

FORTHCOMING EVENTS

All events will take place at Trinity
College unless otherwise stated

5 July 2005

Choral Evensong at 6.30 pm
Annual Gathering (1970–71), 8.00pm

23 September 2005

Choral Evensong at 6.30 pm
Annual Gathering (1980–81), 8.00pm

Please contact the Alumni Secretary
for further details
(alumni@trin.cam.ac.uk
or Tel: 01223 765748)

25th September 2005

Sunday Buffet Luncheon in
The Master's Garden

Open to all alumni and their partners,
12.00 – 2.00pm

To obtain tickets please see enclosed
reply slip or contact the Alumni Relations
Officer (e-mail: cdl28@cam.ac.uk,
Tel: 01223 338484). Please note that
numbers are limited (first come first
served).

4th – 12th December 2005

Choir Tour in Germany, not all dates
confirmed.

Saturday 10th December

Christmas Concert in the Basilika,
Steinfeld, near Cologne

Further information can be obtained
from the chapel secretary
(e-mail: chapel@trin.cam.ac.uk,
Tel: 01223 330870)

EDITORIAL

By tradition we in Trinity have been rather discreet in our contacts with our members. We keep you informed through the *Annual Record*. We bring you together, not as often as many would like, in the splendid Annual Gatherings. Some of you know the joy and pride of becoming parents to new Trinity men and women. But some, or so you have told us, feel neglected.

For two reasons, therefore, the College has decided to reach out to our members in new ways. First, many of you want us to do so. We hope this newsletter will become – with, soon, a more interactive website – a means to bring together all those members, old and new, senior and junior, who wish to be brought together. But secondly, as the Master and John Bradfield both point out, Trinity is also playing its part in the University's 800th Anniversary Appeal, to be launched in September. Some of you are already involved in this effort, and we thank you. All of you can expect the University to approach you in due course. We in Trinity will next year make our own distinctive appeal to your loyalty and generosity, in the same University-wide cause. As John Rallison explains, Trinity has long given important support to the University. With your help we hope to be able to do still more in the future. For you to contribute towards scholarships and bursaries for our own undergraduate and graduate students, for instance, would allow us to prime the pump of yet further initiatives in other Colleges and in the

University. Next year our Appeal brochure will set out, accordingly, the various ways in which you may, if you so wish, invest in all our futures, whether through Trinity or directly to the University. One corollary of this joint effort is that the data that helps Trinity to keep in touch with you – and which, but only if you so choose, could help you to contact each other – is also shared with the University.

Please treat this newsletter, *The Fountain*, as an experiment in which all members may join. By all means write to the editor! E-mail might be best, so that we can also publish your contributions on the website. We also hope volunteers will write on 'life after Trinity' – whether from Seattle or Saskatoon; Edinburgh or Eastbourne; Berlin, Bordeaux, or Budapest; Cairo or Cape Town; Mumbai or Melbourne; Singapore or Shanghai – to match the young who, like Sharon Wilkins, Andrew Lea-Cox and Marie Mikl in this issue, will tell of life in Trinity today.

This first issue appears in June, partly to alert you to the calendar of forthcoming events. In future we expect *The Fountain* to appear around Easter and Michaelmas, twice yearly, with the *Annual Record* continuing to come out around Christmas. Our success will depend largely on our readers. Please join in.

*Professor John Lonsdale, Secretary to the
Alumni Relations Committee.
e-mail: fountain@trin.cam.ac.uk*

The views expressed in this newsletter do not necessarily represent the views of Trinity College, Cambridge

