FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC, MASSACHUSETTS INSTITUTE OF TECHNOLOGY OCTOBER 28-31, 1976

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Although the Computer Music Conference was described as 'First' and 'International', it was in fact the second (following the one in 1975 held at the University of Illinois at Urbana-Champaign) and it remained a predominantly national (i.e. American) affair. Its Americanness must be partly due to the obvious difficulties of travelling long distances from abroad, especially at the time of year when university and college terms are already well advanced; but it is chiefly a reflection of the fact that the field of computer music in all its forms, as of computer science in general, was pioneered and developed, and continues in its development, principally in the USA.

As can be seen from the listing of papers presented (see below), only eight of the forty were from outside the USA. Of these, one was by Bårry Truax from Canada and another (GROOVE again) was by Max Mathews, the pioneer of computer sound synthesis, for many years at Bell Telephone Laboratories at Murray Hill, New Jersey, but now working at IRCAM at Paris. Four of the others were by Italians (one, di Gugnio, now working at IRCAM) and the remaining two by Stan Tempelaars (Netherlands) and Stanley Haynes (UK). (Mr. Haynes's paper was not read to conference as he was unable to attend.) The American contributions came from all parts of the country and reflected a wide range of technical concerns. The

delivery of papers was strictly limited to fifteen minutes, with a maximum of five minutes discussion, which made for extremely intense sessions. Even being a humble delegate was quite hard work: the second day's business, for instance, consisted of twelve papers, two panel discussions, an open discussion, two concerts and studio demonstrations, all shoe-horned into a fourteen-hour day.

The main dissatisfaction I heard voiced, especially by composers, was that papers which discussed specific compositions, or emphasised specifically musical questions, were rare to say the least. The contributions from John Melby and Tracy Lind Petersen were among the memorable exceptions. The opportunity to redress the balance in the panel discussions was not effectively taken: the one entitled 'What Do Composers Want from Technology?' had among its panel members a number of European composers whose poor English severely limited their contributions, with the result that the session degenerated into a rather pointless verbal duel between Richard Hoffman and the chairman, Milton Babbitt.

The concerts were held in the fine Kresge Auditorium at MIT. There were three solely of computer-synthesised compositions. A fourth, presented jointly with the ISCM World Music Days,[1] was to have included three analogue and three digital works, but the Barbaud and Radavanovic works were not given as the tapes were somehow mislaid the night before at the ISCM dinner at the Statler Hilton Hotel in downtown Boston. They were replaced by two works given in the Computer Music Conference concerts, Jonathan Harvey's *Time Points* and Tracy Lind Petersen's *Everything and Nothing*. (The concert will be restored to its intended shape for its broadcasts around the world.)

The original programme is listed below, as are those of the three conference concerts. From these listings, apart from the obvious, understandable and inevitable American predominance, a rather more surprising bias is apparent. Of the thirteen works in these three concerts, six were realised using MUSIC 360, the synthesis program developed by the main conference organiser, Barry Vercoe. A further three were realised on the new MIT system, developed under Vercoe's direction. Ten of the thirteen were realised at Princeton University or MIT; none was the product of a hybrid system. When I later asked Barry Vercoe about these points, he explained that the works presented were chosen by a panel and were the best submitted.

On my travels further west after the conference it became clear to me that a considerable amount of resentment had built up because of the strong 'East Coast' flavour of these concerts.[2] Of couse, readers should realise that when one says 'East Coast' and 'West Coast', one is not drawing just a geographical distinction, but referring to a cultural division which is of crucial importance, at least to many Americans. 'East Coast' tends to imply 'deterministic', 'traditional', 'intellectual', 'establishment', even, in the musical world, 'twelve-note'; 'West Coast' tends to imply 'aleatoric', 'experimental', 'revolutionary', 'hippy'. (Perhaps I should add that these adjectives are here being used rather loosely and journalistically.) On the one side of the divide, one might place Babbitt, Carter, Vercoe, Wuorinen, et al; on the other, Cage, Erikson, Oliveros, Reich. By eliminating the 'West Coast' therefore, the conference eliminated from its concert programmes an important facet of American culture. It might be argued that, however the conference organisers view that facet, they had a responsibility to see that it was represented. (One could extend the argument and say that they should have made more of an effort to secure and promote more contributions from outside North America.) The counter-argument is that the selection panel should promote only what it believes to be of genuine worth, rather than try to ensure wide representation merely for its own sake and regardless of merit.

I for one was impressed with the high musical quality, individual character and expert execution of works such as *Artifice* by Paul Lansky, *Templum* by Hilary Tann (originally from Wales), *Two Stevens Songs* by John Melby and *Synapse* by Vercoe himself. *A Little Background Music* was far too modestly titled by its composer, Beverly Grigson.

