which is not something that can be said of much 1970's electroacoustic music. This is clearly a disc of mature works by a composer who has found his idiom and is comfortable with it. Which is not to say that the tracks all sound the same!

The first piece, Electro-Acoustic Santur (1989) for two santurs, four microprocessors and electronic sounds is the most recent work on the disc. The composer describes it as an experimental music piece. It gives Kupper an opportunity to demonstrate his skills as a player (partnered here by Kyomars Peergalou) of the ancient Persian stringed instrument, in addition to flexing his muscles as a composer. The work is in three parts: the first using a new technique for playing the santur, combined with a special recording technique, to alter the normal attack and decay of the santur notes. The electroacoustic sounds from the two santurs playing rapidly repeated notes, fading in and out, are set against taped electronic drones in a lower register. The second part makes use of the extended detuning possibilities of the instrument, its gong-like sonorities blended with a wider range of electronically generated and processed sounds—mostly sustained processed vocal lines in the mid and low register. The extended final section uses the two santurs in a more traditional tuning, with an exchange between the lyrical playing of the santurs and a tape consisting of electronic bird-like calls, as well as elements of the sustained lower register vocal drone from the earlier movements. The final result is a fascinating mixture of the ancient and the modern: an evocation of mysterious, ancient Persia, set amidst an almost surreal, firmly contemporary, electronic sound-world.

Guitarra Cubana (1988) is a similar experimentation, this time using (as the title suggests) the acoustic guitar rather than santur as the source of most of the sounds, supplemented with some vocally derived material. Another three-section work, the first two sections utilize a mix of largely unprocessed guitar playing, or sounds derived from striking the guitar body, mixed with tiny fragments of vocal sounds. The longer final section uses multiple cross-faded guitar samples to build a collage of prolonged guitar material. The many overlaid guitar strands of this last section are bounced around the stereo field in a completely unreal way, removing any semblance of live performance and highlighting the work's artificiality. To my mind, this piece (and especially its final section) works altogether less well than *Electro-Acoustic Santur*, coming across as little more than a brief (and yet, at times, overworked) exploration of guitar-based textures, with nothing of substance to say.

The third work on the disc, *Inflexiones Vocales* (1982), is for soprano (Francoise Vanhecke in this recording) with tape accompaniment. The electronic sounds on the tape evoke the sound of the wind, temple bells, wind chimes, the calls of birds and the spinning of prayer wheels. Through the gently shifting colours of this accompaniment, the soprano effortlessly threads a slow-moving and wordless melody, to produce an enchanting 21 minutes of quiet, peaceful meditation.

The final work, *Le Reveur Au Sourire Passager* (1977) is the result of a commission by the Groupe de Musique Experimentale de Bourges and is a setting of Kupper's own poem of the same title. Some 24 minutes long, this tape piece presents the poem, sometimes using the natural voice of the reader (Jean-Claude Frison) and sometimes with the voice transformed electronically, against a distant, brooding electronic background of sound, sparse and bleak. During the piece, Kupper puts the reader's voice through a seemingly endless variety of treatments, transforming pitch, timbre, dynamics and stereophonic placing. His handling of the processing is masterly and always with total sensitivity to the poem, which is kept at the forefront of the work throughout. Only rarely are the electronic transformations so severe, or so heavily layered, that the words are obscured totally, and even then the sense of the passage remains clearly communicated. Kupper says that "the composition, through the poem, describes a dark, vast world, incomprehensible and mysterious"—a very powerful impression increased for non-francophone listeners by the absence of any translation of the poem in the accompanying booklet. Incomprehensible this sound world may be (whether francophone or not), but a thoroughly absorbing one it is, none the less, and one which will be occupying my play-tray for quite a while yet.

Reviewed by Steve Benner

(Steve Benner has been criticising other people's music for years. He has recently started composing his own, which should, no doubt, present some people with the opportunity to get even...)