Issue 1 • Summer 2005



THE FOUNTAIN

TRINITY COLLEGE NEWSLETTER

Welcome from
the Master

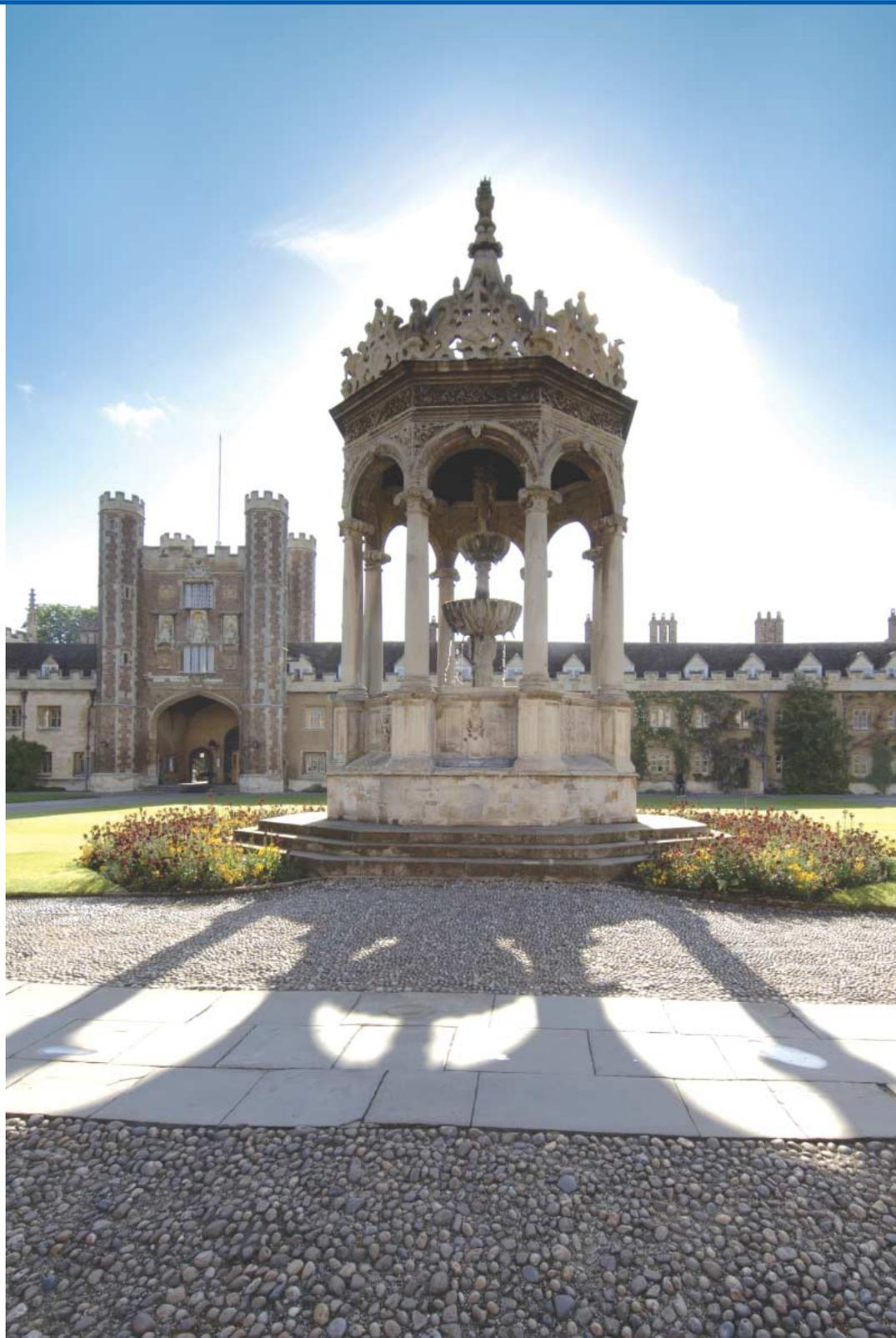
The Isaac
Newton Trust

Financial
Musings of a
former Senior
Bursar

The
Cambridge
Illuminations

Alas Bertie
and Ludwig

The Trinity
Experience
Today



A WELCOME FROM

Welcome to the first issue of *The Fountain*, bringing to all members of the College the latest news, developments and events at Trinity...

SEMPER EADEM?

Great Court looks much the same today as it did 400 years ago. But behind its well-loved façade – one of Trinity's glories – much has changed, even in the mere forty years since I was an undergraduate here. Today's students live in conditions far better than their predecessors. The College has been augmented by the Wolfson Building, Burrell's Field and other developments, and has been kept in good repair. We can now accommodate all undergraduates, as well as most of the growing population of graduate students. Today's students come from more varied backgrounds, and are now almost evenly balanced between men and women. 56 different nationalities are represented among them.

INCLUSIVENESS, EXCELLENCE, AND CASH

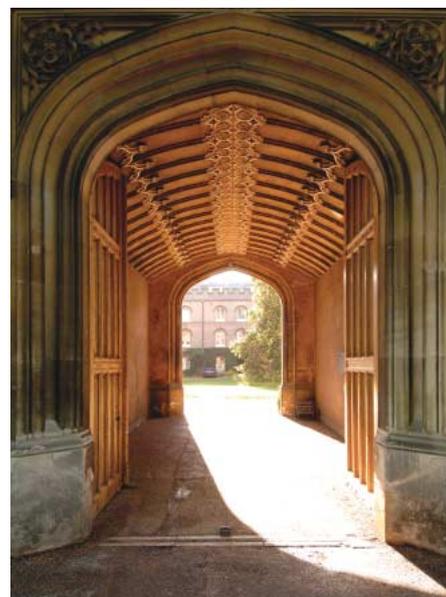
Trinity has traditionally been an inclusive College: because of its size, there is less pressure to conform, and it harbours an immense range of talent – not just in academic spheres, but in music, theatre,

and sport. But students are under other sorts of pressure today: most are financially worse off. Some will have always got themselves into debt, but this fate is far harder to avoid today than it was between the 1950s and the 1980s, when there were generous maintenance grants rather than loans. Cambridge needs and welcomes the revenue from the controversial new top-up fees: indeed their level, £3000 per year, is far below the cost of what we provide for our undergraduates. But these fees will seem a daunting extra burden to many prospective students unless we can offer generous support. We need to earmark more money for scholarships and bursaries.

Such an aim is nothing new. John Bradfield, as you will see in his 'Financial Musings', likes to recall that 'needs blind' admission has been Trinity's aspiration ever since before Newton came up as a Sub-Sizar. Harvard can operate a 'needs blind' policy despite its high fees. But Harvard has huge resources and keeps asking for more. We must continue to seek excellent students from all backgrounds, erase misconceptions they may have about Trinity, and ensure they have the finances to come here. The students are our best ambassadors, and I have been impressed by their commitment towards open days and access initiatives. This effort – pure altruism on their part – is especially crucial during the coming transition to top-up fees and bursaries.

No university anywhere in the world – certainly not in the US – offers its undergraduates and Fellows the experience that Trinity provides. In her inaugural speech, our Vice-Chancellor, Professor Alison Richard, recently arrived from Yale, extolled the Cambridge Colleges as "unique and marvellous embodiments of the idea of academic community" that "mixes scholarship with fellowship and friendship". Trinity is pre-eminent among them.

I have been back at Trinity long enough to have experienced a full annual cycle – matriculation, graduation, Fellowship elections, and so forth. The 2004 Annual Gatherings were, for me, among the high points of my first year. In July 2004 we welcomed those who matriculated in 1952–54, and in September the 1991–92 vintages. It was humbling to learn what some old members had achieved, and to realise the depth of their goodwill towards the College where they spent formative, often very fulfilling, years. The same sentiments have been expressed by many old members I've met overseas.



THE MASTER

TRINITY AND CAMBRIDGE

Cambridge is precariously under-funded compared to the well-endowed Ivy League universities in the US, with which we should compare ourselves, and with which we compete for the best students as well as the best faculty. Government funding for universities – especially for teaching – is spread very thinly, and we cannot prudently depend on it. Trinity's relative wealth has up till now shielded us from the worst of these problems: indeed we're able to support teaching Fellows in less well-endowed Colleges, and (via the Newton Trust) to support the University in other ways. But our resources are a small fraction of what the University needs.