In spite of the above reservations, and in spite of the fact that a number of the papers presented were comprehensible only to a few specialists, the conference was in my view a great success, bringing home as it did the depth and breadth of research effort in what is surely the most inspiring development in contemporary music making. It was striking to discover many fine musicians who were conversant, not to say fluent, in advanced computer science, and also computer scientists who had a subtle and sensitive grasp of the musical problems of composers. (It is frustrating, and even distressing, to contrast the situation here in Britain, which now seems to me an illiterate society with regard to computer music.)

A number of papers are to be published by MIT Press. A booklet of all the abstracts may be obtained from Professor Barry Vercoe, Department of Humanities, MIT, Cambridge, Mass. 02139, USA, as can a catalogue of *Computer Music Compositions of the United States* (1976) compiled by Carol Melby, ($5.00). The Second International Computer Music Conference is to take place on October 26-30, 1977, at the University of California at San Diego, sponsored by the Music Department and the Center for Music Experiment at UCSD. For registration or information, write to Computer Music Conference, UCSD — Q037, La Jolla, California 92093, USA. I wonder if anybody from Britain will manage to get there this year.

NOTES:

[1]The 1976 ISCM World Music Days were held in the USA for the first time during the Bicentennial Year. Between October 24 and 30 thirteen concerts were given, centred on the New England Conservatory at Boston. Sixty-six works of a great variety of nationalities and styles were performed. It was particularly exciting to hear students of the Conservatory (they played fifteen of the works) and of the University of Iowa (four) playing to the best professional standards.

[2]The same kind of grumbles from 'West Coasters' were evident in relation to the selection of American works for the ISCM World Music Days.

PAPERS PRESENTED AT THE FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC, 1976

ANALYSIS/SYNTHESIS TECHNIQUES

Analytic Signal Processing in Music Computation — James H. Justice, University of Tulsa, Oklahoma

Intensity Characteristics of a Synthesis Model for Producing Brass Sounds — Ercolino Ferretti, University of Utah

Music Synthesis by Optimal Filtering — James F. McGill, Culler/Harrison, Inc., California

Practical Considerations in the Application of Linear Prediction to Music Synthesis — R. Cann, P. Lansky, K. Steiglitz, and M. Zuckerman, Princeton University, New Jersey

The Use of the Phase Vocoder in Computer Music Applications — James A. Moorer, Stanford University, California

SYNTHESIS HARDWARE

A Real-Time Computer Controlled Digital Oscillator Bank — G. Di Giugno, IRCAM, Paris.

Microprocessors: A Multiprocessing Approach to Real-Time Digital Sound Synthesis — Bruce Hemingway and David K. Barton, University of Indiana

VOSIM Sound Synthesis — Stan Tempelaars, Institute for Sonology, Utrecht, Netherlands

Real-Time Tone Synthesis from White Noise Using High Speed Digital Speech Processors — David V. James, MIT

MUSIC INPUT LANGUAGES AND EDITORS

MUSICA: A Language for the Transciption of Musical Texts for Computers — Giovanni B. Debiasi and Giovanni G. De Poli, University of Padua, Italy

Second Generation Music Input Terminals: The PCS-300 Music CRT — Armando Dal Molin, Music Reprographics, Ltd., New York

Stylus and Tablet: A Convenient Method for Music Input — Hal P. Shearer and Alan C. Ashton, Brigham Young University, Utah

Interpretation of a Linear Music Notation for Automatic Playing and Graphing of Classical Music Scores — Alan C. Ashton and Robert F. Bennion, Brigham Young University, Utah

Computer On-Line Music Editing in a Compositional Environment: Some Special Considerations — Steven Haflich, MIT

SOUND SYNTHESIS LANGUAGES AND EDITORS

SPIRAL: A Signal Processing Research Language — John W. Amuedo, Culler/Harrison, Inc., California

An Interactive Graphical Interface for MIT's MUSIC 360 Language for Digital Sound Synthesis — Tom Creutz, University of Nebraska

OEDIT — An Interactive Orchestra Editing System — Richard Steiger, MIT

USER PSYCHOLOGY I: CONTROL OF TIMBRE

A Topological Model for the Perception of Context-Embedded Timbres — David Rothenberg, Temple University, Pennsylvania

Perceptually Based Controls for Additive Synthesis — David L. Wessel, Michigan State University and IRCAM, Paris

USER PSYCHOLOGY II: KNOWLEDGE BASED SYSTEMS

Capturing Intuitive Knowledge in Procedural Descriptions — Jeanne Bamberger, MIT

Toward a Theory of User Interfaces for Computer Music Systems — Otto E. Laske, University of Pittsburgh, Pennsylvania

FACILITIES REPORTS

Outline of the Research at the CNUCE-CNR of Pisa, Italy — Pietro Grossi, Pisa, Italy

