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Fundsmith Buy good companies Don’t overpay Do nothing
The arresting cover image is of Professor Henry Snaith. The disconcerting shade of yellow is not fake – it comes from special lighting in a Department of Physics laboratory used for developing innovative solar cells. Snaith has led the discovery of extremely efficient thin-film solar cells manufactured from organic–inorganic metal halide perovskites. His team’s discovery implies a revolution in solar energy, among others that demonstrate how the University is leading efforts to solve urgent questions of global energy demand and climate change.

Elsewhere, we talk to Merton zoologist Professor Tim Guilford about the wonders of flight and the extraordinary cognitive abilities of migrating birds; and we meet Andros Wong and his team at student startup Silo, an attempt to harness the power of the Web to bring together higher education funding bodies and students.

A walk up Norham Gardens leads these days to a much-modified Lady Margaret Hall – altered not just in its new buildings and front entrance, but also in its Foundation Year access scheme, inspired by Trinity College Dublin and put into practice by the college’s Principal, Alan Rusbridger. We talk to some of the scheme’s first students.

Then we ‘fly slowly over the city in a balloon’ with Ralph Aggas’s 1578 map of Oxford as cartography expert Dan MacCannell considers the role played by Oxford in the development of modern maps. It’s a fitting vantage-point from which to consider the magnificent donation now set to transform rowing at Oxford, and to contemplate the vistas opening up for the city’s railway links, before returning to earth for a slurp of some new-wave coffee.
The lecturers are leaders in their field, the sites – both world-renowned and barely touched by tourism – are breathtaking. Our itineraries in India, Myanmar, China and Japan explore cultures ancient and modern that have influenced the art and thought of the modern world – including the ruined city of Hampi in southern India, the Terracotta Warriors in Xi’an and Kyoto’s exquisite temple gardens. Travel through enthralling landscapes, from rural Myanmar to futuristic Shanghai.

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Rasputin disputed

Prince Felix Yusupov, by Eric Hamilton, Venice 1910

May I do a ‘pedantry corner’ on Christopher Danziger’s enthralling piece on Felix Yusupov? Rasputin was not the Mad Monk. He was never a monk, and far from being mad was cunning. But his great enemy and far from being mad was cunning. His great enemy and far from being mad was cunning.

John Penycate
Christ Church, 1962

Further coverage of this story...

Chris Danziger, who wrote the feature ‘The prince, the spy and the Mad Monk’ (OT, Michaelmas 2016), has since received long, thoughtful responses by individuals who knew Yusupov or whose relatives knew him as contemporaries. Chris has written a longer piece by way of response. The original feature, the responses and Chris’s new piece are all online. To access these articles, go to bit.do/rasputinoxford. Alternatively, search for ‘Yusupov’ using the search bar top right at our website, www.oxfordtoday.ox.ac.uk.

The portrait of Yusupov shown here was sketched in Venice in 1910 by Eric Hamilton, a future Dean of Windsor and close friend.

Margaret Thatcher

I was disappointed to read in Letters (OT, Michaelmas 2016) that David Holdsworth was proud of his university ‘when it declined to award the customary honorary degree to Margaret Thatcher’. He went on to say that he hoped the same would apply regarding David Cameron. It made me wonder: what are the criteria? On behalf of whom is the decision made?

When Mrs Thatcher came to power I was working as a buyer in the building industry. She inherited an economic nightmare from Jim Callaghan’s outgoing Labour government. Inflation was in excess of 20% and militant trades unions were holding the country to ransom. A strong leader was needed, and the Iron Lady did not disappoint. Yes, she made some mistakes, but for me, she was the greatest prime minister of my lifetime (I am in my seventies). Clearly, Mr Holdsworth would not agree with me, but that is my point. I assume from his letter that Tony Blair was honoured by Oxford with an honorary degree. For me, he was the worst prime minister of my lifetime, who didn’t seem to think that truth was important, and led us into a war on false pretences. Again I ask, who decides and on what basis?

Ray Smith
Regent’s Park, 1986

Susanna White

I am a confirmed misanthropic sociopath. I blame my tutors. They failed to advise me that ‘the second year is for taking as many lovers as possible’ (OT, Michaelmas 2016). I scored a duck (sadly also true of my first and third years). Is it too late to claim compensation?

David Stanbury
Wadham, 1960

Runworth Vespers

Ellen Davies’s article on the Runworth Vespers was excellent. May I suggest, however, that whoever provided the headline should register for a crash course in history before being permitted to re-enter the portals of Oxford Today? The restoration of a rare 15th-century antiphonal is almost literally the opposite of ‘Restoring the Reformation’, given that the Reformation is largely responsible for the rarity of such manuscripts.

Sue Sims
St Hilda’s, 1971

Oxford in prints

I was surprised to find Peter Whitfield (OT, Michaelmas 2016) thinks the first artist to publish views of Oxford was David Loggan, 1675. Has he forgotten John Bereck’s series for the souvenir book presented to Elizabeth I on her first visit as queen in late summer 1566? Bereblock, who was well known as a calligrapher and miniaturist, drew each college himself. Born about 1532, he was a St John’s undergraduate in 1559/60 and a fellow there by 1562. In June 1566 he moved to Exeter College, having been made a fellow and Dean that April. See Queen Elizabeth’s Book of Oxford, edited by Louise Durning (Bodleian Library, 2006).

Jeremy Godwin
Lincoln, 1962
Peter Whitfield reports nicely on the evolution of prints and drawings of Oxford’s architecture. He also takes a legitimate swipe at some of the University’s post-war concrete monsters. The fan-shaped Nuclear Physics by the Banbury Road (which he abhors) is also my favourite hate. But saying that ‘in practice [the] past is often overshadowed, diminished or tainted by the present’ is going too far into the land of blind reaction. Oxford’s old colleges, and its 20th-century foundations, contain as good a library of the architecture of our time as anywhere in the country – and comparable only with Cambridge. Let’s give credit where it is due and acknowledge the fellows, who have struggled so hard to commission good work.

Terence Bendixson
Worcester, 1954

Marxism

Lewis Siegelbaum (St Antony’s, 1976) objected to the statement that Leszek Kołakowski had been ‘dismissed from his post in Poland in 1968 on account of his successful debunking of Marxism’. Mr Siegelbaum asked: ‘Does this mean that Marxists throughout the world – historians, philosophers … have been operating under the delusion all these decades since…? Seems to me, the nameless compiler of this particular bio was exercising a bit of legerdemain both uncharacteristic and unworthy of Oxford Today.’

Tosh! Back in the day, as young people say today, I was at dinner at Linacre College with the legendary Professor Kołakowski, who had been brought to college by an Australian colleague around 1973 or 1974. As I watched, fascinated, the old Pole listened with barely concealed and increasing annoyance to two young, earnest Afghan graduate students holding forth on the value of Marxism in the future of their homeland. When they paused for breath, he spoke slowly emphasizing every word: ‘Marxism is as much value in the development of Afghanistan as witchcraft!’ This brought an abrupt end to the young Afghans’ peroration and they left the table in a huff.

Richard Gwyn Davies
Linacre, 1972

OUP: Very Short Introductions

It is a shame that Olivia Gordon’s splendid tribute to the OUP’s Very Short Introduction series (OT, Michaelmas 2016) failed to mention their origins in the equally excellent Past Masters series. Yes, the series title might have been unfortunately patriarchal (even in 1980), but they were a boon to my undergraduate career. The quality of the books is evidenced by the fact that several of those titles – AJ Ayer on Hume, Jonathan Barnes on Aristotle amongst others – live on as Very Short Introductions. Even Germaine Greer’s idiosyncratic Shakespeare has been given a second lease of life, though Humphrey Carpenter’s Jesus has passed on.

Stephen J Hackett
St John’s, 1980

Hydrogen transport

I heard a scientist from the Shell Thornton Research Centre (since closed) speak on the hydrazine fuel cell around 1975 at the University of Essex, where I lectured on chemistry and chemical physics. So I was interested in Professor Matthias Holweg’s comments (‘Redefining A to B’, OT, Michaelmas 2016).

Although energy density is important, so is the environment! I think the hydrazine cell which turns the input into water and nitrogen is good on both counts. Of course, hydrazine is not a pleasant substance; but then, filling our cars with hydrocarbon fuel we get a dose of benzene, a noted carcinogen!

Shell’s research engineer disparaged its effort as it was a hydrocarbon production company; perhaps that is why it did not pursue the development further. Perhaps then we were not as aware of the problems of global warming and local pollution.

I note that a Japanese motor firm has developed a new catalyst for the hydrazine cell and a car using it. I look forward to driving one!

Dr David J Greenslade
Wadhams, 1956

Varsity Railway

May I put in a few words in support of the unfairly maligned Dr. Richard Beeching? Contrary to popular opinion, he did not ‘cut’ a single mile of Britain’s railways.

He was appointed by the British Transport Commission to head the new British Rail (BR) Board. His brief was to stem the massive and increasing losses at a time when the government was pouring vast sums into road transport. He did a detailed analysis of all aspects of BR. This demonstrated the inefficiency of long-established operating practices, the under-use of much passenger and freight rolling-stock and that, without government subsidy, most branch lines could never make a profit. Most cross-country trains were running almost empty. His report led to Conservative and Labour Ministers of Transport closing several thousand miles of track. It is often forgotten that some closures started and others were scheduled, before the Beeching Report.

Keith Ferris
Exeter, 1948

Oxford Today

Just to say that for the first time ever I read Oxford Today (OT, Michaelmas 2016) from cover to cover, as it was so interesting.

Keep it up!

Don Matthew
Worcester, 1961

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**The Top 5 Most Popular OT Web Features**

1. **Closure of Ducker & Son**
   Where the Red Baron, Tolkien and Lawrence of Arabia all bought their shoes. Our farewell has brought a postbag of reminiscence, remonstrance and rhyme. [bit.do/ducker](http://bit.do/ducker)

2. **11 amazing facts about the Bodleian**

3. **Celebrating the 150th anniversary of the Randolph**
   Another Oxford institution – but this one’s a survivor, despite a recent near disaster involving a flambé. [bit.do/randolph150](http://bit.do/randolph150)

4. **Reconnecting the Varsity Railway**
   Oxford to Cambridge is a distance of only 66 miles as the crow flies. So why is it so infernally difficult to get from one to the other? [bit.do/varistyrailway](http://bit.do/varistyrailway)

5. **In our new era of conflict old rules no longer apply**
   Why has everything suddenly changed? Professor Andrea Ruggeri anatomises our paradoxical times. [bit.do/eraofconflict](http://bit.do/eraofconflict)
Brexit and Oxford

Oxford insists that maintaining a flourishing higher education sector should remain at the heart of government Brexit negotiations – and that cross-cultural exchange is crucial.

A new Pro-Vice-Chancellor without portfolio has been appointed, based in the International Strategy Office and responsible for Brexit strategy. The appointment of Professor Alastair Buchan (above), former head of the Medical Sciences Division, was announced by Vice-Chancellor Louise Richardson.

The vital importance of cross-cultural exchange has been underlined by another key Oxford figure, Professor Ian Walmsley, Pro-Vice-Chancellor for Research and Innovation. While welcoming the Government’s November announcement of £2 billion more for applied scientific research by 2020–21, he outlined three key elements in a successful ecosystem for innovation: ‘The first is critical mass: sufficient capacity for generating and identifying good and fruitful ideas. The second is cross-fertilisation of concepts: the collision of different ways of thinking, both cross-disciplinary and cross-cultural. And the third is competitive tensioning: ideas must be compared with the best in the world.’

Professor Walmsley said the multinational character of the EU’s framework programmes ‘fosters the need to think about even common ideas in new ways. It also enables projects that could not take place on the national level because they require data or expertise that no individual nation has.’ He insisted that maintaining a flourishing higher education sector should remain at the centre of government Brexit negotiations.

Oxford leads Lords’ revolt over higher education bill

Expected to receive royal assent later this year, the Higher Education and Research Bill 2016–17 was subjected to fierce scrutiny in the House of Lords, led by the University’s Chancellor, by heads of house Baroness Kennedy (Mansfield) and Lord Macdonald (Wadham), and by others connected to Oxford. Lord Patten (above) warned that the bill struck at university autonomy and academic freedom by appearing to hand control of academic courses to the Secretary of State via a new Office for Students (OfS). The committee stage saw the Lords revise this clause, but at the time of going to press the bill’s third reading had not begun.

The Chancellor also voiced his concern at the apparent separation of teaching from research, implicit in the bill’s creation of the OfS and a new research body called UK Research and Innovation (UKRI), to replace the Higher Education Funding Council for England (HEFCE). He said: ‘I am concerned about the artificiality of the divide which is made in the bill between research and teaching. I hope we can address that and, in particular, confirm the continuing strength of the dual support system which is so important to our universities.’
Ruskin graduate Helen Marten wins Turner Prize

The UK’s most prestigious contemporary art prize has again been given to an alumna of Oxford.

Artist Helen Marten (Exeter, 2005), who took her undergraduate degree at Oxford University’s Ruskin School of Art, has won the 2016 Turner Prize. The prestigious award is given to the British artist under 50 who is considered to have put on the best exhibition of the past year.

Professor Brian Catling, Head of the Ruskin School of Art, said: ‘We are all tremendously excited by the news of Helen’s success, but not remotely surprised. Helen showed a distinctive talent at the Ruskin, and an exceptional energy in putting her ideas into practice. ‘She was one of the leaders of her year,’ said Professor Catling, who taught Helen while she studied here. ‘There is no doubt she will go on to have a brilliant career as an artist.’