Cambridge is the leading UK university by most measures; likewise, Trinity is regarded – not just by its own members – as Cambridge's most distinguished College. Being the pre-eminent College would be little consolation if the entire University's international standing were to decline. Conversely, Trinity's continuing success is crucial to the University: our talented students and Fellows, and our financial support to other Colleges, to Departments, and to overseas students.

Trinity can't remain as distinguished in the 21st century as it was in the 20th unless it's embedded in a University that itself remains 'world class'. The 'essence' of Cambridge, and especially of Trinity, is something we should cherish. We owe it to our past benefactors and to our present members to ensure that Trinity's role in this century is at least as distinguished as in the last. For these reasons the University – in coordination with the Colleges – is gearing up for a major appeal, linked to its 800th anniversary in 2009.

HOW YOU CAN HELP

Our Annual Gatherings are splendid, but are occasions for nostalgia rather than for immersion in the present life and future ambitions of students and Fellows. This newsletter represents a modest attempt to record what Trinity is like today. This first issue is an experiment. We'd welcome comments on how future issues might be improved, and suggestions on other ways in which the Annual Gatherings – and the Annual Record – could best be supplemented, so that our old members can maintain closer contact with the College and with each other. I look forward to that prospect.

Martin Rees



MASTER NOMINATED TO BE PRESIDENT OF THE ROYAL SOCIETY

The Council of the Royal Society has nominated Sir Martin Rees (1960) as its candidate for the Presidency of the Royal Society, in succession to Lord May of Oxford, who completes his five-year term on 30 November 2005. The Master is Professor of Cosmology and Astrophysics in the Institute of Astronomy at the University of Cambridge. He is also a Visiting Professor at the University of Leicester and Imperial College, London. He has received many awards in the UK and abroad and has been Astronomer Royal since 1995. His recent awards include the Royal Society's Michael Faraday Prize for science communication in 2004, and the Royal Swedish Academy's Crafoord Prize in 2005, which he shared with James Gunn and James Peebles for "contributions towards understanding the large-scale structure of the Universe".

EDITORIAL BOARD

Professor John Lonsdale (1958) Editor-in-Chief & Secretary Alumni Relations Committee

Mr John Easterling (1952) Editor, Annual Record

Dr Richard Serjeantson (1993) Secretary of the Website Committee, www.trin.cam.ac.uk

Mrs Corinne Lloyd Editor & Alumni Relations Officer, e-mail: fountain@trin.cam.ac.uk

ABOUT THE ISAAC

BY JOHN RALLISON



continues to do so. The founding Chairman was Sir Robin Ibbs (1944) and the founding Director Dr Anil Seal (1956). Over the years the distinguished group of around eight trustees at any one time has included two Vice-Chancellors (Lord Alec Broers and Alison Richard); three Presidents of the Royal Society (Sir Andrew Huxley (1935), Sir Michael Atiyah (1949) and Sir Martin Rees (1960)); and two presidents of the British Academy (Baroness Onora O'Neill and the present Chairman of Trustees, Sir Tony Wrigley).

TRUST ACTIVITIES

Most of the Trust's income, some £2m per annum, is provided by Trinity; decisions about grants are made collectively by the Trustees who meet every term and so are able to respond rapidly to applications and to other funding opportunities that arise. The pattern of spending, now well-established, covers three broad areas: the support of specific research projects; the support of students across the University, both UK undergraduates from less-advantaged backgrounds and also postgraduate students from the UK and the EU; and support of teaching in Colleges and Departments.

HISTORY

Trinity recognised long ago that its success as an academic institution is bound up with that of the University of Cambridge as a whole. In 1988 the College decided to establish a free-standing Trust, named in honour of Sir Isaac Newton, with a remit to support education and research

across all disciplines in the University. The Trustees were to be chosen in part from Trinity and in particular to include the Master and Vice-Master, and in part from outside. HRH the Prince of Wales (1967) offered his patronage to the Trust from its earliest days, and he kindly



NEWTON TRUST

GRANTS FOR RESEARCH

From the start, Trustees recognised that the funds at their disposal could rapidly be spent on a small number of major research projects, projects that could and should be supported in the main by external funding agencies. In consequence they decided to adopt a more tactical role in helping academics and Departments to seize funding opportunities by offering matching funding where appropriate, or seed corn funding to get new policy initiatives off the ground, or by investing in younger academics yet to establish an international reputation. About thirty or forty new projects are supported each year; each application for funding undergoes rigorous peer review, with references from inside and outside Cambridge.

THE CAMBRIDGE BURSARY SCHEME

In 1990, student loans were introduced for the first time in the UK, and the Trust was quick to recognise that this change might have adverse consequences for the recruitment of talented undergraduates from less-affluent backgrounds. The Trust therefore introduced a scheme of bursaries for such students, probably the first in the UK. The scheme extended across all the Cambridge Colleges. From relatively small

beginnings it has grown to form a major part of the Trust's activities, and it is set to play a central part in student financial support across the University when so-called top-up fees are introduced in 2006. This aspect of the Trust's work has been assisted by several external sponsors and alumni for which both the Trust, and also the students who have been supported, are most grateful. For those readers who are interested, more information about the Cambridge Bursary Scheme, intended for prospective applicants to Cambridge, can be found on the Trust's website www.newtontrust.cam.ac.uk.

GRANTS FOR TEACHING

The third strand of the Trust's activity has been the support of teaching across the University. The Trust has given grants for several innovative teaching initiatives both for students studying in Cambridge and as part of the University's outreach to schools. In addition it has made long-term commitments to the integration of teaching Fellows employed by Colleges into their Faculty teaching arrangements and, in the opposite direction, of post-doctoral research workers employed by Departments into College teaching Fellowships.



The statue of Sir Isaac Newton in Chapel

THE FUTURE

External funding arrangements for Higher Education for students, for teaching and for research are constantly changing. The availability of a private source of funding like the Newton Trust is of great value, well beyond its financial weight, in enabling the University, the Colleges and individual academics to respond flexibly and rapidly to opportunities that arise. In my view the need for a Newton Trust today is greater than ever.

