

COMPUTER ARTS SOCIETY

PUBLIC MEETING

ICA Cinema Nash House The Mall London SW 1

Sunday 6 July at 7.30 pm
How I Write Computer Opera and Music
Lambert Meertens of the Mathematisch Centrum in
Amsterdam talks about some of his recent work

Tickets obtainable at the door 5/-
Members 3/- Students 2/-

NOTICE TO NON-MEMBERS

This is the third and last issue of PAGE to be dis-
tributed free to a large circulation list. PAGE
will in future be distributed only to members and
subscribers.

SOCIETY MEETINGS

The series of monthly meetings at the British
Computer Society for members and guests will be
resumed in September. Details will be given in
the next issue of PAGE.

AIMS AND MEMBERSHIP

The aims of the Society are to encourage the
creative use of computers in the arts and allow
the exchange of information in this area.

Membership is open to all at £1 or \$3 per year stu-
dents half price. Members receive PAGE and reduced
prices for C A S public meetings and events. The
Society has the status of a specialist group of
the British Computer Society, but membership of
the two societies is independent.

Libraries and institutions can subscribe to
PAGE for £1 or \$3 per year. Extra copies will
be sent to the same address at half price.

BULLETIN OF THE COMPUTER ARTS SOCIETY

No other membership rights are conferred and
there is no form of membership for organisa-
tions or groups.

Re membership, subscription, circulation, and
information, write to Alan Sutcliffe.

PAGE

Organisers of events concerned with computer art/
design/music/architecture in any part of the world
are asked to send details for publication in PAGE.
Publishers and authors are invited to send relevant
books and articles for mention in PAGE.

PAGE thanks Peter Hunot and John Lansdown for assis-
tance in the production of the first two numbers.
This number is designed by Malcolm Le Grice.

Views expressed are those of individual contributors.

WHY USE COMPUTERS IN THE ARTS?

The CAS contribution to DATAFAIR 69 at a session on
Wednesday 27 August in Manchester. A film of John
Lansdown's ballet project will be a starting point
for discussion. Bob Parslow, Patrick Purcell and
Peter Zinovieff will talk about applications in
graphics, design, architecture, and music. The im-
plications for art and society will be discussed by
David Firnberg, George Mallen, and Gustav Metzger.

ADDRESSES

CAS Chairman Alan Sutcliffe ICL Brandon House
Bracknell Berkshire.
CAS Secretary John Lansdown 50/51 Russell Square
London WC 1
Editor of PAGE Gustav Metzger BM/Box 151
London WC 1

TOOLISH?

'The computer is a tool, a very complex tool, but
still only a tool and in one sense the formation of a

SPECIALIST GROUP OF THE



BRITISH COMPUTER SOCIETY

computer art society can be considered as ridiculous
and as irrelevant as the formation of a society that
would praise the brush of a painter, instead of the
hand or mind of the artist'. From OPINION Computer
Weekly London 13 March 1969.

BENTHALL AT ZAGREB

A symposium on Computers and Visual Research was
held in Zagreb, Yugoslavia, on 4-5 May. The CAS was
represented by Jonathan Benthall. In the July
number of Studio International (where he has a
monthly feature on Technology and Art), he will dis-
cuss the symposium and its related exhibition. In
this article he makes the following point:

"Computer graphics are now surely well enough estab-
lished as an experimental medium to call for a criti-
cal approach. Perhaps the first critical question to
ask is 'What in this output justifies the very expen-
sive and cumbersome mechanical process that has been
used to achieve it?' It would seem to me an inade-
quate justification that, for instance, the computer
has been used to generate random numbers (for which
one might as well use a telephone directory); or that
it would have taken a human draughtsman n days to
draw what the computer can draw in m seconds (which
is merely putting a man out of a job). The com-
puter must do a bit more to earn its keep."

JUST WHAT IS IT THAT MAKES TOMORROW'S SOFTWARE SO
DIFFERENT SO APPEALING?

The Jewish Museum's announcement of an exhibition
titled SOFTWARE will not fool those who have followed
the trend-setting shows there in recent years. It is
inconceivable that this avant-garde New York museum
is planning to show soft sculptures. No: SOFTWARE
in January 1970 must refer to the hard stuff.

Susan Hartnett (PO Box 652 Church Street
Station New York NY 10008) is coordinator
for the show.