At 31, Helen Marten was the youngest nominee, and said she would share the £25,000 prize with other nominees. The chair of judges, Tate Britain director Alex Farquharson, said: ‘The judges were impressed by the complexity of the work, its amazing formal qualities, its disparate materials and techniques and also how it relates to the world … how it often suggests meaning, but those meanings are all in flux somehow. One image, one form becomes another.’

As an Oxonian winning the Turner Prize, Marten follows a trail blazed in 2012 by Elizabeth Price (Jesus, 1985).
New diabetes unit

The University is to host a £115 million diabetes research centre funded over 10 years by Novo Nordisk, the Danish pharmaceutical company. Sir John Bell, Oxford’s Professor of Medicine and the Government’s life sciences champion, said the planned centre would help to revive drug discovery research in the UK. About 100 scientists will work there investigating new approaches to treating type-2 diabetes. It is due to be built on Oxford’s growing biomedical campus in Headington.

Honoured

A total of 50 honours were bestowed on Oxonians in this year’s New Year’s Honours list. Sir Roger Bannister, (Merton, 1946), former Master and Honorary Fellow of Pembroke College, was made a Companion of Honour for services to sport. He broke the four-minute-mile record at the Iffley Road Sports Track in 1954, and is pictured below at the 60th anniversary celebrations at Exeter College.

The same month saw one of its successful spinout companies, Oxford Biodynamics, float on the London’s AIM stock market, valuing it at over £100 million. Oxford Biodynamics Plc is a biotechnology company focused on the discovery and development of biomarkers for use within the biotechnology and pharmaceutical industries.

Oxford University Innovation tops league across Europe

The University’s research commercialisation company Oxford University Innovation (OUI) created 24 companies in 2016, collectively attracting early-stage funding of £52.6 million. This outperformed all other universities in Europe. A significant catalyst for this growth was Oxford Sciences Innovation, which announced in December that it had increased its capital to £580 million following the addition of £230 million after a new funding round.

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Another landmark was reached by Oxford spinout company Oxford Nanopore, a DNA analysis company, which attracted further investment valuing it at £1.25 billion. This lofted it up to the rarefied status of a so-called biotech ‘unicorn’ – a private, fast-growing company valued at more than a billion pounds or dollars.

Apart from spinout successes, the company also achieved a record number of consultancy engagements for University academics, and played a key role in initiatives to support and encourage innovation. These include LAB282, which brings funding and industry expertise to drug-discovery activities in Oxford.

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Chancellor’s Court

The following new members have been admitted to the Chancellor’s Court of Benefactors:

Individual members:
- **Abdulaziz Saud Al-Babtain**, poet, businessman and founder of the Abdulaziz Saud Al-Babtain Cultural Foundation
- **Tan Sri Dr Jeffrey Cheah, AO**, founder of the Sunway Group and the Jeffrey Cheah Foundation, and Chancellor of Sunway University
- **Lady Hintze**, management consultant for tourist and leisure businesses, co-founder of the Hintze Family Charitable Foundation
- **Sir Michael Hintze**, founder, Chief Executive and Senior Investment Officer of CQS, and co-founder of the Hintze Family Charitable Foundation
- **Dr John Moussouris**, Managing Partner of VenEarth Group, and Chairman and Founder of MicroUnity Systems Engineering
- **Gerald Smith**, partner at Baillie Gifford
- **Margo Smith**, musician
- **Qiang (Victor) Wang**, co-founder and Director of Entrepreneurial Thought at ZhenFund

Organisation representatives:
- **Anne Bonavero**, co-founder of the A B Charitable Trust, and a trustee of the Hand in Hand Group and of the Leslie Aldridge Trust, representing the A B Charitable Trust
- **Yves Bonavero**, co-founder of the A B Charitable Trust, founder of Woodsford Consulting and of Woodsford Litigation Funding, representing the A B Charitable Trust

Replacement organisation representatives:
- **Geoffrey Fuller**, partner at Allen & Overy, representing Allen & Overy
- **Henry Knowles**, General Counsel and Company Secretary of Vesuvius, representing Vesuvius
- **Sir Peter Luff**, Chair of the National Heritage Memorial Fund and the Heritage Lottery Fund, representing the Heritage Lottery

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Heads of House

Three new heads of house take up position at Trinity, St Antony’s and St Anne’s

**Trinity**
- **Hilary Boulding**, Principal of the Royal Welsh College of Music and Drama, was appointed President with effect from August.

**St Antony’s**
- **Roger Goodman**, Nissan Professor of Modern Japanese Studies and Head of the Social Sciences Division at Oxford, was elected Warden with effect from October.

**St Anne’s**
- **Helen King**, Assistant Commissioner for Professionalism within the Metropolitan Police Service, was appointed Principal with effect from April.

Professorships

**Race relations**
- Adewale Adebanwi, Professor, Program in African American and African Studies, University of California at Davis, USA, was appointed Rhodes Professor in Race Relations and a fellow of St Antony’s College with effect from July 2017.

**Evidence-based intervention and policy evaluation**
- Jane Barlow, Professor of Public Health in the Early Years and Pro-Dean for Research, Warwick Medical School, University of Warwick, was appointed Professor in Evidence-Based Intervention and Policy Evaluation and a fellow of St Hilda’s College with effect from October 2016.

**Human geography**
- Gillian Rose, Professor of Cultural Geography at the Open University, has been appointed Professor of Human Geography and a fellow of St John’s College with effect from October 2017.

**Quantitative finance**
- Mihaela van der Schaar, Chancellor’s Professor of Electrical Engineering at the University of California, Los Angeles, and founder and Director of the UCLA Center for Engineering Economics, Learning and Networks, was appointed Man Professor of Quantitative Finance and a student of Christ Church with effect from 1 October 2016.

**George Eastman Visiting Professorship**
- Katherine O’Brien O’Keeffe, Professor and Chair of the Department of English and Director of the Program in Medieval Studies, University of California, Berkeley, was appointed George Eastman Visiting Professor 2017–18 and a fellow of Balliol from 1 October 2017 to 30 September 2018.

**Computer science**
- Sir Tim Berners-Lee, inventor of the World Wide Web and Professor at the Massachusetts Institute of Technology (MIT), joined the Department of Computer Science as a Professial Research Fellow and became a student of Christ Church in October 2016.

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- **Sir Peter Luff**, Chair of the National Heritage Memorial Fund and the Heritage Lottery Fund, representing the Heritage Lottery
The wise and contemplative gaze of this caterpillar reminded its photographer, Zoology DPhil student Leejiah Dorward, of the caterpillar from Alice in Wonderland. And so the conservation scientist (St Anne’s, 2014) titled his photograph ‘You Are Old, Father William’, after the poem the caterpillar asks Alice to recite. The photograph, which won the student category of the 2016 British Ecological Society Photographic Competition, shows a spotty Gynanisa minettii moth caterpillar emerging from a thorny bush in Tanzania’s Ruaha National Park.

The main focus of Dorward’s research at his field camp in Ruaha is the conflict between local villagers and carnivorous animals such as lions and hyenas. But his wider interest in natural history means he likes to look for and record sightings of smaller and gentler species too, from birds to reptiles to insects, and he always travels with his camera.

‘I frequently search for animals around my camp at night, as there are a number of slightly more unusual creatures that are more active and visible at night,’ Dorward says. ‘This moth caterpillar’s almost reflective skin was hard to miss under torchlight, and it obliged me with some interesting poses while I photographed it.’

He adds: ‘While not as charismatic as large carnivores, caterpillars are key food sources for lots of species. A caterpillar of this size would be a very tasty morsel for a bush baby!’

Dorward chose this image to submit for the photography competition from thousands he has taken thanks to his love of wildlife photography. He hopes the publicity gained will ‘help in some small way by inspiring interest in the natural world and action to help conserve it’.

Gynanisa minettii moth caterpillar

The wise and contemplative gaze of this caterpillar reminded its photographer, Zoology DPhil student Leejiah Dorward, of the caterpillar from Alice in Wonderland. And so the conservation scientist (St Anne’s, 2014) titled his photograph ‘You Are Old, Father William’, after the poem the caterpillar asks Alice to recite. The photograph, which won the student category of the 2016 British Ecological Society Photographic Competition, shows a spotty Gynanisa minettii moth caterpillar emerging from a thorny bush in Tanzania’s Ruaha National Park.

The main focus of Dorward’s research at his field camp in Ruaha is the conflict between local villagers and carnivorous animals such as lions and hyenas. But his wider interest in natural history means he likes to look for and record sightings of smaller and gentler species too, from birds to reptiles to insects, and he always travels with his camera.

‘I frequently search for animals around my camp at night, as there are a number of slightly more unusual creatures that are more active and visible at night,’ Dorward says. ‘This moth caterpillar’s almost reflective skin was hard to miss under torchlight, and it obliged me with some interesting poses while I photographed it.’

He adds: ‘While not as charismatic as large carnivores, caterpillars are key food sources for lots of species. A caterpillar of this size would be a very tasty morsel for a bush baby!’

Dorward chose this image to submit for the photography competition from thousands he has taken thanks to his love of wildlife photography. He hopes the publicity gained will ‘help in some small way by inspiring interest in the natural world and action to help conserve it’.
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Leonardo da Vinci dreamed of mimicking natural flight. Now an Oxford spinout is making it a reality, inspired by the epitome of insect grace.

Four independently flapping wings will propel Skeeter, developed by Animal Dynamics, at up to 45 kph. No more than 12cm long and 30g in weight, it will carry a camera and microphone – making it ideal for military surveillance and also for humanitarian use in disaster zones.

Adrian Thomas, Professor of Biomechanics in the Department of Zoology, says Skeeter will be cheaper, longer-range and more manoeuvrable than other drones. Its ultra-light wings of carbon-fibre polymer are more energy-efficient and robust than rotors, and handle buffeting winds far better.

Skeeter’s wings, the same weight as a dragonfly’s, support a vehicle thirty times the insect’s bodyweight. They flap faster than a dragonfly’s wings, too – the key to Skeeter’s gust-tolerance.

‘We’re actually beating the real insects – I’m quite pleased about that,’ says Professor Thomas. All these things should make Skeeter perfect for complex urban environments. Work is being funded by the MoD’s Defence Science and Technology Laboratory and its new £800 million Innovation and Research Insights Unit, but Professor Thomas also sees real humanitarian potential – for supporting relief efforts in earthquake zones, for example.

One goal is to make the drones cheap, he said, ‘so you can sacrifice them by flying them into hazardous zones when you wouldn’t want to put a person in there’.

The inspiration ultimately comes from his work in the Zoology Department when he ran the Animal Flight Group. ‘The aim fundamentally is to make beautiful things inspired by nature,’ he says.

www.animal-dynamics.com

Waxy races, here we come

A major obstacle to hydrogen-powered transport – lack of a safe lightweight on-board storage medium – may lie in a form of wax. Research at the KACST-Oxford Petrochemical Research Centre and elsewhere, written up in Scientific Reports, shows that hydrocarbon wax rapidly releases large quantities of hydrogen when activated with microwaves and catalysts. It means that instead of being burned and creating CO2, fossil fuels could be used to produce the wax for hydrogen fuel cells – non-flammable and with zero carbon footprint.

Read more: bit.do/waxy-races

Tree-ring ‘time-markers’ to aid archaeology

Trees that grew during intense solar storms carry ‘time markers’ that could help archaeologists date events from thousands of years ago. Tree rings for those years, such as 775 and 994CE, show sharp spikes of carbon-14, say the Oxford authors of a report in Proceedings of the Royal Society A. The evidence may be preserved in timber, papyrus and baskets too.

‘These secret clocks could reset chronologies concerning important world civilisations,’ said lead author Dr Michael Dee of the School of Archaeology.

Read the paper: bit.do/tree-ring
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Visions of paradise
Exquisite gospels uncovered in Ethiopia prove to be the missing link between ancient Petra and the High Middle Ages

Gospels preserved in an Ethiopian monastery for a millennium and a half have revealed avenues of cultural connection leading back to Pompeii and Petra, forward to the High Middle Ages, and northward as far as Armenia and Georgia.

Oxford classical archaeologist Dr Judith McKenzie has co-written *The Garima Gospels: Early Illuminated Gospel Books from Ethiopia* (Oxford: Manalar Athar), reproducing for the first time all the illuminated parchment pages in all three volumes in colour.

These volumes were once thought to be 11th-century, but radiocarbon dating has put the earliest two between the 5th and mid-7th centuries – earlier than the Lindisfarne Gospels and the Book of Kells. It has been corroborated by McKenzie’s art expertise and the textual analysis of her co-author, Professor Francis Watson of Durham University.

Testifying to the high culture of Ethiopia’s Christian Aksumite kingdom, the books exemplify at least two distinct styles of illumination, pointing to forgotten schools of art.

Among the illustrations is a pillared circular pavilion depicted also on walls in Pompeii, in rock at Petra, and in manuscripts of the 8th century and later. The Garima Gospels were made in the middle of ‘a gap of many hundreds of years’, Dr McKenzie says. ‘This is the key, the missing link.’

Ivory smuggling
Almost all ivory seized in illegal shipments is from elephants that died within the previous three years, it has been found. Radiocarbon dating and genetic analysis by Oxford and the University of Utah found 93.4% of 231 shipments came from such recently dead elephants – pointing to the 96 elephants killed daily in Africa. The findings, published in *Proceedings of the National Academy of Sciences*, suggest that well-oiled smuggling networks are in place to bring the ivory to market beyond the continent.

Read more online: [bit.do/ivory-market](bit.do/ivory-market)

Economic prediction the natural way
Mathematical modelling of natural processes may offer better tools for forecasting and avoiding economic downturns. Complex dynamics used in the physical and natural sciences could let us grasp ‘our collective effect on ourselves’, Professor J Doyne Farmer, Director of the Oxford Martin School’s Complexity Economics programme, said at the Mathematical Institute. The insight might threaten the ‘equilibrium’ concept behind conventional economic thinking, but he hoped it might also facilitate a computer simulation of the world’s major economies.

