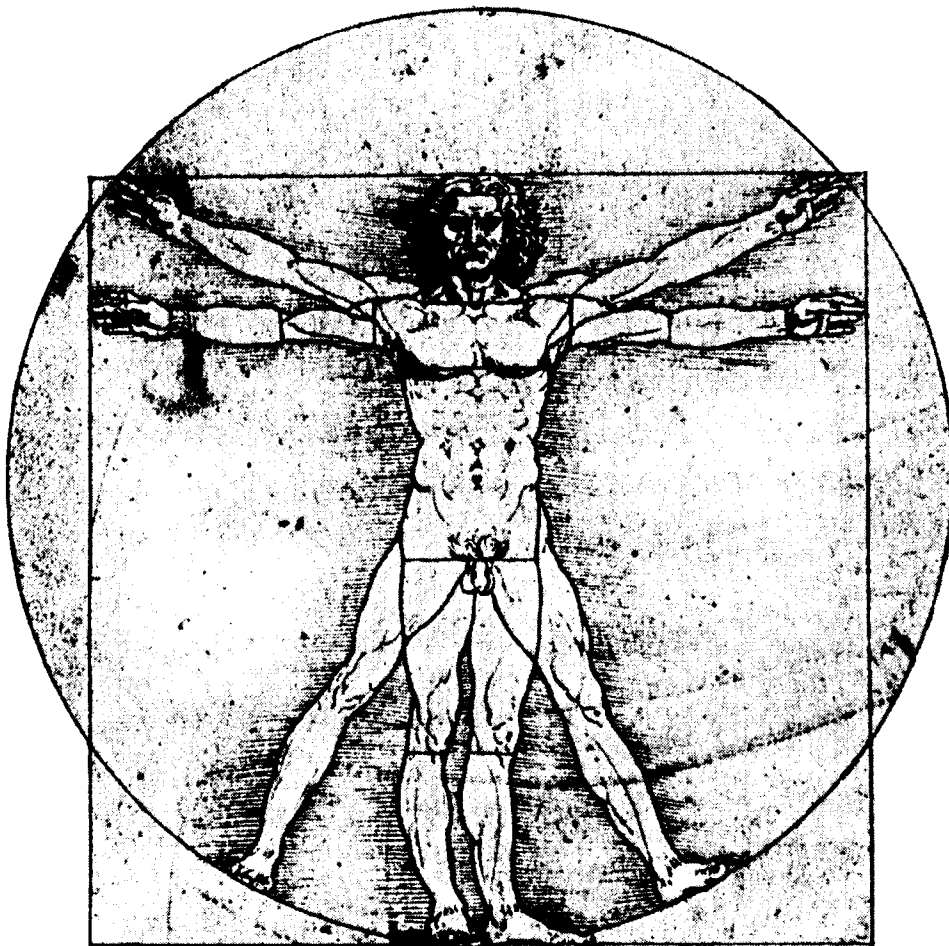


CREATIVITY AND DISCOVERY IN THE ARTS AND SCIENCES

A one day conference on 23rd May 1990
at The University of Glasgow



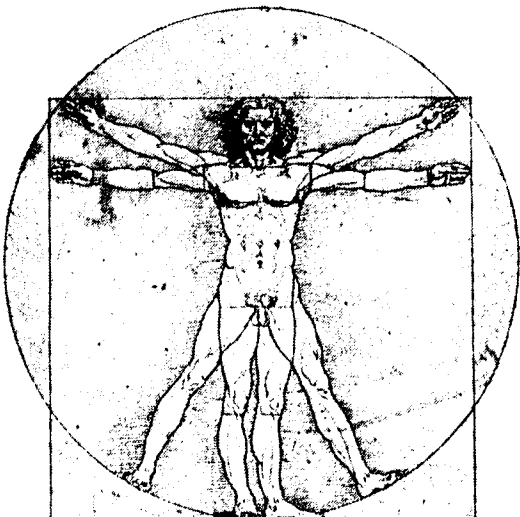
Promoted by the Royal Society of Edinburgh
in association with the Commission of the European Communities
The Scottish Foundation and The Glasgow Herald

CREATIVITY AND DISCOVERY IN THE ARTS AND SCIENCES

Was Charles Darwin right to believe that reading poetry and listening to music could prevent brain atrophy? Was Einstein right to believe that true art and true science share a common cradle? Was Waddington right to argue that looking at paintings would improve the creativity of scientists?

These are the issues which will be explored in this Conference. To be creative is the hallmark of quality in architects, composers, painters and writers, and it also marks out the work of brilliant researchers in the sciences.

Distinguished composers, artists, writers and scientists are coming together in the cultural capital of Europe to discuss whether creativity in their very different branches of human endeavour has common roots and employs similar processes. The discussion will be made especially interesting because most of the speakers have been creative on both sides of the Wall which is too often built between the Arts and Sciences.