JUNE 1969

PRICE SIXPENCE

SHELTER IN THE CITY

Some members of the Computer Arts Society are
taking part in an exhibition and related events
being organised for Shelter by a group of
students at the Architectural Association. The
exhibition will be open from 14 July to 8 August at
Tower Hill Precinct in the City of London. It will
be housed in a 50 foot tensegrity dome which will be
travelling to the Edinburgh Festival and elsewhere in
Britain before returning to London at Christmas.
Organised by Peter Sutherland and friends. AA
36 Bedford Square London WC 1.

SINCE EVENT ONE

Work is progressing on several advanced types of en-
vironmental senser for plotting light and electro-
atmospheric activity. Also, work on a time-lag de-
vice and additional pulse equipment is well under
way. These developments are planned to link up with
the adaptable computer systems of Gordon Hyde, whcse
colleague, John McNulty, is advising on input pro-
cesses and pulse code modulation.

Statement. Quiet Pavement.

SOCIAL RESPONSIBILITY

The inaugural meeting of the British Society for
Social Responsibility in Science took place at the
Royal Society in April 1969. In the first hour of
the day-long conference, Professor Hyman Levy
stressed the desirability of having artists involved
in the work of the Society. The point was taken up
by other speakers, and in the final session a pro-
posal to establish an art and technology working
group was made from the floor. BSSR Secretary:
Dr. R.L. Smith 42 Great Russell Street
London WC 1.

HISTORY AND PROSPECT NOW

The Computer Arts Society was conceived at some time

during the afternoon of Wednesday 7 August 1968 at an informal session on Computers and Music at the IFIP Congress in Edinburgh.

Pregnancy was confirmed at a meeting on 2 October at the London School of Hygiene. Pre-natal checks were carried out periodically at the offices of John Lansdown in Russell Square. The birth took place at The Royal College of Art on 29 and 30 March.

That was EVENT ONE and in the three months since then the society has grown to about 200 members including about 40 outside Britain. PAGE has been launched and already this is the third issue. Public and society meetings have been held. The first weekend workshop is being held. Contributions have been made to other events and possible premises for the society have been looked at.

First plans have been made for the society's part in three major exhibitions next year: Computer Graphics 70 at Brunel University, INNO 70 at the Hayward Gallery in London, and Computer 70 at Olympia, London. Requests for the society to take part in other events during the second half of this year have been more numerous than we can handle.

The society's aims of encouraging the creative use of computers and the exchange of information are being fulfilled. In addition, the work of members is being promoted, and we are already international. Our work in education has started and we are on the way to forming a workshop.

In addition to carrying on these activities further, there are some new ones to be undertaken. A register of members and their works and interests is important for further promotion. A collection of works and projects is needed to draw on for contributions to other events. It is important for more activities outside London to be organised. Alan Sutcliffe.

#### THE FIGHT AGAINST BIG BROTHER

The National Council for Civil Liberties (General Secretary Tony Smythe) is engaged in a campaign on

privacy. A Petition on Privacy is being circulated until 30 November 1969, and will be handed to the Government. Send s.a.e. for copies of petition: Speak Out Number 2 on Privacy: NCCL News Release Data Banks, The Computer, Privacy and the Law. Donald Madgwick: Privacy under Attack. 40pp. NCCL London 1968. 3/6. NCCL 4 Camden High Street London NW 1.

A letter in the Communications of the ACM Vol. 12 No. 5, May 1969 p. 248, protests against the dissolution of the ACM Special Interest Committee on Social Implications of Computing. The signatories of the letter are organising a petition to reactivate the Committee. Offers of support should be addressed to Robert Bigelow 39 Grove Street Winchester Massachusetts 01800 USA Telephone 617-742-8300.

PAGE welcomes information about the fight by computer professionals against 1984.

#### PUBLICATIONS

EVENT ONE. 20 pp. Computer Arts Society London 1969. 3/6 (\$50). EVENT ONE was the launching pad of the CAS, and this is the document produced for that occasion. Like other modern art documents produced in short runs, it is bound to become a rarity in time. The publication includes articles, statements, graphics, and poetry by the following CAS members. John Lansdown, John Lifton, Jasja Reichardt, Ian Pickering, Robert Parslow, Alan Mayne, Alan M. France, George Mallen, Alan Sutcliffe, Peter Zinovief and David Cockerell, Robin Shirley, Gustav Metzger, Malcolm Le Grice. Subjects treated include dance; theatre; sculpture; sound/light systems; architecture; music; film. There are contributions from the Laboratory of Computer Graphics Harvard, Kenneth K. Knowlton, Charles Csuri and James Shaffer, and John Starling.