Read more online: [bit.do/economic-prediction](bit.do/economic-prediction)
**Going viral**

There may be a new weapon to fight cancer without harming healthy tissues – by giving patients a virus

A new ‘virotherapy’ being developed by Len Seymour, Professor of Gene Therapies in the Department of Oncology, uses an engineered virus to find and kill cancer cells but leave others unharmed.

Cancer cells are an easy ride for viruses: their self-repair tools are faulty; they don’t self-destruct like normal cells; and they keep on reproducing themselves. Introduced into the tumour, the virus would do its work directly. But it could also be injected intravenously, to travel around the body hunting down cancer cells developing elsewhere.

Ideally, it would be used when the cancer is at a very early stage. The virus has a further trick – it can turn the cancer cell into a drug factory for ‘potent anti-cancer proteins’, said Professor Seymour. Encoded into the viruses at DNA level, these ‘biologics’ are then produced exactly where they are most needed. With recent research showing that cancer cells escape detection by suppressing the host’s immune system locally, viruses could deliver immunotherapy to cancer cells throughout the body.

‘This approach provides incredible flexibility for targeted expression of pretty much any anti-cancer biologic,’ said Professor Seymour. Currently a candidate virus is undergoing Phase I clinical trials conducted by PsiOxus Therapeutics.

Read the paper: [bit.do/virotherapy](bit.do/virotherapy)
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When they started playing as folk group the Infamous Flapjack Affair in 2013, Oxford students David Carel, Sarah Noyce, Ben Barron and James Mitchell found a common interest in environmental issues. ‘I wanted to combine music and my studies in environmental sciences,’ says cellist James Mitchell, who came from Tulsa, Oklahoma, to take an Oxford MSc in Nature, Society and Environmental Policy. ‘I had an idea of travelling down the Colorado River and recording the Bach Cello Suites in natural soundscapes.’

The four formed the non-profit Widewater Institute to fuse art and music with environmental and social messages, and multimedia documentary project Confluence emerged as their flagship venture. Filmed in September, it follows the band through national parks along the Colorado as they learn about one of the planet’s most important, endangered river ecosystems. They turn their experiences into original music and play at festivals and small venues.

‘Landscapes really did take my breath away,’ says Mitchell, who also works in sustainable finance in maritime shipping. ‘But I was most taken with the people we met. From park rangers of the US National Park Service to Dianna Uqualla, whose tribe was forced out of the Grand Canyon when the national park was created, we’ve had so many fascinating encounters.’

The band plans to screen Confluence – endorsed by actor and environmentalist Robert Redford – at a major film festival this summer and bring it to schools and community groups across the US and Europe.

www.confluencethejourney.com
Out of the fire

Andrea Ashworth
Hertford, 1987

Andrea Ashworth arrived at Oxford secretly ‘deeply, awfully ashamed’ of the horrific domestic violence and poverty she had endured in Manchester. ‘Whispering encouragement to my poor, crushed mum while standing in the shadow of the Bodleian, I really sorely felt the doubleness of my life,’ Ashworth admits.

‘Oxford life seemed truly incredible to me, coming from a childhood with few privileges and almost no books, from a violent home in which it was sometimes dangerous to show interest in “too much learning”.’

On a fellowship at Yale, Ashworth felt a need to write about what had happened to her family. ‘It was almost as if I wasn’t sure which was real – the past or the present. I started to write about the past, hoping to put it in its place.’

Just 21, she began to jot down the vignettes that would become her bestselling autobiography, *Out of the fire*. Now in Los Angeles with her husband and two children, Ashworth helps mentor and support girls and women around the world through a humanitarian organisation, W4 (the Women’s WorldWide Web), brainchild of one of her sisters, Lindsey Nefesh-Clarke. ‘I would feel squeamish if I didn’t try to spread a bit of goodness.’

A head of steam

Bill Parker
Jesus, 1966

On the 150th anniversary of the London Underground in 2013, the magnificent locomotive Metropolitan Railway No 1 steamed along the original route through Paddington, Euston and King’s Cross to Moorgate. It was thanks to Bill Parker, whose interest in steam railway engineering began when he worked as an Oxford Station porter during University vacations while reading Geography, and ultimately replaced his career interests in commercial property valuation.

When British Rail Engineering announced the closure of Brunel’s Swindon Works in 1986, Parker set up a trust to keep working engineering alive there. In 1992 he purchased and restored a derelict engine house at the Flour Mill Colliery, in the Forest of Dean. After overhauling many historic locomotives, running steam on the Underground put the Flour Mill on the map. ‘Operating 19th-century steam engines on a 21st-century railway was just the most extraordinary opportunity,’ Parker says. ‘It’s important to preserve the engineering expertise to make projects like this happen.’

Bill Parker with a veteran locomotive in need of a little attention

www.theflourmill.com

Striking a chord

Mark Hussey
Linacre, 2002

Five years ago, Mark Hussey threw in his job as an Oxford biochemist at the Centre for Ecology and Hydrology to play electric guitar in France with a power trio. In his spare time he learned to read music and built up a classical, fingerstyle and jazz repertoire that allowed him to make a living performing up to two hundred times a year.

An agent who spotted his YouTube channel found him work on cruise ships. Prompted by audience requests for a CD of his music, he wrote a twenty-five minute piece of classical music that became his debut album – the *Concierto de los Sueños* (‘Concert of Dreams’) for guitar – with the help of orchestrator David Holland and Go West bass player Vinzenz Benjamin.

Right philosophy

Yves Bonavero
Harris, Manchester, 1996

At 43, Yves Bonavero turned from running a film production company, several charities and financial conglomerate Man Group PLC to take an Oxford degree in Philosophy and German. He had a lifelong interest in philosophy – and he liked the look of the brochures his son Olly brought home when applying (successfully) to Oxford. Bonavero returned to running his London businesses and became a thriller writer and a keen sailor. Twenty years on, he has endowed Oxford’s new Bonavero Institute of Human Rights. Based at Mansfield College and part of the Faculty of Law, it is led by Baroness (Helena) Kennedy QC. He hopes it will be ‘the epicentre for all human rights work at the university’.
Your global alumni network

There are now 221 alumni groups in 97 countries across the world and the network is enjoying unprecedented growth and success, writes Guy Collender.

From visiting a castle in Oman to drinking at Munich’s Oktoberfest, Oxonians are taking part in many activities organised by volunteer-led alumni groups. Alumni are coming together to share expertise and to socialise wherever they live in the world. The network is constantly expanding, and new Oxford University societies have been set up in the past year alone in Kosovo, Mongolia and Mumbai; in the US in the Great Plains and Philadelphia; and in the UK in Staffordshire, Bristol and Bath, and Cambridge.

Events cater to the professional interests and curiosity of a local audience and many also re-create Oxford’s traditions. For example, technologists have discussed semiconductors in San Diego, and UK groups regularly visit stately homes. Watching the men’s and women’s Oxford versus Cambridge boat races on television is always a high point in the calendar for groups from Bogotá to Strasbourg.

In addition, many groups provide bursaries for Oxford students to undertake educational trips during the vacation, from teaching English in Hong Kong to marine conservation in Cuba. Last year 31 groups organised parties for freshers before they set off from their homes to begin their studies at Oxford.

Of the 221 alumni groups, 126 cater primarily for Oxford alumni. The remaining 95 groups (94 of which are based overseas) are joint Oxford and Cambridge alumni groups.

Guy Collender (Keble, 1998) is Head of Alumni Communications and Marketing.

OUS Gloucestershire

With nearly 4,000 members, the alumni group in Gloucestershire is one of the largest and most active in the world. As well as organising lectures, dinners and concerts, members support current and prospective students. Sam Tolley (St Hugh’s, 1987), secretary of the group, says: ‘Our first admissions evening last year was an incredible success. More than 350 pupils from 15 schools took part, and they all said that they benefited from the event.’

OUS San Diego

The alumni group in San Diego only began in 2011, yet it already has nearly 300 members, ranging in age from their twenties to their eighties. Talks, pub quizzes, and theatre nights are organised as part of an annual programme of around 10 events. Catering to the local tech and academic communities, talks have focused on biotechnology and semiconductor engineering.
OUS Munich

Nearly 700 Oxonians in Munich and the surrounding areas take part in many social, cultural, educational and sporting events, including Oktoberfest. Last year members enjoyed a private tour of the Bavarian State Opera and an alpine excursion in addition to gallery tours, concert evenings, and a British summer Pimm’s party. Caroline Weimann (St Hilda’s, 2004), vice-president of the group, says: ‘Our events are increasingly popular and there are always new faces. We bring together alumni of all ages and try to cater for all interests. It is a very diverse group of people, yet they all share common interests and a common past through their time and studies at Oxford. Great friendships have developed.’

Oxford and Cambridge Society of India

Oxonians in India support local students to study at Oxford, via a scholarship programme going back 30 years. As well as annual fundraising events, the group also organises cultural events and lectures. Vikram Lall (Cambridge), president of the group, says: ‘Our 650 members are very welcoming and helpful, often supporting the activities of other Oxford and Cambridge societies across India.’

Oxford and Cambridge Society of Ghana

Alumni are making a difference in Ghana today by helping children learn to read. This recent initiative continues a strong tradition, dating back to the 1950s, of alumni coming together in the West African country. In 2012 a group was formally established for Oxonians, and a year later it merged with its Cambridge counterpart to form the Oxford and Cambridge Society of Ghana. Dr Emefa Takyi-Amoako (Wadham, 1999), co-chair of the group, says: ‘We strive to be a force for good – not only for the benefit of our membership of more than 100 alumni, but also for the Ghanaian community. Our members include distinguished alumni holding high political office as well as volunteers willing to read with children at libraries in Accra.’
**Birds of a feather**

Zoologist Tim Guilford strives to share the environments of the creatures he studies, he tells Georgina Ferry

My work life and play life are so tightly intertwined that the boundaries are not real,’ says Tim Guilford, Professor of Animal Behaviour at Oxford. His idea of a good time is sleeping overnight on the floor of a pitch-dark cave on the coast of Mallorca, to be wakened by hundreds of screaming birds scrambling over him as they head out to forage at dawn. While he has a passionate enthusiasm for caving, he visits this particular cave in Mallorca annually in his capacity as a research ethologist – to document the foraging strategy, breeding success and migratory behaviour of the critically endangered Balearic shearwater.

Guilford has been in Oxford since he arrived as an undergraduate in 1979. He had just read The Selfish Gene, Richard Dawkins’s classic work on evolution published in 1976 (see Oxford Today, Michaelmas 2016). ‘There’s a moment when you realise that ideas are central to everything,’ he says, and he successfully applied to New College to read zoology with Dawkins as his tutor.

He now holds a tutorial fellowship at Merton, where we meet in the hushed and civilised ambience of the SCR dining room. While Guilford loves Oxford – he says his department is ‘like being at a permanent conference, as thrilling as it is tiring’ – cities are not his preferred environment. Being one of the first into an unexplored cave system in Wales triggered a passion for wilderness that he indulges as often as possible. ‘Seeing amazing spectacles that are completely unchanged since they were formed is very moving,’ he says.

He also has a long-standing interest in flight, which led him to take up paragliding in the 1990s; he currently holds the British tandem paragliding open distance record with his partner Louise Maurice. ‘You might think it looks easy,’ he says, ‘but it’s an intellectual challenge like no other. You take your mind off it for 10 seconds and it’s over – you’re on the ground.’ How birds meet the cognitive challenge not only of staying aloft but of navigating in three-dimensional space over great distances has been one of the key questions of his research career.

‘I think getting as close as you can to the environment of the animals that you are studying provides you with ideas about how they solve their problems,’ he says. ‘You really see how the world looks from the bird’s perspective. You get a grip on the distances, a sense of dynamism of the air.’ He has had some memorable encounters while in flight: sharing thermals in South Africa with storks, and being buzzed by a curious peregrine five thousand feet above the Welsh borders. As well as caving and flying, he also takes to the water. He vividly recalls paddling his kayak out into St Brides Bay off the island of Skomer, Pembrokeshire, and being enveloped in fog, as shearwaters flew out of the mist across the front of his boat, ‘completely unfazed’.

For many years Guilford’s research subjects were not wild birds but homing pigeons housed in a loft at the zoology research station in Wytham. The first experiments involved watching them fly off from the release site and waiting with binoculars for them to reach home. But the advent of tracking devices tiny enough to attach to a bird’s leg or back transformed the questions it was possible to ask.

‘We were among the first to do experiments to see how classical manipulations [such as altering the bird’s sun compass] would affect the way birds move through their entire track,’ says Guilford. His former graduate student Dr Dora Biro continues the work with pigeons, now so precise that it can detect which pigeon in a flock decides the route they all take. Meanwhile Guilford has taken the technology into the wild, focusing on seabirds that make long annual migrations. ‘This is the really interesting problem,’ he says. ‘How do global navigators organise, cognitively, the information they need to fly around the globe repeatedly, when they’ve only got a brain the size of a pea?’

The Manx shearwater lends itself beautifully to this kind of research. It travels enormous distances (up to 25,000km or 15,500 miles in a year), but it nests in burrows in a small number of colonies on western coasts of the British Isles, where each pair of long-
lived birds returns faithfully year after year to the same burrow. They raise a single chick, returning from foraging trips to feed them at night, before flying across the Atlantic and the equator to winter feeding grounds off the coast of Argentina.