Neil B Rolnick
Requiem Songs: for the victims of nationalism / Screen Scenes
1996, Albany Records, TROY188

Neil B Rolnick's *Requiem Songs - for the victims of nationalism* (1993), which takes up almost half of this CD, would hardly class as computer music in most people's reckoning. Drawing on traditional songs from various Balkan villages (with additional lyrics by Ed Sanders and the composer), *Requiem Songs* is primarily a vocal work, scored for two female voices, with a (mostly) simple accompaniment of violin, percussion and the occasional processed sound sample. But, as the composer himself states in his sleeve notes, whether or not this is computer music is really beside the point. For what concerns Rolnick (and, hopefully, the listener also) is not the nature of the tools and instruments used to create and perform the piece, so much as the music itself, together with the ideas and feelings behind it.

Begun as an upbeat piece using musical ideas collected during a stay in the former Yugoslavia, this work changed direction sharply upon the advent of the war in Croatia and Bosnia, with Rolnick reshaping it into a requiem for a culture that was being swept away—the culture he had originally intended the piece to celebrate. The result is a folksy kind of work, but one in which the bleak frankness of the lyrics is often at odds with the lightness and (mock?) jollity of the musical setting: something of a shock tactic, I suspect, intended to point up the incomprehensibility and insanity of ethnic conflicts everywhere. I, for one, was certainly profoundly disturbed to discover myself some days after listening to this disc, singing one of the work's catchier songs, extolling the virtues of ethnic cleansing!

The remainder of this CD is given over to a 'work' that makes a strange bed-fellow to

CD reviews, cont.

Requiem Songs. Screen Scenes (1995) is really a collection of performance pieces for a jazz combo comprising flute/tenor saxophone, violin, bass, percussion and synthesizer/prepared piano. Each piece (termed a "PlayList" by Rolnick) is computer-composed in that, during a performance, the musicians each face a video monitor presenting them with a succession of instructions detailing what or how they should play within the ensemble for the next 10-30 seconds. The composer changes the performers' "playlists" immediately prior to each performance, so that the participating musicians never know exactly how the piece, or their part within it, will develop in any given performance. The resulting music is, according to Rolnick, "a continuing adventure, and hopefully that adventure is communicated [to] the audience as well."

I am not personally convinced that very much of the musical adventure communicates itself particularly well from CD. I rather suspect that an audience at a live performance of any of the four "playlists" presented here would feel somewhat excluded from the proceedings too. The music strikes me as being more fun to perform than to experience from outside the playing ensemble and I have to say that I found the examples on this CD overly long and ultimately rather tedious. But then I'm not a fan of jazz: regular readers of Array will already know my views on the merits of recorded improvised performances! These recordings may appeal to some jazz enthusiasts and may also interest those making a study of improvised musical forms. Other potential purchasers would do well to try before they buy.

Reviewed by Steve Benner

Evan Parker & Lawrence Casserley
Solar Wind

Touch TO:35
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This CD appeared in my mailbox several weeks ago. Since then, I've listened to it umpteen times. And I'm amazed every time I listen to it.

Evan Parker improvises on soprano saxophone in this collaboration. Don't expect to hear a lot of _obvious_ sax, though, as this 1997 recording also features Lawrence Casserley improvising on signal processing instrument. Together, the duo create an intricate and compelling sonic environment; they _cook_. This music doesn't need words about it: Listen to it, and then put it on your list of CDs to take with you to that desert island.

For Evan Parker information:
http://www.shef.ac.uk/misc/rec/ps/efi/mparker.html

For information on Lawrence Casserley and his instrument:
http://www.chiltern.demon.co.uk/

IN SEARCH OF *THE SOUND*

In Defense of the Old Days...

It has been fifty years since a serious new approach to electroacoustic music (EA) was proposed in Paris at the GRM, and 30 years since the first larger EA works were commissioned in Norway and presented on LP records. Arne Nordheim was the Norwegian pioneering champion in those days, and some of his music has now been remastered for a new CD release.