Dr John Rallison (1970) is the Director of the Newton Trust and Reader in Fluid Dynamics in the Department of Applied Mathematics and Theoretical Physics and a Fellow of Trinity College.

THE CAMBRIDGE ILLUMINATIONS

BY DAVID MCKITTERICK

Cambridge has not seen anything quite like it. For the second half of this year, the Fitzwilliam Museum and the University Library have combined to display, in their two buildings, the largest loan exhibition of medieval illuminated manuscripts to have been seen anywhere in this country for almost a century.

The Museum and the Library have collaborated with the Colleges to show some of the very finest medieval art in the University. While many of Cambridge's manuscripts are well known, such as the thirteenth-century life of Edward the Confessor (in the University Library), or the copy of the Gospels (now in Corpus) said to have been brought by St Augustine when he arrived in Kent to convert the English, others are very far from familiar even to scholars. This is a chance to catch up, and discover something of the inheritance for which the Colleges and the University are responsible.

Trinity will be lending twenty-eight items. The twelfth-century Eadwine Psalter, with its pictures derived from a ninth-century manuscript now in Utrecht, and with its uniquely important interlinear

texts in French and Old English, was bequeathed to the College by Thomas Nevile, our Master, in 1615. The thirteenth-century Apocalypse, with its gold, deep reds and blues, and images closely related to the tiniest details of the text, came to the College in 1660 – its donor, Mrs Anne Sadleir, considering Trinity a safe haven for such a book after the mid-century turmoil of civil wars. Like the eleventh-century Gospels, one of the finest of all Anglo-Saxon books to have survived and also given by Nevile, these will be remembered by regular visitors to the Wren. Others may come as pleasant surprises, and are reminders of work very much in progress, such as a herbal from Germany given to Trinity by Roger Gale in 1738 or the collection of theological texts recently recognised by Teresa Webber as having belonged to Henry IV. The College is also lending an all but forgotten portolan map of the Mediterranean made in 1584, one of the latest manuscripts in the exhibition.

By now most readers will have heard of the Fitzwilliam's success a few months ago in acquiring the early fourteenth-

century Macclesfield Psalter, which will be on display in the exhibition. In the Wren we shall meanwhile be showing a copy of Bede's Ecclesiastical History with illustrations partly by one of the Macclesfield artists, and in the same engaging detail – one more example of how Cambridge manuscripts often relate to each other.

'The Cambridge Illuminations' runs in the Fitzwilliam Museum and the University Library from 26 July to 11 December. It is accompanied by a fully illustrated catalogue, available at the exhibition.



Dr David McKitterick FBA, Fellow, is College Librarian and a Tutor.



TRINITY, THE WREN, AND MEDIEVAL MANUSCRIPTS

BY TERESA WEBBER

Medieval manuscripts are eloquent witnesses to human creativity and intellect. But unlike modern books, they rarely tell us when, where, and by whom they were produced. Palaeography – the study of ancient handwriting – provides the skills to use handwriting, layout, decoration, and the document's physical construction, to place manuscripts in their correct historical context, and to understand why their characteristics have changed over time.

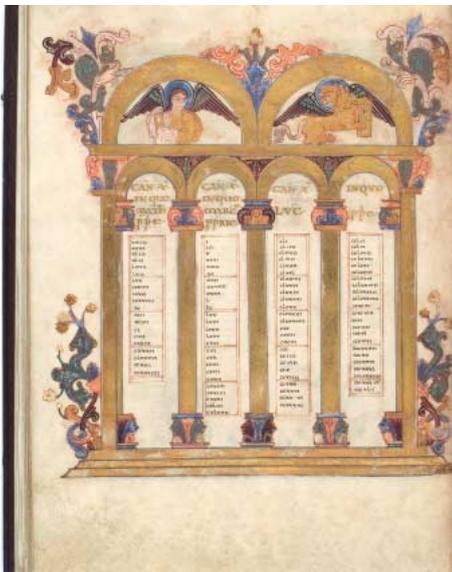
My teaching focuses on Western Europe's books and documents from

late Roman times to the Renaissance. I contribute to the M.Phil. in Medieval History, but graduate students from other Faculties also attend my classes. I also teach undergraduate historians and students of Anglo-Saxon, Norse and Celtic, encouraging them to use manuscript evidence to deepen their understanding of medieval history and literature.

It is wonderful to have at Cambridge, especially at Trinity, outstanding collections of medieval manuscripts that enrich my teaching. While I normally have to use reproductions in my classes I can also take students to the Wren Library and other Cambridge libraries, to examine the manuscripts themselves. The complex physical structure of medieval books, and the variety in their dimensions, embellishment, script and layout, can never be fully replicated in facsimile, whilst photographic reproduction cannot capture the dynamic quality of handwriting, a quality essential to analysing individual scribal hands. Students are thrilled by manuscripts that bring the history they have studied into their own hands: like the book of Canon Law that Archbishop

Lanfranc, when he reformed the Church in England after the Norman Conquest, bought from his old monastery at Bec in Normandy for his use at Canterbury; or the stunning Eadwine Psalter, with its astonishingly complex page design that incorporates for every psalm, three different Latin versions, English and French interlinear translations, a Latin commentary, a pictorial illustration, introductory preface and concluding prayer: a powerful image of the religious and scholarly culture of a twelfth-century Anglo-Norman monastic community.

Trinity has played a vital role in reviving the teaching of palaeography. Cambridge lost its post in medieval palaeography in 1973. The re-establishment of a University Lectureship in Palaeography in 1997, initially for just five years, was made possible only with the generous assistance of the Newton Trust, with additional support from the University Library's Dorothea Oschinsky Fund for Medieval Manuscript Studies. In 2002 the lectureship was renewed on a more permanent basis as an established post in the Faculty of History.



Dr Teresa Webber, Fellow, is a University Lecturer in History.