Guilford and his team haul them out of their burrows (risking a sharp bite) and fix miniature data loggers to their legs, to be retrieved and downloaded the following year. The devices log not only where the bird is and when, but whether it is on the water or in flight. ‘Immersion loggers allowed us to recognise that they almost always stop on the way to refuel, way out at sea,’ he says. ‘Nobody had seen that before.’ The new data has helped Birdlife International to put together a robust proposal for a Marine Protected Area in the middle of the Atlantic, which will also benefit other migrants such as kittiwakes and puffins.

Guilford’s interests now extend from navigation to broader ecological questions about life history and foraging strategies. He and his colleagues have established that in the breeding season shearwaters from all their study colonies, from Lundy off Devon to Rum in the Inner Hebrides, congregate to feed for up to ten days at a time in rich foraging grounds in the Bay of Dundalk, on the north-east coast of Ireland. ‘Shearwaters spend much of the time feeding their young,’ says Guilford, ‘and then go on long journeys and stuff themselves for self-maintenance. What is remarkable is that the two individuals in a pair coordinate this switching. If they both turn up on the same night to feed the chick, one of them will shorten their next journey and the other will lengthen it. But we have no idea how they communicate.’

The tracking devices have enormously increased the researchers’ powers of observation, but they also make it possible to do experiments. ‘If there’s a thread that runs through my research endeavour,’ says Guilford, ‘it’s to try to apply to field situations the control the laboratory allows.’ For example, shearwaters don’t notice if the researchers switch their chick for a younger one, and still raise it successfully even though that might mean having to do three weeks’ more work. However, the following year they are more likely to skip breeding. ‘Birds take sabbaticals if they are not in condition,’ says Guilford. ‘The slow breeding strategy that is typical of seabirds really is long-term – what
happens one year affects what happens the next.’

This kind of information is vital when developing a conservation strategy that is truly evidence-based – which is what brought the team to Mallorca. The Balearic shearwater breeds in caves on the Balearic Islands and then migrates out of the Mediterranean and up the Atlantic coast as far as Brittany. In recent years it has been seen in British waters. It is thought to have a global population of only 25,000, and at the current rate of decline – mostly due to commercial long-line fishing – the species will be extinct in less than 60 years. As part of a conservation project with colleagues from France and Spain, members of the Oxford team are tracking birds from the caves of Dragonera off Mallorca. They have established that birds that fail to breed spend longer on their migration. But so far none of the tracked birds has visited the UK. ‘We’ve got this population of a critically endangered species in British waters,’ says Guilford, ‘and we have no idea who they are, what age they are, where they come from or where they breed.’

Natural England is helping to fund the project, which otherwise depends on volunteer donors, including Oxford alumni (see www.campaign.ox.ac.uk/save-our-shearwaters). Strolling through Merton’s chilly quad in January, Guilford is eagerly looking forward to his next trip to the cave, just a few weeks away.
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It is by no means a new question, and that is the problem. Oxford, along with Cambridge, has been struggling for centuries with a ‘posh’ reputation. Modern attempts to broaden access at Oxford predate the First World War. Oxford colleges were established for poorer students as long ago as the thirteenth century; scholarships have been in place for hundreds of years. Today the University spends heavily to attract applicants from under-represented backgrounds. The access budget for 2017–18 alone is £6.5 million – higher than ever before. It has risen from £1.35 million in 2006–7.

This year, the proportion of privately educated Oxford students is at its lowest ever at 40%. But some people think that percentage is still too high, even when one in ten Oxford students now comes from very poor households earning £16,000 or under. Despite everything that the University, colleges and departments do – from bursaries to summer schools to visiting state schools countrywide to partnering with educational charity the Sutton Trust – in Vice-Chancellor Louise Richardson’s words Oxford is ‘still not meeting the most deprived students’. And so, in a move unprecedented in the University’s history, one college has taken the bold and controversial step to offer a foundation year to those who didn’t make the grade at A-Level.

The groundbreaking idea came to Alan Rusbridger, Principal of Lady Margaret Hall (LMH) and former Guardian editor, over a pint of Guinness in an Irish pub. On a visit to Trinity College Dublin in December 2015, he discussed why sought-after universities struggle to recruit students from ‘non-traditional’ backgrounds. Trinity College Dublin, he discovered, runs a highly successful scheme, which admits bright students with slightly lower grades than usual for university acceptance, if they have battled with socio-economic disadvantage. Inspired, and with the encouragement of Oxford’s new Vice-Chancellor – herself a graduate of Trinity College Dublin and not from a moneyed background – Rusbridger has made it the focus of his first year at LMH to bring the scheme to Oxford.

Last autumn, the first ten new students began LMH’s ‘Foundation Year’, reading subjects ranging from Law to Music to Biology. They live in college for a year and are treated like undergraduates, but with all fees, accommodation and other basic expenses covered. If they perform as well as the college expects, most, if not all, will qualify to embark on an undergraduate degree at LMH this October.

On the basis of their academic results alone, none of these young people would have secured an offer at Oxford under the usual admissions process. But each has demonstrated exceptional intellectual potential as well as dedication and resilience. The seven girls and three boys come from a range of ethnic backgrounds, and from homes with an average annual household income of just over £13,000.

In the words of Jumana Haque, a Foundation Year student from east London, ‘In my area no one really thinks about going to Oxford or Cambridge, because it just seems like something that’s unattainable.’ Michael Clark, from Liverpool’s deprived Walton area, says: ‘Although I went to a mildly selective school, I didn’t really know what Oxbridge was. It was kind of alien to me.’ Varaidzo Kativhu lost her father while young and grew up in straitened circumstances in the West Midlands. She recalls how teachers at her (averagely good) school frowned or rolled their eyes when she dared to voice dreams of Oxford; for her personal statement, she was encouraged to write about liking football and McDonald’s. ‘You’re doomed,’ she realised.

The scale of Oxford’s inaccessibility to such students hit home to Dr Jo Begbie, the Foundation Year’s...
coordinating tutor, when she realised some did not have the money to pay for a coach ticket to Oxford, even though they would be subsequently refunded by the college. ‘It was sobering’, Begbie says.

Cliona Hannon, director of the Trinity College Dublin scheme, has affectionately described Rusbridger’s bold move as ‘bloody-minded’. But increasingly, Oxford is recognizing that context is crucial to a fair application process, and 2016 admissions data shows that applicants flagged as being disadvantaged are shortlisted and given offers at a higher rate than for all UK-domiciled applicants. The Vice-Chancellor is actively supporting the Foundation Year. When she arrived at Oxford determined to improve access, she says, ‘I expected resistance… dons who thought that excellence was found only in people who looked and sounded like them and that excellence was the only criterion that mattered. I was completely wrong… I found universal support … and also encountered a certain frustration that we hadn’t achieved more.’

Any academics who recruit students at interview in their own image – consciously or unconsciously – are not going to get away with ignoring ‘flags’ for much longer. The University currently strongly encourages training for all interviewers on ‘unconscious bias’ and ‘cultural awareness’. Samina Khan, Oxford’s Director of Undergraduate Admissions and Outreach, strongly supports such training.

Coincidentally, the same training was urged by the former higher education minister, Tottenham MP David Lammy, in a heated exchange at a symposium on access held at LMH in January. ‘As a black politician serving the most diverse constituency in the country, I find it worrying that there’s a roar of “Oh, we can’t possibly be racist,”’ he said. ‘When I speak to my constituents and they come into an institution like this … for an interview … and they’re coming from a tower block on Broadwater Farm on the 15th floor, a Somali girl … the burden is on this institution to demonstrate there’s no unconscious bias.’ He noted that posters in New York’s Harlem advertising Harvard have no equivalent in Britain. Later he told Oxford Today that for his constituents coming to interviews at Oxford, ‘It’s still very intimidating, despite the outreach… Individual colleges are doing great things … but is that happening across the board? There’s more to do.’

The problem is bigger than Oxford, of course. Vicious cycles of inequality – financial, social, educational – affect the whole country. An outdated and inaccurate media reputation (that dreaded word ‘posh’) reaches prospective applicants, their teachers and parents. Moira Wallace, the Provost of Oriel, has been chairing a review of access and notes that unequal application rates are a significant problem.

The Sutton Trust reports that 43% of state secondary school teachers simply do not advise bright pupils to apply to Oxford. And the application figures bear this out. Of the pupils with the highest grades, 37% from independent schools apply to Oxford, and just 25% from state schools. Of the latter, only 14% are from the most disadvantaged postcodes. There are also significantly fewer applications from pupils outside the South-East of England.

Wealthier pupils are often more confident, thanks
to familiarity with Oxford and routine interview coaching at private schools. Rusbridger and the University have publicly voiced distaste for (the numerous) companies like Oxbridgeinterviews.co.uk, which charges £1,075 for a two-to-three-day ‘platinum’ course coaching for Oxford interviews. LMH Physics tutor Professor Todd Huffman notes: ‘The moment you publish all of your criteria and results – everything you need to get into this place – then those who have resources will do everything in their power to make sure they have the very best chance of meeting those criteria.’

By contrast, says Rusbridger, the Foundation Year students are ‘completely unentitled’. As Michael Clark, the Liverpool student, puts it, ‘I couldn’t compete in the race.’ Yet the combination of raw talent, a strong work ethic and determination makes these students – often substantially self-taught – precisely the kind most desirable for a top-league university. Huffman, who tutors on the Foundation Year scheme, has been ‘extremely impressed’ by ‘their voracious appetite for the material’.

When a college starts to take flags seriously, it appears to have a ‘ripple effect’: more underprivileged pupils are encouraged to apply. More than half of Univ’s UK intake this year are ‘flagged’, now its own new access scheme is gaining publicity. Dr Andrew Bell, Senior Tutor at Univ and architect of the Opportunity Programme, says other colleges could learn from the scheme too. ‘I hope the model will spread – we’d be interested in collaborating in future.’

In Rusbridger’s view, the current drive to widen access to students from disadvantaged backgrounds is analogous to the Victorian campaign to allow women into Oxford – which was pioneered by LMH against huge resistance. Rusbridger notes: ‘There’s an arc of history here that says it’s rather appropriate that LMH should be pioneering another kind of scheme which is for people who are in many respects excluded from an Oxford education.’ The funding for the first three Foundation Years at LMH – approximately £750,000 – has come from just a handful of alumni, but it doesn’t look as if the money will run out.

Whether other colleges take up Rusbridger’s experiment remains to be seen. But Samina Khan, whose office is responsible for access in general, acknowledges that the University could do more to join up a variety of access and outreach projects. Though the Conference of Colleges has an active central admissions committee, and though there is so much on offer, still there exists no single website with links to all the different projects.

One thing is certain, though, and that is how much the Foundation Year means to its first students. Jumana Haque is delighted with her study of Physics, and Fatima Arif with Biochemistry. Michael Clark plans to get a doctorate and continue his study of Mathematics, while Varaidzo Kativhu says: ‘Every week I get to walk into the Classics faculty and they’re interested in me. It’s totally changed my life. Every university should have a foundation year.’ She hopes, one day, to work in international development and ‘make a change’ in the world.

Cliona Hannon (centre), Director of Trinity Access Programmes (TAP), at Trinity College Dublin

Olivia Gordon is an Oxford-based writer and journalist and regular correspondent for Oxford Today.
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Half a century ago, he helped to devise the Standard Model, a major step towards a ‘theory of everything’. Then, as Director General of Cern in Geneva, he oversaw the birth of the world’s biggest experiment, the Large Hadron Collider. At the turn of the millennium, he moved on to taming the power of the sun in the most ambitious nuclear fusion programme of the day.

Today, Sir Chris Llewellyn Smith (New, 1961) divides his time between pulling together a remarkably diverse pool of experts, 200 or so, who lead Oxford University groups addressing the challenges of providing the world with sustainable energy, and working as the president of the council of Jordan-based Sesame (Synchrotron-Light for Experimental Science and Applications in the Middle East), a scientific research centre.

Members of his Oxford Energy Network want to help crack the great energy conundrum – how to cut carbon emissions and curb dangerous climate change when the global appetite for energy seems unquenchable.

Or, to put it another way, how can Oxford help save the world?

Strangely enough, elephants preoccupy much of Sir Chris’s thinking. There’s a herd of them lumbering around that Earth-sized room we call the global climate system: critical global energy issues, yet relatively undiscussed in the great climate debate.

Perhaps the biggest (‘a mammoth!’ he declares) rests on the realisation that worldwide efforts to cut carbon have not focused enough on the biggest target – the nearly 40% of all primary energy we use as heat (almost as much ends up as electricity, while transport accounts for around 25% per cent). Decarbonising heat production should get much greater priority and, when it comes to the UK, will be particularly hard, says Nick Eyre (Balliol, 1974), Professor of Energy and Climate Policy at Oxford’s Environmental Change Institute.

He cites data from the Committee on Climate Change that heating and hot water for buildings are responsible for 20% of the UK’s greenhouse gas emissions.

One focus should be decarbonising high-temperature processes in industry. In Oxford’s laboratories, various technologies show promise. A solar cooker trialled by Emeritus Professor of Physics Nick Jelley (Balliol, 1965) in Tanzania to replace toxic cooking fuels could find industrial uses. ‘Market research for a solar cooker and in industrial processes, for example for melting scrap aluminium, is now being undertaken by the company FuturEnergy,’ he says.

But while solar offers one way to decarbonise heat in hot countries, it is not so straightforward under the grey skies and snowy winters of colder latitudes, where there is a ‘mountain to climb’, says Sir Chris.

Another wrinkled pachyderm obstructs the path to peak heat decarbonisation: if we simply electrified heat generation, we would have to cope with hugely fluctuating electricity demand, rising by 70% in midwinter. To maintain sufficient electricity generation infrastructure to cope with this surge for a few cold months would be unsustainably expensive.