Listening to these five works brings back old memories, as well as some solemn thoughts about those passing years.

For centuries, music creators have been effected by technological developments in instruments, recording techniques and human performance skills. This is perhaps most apparent in EA music, a tradition that has developed over a period of only a few decades. The pioneers were fascinated by the new possibilities but were also severely restricted by the available equipment and the skills of assisting technical personnel, such that a number of compromises were made. There are scores of pieces from the early years which lack both sonic lustre and musical «value.» We see the younger generation today smile at the feeble attempts to create layers and mix them into an interesting, soft blend, a process now simple enough to perform on their home computers.

Arne Norheim has always had an innovative and playful approach to his music, seeking new means for the expressive composer. He chose to travel to Warsaw in the 1960's, a city known for both its modern music (Lutoslawski and Penderecki) and its *Studio experymentalne*. This is where the «pure» EA pieces on this CD were made.

In many ways these pieces are extensions of his early orchestral works, which is most apparent in the temporal aspects. However, these pieces also reveal the development of sounds and timbres that appear in his later orchestral works, particularly in the higher registers. Some of the typical «Nordheimesque» vocabulary is heard in these pieces. In addition, he develops in these pieces an almost mystical veiling of hidden meaning drawn from literary sources, whether in the form of a declaration of human rights or a nursery rhyme.

I must confess. Upon first hearing the piece *Warsaw*, I called it a «rehash of sterile, left-over tape ends from the Warsaw studio.» Today I am 28 years older, more patient, and experience a «story» in this piece. And I have a good feeling about the other pieces as well. They are musically sound, and one tends to ignore some clumsy passages and dated sounds in awareness of the period's equipment and the interesting history of the setting.

The tapes have been remastered and it is difficult to know how much cosmetic cleaning was done. *Solitaire* still sparkles, even brighter than before, the facets are clearer. In keeping with some recent tendencies, however, I would not be surprised to see a demand for more «authentic» performances of works like these, a performance of the old analogue tapes on a vintage Studer through an old tube amplifier to «duller» loudspeakers in a narrow, crowded room with people sitting on the floor.

Arvid O. Vollsnes

Dept. of Music, University of Oslo
(Chairman of NoTAM, Norwegian Network for Technology, Acoustics and Music)

Arne Nordheim: *electric*
RCD 2002
Solitaire (1968), *Pace* (1970), *Warsaw* (1970), *Colorazione* (1968), *PolyPoly* (1970).

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4 CD REVIEWS

The following four reviews are all written by Dexter Harncourt, and the selection of music comes from what can loosely be termed musique concréte. It contains some of the most stunning beautiful creations of sound. Some of these CD's were "harder going" than others. They all share a common origin through association with the Groupe de Recherches Musicales in Paris or the electronic studios at Bourges (both familiar places to electroacoustic musicians), either through resident composers or special commissions.

The Sea Maid's Music
by Jean Schwarz

Elise Caron (Soprano)
(INA C 3003)

Fabulæ
... fabula
... onoma
... nota
... sonora
by François Bayle
(MUSIDISC 244732)

Notre besoin de consolation est impossible à rassasier (Our need for consolation is impossible to satisfy).
by Denis Dufour
(INA C 1010)

Le Sixte Livre... - Chrysopée électronique - Bourges
(«The Sixth Book» known as the «electroacoustic» book)
by François Rabelais
(LCD 2781105)

Sea Maid's Music (1990)
by Jean Schwarz

> And [I] heard a mermaid on a dolphin's back
> Uttering such dulcet and harmonious breath,
> That the rude sea grew civil at her song.
>
> William Shakespeare

Technically *Sea Maid's Music* involved improvised sessions with the versatile soprano Elise Caron and the dextrous, manipulative computer, Syter (Upon which ideas for GRM Tools were taken). Caron recites from Midsummer Nights Dream amongst other delicate vocal extemporisations. Where Schwarz succeeds is in making the work intimate and also not abusing (too much) either the voice or the processes involved.