FINANCIAL MUSINGS FROM A FORMER SENIOR BURSAR

BY JOHN BRADFIELD



DEATH AND TAXES – BUT ALSO LEARNING

They say only two things are certain in life – death and taxes. But there are more complex certainties too. One that looms large for a country like Britain where, sadly, manufacturing declines and natural resources shrink, is this: unless we maintain a few world class universities, we face a steady decline in prosperity, quality of life, and ability to influence the world for good. Why? Because those universities provide international leadership in the arts, sciences, and technologies

that inform a wide range of business activities and attract distinguished overseas visitors, young and old, giving us excellent contacts abroad; because they prepare students, directly and indirectly, for the high-tech commerce and international financial, legal, and other services that must replace the lost industries; and because – in the Cambridge case through our admirable supervision and Tripos systems – they inculcate in students the flexibility and breadth of outlook essential for survival in a rapidly changing world.

COLLEGE CHAT LEADS TO LATERAL THINKING

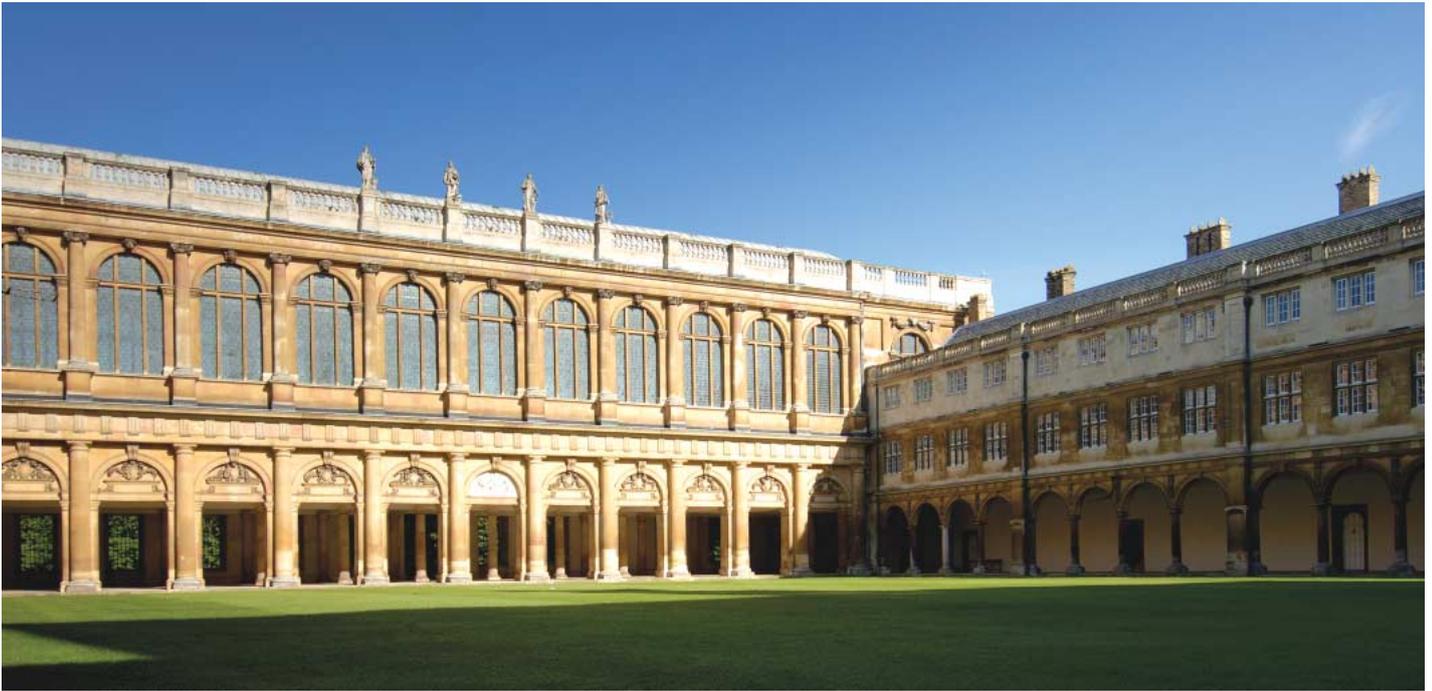
Cambridge is certainly a world-class university. Colleges are essential to its excellence. They allow Cambridge to grow large and remain intimate, to be at once both big and small – organisationally brilliant. Neither food nor drink loom large for me. But I have enormously valued the breadth and depth of what one learns from colleagues in casual chats over College meals – fantastic intellectual

riches, freely given, that stimulate vitality, creativity and lateral thinking, whether one wrestles with genomes or universes, develops a science park, or decodes the political nuances in Izaak Walton. Colleges, each spanning the academic spectrum, offer this cross-fertilisation to our junior members too – a great preparation for the rough and tumble of life.

FINANCE VERSUS EXCELLENCE

In recent years all of us – University, Colleges, students – have faced increasing financial difficulty. The University has been hard pressed to maintain its world position over an ever-growing range and complexity of subjects. Many Colleges have struggled to maintain two premier activities: first, providing good undergraduate supervision – the difficulty being due to unreasonable government fee controls; second, financing Junior Research Fellowships. Yet both activities are vital to our system, which has put Cambridge nationally first in teaching and in research. Students have felt the pinch





with the abolition of maintenance grants and often the necessity to incur heavy loans. They will be further hit by top-up fees, necessary though these are to get nearer to realistic cost-reimbursement and avoid still further dependence on Government.

TRINITY AND THE COLLEGIATE UNIVERSITY FAMILY

Trinity has increasingly helped with these difficulties: by supporting crucial University projects – for instance awards for home and overseas graduate students, critical for University research teams; by assisting other Colleges to maintain their all-important teaching staffs; and, above all, by providing, via the Isaac Newton Trust, bursaries in virtually all Colleges for talented undergraduates who might otherwise be deterred from coming here. This is not new. Colleges have been helping students since the Middle Ages. Newton himself entered Trinity as a Sub-Sizar, doing menial jobs in exchange for support. But

socio-political trends seem likely to make student support particularly important for the foreseeable future.