While there is no one-size-fits-all approach, Eyre believes the current mix of methods to cut carbon, from energy efficiency to renewables, will have to expand to include hydrogen. This can be made either from natural gas (which would require capturing carbon dioxide) or by electrolysis of water (which would only be economic if electricity becomes very cheap) and distributed by converting the...
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existing natural gas grid to provide heat, and also possibly electricity by the use of fuel cells.

Behold more bellowing, trumpeting and ear flapping. Sir Chris suspects that the public responsiveness to decarbonisation would be more urgent if greater emphasis was placed on reducing air pollution in the here and now. 'People do not talk about the large number of deaths caused by burning coal and gas in power stations and petrol and diesel in cars,' he says (though awareness has risen in the wake of the Volkswagen emissions scandal). It does not seem to have sunk in that around 9,400 Londoners die as a result of air pollution each year. Sir Chris points out that pollution from fossil-fuelled Didcot power station over its lifetime probably killed 100 times more people than the world’s worst nuclear disaster, Chernobyl.

Sir Chris’s next troublesome tusker is lack of public awareness, not of decarbonisation itself but the challenge of its jaw-dropping enormity: with fossil fuels constituting nearly 90% of our primary energy, and wind solar and geothermal providing only 1.8%, drastic cuts in our dependence on carbon will be necessary to avoid a rise in the numbers of storms, floods and other extreme climate events.

To stop temperatures from rising, carbon dioxide emissions need to end. That 100% cut needs to fall like a guillotine if we are to keep below the two-degree celsius target – beyond which climate change risks become unacceptably high, according to the International Energy Agency and the Intergovernmental Panel on Climate Change. But to achieve this, 'the numbers are stark,' explains Cameron Hepburn (Magdalen, 2000), Professor of Environmental Economics at the Smith School and the Institute for New Economic Thinking. Even making the heroic assumption that all other sources of greenhouse gas emissions meet their targets, we would either have to stop building new carbon-emitting electricity infrastructure this year, or offset new infrastructure by retiring existing plant or adding carbon capture and storage (CCS) technologies. The latter sounds an easy fix but is expensive and ‘CCS technologies are not scaling up at the pace required,’ says Hepburn.

Harnessing the sun’s rays has always been a major goal, given that as much solar energy strikes the Earth’s surface in a couple of hours as the world consumes in energy annually. Dr Bernard Wenger, who works on solar power in the Clarendon Laboratory with Professor Henry Snaith, puts the challenge into perspective: to meet global demand in electricity, we would have to cover a surprisingly small land area with solar panels. ‘If we installed solar panels at the rate we deforested the world in the last decade or so, it would take just seven months to satisfy the current global demand for electricity,’ he points out. According to Sir Chris, it would only take a sunny area the same as that of the British Isles (less than 0.1% of the world’s land surface) to meet all the world’s energy needs.

In his laboratory on Parks Road, Professor Snaith is leading research into perovskites, a family of materials with a particular crystal structure. Efficient light-harvesting perovskites are obtained when metals (such as lead) and halides (such as iodide) bind to organic molecules. Their ingredients can easily be modified so they can be designed to capture different wavelengths, allowing them to harvest more sunlight than conventional purified silicon cells. And while the most efficient commercial silicon cells need to be baked above 800°C, perovskites can be made at low temperatures, and some 200 times thinner too.

‘It would only take a sunny area the same as that of the British Isles – less than 0.1% of the world’s land surface – to meet all the world’s energy needs’

Thanks to fundamental research on perovskites, for instance with his fellow Clarendon professor Laura Herz, Snaith has watched a dramatic increase in power conversion efficiency (the fraction of sunlight that can be turned into electricity) from 3% in 2009 to as high as 22% today. Snaith’s spinout company, Oxford PV, wants to use hybrid perovskites initially to enhance conventional silicon PV cells, made at a pilot plant in Brandenburg on Havel, Germany. Production will start in the next 18 months and, if they prove robust enough, it may eventually be possible to make perovskite sandwiches that can turn extraordinary amounts of sunlight into electricity, or cheap perovskite paints that will enable whole buildings to harvest sunlight.

Enter another wrinkled grey body that’s too big to ignore. ‘Headlines now say that it is cheaper to generate electricity with wind than burning gas – so isn’t the problem solved?’ asks Sir Chris. He knows the answer only too well. No. ‘Being cheaper is a necessary but not a sufficient condition because you’ve got to deal with uncontrollability. When the wind blows at night, the energy made by a wind farm is valueless – there are companies in Texas that give it away. Furthermore, the price will rise when you add the cost of integrating wind and solar power into the grid.’

The Oxford Martin Programme on integrating renewables is addressing the knotty problem of how to integrate fluctuating renewable power into the grid. This will require a blend of approaches: reducing and shifting energy demand, which is being studied in work led by Eyre; more energy storage; beefing up the grid; and flexible backup for when the wind is not blowing, the sun not shining and other measures fall short of keeping the lights on. Finally, the right incentives will be needed to produce a mixture of these measures that minimises the overall ‘system’ cost. Research on storage technologies is being led in Oxford by Peter Bruce, Wolfson.
Professor of Materials, who helped develop rechargeable lithium ion batteries that revolutionised portable electronics. We have grown accustomed to a dizzying rise in computer power, which for decades held true to a 1968 prediction by Intel’s Gordon Moore that transistors per circuit would double every two years. But in energy storage, Bruce believes only modest gains are likely. ‘Thirty per cent increase is a big deal. There is no Moore’s Law in energy storage.’

When it comes to storing renewable energy, relatively cheaper sodium ion battery technology looks promising. Meanwhile lithium-sulphur and lithium-air technologies, where his team and others have advanced understanding of fundamental chemistry, could provide a step change in decarbonising the automotive sector. ‘Battery technology is the barrier preventing us from moving to full electric vehicle use,’ he says. At the grid scale, part of the solution may lie in much cheaper flow batteries, and in converting power to gas (hydrogen or ammonia) and back again – all of which are also being studied in Oxford.

To deliver the incentives to minimise the overall cost of integrating renewables, Cameron Hepburn – among others at Oxford – is addressing how to engineer markets to deliver the best result for all. One avenue is the consumer-operated market, doing away with middlemen by using the blockchain technology pioneered for bitcoin transactions. ‘This is a problem I regard as urgent,’ says Sir Chris. ‘If we do not fix the market to drive us to some solution that minimises overall cost before it is necessary, we will end with the wrong solution. That is a big elephant.’ In short, decarbonisation will require a wide portfolio of technologies and policies, although another elephantine issue looms in the belief that a magic bullet or two might lead to a great leap in clean energy production.

The best-known example is fusion power, which has the potential to provide 30 years of power for one person from the lithium in a single laptop battery and deuterium from a bath full of water. Over the past half century, glinty-eyed fusion proponents have forecast that it will take 50 years to build a commercial fusion power plant. Alas, they are still making the same prediction and Sir Chris now doubts that fusion will be competitive. ‘The cost of wind and solar have come down faster than anyone could have dreamt, while it looks as if the cost of fusion power will be higher than we thought a decade ago.’ However, in Cadarache, France, construction of the £14.3billion International Thermonuclear Experimental Reactor (Iter) continues. Latin Iter means ‘the way’; it can also mean ‘journey’ and, with full power now delayed until 2035, cynics carp that the road remains inordinately long. The project has gone ‘way, way over budget’, admits Sir Chris. As a previous chair of the Iter project board, he remains convinced that the reactor is needed to establish the scientific viability of fusion. Even so, he adds that a reassessment of fusion should come before any decision on whether to build an actual fusion power station.

A more optimistic view of fusion comes from Professor Steven Cowley (Corpus Christi, 1978), former CEO of the UK Atomic Energy Authority, now President of Corpus (and the first scientist to hold the role). Although a clutch of boutique experimental concepts has garnered much recent publicity, he still rests his optimism on the solid work behind Iter. The world’s most successful fusion factory, the Joint Global Energy Futures
European Torus at Culham, has recently finished building a £45 million upgrade of the smaller Mast device (Mega Amp Spherical Tokamak) to explore cheaper and quicker-to-build fusion reactors, reaching towards the theoretical smallest size of about three metres in diameter.

Despite this herd of issues, can we avert potentially disruptive two-degree warming? The good news is that, in the wake of the Paris climate agreement, 20 countries pledged to double funding in clean energy research to $30 billion (£24 billion) over five years. The bad news is that, relative to the riches poured into extracting carbon (fossil fuel subsidies approached a jaw-dropping $500 billion in 2014) the world still invests too little money and brainpower in this, the most pressing issue of our age. Fusion, for example, has had a pitiful investment relative to its potential, though China is now taking serious interest, planning its China Fusion Engineering Test Reactor, which will be even bigger than Iter, by 2030.

Some are bullish, with Snaith arguing that the challenge is ‘hard but entirely doable’. He insists: ‘We are up to solving this problem as a species, not letting it wipe us out.’ Sir Chris agrees with him, but thinks that with so many elephants jostling for more attention it is unlikely that the solutions will be implemented quickly enough to keep atmospheric CO2 below 450 parts per million. On the other hand, he says, ‘The implantation of low-carbon technologies is picking up momentum, independent of governments, and the vigour with which students at Oxford and elsewhere are addressing the issues gives grounds for the optimism needed to succeed.’

Roger Highfield (Pembroke, 1976) is an author, science journalist, broadcaster and director of external affairs at the Science Museum Group. During his research career, while working at the Institut Laue Langevin, he was the first person to bounce a neutron off a soap bubble.

Oxford’s energy powerhouse
The grand challenges of climate and energy are being tackled by a dazzlingly diverse array of researchers at Oxford

From lawyers to chemists, economists to engineers, Oxford’s climate and energy researchers can be found at www.energy.ox.ac.uk. Some teams focus on transport. The head of the Energy and Power Group, Professor Malcolm McCulloch, worked on the Morgan LifeCar, a hydrogen sports car, while Paul Newman, BP Professor of Information Engineering, is a leading expert on self-driving cars.

Novel approaches to solar are being probed. Moritz Riede, Associate Professor in Soft Functional Nanomaterials, works on solar cells made of molecules similar to many common organic dyes. Peter Edwards, Professor of Inorganic Chemistry, alongside fellow chemist Tiancun Xio, is working with the Chinese Academy of Sciences, coal producers in China’s Shanxi Province, and Saudi oil producers on catalysts to turn carbon dioxide directly into fuel.

New sources of biofuel are being studied, such as plants with crassulacean acid metabolism (CAM) including prickly pear and Euphorbia tirucalli, adapted to arid conditions by evolving leaf pores that clamp shut by day to cut water loss and open by night to collect carbon dioxide. In place of growing corn, sugar cane and traditional biofuels on prime agricultural land, CAM species grown on unproductive land can make a huge contribution to sustainable biogas production. Oxford Martin fellow Dr Mike Mason estimates it would take no more than 12% of available semi-arid land to match natural gas’s five petawatt hours of electricity per year.

Rethinking industrial processes is another priority. Professor Edman Tsang of the Department of Chemistry, with several UK universities and companies such as Johnson Matthey, is studying catalysis for carbon capture and re-use, and catalysts for greener industrial processes. Others place emphasis on understanding consumers. Dr John Holmes, senior research fellow in Earth Sciences, is co-leader of the Smart Villages initiative, which aims to find the barriers to energy access in villages in developing countries – technological, financial and political – and how to overcome them.

And, of course, there are those who seek the big picture. Among them is Alex Halliday, Professor of Geochemistry, who is leading an energy programme for the Royal Society which includes carbon capture and use, energy storage, and novel energy harvesting methods, aiming to report towards the end of 2017.

This diverse range of University-based researchers is bolstered by a huge web of influential alumni. Oxford is in contact with 800 members of this talented diaspora, including Lord Oxburgh (Univ, 1953) who reported last year on carbon capture and storage as a priority for Britain; Richard Nourse (Univ, 1983), managing partner of Greencoat Capital, one of the UK’s largest dedicated renewable investment management firms; E.ON UK chief Tony Cocker (Lincoln 1978); and Oxford Martin visiting fellow Stephen Heidari-Robinson (Lady Margaret Hall, 1992), who was David Cameron’s energy and environment adviser.

There is ‘something about Oxford itself’, adds alumna Juliet Davenport (Merton, 1986), chief executive officer and founder of Good Energy, which helps homes and businesses to be part of a sustainable solution to climate change. ‘Oxford, like Cambridge, is known for academic excellence but has produced more prime ministers. Energy is so intertwined with society that, at its simplest, we need this powerful combination of policy and science if we are to make massive strides forward.’
From the dawn of British cartography in the sixteenth century, maps were made in civilian and military forms, separate and distinct from one another. Civilian maps favoured the bird’s-eye view, while military ones were constructed with a strict ‘ichnographic’ viewpoint from directly above – the norm today. Maps of Oxford illustrate this distinction, which persisted into the eighteenth century. Victorian scholar Herbert Hurst compared the experience of reading Ralph Aggas’s 1578 map of Oxford to flying slowly over the city in a balloon, a wonderful way of describing the experience of the bird’s-eye view. This is completely different from Captain Sir Bernard de Gomme’s carefully sketched 1:10,886 ichnographic, top-northwards plan of the city under siege, completed in 1646 as the Civil War raged.