There are few composers (Trevor Wishart is the exception that immediately springs to mind) who manage to paint with the whole voice/computer palette and retain form. Many vocally inspired works traverse such a broad spectrum that form is forgotten. So, Schwarz sets an intimate relationship between the voice and the listener. The drama is easily followed. This is not to say the music is simple - far from it. Keeping dramatic tension and variety for 61 minutes is no easy feat. Melodic motives lead to a pitch dominated work where samples are latched to build drone backgrounds and delays are used to give Reich-like rhythmic pulse. The voice could probably do with a little more "solo" work as the "natural sound" tends to get de-personalised as time goes on with practically never ending treatment even at its most subtle. However, like the vocal music of Alejandro Viñao, the meld between and tape and voice is precise and always allows meaning to be understood both metaphorically and literally.

Fabulæ (1990/1992)
by François Bayle

A nursery rhyme is played on an imaginary xylophone whose bars are horses hooves.

picture this...
Fabulæ bubbles like a pot on a gas stove - every now and again sonic spills down the side of the pan and **fries** on the heated oven. The atmosphere is tense - someone must be here. Two loudspeakers crawl in the distance, two more from behind searching...

or this...
a childhood den in a field. A storm looms but the sun is shinning right now. Some children begin to dance around us, holding hands with the *Gitanes* smoking fairies. The lake bubbles blue and pink, the sky sneezes multicoloured rain. Its all a little upside down - its life ?

Pitched motives burst into the stereo field of *Fabulæ* and possess the most delicate sense of space. Like an artist with a fine airbrush Bayle manages to layer and accentuate the forms such that they are clearly definable whilst not being obtrusive or obvious. *Fabulæ* exists in 4 movements and like the Schwarz is a whole suite on one CD. Each piece has the principle of acousmatic sound at its core.

The acousmatic listener is not allowed in theory to attribute source to cause but this CD can sparkle the visual imagination. Acousmatic sound is sound one hears without seeing their originating cause - a invisible sound source - difficult to do in the real world as its practically impossible to shut off our vision. Maybe we want to conjure images with the minds eye. *Fabulæ* lets you do this but requires that you get to know the gestures and timbral colors so that their repetition and development begin to alter your understanding and change the patterns you form. This music has an agility that most younger composers fail to achieve. It has a very instrumental feel to it with themes and motifs. Each movement deals with the playful, artful, secretive, fantastic fairy-tale world between our ears. Performed over the Groupe de Recherches Musicales diffusion system the Acousmonium, *Fabulæ* would ignite your fantasies and illuminate the extraordinary. The booklet adequately describes what we expect to hear - or whatever we do with a booklet while the CD is playing. I shall only say that the sounds are very well known to us bearing instrumental-like qualities but they naturally do not relate to our perceived human performance practice.

Context.
I find this CD extremely difficult to compare with other Bayle Cds such as Erosphere, and Motion-Emotion. It bears more resemblance to his latest CD, La Main Vide but only in a vague timbral correspondence. However, check this one out and buy the collaborative masterwork (with B.Parmegiani) *Divine Comédie* while you are at it!

Notre besoin de consolation est impossible à rassasier (1987/1989)
(Our need for consolation is impossible to satisfy)
by Denis Dufour

This is a dark work and has a pretty desperate canvas based on Stig Dagerman's text. *The snapshots he offers to our view suggest that happiness is both real and impossible to achieve - or perhaps simply that reality is impossible, given the conditions mankind creates and inflicts upon itself.* (from the booklet)

This is *Cinema for the ears*, the work is extremely visual and I had no problem involving myself with the music. This work has the grit and stubbornness such as I find in most of Michel Chions work. This CD is big - weighing in at 67' 22. It's definitely a one sitting job or you do not do it justice. This work has a mix of text, sound, music and imagination that the sensitive ear finds engaging. Whereas the voice (especially when reciting text) can sometimes extract itself from the musical fabric, in *Notre besoin* the words fuse with the music (I recommend you also listen to Chion's Requiem as there are many similarities). There are some real delicacies in this work. Spaces, the minute sounds that only a repeated listen (with headphones) will pull out. There are some classic montage sequences - remember these ? when different bits of tape were stuck together one after the other. Track 8 is indicative of the whole work and shows a more influential figure hiding in the background, that of Pierre Schaeffer.