Software Sound Synthesis in the United Kingdom — Stanley Haynes, University of Southampton, England

Sound Language — George Cohn, Indiana University

An Interactive Software System for Real-Time Sound Synthesis — Graziano Tisato, University of Padua, Italy

THE COMPOSER'S EXPERIENCE

Variable Amplitude Modulation by BUZZ — Joel Gressel, Baruch College, City University of New York

Composing with Cross-Synthesis — Tracy Lind Petersen, University of Utah

Compositional Approaches to the Combination of Live Performers with Computer-Produced Tape — John Melby, University of Illinois

DIGITAL SOUND RECORDING AND EDITING

All-Digital Sound Recording and Processing — Loren Rush, James A. Moorer and Gareth D. Loy, Stanford University, California

A Portable Off-Line Tape Recorder for Recording, Archiving, and Duplicating Digitized Music — Robert B. Ingebretsen, Thomas Greenway Stockham, Jr., and Richard B. Warnock, Soundstream, Inc., Utah

Floating Point Encoding for Transcription of High Fidelity Audio Signals — Francis F. Lee and David Lipschutz, MIT

SYSTEM DESIGN PHILOSOPHIES

Aspects of Computer Music System Design — Bruce E. Rittenbach, La Jolla, California

Input Languages Affect System Design — Wayne Slawson, University of Pittsburgh, Pennsylvania

The Inverse Relation Between Generality and Strength in Computer Music Programs — Barry Truax, Simon Fraser University, British Columbia, Canada

REAL-TIME CONTROLS

An Inexpensive Computer-Driven Organ Playing System — Jeffrey H. Lederer, University of Pittsburgh, Pennsylvania

An Input Interface for the Real-Time Control of Musical Parameters — Paul Edward Dworak, Carnegie-Mellon University, Pennsylvania

The Conductor Program — M. V. Mathews, IRCAM, Paris

INTERACTIVE COMPOSING

Real-Time Interactive Compositional Procedures — Emmanuel Ghent, New York City

Composing Hybrid Music with an Open, Interactive System — Larry Austin, University of South Florida

Interactive Woman-Machine Improvisations — Joseph Pinzarrone, University of Delaware

CONCERT PROGRAMMES AT THE FIRST INTERNATIONAL CONFERENCE ON COMPUTER MUSIC

(Information appears in the following order: composer's name, home institution, title of work, date of composition, place of realisation, technical details.)

PROGRAMME 1

Jonathan Harvey (University of Sussex, UK), *Time Points* (1970; Princeton; MUSIC 360)

Hilary Tann (Princeton University), *Templum* (1975; Princeton; MUSIC 360)

Beverly Grigsby (California State University at Northridge), *A Little Background Music* (1976; Stanford; MUSIC 10)

Paul Lansky (Princeton University), *Artifice* (1975-6; Princeton; MUSIC 4 BF & Music 360)

PROGRAMME 2

John Melby (University of Illinois at Urbana-Champaign), *Two Stevens Songs* for soprano and computer (1976; University of Illinois & Princeton; MUSIC 360)

Richard Hoffman (Oberlin Conservatory, Ohio), *In Memoriam Patris* (1976; MIT; MUSIC 11)

Barry Vercoe (MIT), *Synapse* for viola and computer (1976; MIT; Music 11)

Tracy Lind Petersen (University of Utah), *Everything and Nothing* (1976; University of Utah;?)

PROGRAMME 3

Barry Truax (Simon Fraser University, B.C., Canada), *The Journey* (1972; Simon Fraser University; POD 5 & POD 6)

P. Howard Patrick (Washington, D.C.), *Suspensions* (1973; Princeton; MUSIC 360)

Michael Dellario (Princeton University), *Maud* for soprano and computer (1974; Princeton; MUSIC 4BF)

Ethan Haimo (University of Indiana at South Bend), *Convergence* (1973; Princeton; Music 360)

Alva Couch (MIT), *Surges* (1976; MIT; MUSIC 11)

ISCM ELECTRONIC MUSIC CONCERT

Knut Wiggen (Stockholm), *Resa* (1974; Stockholm; computer realised)

Enrique Raxach (Netherlands), *Chimaera* for bass clarinet and tape (1974; ?; analogue)

Pierre Barbaud (IRIA, Paris), *Ars Recte Computandi* (1975; CEMAMu; CGM & Saltatio, computer realised)

Vladan Radovanovic (Belgrade), *Electra* (1974; Radio Belgrade; EMS, analogue)

Andre Laporte (Belgium), *Harry's Wonderland* for bass clarinet and tape (1976; ?; analogue)

Benjamin Boretz (Bard College, N.Y.), *Group Variations II* (1973; Princeton and Bell Telephone; MUSIC 360)