More intriguing still is the role of Oxford in solving the curious paradox of why the civilianisation of mapmaking led almost immediately to the near-universal adoption of the ichnographic perspective that had been the hallmark of the military map. When the civilians won control of the profession, why did civilian aesthetics lose? Part of the key to why the aesthetic split had taken place at all lies in the word ichnographia, believed to have been coined by Vitruvius – the best-known architectural thinker of classical antiquity, and an artillery officer tasked with the design, maintenance and deployment of ballistas and other giant siege-warfare machines of that pre-gunpowder era. Tellingly, the oldest instance of the adjectival form ichnographic in the Oxford English Dictionary, from 1695, is in the context of the ‘projection of any regular fort’. To put it crudely, battering an enemy settlement into submission was ‘architecture in reverse’. It stands to reason that military plans of towns and camps would take on the quality of gigantically elaborate architectural drawings. Meanwhile non-military maps, like paintings, were free to focus on their subjects’ socio-economic, political, and aesthetic importance: to be, in the words of Roger Kain and Richard Oliver, ‘paper surrogates for the townscape’, and decidedly not ‘an aid for those out and about on the ground’.

Thus, at the end of the Elizabethan period, the ichnographic perspective – like the use of a strict scale – was effectively limited to maps of fortifications and militarily significant seaports; and over the course of the seventeenth century, the distinctive civilian and military mapping traditions continued to evolve side by side, with neither yielding to the other in any point of accuracy or skill. In Oxford’s case, it is instructive to compare de Gomme’s 1646 map with the elaborately pictorial 1:3,265 effort by David Loggan, published by the University in 1675. Though very up-to-date with regard to features on the ground, including the Sheldonian – where it would have been printed – Loggan’s map preserved the bird’s-eye, south-at-top format that had dominated civilian maps of the city made over the preceding hundred years. Remarkably, as late as 1728 Robert Whittlesy would engrave a 1:2,520 version of Aggas’s spatially flawed but jolly romantic map of 1578, the one Hurst compared to a balloon flight. Even at the start of the reign of King George II, many non-military maps retained an impressionistic, non-scientific character. But something changed, and within a few years civilian maps adopted the plan view, the utilitarian approach of getting from A to B, that underpins mapping right up to Google. The last battle on British soil was fought in 1746, and though foreign invasion remained a threat, a Europe-wide shift in doctrine away from sieges and toward engagements in open country meant that many fewer military maps of British towns were produced from this point onward. Civilian cartographers soon outnumbered their military counterparts – a process not unconnected to the emergence by 1771 of the new profession of ‘civil engineering’, so named specifically to distinguish it from its military forebear. One lonely forerunner of this process of transformation was a splendid 1:1,200 ichnographic map of London created in the 1670s by John Ogilby, inventor of the road map, dancing master, lottery winner, sometime actor and impresario. Ogilby was...
residents had always taken an interest in advanced cartographic techniques. Christopher Wren, for example, was keenly concerned with surveying before his architectural career began, in his guise as Oxford’s Savilian Professor of Astronomy. And the University had already, by Wren’s time, produced a string of giants in the fields of geography and cartography that included Humphrey Lhuyd (1527–1568) and Robert Hues (1553–1632), both of Brasenose; Richard Hakluyt (c. 1552–1616) and William Camden (1551–1623), both of Christ Church; and John Norden (1547–1625) of Hart Hall.

Unfortunately, the inception of the Williams–Toms collaboration remains shrouded in mystery, but it is not unreasonable to suppose that it was Oxford University Press that brought these two very different men together. In any case, the University’s status as a centre of Welsh learning in the early modern period should be obvious from the above list of responsible for the first ichnographic map of Oxford in a non-military context, albeit at a tiny scale within his famed road book, Britannia (1675). But Ogilby had served as a soldier in the Duke of Buckingham’s ill-fated Île de Ré expedition of 1627, as well as in the Royalist cause in Ireland in the 1640s (under future Oxford University chancellor the Earl of Ormond). He might simply have seen himself as an old soldier.

More significant is a curious project of Oxford University Press called Oxonia Depicta, half a century later in 1726—a date that signifies the start of the ichnographic mapping revolution and the demise of the bird’s-eye view approach. Both the magnificence and the influence of this royal-folio-sized tome, which was finally published in 1733, would be hard to overstate. A single gilt red-morocco-bound copy once owned by the Duke of Hamilton achieved a price of £8,125 at Sotheby’s in 2009. The project brought together a Welsh civilian surveyor named William Williams with a talented engraver from a London naval family, William Henry Toms. Hailed as one of Britain’s top practitioners of the art of engraving in 1726, and perhaps selected to work on the Depicta for that reason, Toms would go on to create the largest map of America to be printed in colonial times, and develop what the Oxford Dictionary of National Biography calls ‘a particular expertise in engraving maps and plans, many clearly intended for naval instruction and aimed at naval buyers’. It adds: ‘His output in this field was prolific and his naval connections allowed him to respond rapidly to contemporary events.’

With Toms at the helm of Oxonia Depicta, the 150-year-old Aggas–Speed–Hollar–Merian–Loggan–Lea–Whittlesey consensus that Oxford should be mapped using a bird’s-eye perspective suffered a sudden death. Though individual buildings would still be presented as bird’s-eye views on their own pages, the book’s 1:3,168 map of the city itself was rigidly ichnographic.

Certain University members and other Oxford
Why are maps cool again?

In the spring of 2010 I was having a drink with an old friend, a Lincoln College alum who teaches cartographic history, writes Dan MacCannell. He said a prospective student had asked him, ‘Will it be okay that I can’t read a map?’ It seems an entire ‘You Are Here’ culture, articulated by sat-nets and other mobile devices, is rapidly erasing a set of skills considered fundamental since before living memory. To the fabled ‘man in the street’, maps could soon be defunct – in spite of, or perhaps because of, the much-vaunted globalisation of nearly everything.

Even so, despite having fallen off the edge of map-use as a personal skill, the woman still wanted to take my friend’s class. For, in what seemed like the blink of an eye, old maps have become cool. We should have seen it coming. After all, mechanical wristwatches were just ‘wristwatches’ until the digital revolution of the early 1980s inspired millions of us to circle the wagons around them. We have seen unexpected revivals in the use of gliders, balloons, and dirigibles, decorating with antiques, making ice cream and butter at home in wooden churns, hand tailoring, and pesticide-free agriculture. For nearly every technological great leap forward there has been an equal and opposite reaction, hyped as ‘retro’ or decried as ‘Luddite’ but often underpinned by sound environmentalist or aesthetic principles or by cost considerations.

The current revival of interest in ink-and-paper maps and their makers goes well beyond this. Old maps have emerged steadily over the past two decades from a monomaniacal coins-and-stamps atmosphere, in which ‘advanced’ publications on the subject often seemed to cover the same map over and over again in ever-increasing detail, while ‘introductory’ books covered such an array of map scales, projections, time periods, and territories as to be bewildering. Books about maps have benefited, and benefited from, the transformation of map collecting into something much more recognisably related to the art-and-antiques world.

The impetus behind the new-found popular interest in old maps of cities in particular is that the world since 2007 has had a majority-urban population for the first time in its history. However, cities are not simply growing; they are getting smarter. The next step, abetted by the ‘internet of things’, will involve geo-locational information being communicated collaboratively and ever more seamlessly between and among phones, vehicles, sensor networks, and even clothing. But for anyone who prefers retro, we can still buy bird’s-eye views of modern Oxford, on paper, from coin-operated machines at the railway station.
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Every Holocaust history is disturbing to read, but by focusing on victims’ voices which have traditionally been silenced – those of women – Dr Zoë Waxman’s new account is one of the darkest, and most shocking.

*Women in the Holocaust: A Feminist History* is Waxman’s third book, following works on Anne Frank and Holocaust literature. But the idea of a feminist history has been brewing for ten years in the mind of the historian and genocide expert, who is based at Oxford University’s School of Oriental Studies.

As a graduate student Waxman once asked a leading Holocaust historian about the female victims who didn’t sacrifice themselves for their children. He replied, ‘Well, most women did.’ She recalls, ‘I was sure that wasn’t true. Suffering doesn’t make all people behave in a heroic way. I found myself frustrated with discussions representing women in the Holocaust in a one-dimensional way – as mothers or caregivers, as unproblematic victims.’

A feminist history rocks the status quo. ‘Even the most recent books – books that claim to deal with gender – have index entries on “women” but none on “men”,’ notes Waxman. ‘The assumption, presumably, is that the normal experience was male, and women were a special category.’ Feminism remains a blind spot for Holocaust studies, she believes. ‘People think looking at gender somehow lessens the atrocity – it’s wrongly seen as a softer topic,’ she says. ‘And history is still a very male-dominated subject. Various colleagues have said it’s not a very sensible idea to write a feminist history – no-one’s going to be remotely interested.’

Waxman’s work has led her to conclude that in general, women suffered more than men in the Holocaust, largely because of their biological role as child-bearers. Pregnant Jewish women had forced abortions, and any visibly pregnant woman arriving at Auschwitz was immediately sent to death, as were women accompanying children.

There is also the little-discussed history of the rape and sexual abuse of Jewish women during the Holocaust. Although both men and women were degraded, dehumanised and desexualised, Nazis acting with ‘violent, murderous sexism’ also targeted female prisoners for brutal sexual violence. After the war, many female survivors were sexually assaulted by fellow survivors and by liberators. Female victims’ experiences differed from men’s in all sorts of ways. Jewish women found it easier than men to pass as ‘Aryan’ because they weren’t circumcised and had often had a more secular education. Orthodox Jewish women’s hair was shaved previously as a tenet of faith (questionable in itself), but when it was done in the camps ‘something that was meant to be a private ritual at home became a public spectacle’.

Waxman’s research has led to ‘furious arguments with colleagues’. After a lecture she gave on the rape of Jewish women, one colleague said, ‘So what?’ The implication was that rape was not a particular feature of the Holocaust, so who cares? Waxman recalls: ‘I found this so enraging.’ It only spurred her to research these hidden stories further – and to question why they have remained hidden.

Since the Seventies a small body of feminist literature has developed about the Shoah. But Waxman’s work builds on this with a modern understanding, for example that the stripping of women’s clothes was a form of sexual violence. She dispels the long-assumed myth of feminine martyrdom to reveal a yet more tragic truth. Among the most terrible stories is that of Holocaust survivor Ruth Elias, a pregnant woman who fell into the hands of the sadistic Dr Mengele at Auschwitz. He allowed her to give birth but bound her breasts to see how long it took for her baby to die. When he lost interest after six days of watching the baby turn into a barely living skeleton, he told Elias both would be gassed. Knowing her daughter had no chance of survival, and that all women with children were killed too, Elias saved herself. She killed her baby by injecting her with morphine and told Mengele the child had died in the night; he could not find the body, hidden in a pile of corpses. No longer linked with a child, Elias was spared the gas chamber. Waxman writes: ‘She was only 22 years old and not yet ready to die herself.’


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> **Uncovering a more tragic truth**

Women victims of the Final Solution have been silenced first by the Nazis, then by history, argues a compelling new study reviewed by **Olivia Gordon**
The Making of the Oxford English Dictionary

John Garth reviews Peter Gilliver’s remarkable history of what has come universally to be referred to merely as ‘the OED’

Peter Gilliver’s authoritative history of the making of the OED testifies to the dedication of Dictionary staff and their predecessors since its beginnings in the 1850s. First editor James Murray would put in a couple of months of 80-hour weeks to finish a letter-section. After one such prodigious effort in his chilly scriptorium, Murray wrote on the slip for *dziggetai* (a mule-like Mongolian quadruped): ‘Here endeth D, 11pm, 24th November 1896,’ and (in Greek) ‘To God alone be glory.’ As Gilliver says, ‘You have to love your work to do something like that.’

Simon Winchester’s very readable *The Meaning of Everything* (2003) has been ‘a great enthuser’ for interest in the Dictionary, but this new history, by an associate editor of the *OED*, ‘is the one with footnotes’. At 300,000 words, it has grown far beyond the original remit: ‘I just kept on finding things I couldn’t not write about,’ says Gilliver.

The story, personalities and rich archival photographs make this a thoroughly engaging book for logophiles or those interested in this most enduring of achievements, running on through the Second Edition in 1989 (21,728 pages in 20 volumes) and digitisation.

The Dictionary’s origins can be traced to the activities of the Philological Society in the mid-19th century. The Dictionary’s work, involving consultation overseas, injected European philological expertise into the British academic bloodstream. Murray and co-editors Henry Bradley, WA Craigie and CT Onions were trained philologists: experts not only in current English but in other languages and dialects living or dead.

Murray’s near-legendary talent and capacity for hard work drew Gilliver’s scepticism. ‘Yet the more I worked, the more I realised that he’s everything he’s cracked up to be.’ Gilliver’s painstaking work revivifies many of the unsung heroes of the project – lexicographers such as Arthur Maling (1858–1939), whose sweet tooth is

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Work by the Dictionary’s most famous member of staff, JRR Tolkien

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One feels that this book has been waiting to happen for years. ‘Secularisation’ has not taken place smoothly, and nor has religion simplified into consensus. The two are as entangled as ever but bear a relation to each other. If you read one book this year read this.

Wonderfully illustrated, this handsome volume is a bit of a bargain for its price. Amazon specialist Hemming (Magdalen, 1954) has shown how the three great Victorians Alfred Russel Wallace, Henry Walter Bates and Richard Spruce all made their reputations in the paradise of Amazonia.

In a format reminiscent of other recent books such as James Macdonald Lockhart’s Raptor, the author, who is Professor of English at Oxford, takes 17 common trees native to the UK and writes eloquently about each, teasing out a combination of history, art, commerce, culture and folklore while infusing it with a personal commentary.