This piece is about 10 years old. Schaeffer's early works are approaching 50 years old. *We are promised both the earth and extinction.* There is a problem with electroacoustic music. This work seems as vibrant now as any work that came hot out of the CD-R (by that I mean over the last couple of years). I am guilty as are many others of giving preference continually to that created yesterday. This work gets back to the sound and it is from here that we can move forward.

CD reviews, cont.

Le Sixte Livre... (1994)
«The Sixth Book» known as the «electroacoustic» book.
by François Rabelais

This is a compilation of works celebrating the fifth centenary of François Rabelais' birth with specially commissioned works by Sten Hanson, Francoise Barriere, Rainer Boesch, Michel Redolfi, Leo Kupper, Pierre Boeswillwald, Georg Katzer, Daniel Tosi, José-Manuel Berenguer and Ulrich Suesse.

This CD is an amazing insight into how composers respond to and treat text in general, and their understanding of Rabelasian thought/language in relation to their current position in particular. I must have been daunting task to have been commissioned for such a project. As this is a "Radiophonic" CD - the voice from nowhere is not a problem and stirs the imagination especially when you hear the opening track which has René Zosso reading the famous «Inscription mise sur la grand port de Thélème» which is extremely powerful.

I expected some electroacoustic Ars Nova to follow. However this was not to be. Text usage varied from spoken-intelligible through to sonic material ripe for manipulation. Indeed the variety of style is refreshing and raised many issues about compilation CD's. There was perhaps too much freedom and for one who is not well versed in Rabelais this was a difficult task and quite frankly I had to go on what I heard. The Barriere, Redolfi, Boeswillwald, Tosi and Berenguer are highlights worth waiting for but what I can not believe is how the rhythm of the text, the recitation and the meaning seemed astonishingly drained from these interpretations by composers of international acclaim.

Reviewed by Dexter Harncourt

Software review

SuperCollider
James McCartney's Realtime Sound Synthesis Programming Language

Colby Leider
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In 1996, James McCartney introduced SuperCollider, a realtime sound synthesis programming language for the PowerPC Macintosh with roots in his synthesis program Synth-O-Matic and his numerous MAX objects. The language, which somewhat resembles Smalltalk and C/C++, currently contains over 600 built-in functions, including oscillators, filters, random number generators, file input/output routines, MIDI support, and envelope followers. In addition, its realtime operation makes it well-suited for live electronic music. File input/output routines may be used to read a text file score, thereby allowing a user to treat SuperCollider as a Music V-style score processor and synthesis engine. However, SuperCollider's real strength and uniqueness lies in its inherent lack of distinction between the archetypal score and orchestra. In contrast to Csound, a single program may contain both compositional algorithms and synthesis routines. Furthermore, the language provides users with access to an audio stream at any desired level, including individual samples. And in the tradition of HMSL, hierarchical compositional and gestural structures may be easily constructed.

SuperCollider has quickly and quietly gained a devoted following. Stephen Travis Pope has written a tutorial bookSound and Music Processing in SuperCollider and has organized the first SuperCollider conference at the University of California at Santa Barbara (to be held February 27-March 1, 1998). Several academic institutions have already integrated the language into their curricula, including Florida International University (Kristine Burns), the University of California at Santa Barbara (Stephen Travis Pope and Curtis Roads), Peabody Conservatory (Ichiro Fujinaga), and Dartmouth College (Larry Polansky).