Trinity's resources are substantial relative to those of most other Colleges, thanks to generous foundation by Henry VIII and subsequent donations – plus, in the last half century, some good fortune and much hard work. But they are small relative to the task in hand. They must on no account be so swamped by outside needs of the present that we risk endangering our power to maintain Trinity's own excellence in people and plant. To allow that would be to fail both Henry VIII and the host of other devoted benefactors who have helped our great College over the centuries. It would also permanently impair our ability to help with outside needs in the future. The Trinity we pass to our successors must be stronger financially than in our day, not weaker.

So on account of Cambridge's major needs – and on account of these important Trinity considerations – I welcome the Vice-Chancellor's vigorous lead in formulating the 800 Appeal that combines

both University and Colleges, and I welcome the support the Master will be giving to the project by encouraging our members, in due course, either to help the University directly or – alternatively or additionally – to help Trinity, thereby enabling us not only to maintain our own beacon of excellence, but also to aid other parts of the Collegiate University family, according to our own view of their relative needs from time to time.

*Dr John Bradfield (1942) CBE, Fellow,
was Senior Bursar until 1992.*

Postscript

What a pleasure it was to learn of the Master's election as President of the Royal Society. This means that every scientific or mathematical Master of Trinity during the last 100 years has held that distinguished office and that of the 23 Presidents in this period 12 have been members of the College – not bad, even by Trinity standards!

HOW TRINITY ALUMNI CAN HELP A NEW STUDY AT CAMBRIDGE'S AUTISM RESEARCH CENTRE



BY SIMON BARON-COHEN

work both to identify the causes of autism and to evaluate interventions that help. The Autism Research Centre (ARC) team includes geneticists, neuro-scientists, psychologists, epidemiologists, and clinical researchers.

Recent discoveries include finding that the amygdala (sometimes thought of as the emotion centre) in the brain is under-active in autism; that autism can be diagnosed in children as early as 18 months old using a quick screening test available to GPs; and that testosterone produced by the foetus in the womb is associated with how sociable that child is after they are born. The latter result may help explain why autism affects boys much more often than girls.

Autism and Asperger Syndrome not only make it hard for the person to socialise. They also lead the person to have strong interests in narrow areas – sometimes called obsessions. The child may find it hard to chat or interact, but may spend hours watching Thomas the Tank Engine videos over and over again, or doing maths problems at high speed.

In those with Asperger Syndrome, such social difficulties need not be a barrier to further education, and their obsessions can mean they even excel in one area,

such as maths. At least 40 people with Asperger Syndrome are studying at Cambridge University today.

Scientists at the ARC invite Trinity's alumni to help with a unique new research project. It aims to test whether there is a link between parental degree subject and their children's talents (such as in maths) or disabilities (such as autism or language delay). Anyone who is a parent and an alumnus of Trinity can take part. Simply log into www.cambridgepsychology.com/trinity. It only takes a few minutes and involves providing information through a secure website.

Donations to support the work of the Autism Research Centre can be made by sending a cheque made payable to the University of Cambridge, to Jenny Hannah, ARC, Douglas House, 18B Trumpington Rd, Cambridge, CB2 2AH. For further information about the work of the ARC, visit www.autismresearchcentre.com

Professor Simon Baron-Cohen, Fellow, is Professor of Developmental Psychopathology and Director of the Autism Research Centre.

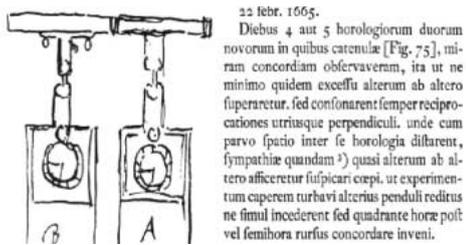
Autism is in the news a lot these days. This neurological condition makes it difficult for children to socialise and communicate. It seems to be far more common than in the past. In 1978 the rate was 4 in 10,000 children. Today the rate is 1 in 200. This may just reflect better recognition, awareness, and diagnosis. Autism is no longer a diagnosis only given to children with low IQ or limited language. It is also given to children of average (or above average) IQ who have excellent language. In such cases, their social difficulties lead to a diagnosis of Asperger Syndrome, today recognised as being on the 'autistic spectrum'.

Cambridge University has the leading research centre into autism in the UK, and it is regarded as a leading centre internationally too. It is situated in the Clinical School of Medicine's Psychiatry Department. More than 30 scientists



SYNCHRONISING ATOMS TO BUILD A BETTER CLOCK

BY PETER LITTLEWOOD



In 1665 Christiaan Huygens, the great Dutch physicist, wrote to the Royal Society in London describing his latest experiments on time-keeping. He held the patent on the pendulum clock, and was designing maritime clocks on contract to the English navy. Huygens built clocks in pairs, set in a common frame, so that one would continue to run while the other was being wound. Of course, he knew that even identical designs would not keep exactly the same time. His report then expressed surprise to observe “..an odd kind of sympathy ... in these clocks suspended by the side of each other.” The clocks had synchronised, beating precisely in counter-oscillation, keeping identical time. Huygens deduced that the effect came from “imperceptible movements” of the common frame supporting the clocks.

Spontaneous synchronisation is widespread. It accounts for the regular contraction of heart muscle, epileptic seizures, and the periodic 13- and 17-year emergence of locusts (cicadas). It turns out that not just large objects can be synchronised, but atoms too.

Synchronisation of matter is only intelligible because of quantum mechanics. Elementary particles are not points, but waves, which have both an amplitude (their height) and a “phase” (marking the position of a wavefront). Waves that are synchronised we usually call “coherent”, as in the regular pattern of water waves obtained by throwing a pebble into a still pond. However, water waves dissipate and decay, and an initially coherent pattern will degenerate under the onslaught of the environment into random fluctuations. Yet in superconductors and superfluids, a synchronised ground state spontaneously arises due to collective interactions amongst all the particles. In such systems, the phases of all the electron or atom waves become locked together – hence individual particles can no longer be scattered out of their ballistic motion and resistance to flow vanishes.