For our ‘book of the week’ feature, visit www.oxfordtoday.ox.ac.uk/bookoftheweek

John Garth (St Anne’s, 1985) is the digital editor of Oxford Today.
BOOK A DAY OFF

IN OXFORD UNIVERSITY’S MINDGROWING GARDENS, LIBRARIES & MUSEUMS

PLAN YOUR TRIP AT MINDGROWING.ORG
Death, Anxiety and Religious Belief
By Jonathan Jong and Jamin Halberstadt
Bloomsbury. £85

‘Ye miserable, crawling worms, are ye here again, then? Have ye come like Nimshi son of Rehoboam, secretly out of yer doomed houses to hear what’s comin’ to ye?’ Amos Starkadder’s sermon in Stella Gibbons’ Cold Comfort Farm is one of the great comic moments of the twentieth century. His suitability oppressed congregation are threatened with ‘endless, horrifying torment’, their ‘poor, sinful bodies stretched out on red-hot gridirons’ while demons mock them by waving ‘cooling jellies in front of ye’.

Amos is a caricature but a terribly accurate one. Throughout most of Christian history, preachers have prophesied doom. As early as the second century, theologian and apologist Tertullian declared one of the great pleasures of the End Times would be the opportunity for the saved to watch the damned ‘groaning in the lowest abyss of darkness’. Muslim tradition is also full of the most lurid descriptions of the afterlife, and it is not just the great monotheistic faiths that threaten a grisly time after death. One Chinese Buddhist tradition apparently envisages 96,800 hells in which victims are variously skewered, dismembered, fried, mauled, or minced for dog food.

In focusing on the afterlife, religions might seem to be playing to their strengths. Prayers may fail, invocations may seem fruitless, worship may be boring; but death is an inevitability. Or so you might think. In this ambitious and scholarly study, Professor Jamin Halberstadt of the University of Otago and Dr Jonathan Jong – who somehow manages to combine an academic post in psychology at Coventry and anthropology work at Oxford with life as an Anglican priest – explore whether religious belief and fear of death are inevitably, inextricably intertwined.

The book began life as a doctoral thesis and still reads a little like one. There are a lot of citations, a huge literature survey, a bevy of statistics, and a wonderful collection of macabre acronyms: from the Existential Death Anxiety Scale (EDAS) to the MODDE-F (Multidimensional Orientation Towards Dying and Death Inventory). At its heart, however, is a remarkable series of claims which challenge Amos Starkadder.

Drawing on a tremendous array of research, the authors argue that fear of death is less powerful and prevalent than one might have thought. Nor does the fear seem to push people consciously towards belief. Instead, a more interesting process is at work, in which religious people facing death become somewhat more religious and sceptics tend to become rather more confused, forced to believe both in their own immortality and in their non-religious worldviews, an intriguing contradiction.

There is much more work to be done on the subject. As a historian, I wonder whether the authors are right to downplay the fear of death. Historically, people have been very frightened about eternity. A dread of hell has inspired great charity and conspicuous architecture, as well as ostentatious piety. One of the remarkable changes in Christianity, at any rate, has been a decline in the power of that fear. Hell isn’t what it used to be – indeed, it has been a failing concern for years.

Read William Whyte is Professor of Social and Architectural History at St John’s.

The Occupant
By Jane Draycott
OUP. £25

Draycott, who teaches Oxford’s Creative Writing MST, poises quiet domestic scenes against the vast and various outside world. In evocations of youth, phrasings from the Beatles come together with the rhythmic tautness of the medieval Pearl (which she has previously translated).

Russia in Revolution
By S A Smith
OUP. £25

Answering the hows and whys of 1917 a century on might seem to demand a Tolstoyan epic. Smith, a Senior Research Fellow at All Souls, has kept it brief, with an eye to readers new to the topic. Without understating Soviet horrors, he insists that we will only see the revolution for what it was if we understand the ideals that fired it.

The Long and the Short of It
By John Kay
Profile. £10

Kay’s quarry is the same ‘intelligent investor’ addressed so famously by Benjamin Graham in 1949. Kay writes with the authority of an insider in the finance world, but with the intellectual curiosity and straight talking of a senior fellow of St John’s. Fascinating and entertaining, if at times difficult.

How to Make a Garden Grow
By W Heath Robinson and K R G Browne
Bodleian. £10

If Oxford had a Chair of Improbable Devices, Heath Robinson would have occupied it. Here, first published in 1938, is a humorous guide to gardening that he embellished with gadgetary not seen lately outside Wallace and Gromit earwig traps, cat dowsers, magnetic braces...
The good sport

Lightweight rowing

A transformational gift to Oxford will bring Varsity-level sport within the reach of many more students, writes John Garth

Rowing may seem the preserve of giants, and at Oxford historically the sport of giant men, but its younger branch is about to get a major boost that will put the top-level experience within reach of many here.

Lightweight rowers stand to benefit most radically from a new endowment fund for the University’s rowing clubs – the largest-ever donation to sport at Oxford. It has long been the ambition of all four clubs, along with the University and the alumni donors, that the women’s and lightweight rowers be lifted up, equally represented, and appropriately funded. For the women, that has been achieved by equality of sponsorship and the move to the Tideway in London. Now comes the opportunity at last to change things for the lightweights – so that anyone wanting to row for Oxford should be able to do so.

Lightweight rowing, a Seventies initiative to open up international competition for countries newer to the sport and for populations with a generally slighter build, debars women above 57kg and men above 70kg. In the words of former OUBC president, Olympic silver medallist, and three-time Oxford Blue Colin Smith, it’s for people who are emphatically not ‘giants like Steve Redgrave and Matt Pinsent’.

With the weight advantage a biomechanical fact of rowing life, openweights inevitably reach higher speeds. As noted by Nanda Pirie, Senior Member of Oxford University Women’s Lightweight Rowing Club, ‘They attract all the international rowers, because of the glory; whereas we’re largely working with college rowers.

‘But that’s part of the beauty of it,’ she insists. ‘We take people who may not have rowed before – perhaps from state schools where there’s been no opportunity. If you’ve got the potential and you’re prepared to dedicate yourself, you can do it. Our programme is just as rigorous, we’re just as determined to reach really high standards.’

Yet the slower speeds and briefer, quieter history of lightweight rowing have deterred sponsors and donors. At the moment the women’s and men’s lightweight clubs get £5,000 from the University, and nothing in sponsorship. One of the two clubs spends about £40,000 annually and the other club spends twice that – almost all paid for by rowers themselves and by donations.

Though colleges and alumni have helped out, rowers are having to find between £500 and £1,600 a year out of their own pockets, says Peter Nordberg, Senior Treasurer of Oxford University Lightweight Rowing Club. ‘I do have a concern that the costs cause people to not consider doing it at all. And that has an impact on diversity in the squad.’

All four clubs – openweights included – have found themselves pulling against an inexorable economic tide, with rights income and sponsorship plunging while security and other costs rise. Results include
staff wage freezes, fewer new boats and fewer training camps.

Yet rowing is Oxford’s highest-profile extracurricular activity, and the one with the highest levels of participation by far. ‘It is the sport of the University by almost any measure,’ says Smith.

Men’s lightweight president Rowan Arthur sees the sport as a way ‘to do something genuinely difficult and challenging which is beyond the normal limits – and to find out more about yourself’. It’s about the camaraderie that comes of spending 35 hours a week training with others, and ‘the pleasure of getting outside of Oxford and rowing down the river’. But he adds: ‘I know there are guys who’ve made the boat this year who just won’t be able to afford it next year. That’s the end of the line for them.’

The new endowment fund should change all that. An initial £12 million has been pledged including a £10 million outright gift plus £2 million that depends on finding matched funding. Once the endowment reaches its target of £20 million, the lightweight clubs will have a budget of £110,000 each – none of it coming from students. ‘Those people who want to row will be able to do so without significant financial constraint, regardless of income,’ says Smith.

The proposal, put together by the anonymous donors and the University’s boat clubs, was announced at last year’s Boat Races along with the initial pledge. It is the first endowment in Oxford University’s history to mandate equal treatment of men and women at all times. The money given will fall evenly between the two.

For the openweight clubs, the Topolski Fund will simply be used to make up any shortfalls in sponsorship. Named after world champion lightweight rower Dan Topolski (1945–2015), who gave six months a year for 15 years as an unpaid coach for OUBC, it seems fitting that it will allow the lightweight clubs to hire good professional coaches – among other improvements that will help them mirror what the openweight clubs do.

The four clubs will now answer to a new overarching authority, the Oxford University Rowing Association (OURA). Discussions are in progress for the University to take over the maintenance and insurance costs of the Fleming Boathouse at Wallingford.

As Smith sees it, the lifting of financial burdens – coming in the wake of the departure of the openweight women to the Tideway – will allow lightweight rowing to make Henley its very own. ‘Henley has an amazing opportunity to rebrand itself as the best university lightweight boat race,’ says Smith.

He has high hopes for the fund and its impact on all rowing at Oxford. ‘It means the kind of educational experience that students get from the Boat Race will be enjoyed by more people, for longer.’

John Garth (St Anne’s, 1985) is Digital Editor of Oxford Today.
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Mentored by a Madman: the William Burroughs Experiment
by A J Lees

‘The time has come for the line between literature and science, a purely arbitrary line, to be erased.’
William Burroughs

A.J. Lees
Foreword by James Grauerholz

Mentored by a Madman

• Selected by the Observer’s Robert McCrum as his book of the year 2016
• ‘Comparisons with the late, great Oliver Sachs are entirely justified’ – Professor Raymond Tallis
• Professor Andrew Lees will be at Waterstones Oxford signing books in June 2017


Notting Hill Editions
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Anyone alighting at Oxford railway station in the last few weeks of 2016 was treated to scenes of almost apocalyptic demolition, with vast piles of rubble and furiously working bulldozers framed against the backdrop of Saïd Business School.

One result is a new platform and terminus for trains running up and down from London Marylebone. For a while, it was difficult to believe that a new platform would be made ready in time for Chiltern Railway’s self-imposed deadline of Monday December 12. In the event the rail franchise ran its first service to Oxford a day earlier.

The apparent miracle is explained by the demolition site, which remains ongoing behind hoardings, part of a more extensive remodelling of the Oxford station managed by Oxford City Council.

For the past year Chiltern Railways, a subsidiary of German rail giant Deutsche Bahn, has operated trains between London Marylebone and Oxford Parkway, a new station built by Network Rail and opened in October 2015 by David Cameron as Prime Minister.

It then took another year for Network Rail to complete just three miles of additional track to central Oxford. As with virtually anything to do with Oxford, the last bit of track was embroiled in a furious controversy about anticipated noise pollution on the new line and how it might interfere with the quality of life of residents of North Oxford.

This row remains unresolved, with residents accusing Network Rail of reneging on an earlier promise to implement a ‘silent’ track in residential areas including Wolvercote. Rail Minister Paul Maynard, the Oxford Times reported recently, wrote to Network Rail on behalf of both the City Council and furious residents, saying: ‘I am writing to Network Rail asking them to review their mitigation plans and outline to me how it is ensuring it is operating as a considerate neighbour, as far as is reasonably practicable, and why the mitigation it has implemented differs between sections.’

Aside from these hitches, Chiltern insists that the new platform constitutes the first new rail connection between cities since 1899, effectively reversing a century of railway decline in the UK. Many travellers from London alight at Bicester Village – the station is distinct from Bicester and directly adjacent to the retail outlet cluster – and never make it to Oxford, preferring to buy Samsonite luggage than to engage with the world’s greatest University. This has presented a conundrum for Oxford’s tourist board. The opening of the new platform at Oxford also marks the completion of so-called ‘Phase One’ of the eventual re-opening of the old Varsity line between Oxford and Cambridge. Phase Two will see trains running out to Bedford via Bicester and Bletchley by 2024. Phase Three (Bedford–Cambridge) is subject to an uncertain timetable but recently received the financial support of central government, to the tune of £120 million. Chancellor of the Exchequer Philip Hammond spoke in his autumn 2016 budget of a ‘transformational tech corridor’ that would ‘draw on the world-class research strengths of our two best-known universities.’ The old Varsity line connecting Oxford to Cambridge was closed following the ‘Beeching Cuts’ in 1967, named after its author Dr Richard Beeching. With the benefit of hindsight, one can argue, that Beeching made a cut too far when he closed this particular line.

Network Rail engineers working on Oxford’s new railway station in December 2016. The track in the foreground is a new terminus for the Chiltern Railways train to Marylebone.
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In rushes coffee’s new wave

By Christopher Benton

Oxford’s coffee scene is much like its property prices – trailing London, but barely. The dreaming spires are increasingly caffeinated with theatrically brewed coffee beans, as if Shoreditch had driven up the M40 and parked its stripped-out, bare-brick and reclaimed-timber soul in the city centre.

We don’t mean college SCR capitulation to fake choice via those infernal Nespresso capsules, which are as expensive and poor-tasting as they are environmentally unfriendly, whatever the claims. We’re not referring to Costa or Starbucks, both in the High Street, nor the Benugo franchise which supports the Bodleian’s hugely successful venture in showcasing its riches to the visiting public at the Weston Library in Broad Street.

Nor even do we mean the Caffè Nero concession, perched on the first floor of Blackwell’s. No. The so-called ‘new-wave’ of coffee is defined by independent outlets, their credibility resting partly on their ability to fly just below the radar of branded respectability. Their owners’ avowed emphasis is on the coffee – and nothing but. A stripped-out, cramped space is key for student approval. An ethical stance is definitely part of the mix, even though the takeaway cups continue to resist recycling on account of their plastic lining.

Colombian Milly Barr, whose Colombia Coffee Roasters opened in the Covered Market in December, serves coffee grown on a variety of farms in Colombia – one of them within her family – and already has a very successful roasting business in Oxford. A note inside the shop declares: ‘We are part of a generation of coffee farmers in Colombia with strong focus on delivering high-quality coffee while supporting Fair Trade conditions to ensure our coffee is sustainable and ethical.’