(This publication can be ordered from Alan Sutcliffe. Price 3/6 - \$50 includes postage.)

Leonardo Mosso: Programmierte Architektur. Introductions by Umbro Appolonio and Carlo Belloli. 103 pp. Studio di Informazione Estetica Turin and Vanni Scheiwiller Milan 1969. This attractive book consists of writings by the Turin architect and photos of his work. This is the first book in a series that will deal with experimental aspects of architecture, plastic arts, and design. The book is produced in limited editions in Italian, German, French and English.

bit international. This is the leading journal in the field of computer art. Each article is printed in Serbo-Croat, and in English, German, French, or Italian. 3 well illustrated numbers have appeared, averaging 130 pages. bit appears four times a year, and is edited by Bozo Bek. There is a special introductory subscription of £3 (\$7). Order from: bit international galerije grada zagreba katerinin trg 2 Yugoslavia.

Arthur H. Phillips: Computer Peripherals and Type-setting. 665 pp. HMSO London 1968. £8. This book is superbly written and produced. It is indispensable.

#### CAS AND EDUCATION

At the request of the St. Mary's College of Education Twickenham, the CAS is mounting an exhibition of members' work as part of a three-day event on Computers in Education. The exhibition includes the first showing of a model and designs by Edward Ihnatowicz for his large computer-linked commission for Phillips at Eindhoven to be completed early next year. There are computer graphics by students of Professor Katherine Nash, University of Minnesota, using the ARTI programming system. From EAT New York, there are a number of posters including the impressive BROOKLYN MUSEUM, a computer-processed photograph with text and symbols by Manfred Schroeder. On 25 June, Bob Parslow will give a lecture/demonstration on Computer Graphics. The same evening there

will be a discussion: The Impossibility of Computer Art. Taking part will be: Stroud Cornock, Gordon Hyde, Edward Ihnatowicz, and Peter Kilgannon.

#### EVENT ONE IN POLAND

Prof W M Turski of the Polish Academy of Sciences Computation Centre gave a talk at the end of May on Polish State Radio in the series Horizons of Science. He used the EVENT ONE programme, the creation of the Computer Arts Society and the emergence of a computer folklore as the starting point for a foray into the subject of the role of computers in freeing creative processes of technical encumbrances, and thus in the essential socialisation of these processes.

#### CREATIVITY AT PORTSMOUTH

A two-day Investigation into the Art and Science of Creativity has been arranged at Portsmouth College of Education (organiser: Miss M P O'Farrell). John Lifton, representing CAS, will speak on Cybernetics and Creativity on 17 July.

#### CYBERNETICS IN MEXICO

Miss J Mena 32 Ainger Road London NW 3 is assembling material for an issue of ARQUITECTOS DE MEXICO (in Spanish and English) devoted to cybernetics, and the use of computers in the arts, to appear later this year.

#### CAD AT SOUTHAMPTON

730 delegates - many from abroad - attended the CAD symposium at Southampton in April. The Institution of Electrical Engineers has since announced that another CAD symposium and exhibition will be arranged for 1971. A call for papers will be issued at a later date.

(The papers of the Southampton symposium are reviewed elsewhere in this bulletin.)

## COMPUTER FILM IN EDINBURGH

The Edinburgh International Film Festival (Director Murray Grigor) has asked CAS to help locate computer films for screening this August. Write to:  
A G M Pritchett Hill Top House Five Ashes  
Mayfield Sussex.

## BRITISH SOCIETY FOR ELECTRONIC MUSIC

This Society is being launched with a concert at the Royal Festival Hall, London, on Monday 30 June, 8 pm. With the Pierrot Players. Works by Babbitt, Connolly/Zinovieff, Davidovsky, Gerhard, Orton, Randall and Ussachevsky will be performed. The Society aims to establish a national studio including a lecture hall and recital hall, a studio with tape room and processing facilities, a library and archive. The recital hall would accommodate mixed media performances. £3000,000 are required for the project.