One goal of our research is toward a new kind of superfluid, that is a cousin of another coherent system – the laser. Light from a laser is coherent, in the same sense as the water waves above, but the light comes from short-lived electronic states. The laser has only the classical coherence of Huygens's clocks and is not a superfluid. But the excited states inside the solid are themselves a new kind of atomic “particle”, and we expect that these new particles can be made spontaneously coherent by

confining them in traps in the solid, cooling them sufficiently, and – crucially – increasing their lifetime.

I myself am a theoretical physicist, and my role in this enterprise is to make stories, analogies, mathematical pictures, and occasionally to do a few calculations. The mathematical models we use exhibit links between physical systems that superficially seem very different – cicadas, lasers and superfluid atomic gases are examples – so concepts, ideas, and even experimental results can be transferred from one forum to another. We work closely with experimental researchers, analysing data and evaluating proposals for new experiments. This involves asking simple questions with potentially difficult answers – “If you had made a new kind of superfluid, how would you know?”

The other question often asked is “What would one do with such a thing?”, to which the current fashionable answer is “Build a quantum computer” (whatever that is), and the honest answer is that I don't know. But Huygens would no doubt have realised that synchronised atoms make excellent clocks.

*Professor Peter Littlewood (1973),
Fellow, is Professor of Physics and Head
of the Department of Physics.*

“ BETWEEN TWO WAVES OF THE SEA ”

BY RICHARD CAUSTON

I was appointed to Trinity's Fellow Commonership in the Creative Arts for two years from September 2003. The post can be held by artists working in any field – previous holders have included the writer Ben Okri, poet Kit Wright, and painter Thomas Newbolt, as well as composers Thomas Adès and Judith Weir. It is one of the very few non-academic positions at Trinity and is highly unusual in that it provides a stipend, work space, board and lodging for two years but leaves the artist free to work on developing his or her own projects.

Most of my own work at Trinity to date has been devoted to composing a large-scale piece entitled *Between Two Waves of the Sea*, which was first performed in December 2004 by the City of Birmingham Symphony Orchestra. The piece was commissioned by Jane Arthur in memory of her parents Jean and Peter, and it is cast in the form of a dialogue between the orchestra and recordings of itself, which are heard through speakers at the back

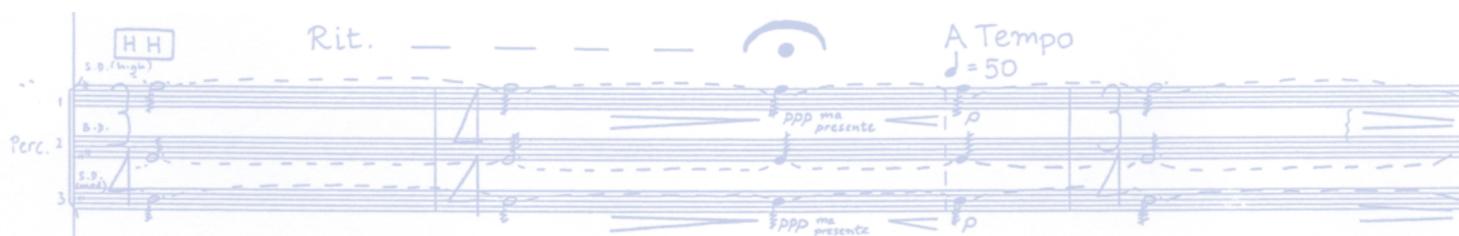
of the concert hall. In performance the audience therefore finds itself sandwiched between a live orchestra and another, physically absent 'ghost' orchestra. This recorded element functions in various ways: sometimes it is barely audible, like something half-heard in the distance which gradually reveals itself; at others it is like a separate orchestra playing in the next room; at others again it challenges the live orchestra as its mirror image in passages of conflict. The two elements are rarely in the same tempo as one another and the interplay between them is like a dialogue between different kinds of time, or perhaps between life and death.

So far as I know, nothing quite like this has been tried before and as well as throwing up unexpected technical difficulties, composing the parts for both orchestras involved a vast amount of work (something like twice the number of notes!). Large-scale projects of this kind, which demand absolute concentration and continuity of work over a long period of

time, would be extremely difficult to realise without the kind of support which the Fellow Commonership provides.

Posts like this are of particular importance nowadays because the situation for composers in the UK at the moment is very difficult. Paid composition work is always project-based (i.e. commissions) and the current rates of pay for such work fall well short of what one can actually live on; therefore the bulk of a composer's income generally comes from teaching, running workshops in schools etc – activities which inevitably take time and energy away from actually writing music. There is no obvious career structure and a composer's reputation rests largely on his or her catalogue of works, usually built up painstakingly over many years. Against this backdrop positions like the Fellow Commonership in Creative Arts at Trinity are more vital than ever, and I hope that artists continue to benefit from it for many years to come.

Richard Causton is the Fellow Commoner in Creative Arts at Trinity and in 2004 his work *Seven States of Rain* won Solo/Duo category at the British Composers' Awards.



NOTES FROM THE CHAPEL

BY ARNOLD BROWNE

A report recently commissioned by the College suggested that all should have access to the Chapel 'irrespective of their religious faith or of their reasons for visiting a religious facility'. This is excellent theology. Everyone is welcome in the house of the one Father of all, and it is unwise to pass judgment on others' motives for entering a sacred space. It is difficult enough to discern our own.

The Chapel belongs to the whole College community. Sir Martin Rees was installed as Master there, when our outstanding choir sang a *Te Deum* especially composed by Deirdre Gribbin. Increasing

numbers of Fellows and staff, students and former students are married there. In the Easter term 2005, while the regular pattern of said and sung worship continued, Soul Space, a special installation, used plants and sculpture, cushions and water, fabrics and lighting, to help anyone who entered to 'see yourself differently, unwind a little and then leave feeling just a little bit lighter', offering a helpful sense of perspective for the examination period.