McCartney notes that version 2.0, to be released in 1998, will be fully object-oriented with a comprehensive class library and many new features, among them multiple control rates, sample-accurate event start times, on-the-fly patch building, and dynamic allocation of signal buffers such as delay lines. The SuperCollider home page is located at http://www.audiosynth.com.

ICMC 1997 reviews

Review of 1997 ICMC Session: Analysis/ Synthesis 1
by James Beauchamp, University of Illinois at Urbana-Champaign

«How can we make a more perfect analysis/ synthesis?» was the theme of this session. While, as usual, the extraction of sine waves from the signal was the foremost concern, mathematical techniques considerably beyond traditional Short-Time Fourier Transform (STFT) were used.

The first paper «Sinusoidal and Residual Decomposition and Residual Modeling of Musical Tones Using the QUASAR Signal Model» by Yinong Ding and Xiaoshu Qian was given a very strong delivery by Dr. Ding. The paper attempts to find an optimum representation of a sound's constituent sine wave frequencies as well as an optimum separation of an additive noise part from the multiple sine wave part. The authors' point of departure was a paper by Xavier Serra and Julius Smith [Serra and Smith, 1990] which had a similar goal. However, while Serra and Smith used FFT methods for representation

and separation, Ding and Qian are using an entirely different method with their goal being to achieve identity between the original and synthetic sound without any compromises. Phase deviations of the sine waves are represented by a summed series of B-spline quadratic polynomials. These polynomials overlap so that during any frame three of them are operating, while each polynomial extends over three frames. Similarly, amplitude is represented by a summed series of linear B-splines which extend over 2 frames. The weights applied to these B-splines vary from one frame to the next and from one sine wave to the next and are optimized to minimize the sum-squared difference between the original and synthetic signals. (The minimization technique was published elsewhere [Ding and Qian, 1997].) The phase deviations are computed with reference to «nominal frequencies». No method for determining these is given, although Dr. Ding has explained to me that any conventional method such the STFT could be used for this purpose. Also, the nominal frequencies are assumed to be constant. This should work fine for the musical instrument sounds tested, but there might be problems with sounds with large amounts of vibrato or frequencies which vary substantially. Once the sine wave amplitudes and phase deviations are determined, they are synthesized, summed, and subtracted from the original signal to determine the noise residual. The authors have experimented with various techniques such as «Multi-pulse Excitation Linear Prediction» and «Regular Pulse Excitation» as ways to data-reduce the residual. It was difficult for me to evaluate the quality of the analysis/synthesis demonstrations at the talk, but when I listened to their demo tape later I found them to be very impressive. Nevertheless, I am not yet convinced that this method offers a substantial improvement over the simpler Serra-Smith and standard phase vocoder methods.

Related to the idea of noise is the idea of aperiodicity. Rather than thinking of noise as additive, we can think of it as applied to the phases of the harmonic partials in a sound. This was the topic of the second paper, «Statistical Modeling of Sound Aperiodicities» by Shlomo Dubnov and Xavier Rodet, who actually presented the paper. They applied a new method of Higher Ordered Statistics to the time variant phases (de-trended) obtained from time-variant spectrum analysis (TVSA) of sustained (basically harmonic) instrument sounds such as those produced by trumpet, cello, and clarinet. Although no details on the method of TVSA were given or sited in the paper, this has been published elsewhere [Rodet, 1997] and is available on IRCAM's web site. Quadratic Phase Coupling (QPC) is defined as the time average of the exponential of the sum of two harmonic phases minus the phase of a third harmonic whose number equals the sum of the other two harmonic numbers. If the phases of the three harmonics are locked, the result would be exactly 1.0, but if the phase values oscillate in a limited range, the result will converge to a value less than 1. A related «SOS» statistic is referred to and even graphed but not defined. 3D graphs of SOS and QPC are shown, which strangely give kinds of checkerboard patterns. Unfortunately, the absissca and ordinates of the graphs are not defined. However, the cello and trumpet graphs look entirely different, so this measure could be an aid for recognition. A measure similar to QPC is the Kurtosis of the signal, which is defined in the paper's Appendix as the triple sum of objects similar to those used Quadratic Phase Coupling except that four harmonics are used instead of three. Again, Kurtosis measurements seem to be differentiated by instrument type, with brass having very large values, woodwinds intermediate, and strings and flute very low values. The authors mention a connection to «subband», but this term is not defined. These methods appear to differentiate between different classes of instrument sounds, but the question is, does the ear use the same information, and is the data useful for synthesis? The remainder of the paper is devoted to synthesis, sound transformations, and modelling of the phase phenomena. When the phases of one instrument (e.g., a cello) were exchanged with those of another instrument (e.g., a trumpet), it was found that certain timbral characteristics were exchanged giving the resulting sounds true hybrid qualities. What happens when vibrato phases are used to drive a resonant structure is also discussed.