## ART AS PROCESS

There appear to be two approaches to Computer Art enshrined in the CAS. This became particularly evident during the discussion at the Society's recent meeting on "Patterns of Randomness". On the one hand is the approach which uses the computer as a random number or sequence generator and then uses the output of the generator to "drive" a process, which might be a dance, music, or poetry sequence. The programmer/composer then selects from the machine output that which he thinks is good or best suits his needs. Note that there are essentially three elements in this system:

- 1 the sequence generator,
- 2 the process (rules for generating the dance, music, etc.)
- 3 the programmer/composer part of whose job is to select from the output and modify the process to produce the output required.

The second approach is not easily defined but appears to be based on the first and to be aimed at taking it one stage further. Essentially the approach seeks an affirmative answer to the question "Can the computer be given the tasks of selection and modification specified at 3 above?"

I believe that the most interesting developments in this field will stem from attempts to answer this question. To phrase the matter in more mediaeval language "If Nature (God) stands to Man as Man stands to his simulated processes then, insofar as it is purported that God simulates himself in Man, is it possible for Man to simulate God?"

God, what circumlocution...!  
G.L. Mallen.

Computer Aided Design. 683 pp. IEE Conference Publication No. 51. Institution of Electrical Engineers London 1969. £11. In the Computer Arts Society we have two main groups; artists who are looking for new techniques, aids and modes of creative expression, and computer technologists who have an interest in the Arts. Of the two groups the computer professionals have the advantage, in that knowledge of the Arts is possible without too much expertise, whereas computer technology and particularly advanced development calls for considerable professional knowledge.

It is against this background that the value of works such as this to the artist members has to be assessed. The vast proportion of the papers presented would be almost incomprehensible to artist members lacking computer experience. The volume is heavily biased towards engineering and electronics in an industrial context. For this reason, the number of papers of direct interest to the CAS is few, being largely those dealing with logic simulation and man:machine conversation. Among these may be mentioned Leavers (p.11) Armit (p.152) Wise (p.72) Montgomerie and Michael (p.198) George (p.477) Weaver (p.579) and Ewing (p.600). These papers all

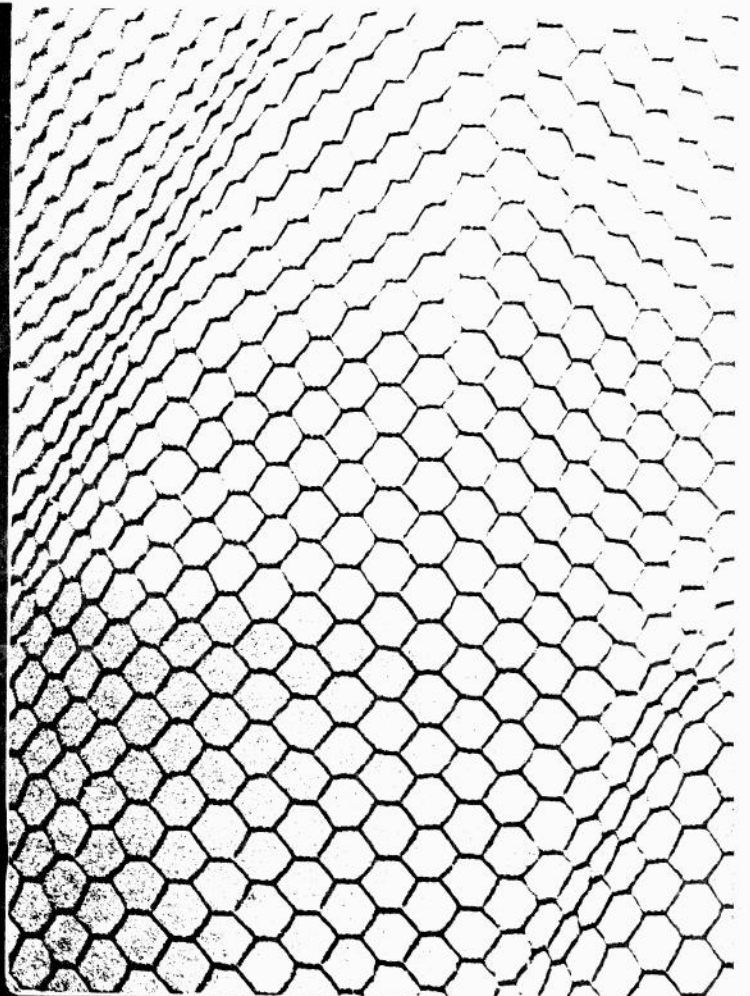
contain general statements which may help in framing creative ideas in machine terms, provided the reader has a good grounding in computer basics. The papers dealing with graphics are on the whole disappointing, as the engineering bias tends to applications with relatively rigid constraints.

