

important and beautiful, and a whole new class of mathematical objects came out of that analysis and are still being used today.

Twinkling Stars

Cogito: What other applications are there?

Professor Berry: The question of why stars twinkle is very old. Newton gave the essentials of the answer that we have today - the stars twinkle because the atmosphere is not a smooth refractive medium, but has turbulent regions which refract the light rays ever-so-slightly. Still, over long distances such as when the star is near the horizon, the rays can be disturbed so much that the light can be brought to focus. Now that interpretation stood for 300 years, without any quantitative description. How do you give a statistical description of these fluctuations? People haven't studied that very much, because the main aim has been to avoid making astronomical observations in such circumstances. Catastrophe theory gives an answer. Particularly bright twinklings occur whenever caustics pass across your eye, just as when you have a bright line on the bottom of the swimming pool. This subject is a thriving branch of optics that did not exist twelve years ago.

Chaos

Cogito: Poincaré touched on chaotic dynamics, which is what occurs if regular and simple laws lead to irregular and chaotic effects. René Thom's book contains some basic things about chaotic behaviour, doesn't it?

Professor Berry: Not really. He is interested in it, but he doesn't have anything on chaos such as the theorems about the classifications of catastrophes.

There is a sense in which chaos and catastrophe are at opposite ends of a spectrum. In mechanics and optics we get catastrophes where we have smooth families of trajectories with stable geometries. Chaos is quite different. You get chaos in mechanics when you have trajectories which are confined to the same region of space, which is repeatedly explored, but each time they come back to the same region, they come back in a slightly different direction. The net result is a great tangle like spaghetti in a pot. There is very precise sense in which chaos in a mechanical system is the *absence* of focal surfaces - a kind of geometric instability.

CONTENTS

The Argument From Design	6
In the third of his series of 6 articles, Brian Davies looks at the arguments for God from apparent purposes and regularities in the natural world. <i>Brian Davies</i>	
Genuine and False Emotions	10
Can we distinguish real-life feelings from those induced in the cinema? Sartre's theory of emotions suggests how this might be possible. <i>H.W. Thomas</i>	
Did Lewis Carroll write <i>Genesis</i>?	12
Does belief in God make sense? <i>Adam Morton</i>	
The Image of a Philosopher	17
Painters have often portrayed philosophers and other thinkers, but how does one depict the activity of thought? <i>M. Q. Smith</i>	
Suicide	21
The issue of whether or not suicide is morally objectionable cannot be decided until it is clear what suicide is. However, there are considerable difficulties in clarifying the concept. <i>A. J. Dardis</i>	
The Structure of Medical Revolutions	27
In the process of scientific development, it has been said, there sometimes occur major shifts of conceptual foundations. Could the same be true of medicine, and might we be witnessing this process now? <i>J. Baillie</i>	
A Look at Philosophy in London	32
Some Impressions of London Philosophy. <i>Nick Wilkins and Kim Davis</i>	
INTERVIEW with MICHAEL BERRY	1
COGITO SOCIETY NEWS	16
EXTRA-MURAL LISTINGS	24
FEEDBACK	25
BOOK REVIEWS	26
PUZZLES & POSERS <i>Martin Hollis</i>	30
FICTION <i>Jonathan Harrison</i>	31
CLASSIFIED	15
LETTERS	35
PHILOSOPHY NEWS	36

COGITO is published 3 times per year. The next issue will be available on the 1st May 1988.

Contributions and ideas are welcomed by the magazine. Please write to the Editor at the address below.

Advertising rates available on request. Please contact Valerie Pierce, Advertising Manager, at the address/tel. no. below.

The Editorial Team: John Cleave (Editor-in-Chief), Ian Thompson (Managing Editor), Simon Whiteside (Assist. Editor), Valerie Pierce, Gordon Reddiford, Michael Stanford, Daniel Hermele, Jonathan Leigh-Pemberton, and Nick Scott-Samuel.

COGITO is published by the Cogito Society in association with the University of Bristol. Address: The Cogito Society, Department of Philosophy, University of Bristol, 9 Woodland Road, Bristol BS8 1TB. Tel: (0272) 303401

COGITO was founded by Edo Pivcevic.

Vol. 2: No. 1. ISSN 0950-8864 © 1987, Cogito Society.