Other credibility cues include offering a ‘coffee of the day’, typically a single-origin bean, meaning that it is from an identifiable farm rather than being part of a blend of beans from different regions or countries. Colombia Coffee Roasters barrista Aaron Dorres offers V60 drip filter as well as Aeropress, in addition to the expected Italian espresso machine (which had better be a La Marzocco – and it is).

The newest coffee house in Oxford, opened in January, is Peloton in the Cowley Road, a continuation, in all but name, of the already hugely popular Quarterhorse.

Then there are Jericho Traders, recently opened on the High Street, and The Missing Bean in the middle of Turl Street, the closest ‘real coffee’ to the Bodleian Library and a huge hit with students since it opened in 2013. Heading north, we’d highlight Brew, recent newcomers to North Parade, and the Natural Bread Company in Little Clarendon Street.

Most of these establishments roast their own beans, or source them from specialist roasters. All are magnets for students and – unlike some London coffee shops – they offer wi-fi and tolerate long sojourn.

Meanwhile, of course, some of the iconic older shops and cafés of Oxford soldier on in a time warp – Brown’s in the Covered Market, and opposite it Cardews. These and other institutions such as the Queen’s Lane Café and Taylor’s have all ‘upped’ their coffee offering, but the days of merely offering ‘strong’ coffee to counter once-bland fare are over. The new game concerns variety, provenance, delicacy and flavour – qualities that these newcomers are really delivering on. Perhaps above all, the owners of these businesses are part of the community around them. They gain credibility by being small-scale and local. The choice and quality of coffee in Oxford is today unimaginably good compared even to five years ago.

Christopher Benton regularly serves coffee at Oxford college events, and is the founder of Pedal and Post, Oxford’s only dedicated bicycle delivery company (pedalandpost.co.uk).

Christopher Benton
The business of making ends meet

Andros Wong (New, 2013) recounts the giddy moment when his new enterprise Silo took off – and reveals the gruelling realities of being an entrepreneur

Being an entrepreneur has always fascinated me. My first venture at the age of 16 was a digital marketing firm for restaurants near my school. I still remember the moment we first made a profit – the euphoria that hit me was indescribable and from that point I knew I wanted to create another venture.

My motivation for starting Silo began when my girlfriend was accepted into her Master’s degree at Oxford but was unable to finance it. For weeks we searched for grants and scholarships, only to be met with incomplete information and dead ends. She also created a crowdfunding page, and eventually funded her degree through an unadvertised college scholarship and the generosity of a family friend. I realised that most students encounter a similar runaround, faced with the harsh reality of needing to self-fund their degrees. The solution, as I saw it, lay in bringing together funders and students. If I could do both, I might have a worthy venture on my hands.

During the development of the Silo platform, I would work on my degree from 8am to 3pm and then I would go to St Anne’s College to write software code from 4pm to 12am with my co-founder Howard Tam (St Anne’s, 2013).

This continued for two terms until the summer of 2016, when we had found a place in the St Anne’s incubator – the University’s first college incubator. Silo is a software platform that connects students with funding institutions whilst allowing them to crowdfund. It is a for-profit enterprise that aims to maximise social impact by reducing inequality in education funding. We take no commission from funding matches, but are pursuing third-party affiliate marketing revenues – in other words, sponsorship from companies and startups that want to reach talent. Social good as an explicit aim: welcome to the social enterprise.

There were lots of obstacles. Many funding institutions had obsolete application systems: they still relied on letters of application. They were unwilling to be digitised and they were inefficient in communication. Despite our clear-value propositions (reducing administrative burdens, increasing publicity and, most importantly, helping students) they were unwilling to engage with us. We decided to shift our focus to getting students on board first. By the end of the summer we had produced the largest database of scholarships and grants in the UK, a superior search engine that returns relevant results, and a crowdfunding platform for users to give and receive online payments.

Entrepreneurship isn’t glamorous. The grind is real, and disappointments occur more often than not. The
question becomes: how much pain can you tolerate? During the second week of our launch in Michaelmas term 2016, despite high rates of growth, a key member of our team dropped out, rapidly followed by another. Suddenly, I was alone. Despite priding myself on my resilience, I became increasingly anxious that I was facing failure.

Then I realised how stupid I was being. Despite the setbacks I was still doing what I loved, working towards a worthy and potentially profitable cause, which could have a positive impact on many students. I picked myself up, tried to gather new talent and applied to TheFamily – one of Europe’s largest accelerators for startups.

With a stroke of luck, members from TheFamily came to speak at an Oxford Entrepreneurs event two days later. I skipped dinner in order to attend the event. After the lecture I started talking to one of the partners. I told him about our platform and that we had made an application. He seemed impressed and decided to check our application on his phone, there and then. He then told me that the founder of the incubator (also the speaker at the event) had accepted our application. Suddenly I was talking to the founder and we made further arrangements to proceed. I will never forget crying with relief and exhilaration whilst finally managing to grab some food from my favourite pizza van opposite Christ Church.

Since then, things have been looking up. We now have over 1,500 students on our platform and the numbers are rising steeply. We have partnerships with the Rhodes Trust, Weidenfeld-Hoffmann Scholarships and the Fulbright Scholarships, and a dozen more institutions. My search for talent paid off, and we are now a team of five. However, there is still much work to be done. The traditional method of funding applications is inaccessible, outdated and flawed.

Against the backdrop of rising tuition fees, students will become more reliant on alternative sources of funding. We want to be the matchmaker between students and funders.

Andros Wong is a fourth-year undergraduate studying engineering, economics and management. Silo (www.silofunds.com) is a platform that connects students with funding institutions while allowing them to crowdfund. Andros welcomes contact and investor enquiries at andros@silofunds.com

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St Anne’s College and the Danson Foundation jointly supported an incubator project to help three teams of students start their own businesses. As well as receiving working capital and accommodation, the teams were offered dedicated mentoring from college alumnae and the foundation. Find out more: bit.do/danson
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Obituary

Sir Geoffrey Hill
18 June 1932 – 1 July 2016

Poet Sir Geoffrey William Hill died on 1 July 2016, aged 84. Born and brought up in Worcestershire, the son (and grandson) of a police constable, he was educated at the County High School, Bromsgrove, and read English at Keble, graduating in 1953. As an eight-year-old he saw the glow as Coventry was blitzed, and was ever after fascinated by impermanence and chance. Later he roamed the local countryside with Oscar Williams’s A Treasury of Modern Poetry in his pocket; he never had any doubt about his vocation. His first poems were published while still an undergraduate, in the Oxford Guardian and Isis, and in a Fantasy Press volume.

Hill combined academia and poetry. He taught at the University of Leeds from 1954 to 1980, the last four years as professor of English literature; from 1981 to 1988 he was a university lecturer in English and fellow of Emmanuel College, Cambridge, and from 1988 to 2006 he was professor of literature and religion at Boston University, USA, where he was also founding co-director with his friend Christopher Ricks of the Editorial Institute. In 1956 he married Nancy Whittaker, and they had three sons, Julian, Andrew and Jeremy, and a daughter, Bethany, but the marriage was dissolved in 1983. In 1987 he married Alice Goodman, a graduate of Harvard and Cambridge, fellow poet, and librettist; they had a daughter, Alberta. Throughout his life he suffered anxiety, depression, and obsessive-compulsive behaviour, but the treatment he sought with Alice’s encouragement afforded him a measure of emotional stability.

Hill’s first poetry collection, For the Unfallen (1959) was followed by King Log (1968). He was perhaps best known for his thirty Mercian Hymns (1971), juxtaposing scenes from the life of Offa with reminiscences of his own West Midlands childhood. Further collections included Tenebrae (1978) – his output accelerating rapidly following his treatment for depression – and Canaan (1996), compared in impact and subject matter to TS Eliot’s ‘Ash Wednesday’. The Triumph of Love (1998), contrary to its title, was a meditation on the twentieth century as an age of extreme violence. Then came Speech! Speech! (2000); The Orichards of Syon (2002); Scenes from Comus (2005); Without Title (2006); A Treatise of Civil Power (2007); Oracle/Laolecules (2010); Classics (2011), and Odi Barbare (2012). Overall he published some twenty volumes of poetry, including five volumes of selected or collected poems up to Broken Hierarchies: Poems, 1952–2012 (2013). Many won prestigious prizes.

He was often described as a ‘difficult’ poet; his poems were rich with historical and literary allusions, often arcane or obscure, marked by frequent abrupt changes of tone or metre and interjections, and tackled complex issues concerning morality, religion, politics, and violence. He described poetry as ‘solemn, /Racked with anarchic laughter’. His love of the British countryside and his embeddedness in British history – what Seamus Heaney described as his ‘deep scholarly sense of the religious and political underpinning of everything in Britain’ – led many to assume he was a High Tory, though he was a lifelong Labour voter.

Hill also wrote a rhyming version of Henrik Ibsen’s Brand, first produced at the National Theatre in 1978, and four volumes of literary criticism, including Collected Critical Writings (2008). His judgements on contemporary poets were frequently pungent; he once described Carol Ann Duffy as writing in ‘cast-off bits of oligarchical commodity English, such as is employed by writers for Mills & Boon’.

In his latter years Hill was often hailed as England’s finest living poet. In 2010 Oxford gave him an honorary DLitt and elected him Professor of Poetry (above Michael Horovitz and Roger Lewis). His five years of lectures ranged from Shakespeare’s sonnets to Philip Larkin’s ‘Church Going’. In his first he declared, ‘The craft of poetry is not a spillage but an in-gathering; relevance and accessibility strike me as words of very slight value… Accessibility is a perfectly good word if the matter under discussion concerns supermarket aisles, library stacks or public lavatories, but has no proper place in discussion of poetry.’

Among many other honours he received honorary degrees from Leeds, Warwick, Bristol and Cambridge universities, and was an honorary fellow of Keble College, Oxford, and Emmanuel College, Cambridge. He was knighted in 2012. From 2006 he and Alice lived in Cambridge, after she – by now ordained an Anglican priest – became chaplain at Trinity College, and then rector of Fulbourn and the Wilbrahams. He is survived by her, by their daughter, and by the four children of his first marriage.

Obituary contributed by Dr Alex May (St John’s, 1982), research editor at Oxford DNB.
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Lucy Kellaway

The Financial Times columnist and co-founder of Now Teach talks to Richard Lofthouse

What made you choose Oxford to study?
Oxford chose me. At Camden School for Girls I did no work – I was naughty, and a bit disaffected, and there was much more status attached to being cool than being swotty. So I had terrible A-levels and I needed a university with an entrance exam. I applied during a gap year – a second chance, in effect.

What were your impressions of Oxford at the time?
I had one year of LMH when it was women-only. I hated my first term. I was an insufferable mixture of very superior and inferior. Compared to the boarding school girls I encountered at LMH, I felt like Johnny Rotten. In those days if you went to a boarding school you didn’t have access to Portobello Road market; these girls were Mary Janes in twin sets and pearls. It was bizarre. It was like, ‘Who are these people?’ But I was very insecure as well!

What kind of student were you?
I was very motivated after the A-level debacle. So I worked hard – office hours. I’d go into the library, take a lunch break, but never ever worked evenings and weekends. I never had an essay crisis. I was very, very, very well organised. If Oxford works well then you educate yourself, which is exactly what I did.

What was your social life like?
Initially a lot worse than in London. We were cliquey, the Londoners. I had one best friend. Then I had an American boyfriend outside Oxford that diverted a lot of time. I did make friends at Oxford that I’ll have forever – amazing. Lucy Heller – now CEO at Ark Schools, with whom I am working, was one at LMH.

Did you take part in any extra-curricular activities?
I worked, I talked to my friends, and I went to the King’s Arms. I did set up a knitting class. I suppose that counts. I championed knitting!

What were your tutors like?
I had some very poor teaching and some very good. It was old-Oxford. Some tutors didn’t even pretend to listen. Sometimes you would get something that was simply extraordinary. Margaret Paul, now dead, was wonderfully thoughtful, delightful. Peter Oppenheimer at Christ Church was bored by his undergraduates. He used to clean out his ear with his pen in a slightly disgusting way. Occasionally he would say something stimulating. We went to Amartya Sen and Ronald Dworkin’s lectures – PPE gods of the time.

How has your PPE degree helped in your career?
Oxford has given me the most enormous leg up. JP Morgan was a doddle, from Oxford. Then, at the FT, there was a massive preponderance of people from Oxbridge. Occasionally you met someone from Bristol, and imagined ‘Oh, you must have worked very hard.’ I also benefited from being a woman. There were not that many of us from Oxford back then.

What have you taken from Oxford?
Confidence – and a rage at the unfairness of it all. Life has been so easy for me. This is partly why I have set up Now Teach. Today I went to a severely disadvantaged school in Elephant and Castle. They have just had their first-ever Oxbridge acceptance. It made me want to weep with joy and despair. I’m trying to avoid the phrase ‘give something back’, but…

How do you think of Oxford now?
Despite or perhaps because of the enormous privilege, I felt very phobic about Oxford. It changed me but I have always felt very uneasy about it. I don’t like the claustrophobia and I don’t like being back there. I was actually miserable. It’s so beautiful yet I loathe it. I think the access question is exactly the key to all this. I cannot abide contemporaries of mine, for whom ‘getting [their children] in’ to Oxford provokes total jubilation or despair. This makes me feel physically sick. This is privilege and entitlement stuff and it makes me feel that I want to do something violent. I hate the elitism and the arrogance. I really despise this. I’m sure I had it, mind you – but not now.

Lucy Kellaway remains at the Financial Times until July. She is co-founder, with Katy Wildigrave, of Now Teach, and will train as a maths teacher from September. Nowteach.org.uk
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