In considering congress proceedings of this kind, one becomes aware not only of the communication gap, but also the problem of making the more interesting developments available in hardware terms. The creative potential of the general purpose machine and standard language is severely limited. On the other hand, some of the advanced techniques and special purpose machines described in the literature are conceptually closer to what the artist aspires to in computer terms. If we are to present the computer field to a wider category of exploitation and achieve a true symbiosis between the computer technologist and the artist, the literature must not be merely a shop window against which the latter presses his nose, but a means of bringing him into direct contact with the development itself. Gordon Hyde.

Nicole Lachartre: Le musiques artificielles. 96 pp. Diagrammes du monde, No. 146. Editions de Cap Monaco 1969. 5 f.

The title of this book is slightly misleading as its main subject is the application of computing systems to the composition of music. It attempts a broad survey of the field which is seen as developing in three main directions - composition based on a mathematical structure of logic/probability/randomness; the direct synthesis of sounds; and synthesis or composition based on the mathematical analysis of existing pieces of music. The work of Hiller, Barbaud, Xenakis, Philipot, Koenig, Fucks and Lachartre is covered in some detail but others are only mentioned in passing.

The book has a large number of diagrams adjacent to the related text, and which are very useful in clarifying the written material.





In the past, the range of sounds available to a composer was limited not only by the existing types of musical instrument but also by conventions as to the groupings of the instruments which were acceptable. Artificial music brings the freedom to create any sound possible and present it in any way desired. It is practically impossible for any composer to completely control both the quality of the sound and its organisation in a musical work of any length. Most of the work dealt with in this book relinquishes some control over the quality of sound in order to concentrate on its organisation, and this appears to me to be complementary to much work in the 'non-computer' area of electronic music where the actual quality of sound is thought more important than its organisation. It would be a shame if the mere use of a computer in composing music became a definition which would in time come to separate it from the field of artificial music as a whole. In a subject as young as this it could have very damaging results. John Lifton.

Lloyd Sumner: Computer Art and Human Responses. Paul B. Victorius Charlottesville, Virginia 1968. \$7.50.

This is a happy book, presenting about 60 of Lloyd Sumner's designs produced using a computer and graph plotter. Each design has a caption on themes like love and the heart, freedom, loneliness and the universe. This collection is a tour de force in graph plotting techniques, and there is a useful introduction describing the methods used.

It can be argued that the mass reproduction of these designs in the form of identical books is not in keeping with the natural ability of computers to produce very many different designs. The directness of approach here disarms the critic. A.S.

Max V. Mathews: Technology of Computer Music. MIT Press 1969.

Dr Mathews is director of the Behavioral and Statistical Research Center at Bell Telephone Laboratories

at Murray Hill, New Jersey. This book describes the system and work there, and incorporates the MUSIC V Manual.

Heinz von Foerster and James W. Beauchamp, Ed. : Music by Computers. 139 pp. John Wiley and Sons 1969. \$14.95.