GUEST SPEAKERS at the Day Conference in The UNIVERSITY of GLASGOW

BENOIT MANDELBROT,
I.B.M. Research Fellow
*"Fractal Art: Invention,
Discovery or Creation?"*

Benoit Mandelbrot "has acquired an almost heroic status in certain academic and artistic circles as the man who helped to open a gap for aesthetics in the information technology era" *The Listener*.

DAVID DAICHES:
*"Creativity in Literature and
Science"*

David Daiches, FRSE. Literary Critic, who has taught at Edinburgh, Sussex, Oxford, Cambridge, Chicago, Cornell and Indiana. Editor of 'Literature and Western Civilisation', Vols I - IV; Honorary Doctor of six universities including Edinburgh, Glasgow and Stirling.

NIGEL OSBORNE,
Composer
Music, Science and Technology.

Nigel Osborne is a distinguished composer and editor-in-chief of 'Contemporary Music Review'. The BBC Symphony Orchestra commissioned his 'Sinfonia I' for the 1982 Proms, and his opera 'The Electrification of the Soviet Union' was commissioned for Glyndebourne. In September 1990 a violin concerto commissioned for Musica Nova will have a first performance in Glasgow.

JAMES ALTEY,
Turing Institute
*"Creativity in Science and
Composing"*

James L Alty, Executive Director of The Turing Institute and Professor of Computing Science, University of Strathclyde. Research interests: man-machine interaction and knowledge based systems. Author 'Expert Systems: Concepts and Examples', and (with M J Coombs) 'Computer Skills and the User Interface'.

PHILIP HUGHES,
Chairman Logica and
Professional Artist
"Kinds of Creativity"

Philip Hughes, CBE. Artist, Co-founder and Chairman of Logica plc; many exhibitions of paintings including 9 one-man exhibitions; D Univ Stirling, and DSc Kent.

YANNIS XENAKIS:
*"Stochastic and other
procedures in the composition
of music"*

Yannis Xenakis studied engineering in Athens, music in Paris and worked in architecture with Corbusier. Using mathematical theory he developed 'stochastic music'. He has composed approximately fifty works and was awarded the Maurice Ravel Medal. He is a member of the American Academy of Arts and Letters and was recently awarded an Honorary Doctorate in Music by the University of Edinburgh.

LORD DAINTON:
"A Scientist looks at Poetry"
Lord Dainton, FRS. Distinguished Chemist; Chancellor of Sheffield University; Member of Museums and Galleries Commission; author of 'Chain Reactions', 1981; Honorary Doctor of 19 Universities including Aberdeen, Heriot-Watt and Strathclyde.

EOIN O'BRIEN,
Cardiologist
*"Literature and Medical
Catharsis"*

Eoin O'Brien, FRCS (London), FRCS (Ireland) is a consultant cardiologist in a major teaching hospital in Dublin and has published widely in the history of medicine. He is author of 'The Beckett Country', "A magnificent book which traces the roots of Beckett's work in Irish landscape and speech." (*Guardian*)



QUIDDITIES

"If I had to live my life again, I would have made it a rule to read some poetry and listen to some music at least once every week; for perhaps the parts of my brain now atrophied would thus have been kept active through use".
Charles Darwin

"The poet (should be able) to read a mathematical equation, a musical score, a book of verse, with equal understanding".
W.B. Yeats

"The artist cannot attain to mastery in his art unless he is endowed in the highest degree with the faculty of invention".
Charles Rennie Mackintosh

"If I were asked to frame a test paper for literary aspirants, I would ask: (1) A poem on the fact that what is known as the 'Lorentz transformation' looks like the 'Einstein transformation'..."
Hugh Macdiarmid

"Looking at paintings ... is one of the best ways for a scientist to loosen the joints of his psyche, to 'roll the bones' of his ideas and give himself a chance to dredge up from the obscure internal depths something, which will probably not have the slightest obvious connection with the work of art he has been contemplating – but which may be fresh enough to be worth while".
C.H. Waddington

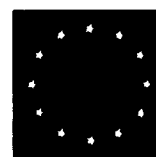
"Without the requirement of mathematical aesthetics a great many discoveries would not have been made".
"The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of true art and true science. Whoever does not know it and can no longer wonder, no longer marvel, is as good as dead and his eyes are dimmed. It was the experience of mystery — even if mixed with fear — that engendered religion".
Albert Einstein

"Primary-process thinking is nonlogical, and makes use of such mechanisms as are common in dreaming— condensation, displacement, symbolization, and so on. When such ideas first arise in consciousness, they may take various forms — fragments of words or visual images, schematic patterns, a sense of relationship. The secondary process is logical and rational and under voluntary control".
Anne Roe

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Registration forms can be obtained from Sir Kenneth Alexander
The Royal Society of Edinburgh 22-24 George Street Edinburgh EH2 2PQ