A wider community too is made welcome. In October 2004 Park Street Primary School held its harvest festival there. Many local charities continue to

use the Chapel for fund-raising events, often concerts by our College musicians. In July 2005 choirs from many of the parishes of which Trinity is patron will join together for a day out in Cambridge. A lunch for five hundred in Nevile's Court will be followed by choral evensong. The combined choirs will fill the Chapel and squeeze the congregation into the Ante-Chapel.

The recent report on Accessibility was written for the College by property consultants, not by theologians. It concerned physical access and, while the Chapel induction loop is already in place for the hard of hearing, our ramps need careful improvement. Nevertheless, that the College has categorised the Chapel under 'general access' and made the work 'high priority' is not only good sense; it is also good theology!

Dr Arnold Browne is Dean of Chapel.



On Friday
September 23rd
at 8.00pm in the
Winstanley lecture
theatre, not only
Professors Simon
Blackburn FBA
(1962) and Edward
Craig FBA (1960)
but also a galaxy of
other philosophers will argue: *Who was the greatest Cambridge philosopher? And (of course), was he from Trinity?*

ALAS
BERTIE
AND
LUDWIG

All welcome but tickets must be obtained from Cambridge University Development Office, Tel; 01 223 332288, e-mail:

alumni@foundation.cam.ac.uk, please see the University's Alumni Weekend brochure 'Transformation' for further details; refreshments available from 7.30 for Trinity alumni and again for the entire audience before *they get to vote!!* Come along and support your candidate!

FIRST AND THIRD TRINITY BOAT CLUB

BY ANDREW LEA-COX



Head of the River crew, Lent Bumps, 2000

Alumni members of the Black Prince Boat Club will know all this but other Trinity members may also like to know of our proud history on the water. Trinity Boat Club was Cambridge's first, launched ten years after Waterloo. It became First Trinity when Second Trinity was founded in

1831 for those who read for an honours degree – a minority in those good old days. While Second Trinity was disbanded in 1876 for lack of support, Third Trinity was established in 1833 for those who had been to Eton or Westminster, and soon rivalled the First Trinity.

Trinity has won a staggering 89 times at Henley, including the Grand Challenge Cup five times and the Visitors' Challenge Cup 28 times – Third Trinity still has the most wins in this event! Before 1908 Trinity were also Head of River 52 times out of a possible 103. The victorious 1849 Boat Race crew was entirely Trinity. A First Trinity coxless four even won Gold for Great Britain at the 1928 Olympic Games.

First and Third Trinity amalgamated after 1945 and are as successful as ever. Most importantly, we have the largest intake of novices of any College, giving everyone a chance to represent the most famous of Boat Clubs.

Andrew Lea-Cox (2002) is Captain of First and Third Trinity Boat Club.



The original Trinity boathouse, 1863

First Trinity dominated both on and off the Cam, notably at Henley, where they won the Grand Challenge Cup in the very first Royal Regatta. Their boat was called Black Prince. We still have its bow section, and the top men's boats are named Black Prince to this day.

THE TRINITY EXPERIENCE TODAY

BY SHARON WILKINS

There's something about Trinity, even today, that makes it unlike any other College. Is it because of our history, tradition and prestige? Or are we now defined by our broad social mix, our

many nationalities, our modern facilities and our ongoing student rivalry with St John's (we shall even be racing each other in the boat race across the Channel this summer!)? As Trinity College Students

Union President I have the daunting task of representing the views of all in this diversity while telling all our members about our recent trials and triumphs.



Trinity still has a charming mix of the traditional and contemporary. Modernisation of College accommodation and facilities is an ongoing and appreciated process, with fantastic renovations of the Grange Road houses; a revamp of the Wolfson Building is also imminent. The Wolfson project has led to some of next year's second years being required to live out of College, in Histon Road. This left many students a bit hot under the collar for some time, but we have now resigned ourselves to the desperate need for the work to be done and just look forward to its completion. These projects proceed alongside the College's feasts and historic ceremonies. One of these rituals recently installed our new Master, Sir Martin Rees, with an extraordinary display

of pride and custom but also innovation – in music and social inclusiveness.

Trinity students remain both academically successful and fully immersed in university life. The number of university societies is growing and they are becoming ever more obscure! Who would have guessed there was a market for Winnie the Pooh appreciation? Highlighting all our student successes is impossible; I can only mention a few. Recently we have enjoyed some very successful concerts by Trinity musicians, including The Messiah, B Minor Mass, and Brahms's Requiem. The Field and Boat Clubs have had equal triumphs. The men's first boat retained their place as second on the river in the Lent bumps, men's football came second in the league, and Trinity had the largest presence on

last year's Varsity ski trip. Several Trinity students have played in Varsity teams, including the Rugby under-21s, Rugby League, Football (Falcons) and Water Polo. But our particular congratulations go, finally, to Trinity's sporting females. They have really excelled this year: top of their leagues in football, netball and badminton! The first women's boat have also celebrated: they moved up no less than six places on the river in first division bumps and earned themselves blades.

Most students will not spend long here but all make the most of what is on offer – our main concern continues to be to try to fit everything into three short years!

Sharon Wilkins (2003) is President of Trinity College Students Union.

THE BA SOCIETY

BY MARIE MIKL

From the welfare provisions of prostitutes in mediaeval France to the circadian rhythms of Chinese hamsters – Trinity's BAs are at the forefront of essential and applicable research. As varied as the research interests, are the backgrounds of those making up the 400 or so members of our BA Society. About half of us are born-again Trinitarians, while the others come from as far afield as New Zealand, Brazil and Bristol. The BA Committee has generous College funds at its disposal, with which we organise social events, especially in Freshers' Week, to ensure that no new arrival gets through the system uncorrupted. Events over the

past year have included a garden party, wine tastings, film screenings, a Tsunami disaster appeal fund-raising party, fortnightly brunches and the popular weekly BA dinners. Most BAs spend their time outside the library or laboratory in an innovative manner, even without the aid of entertainment professionals of the BA Committee, contributing to making the graduate community of Trinity interesting and fun to be part of.



Marie Mikl (1999) is President of the College BA Society.