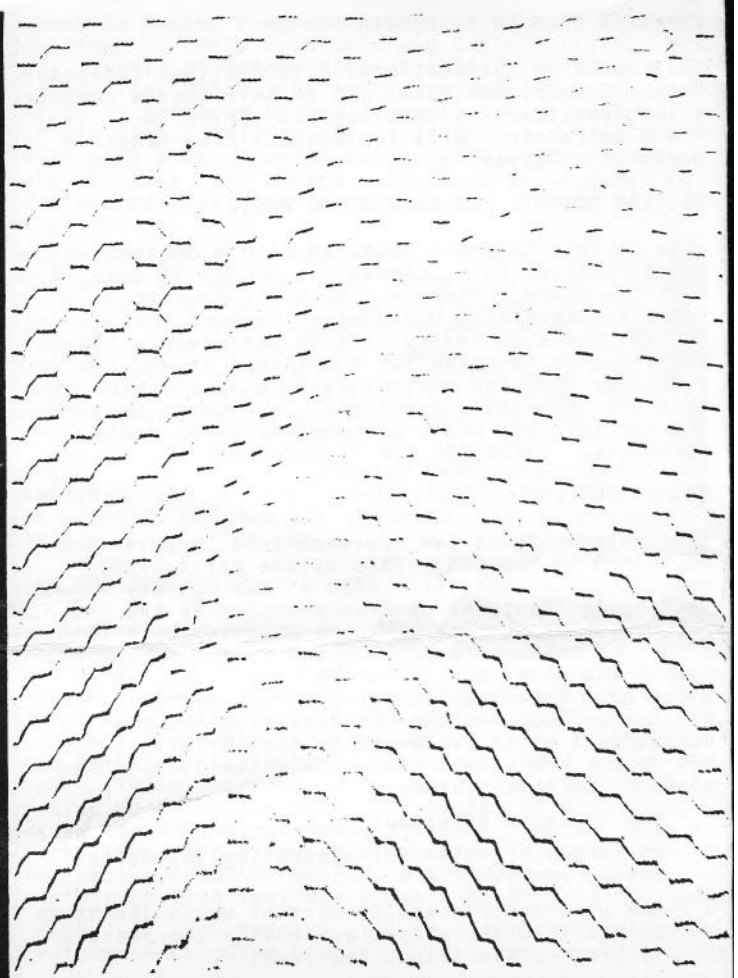
"Biologically speaking, all auditory systems serve primarily one and only one purpose: to infer from the sounds that are perceived the sources that produced these sounds." Heinz von Foerster.

"It is one thing to aim for a particular sound and then to search for the means of making such sound audible. It is another thing to provide for a series of events to happen and then to discover the timbre of the sounds so generated. .... These are not only two different approaches to the composition of music but also two different political attitudes." Herbert Brdn.

So this collection of articles, from a session at the 1966 Fall Joint Computer Conference, goes from biology to politics by way of wave form synthesis and composing algorithms, with a shared concern for environments.

In his introduction, von Foerster considers the physical and physiological reasons for the way we hear. We see quite differently: we do not respond in any way to simple relationships in the wavelengths of light entering our eyes as we respond to harmonic relationships in a single sound. These matters are important when we are proceeding from more elementary levels than ever before in specifying sounds - not just wave forms but their digital expression. In passing von Foerster shows that the search for conditions under which sound will be interpreted as music is bound to fail. Music is no more than what we choose to present and attend to as music.

The main part of this book is an invaluable survey of recent work in the U S A on the use of computers in composition (mainly of electronic music), the control



of electronic music apparatus and the synthesis of sounds. For too long this work has remained in scattered and unpublished papers.

David Freedman, outlines the properties required of a system for the on-line generation of sounds. The graphical language for inputting scores to the electronic sound system at Bell Telephone Laboratories is described by Mathews and Rosler. There is a substantial contribution from James Beauchamp on the analysis and synthesis of complex tones. Arthur Roberts describes the ORPHEUS system (a development of MUSIC IV) and his work to produce more acceptable electronic sounds by making them less static. A similar theme is traced by Gerald Strang, and both show the trend away from a simple, instrumental approach to electronic music. This is taken further by J K Randall who writes about transformations of wave forms, and by Herbert Brdn in describing his piece *Infraudibles*. Pierce and Mathews outline experiments with sounds using overtones not following the harmonic series. Lejaren Hiller describes the composing methods he used in *ALGORITHMS I AND II*, and the *MUSICOMP* system at the University of Illinois.

A set of four 7-inch records are included with the book, explaining the price. They contain examples and music illustrating all the articles.

Some questions remain. If a similar book were produced by British authors, or even European ones, would any of them be professors of music? Given the emancipation of dissonance, where in us lurks the distaste for mixtures of consonance and dissonance, of common chords and tone clusters? How much longer will it be possible to run an electronic music studio that does not contain at least one computer? When loudspeakers can be controlled to produce sounds with all the complexities and subtleties of instrumental players, will there be audiences to sit in concert halls to pay these sounds the same attention they pay to human performers? Alan Sutcliffe.

Photographs by Hilary V. Salter