Aperiodicity was also the subject of the third paper «Analysis and Regularization of Inharmonic Sounds via Pitch-Synchronous Frequency Warped Wavelets» by Gianpaolo Evangelista and Sergio Cavaliere. However, in this case the aperiodicity is more severe to the point that the partials of a sound are inharmonic. The piano, which is the guinea pig for this paper, has partials whose spacing increases according to an approximately parabolic curve as a function of partial number. This makes it difficult to use ordinary STFT methods where the frequency bins are intrinsically harmonically spaced. In 1993 Evangelista devised a Pitch-Synchronous Wavelet Transform (PSWT), which was used to separate spurious inharmonic and noise components from the basic harmonic ones. Now, using a Laguerre transform, the authors are able to warp the frequency scale so as to better isolate the intrinsic inharmonic components of the piano and separate out the noise residue. This method has been used to analyze and synthesize actual piano tones, and the examples played at the talk were quite impressive. Whether this method can actually be applied, as claimed, to sounds such as cymbals and drums, which have closely-spaced inharmonic partials, remains to be seen.

Whereas the first three papers utilized methods beyond the traditional STFT, the last paper «About this phasiness business» by Jean Laroche and Mark Dolson is firmly rooted in that method, also known as the Phase Vocoder: It returned to examine a problem which has plagued it over the years since it was introduced in the mid-60"s. The problem occurs when one tries to time-scale (compress or stretch) sound files or change their pitch. The authors use an analysis method which involves taking successive FFTs of overlapped windowed portions of the input signal and computing the instantaneous frequency of each bin by a method of phase unwrapping. For synthesis, FFT phases are corrected using a standard «phase propagation formula» before inverting FFTs and performing synthesis by the overlap-add method. It turns out that this only gives expected results if time-scale is restricted to integer (stretching) factors. (Compression using factors less than 1 usually works simply because the ear doesn't notice phase problems when the sounds are sped up.) The authors discuss several methods for resolving the difficulty, and then conclude with a new «peak phase-locking» technique. Demonstration of time-stretched speech samples before and after the phase-locking technique was imposed convincingly demonstrated (to this listener) the value of the new method. Also, because the synthesis overlap can be reduced from 75% to 50%, the amount of computation required is reduced by a factor of two. Now, if only we could have a mathematical definition of «phasiness».

The new analysis/synthesis methods introduced on this session were both innovative and fascinating. If practical software for musicians and composers can result from these approaches in the near future, the entire computer music community will benefit.

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ICMC 1997 reviews, cont.

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Members' News

Martin Fumarola

In the beginning of February 1998, MARTIN FUMAROLA finished the production of a computer music piece using Max in the «Theremin Center for Electroacoustic Music and Multimedia» in Moscow (Russia). Three of his tape alone electroacoustic pieces will be included in a CD to be released in May 1998 by the moscovite CD label «Electroshock Records». Besides, he presented Argentinian and Latinamerican ea/cm in a lecture, two TV programs and a radio program in Moscow as well.

Jim Phelps

«Blue Note recording artist/guitarist, Fareed Haque, recently commissioned «ATALLMIRROR» from composer James Phelps. The work is a computer-mediated composition for The Fareed Haque Quartet and is in the form of an «EP». The acoustic «mix» was recorded at Tone Zone in Chicago for upcoming release on a classical CD while the entire EP is slated for premiere and recording early in 1998. The work fuses a bit of Tango, Flamenco, Rock, Baroque, Minimalist, Maximalist, Classical, Neo-Classical, Punk, Funk, Daft Punk, Post-punk, Pop, Avant-pop, Post-pop.»

TERRE THAEMLITZ' latest electroacoustic album, "Means from an End" was released on January 12, 1998, by Mille Plateaux (Germany). Drawing from Electroacoustic music's historical associations with socialist movements in the early 20th century (i.e. Constructivism, Futurism, Musique Concrete, Minimalism), "Means from an End" looks at the capacity for contemporary computer synthesis techniques to serve as a socio-analytical platform. Thaemlitz' attempt to recouperate this politicized past leads to a discussion of the fiction of Historical Closure as utilized in conservativism, liberalism and radicalism. An accompanying text outlines the interrelationships between Thaemlitz' intentions and processes. Text and images can be found at http://www.comatonse.com/listening/means.html

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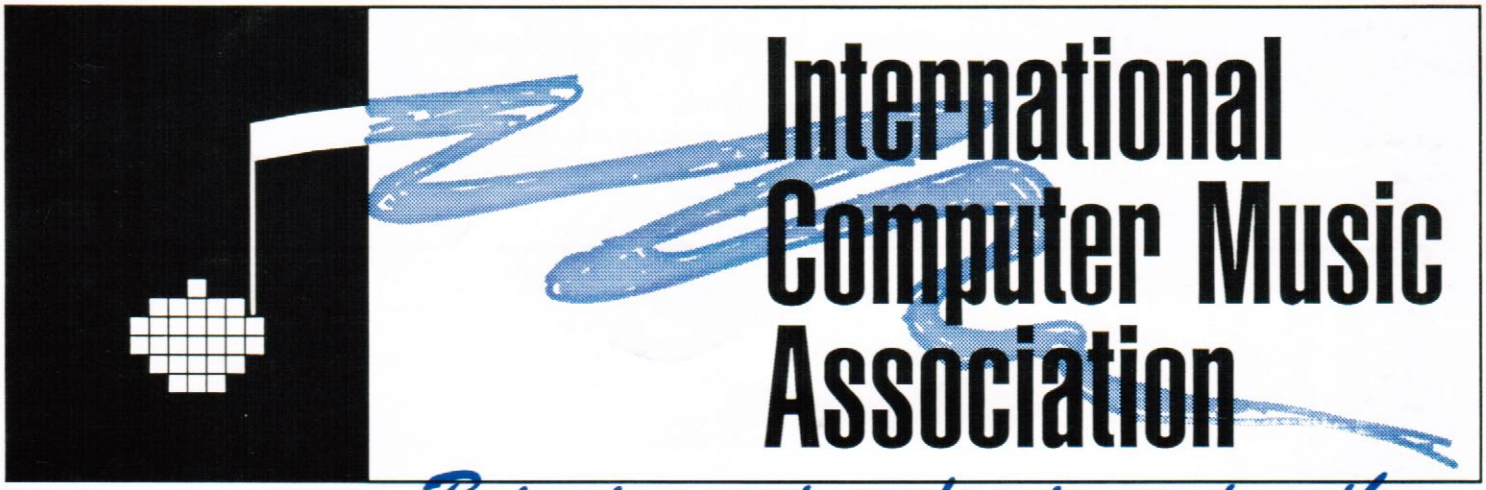

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