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# Cambridge Alumni Magazine

## Easter Term 2023

### Issue 99



08

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Sara Agutoli

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**YBM**





# Editor's Letter

Welcome to the Easter Term edition of CAM. A £2bn turnover. Global reach. More than 30,000 brilliant – and independent – thinkers. And a governing system that has evolved over 800 years. So what does it really take to lead one of the – forget that – *the* greatest university in the world? From July, Professor Deborah Prentice becomes Cambridge's seventh full-time Vice-Chancellor; on page 18 we find out what the job entails.

Meanwhile, we thought it was time CAM entered the culture wars. When is it OK to laugh? Who gets to make the jokes? When is enough? What is never funny? Welcome to the 18th-century culture wars – and the Great Laughter Debate. Find out whether you're crossing an (18th-century) line on page 28.

Elsewhere, on page 24, Professor Rachel Oliver explains why gallium nitride – the material that powers LEDs – could power the future, and on page 34 we introduce a piece of 'Emergency Education' on Irish history.

On these topics – and on all things Cambridge-related – we look forward to your contribution to the debate, online at [magazine.alumni.cam.ac.uk](http://magazine.alumni.cam.ac.uk), by post and email or on social media.

Mira Katbamna  
(Caius 1995)



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[magazine.alumni.cam.ac.uk](http://magazine.alumni.cam.ac.uk)

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# Inbox

## Seeking refuge

✉ The mention of an anti-Nazi refugee (City of Refuge, CAM 98) brought to mind two Spanish scholars whom I knew in the 1950s. One was Dr Batista i Roca, a distinguished historian who had represented autonomous Catalonia in Britain during the Spanish Civil War of 1936-1939, and had stayed on. Another was a Sanskrit scholar from Majorca whose surname was Mascarò. I wonder if there were any other refugee Spanish academics in Cambridge after Franco's victory in 1939.

**Michael Alpert (Downing 1954)**

✉ My father was one of the LSE students evacuated to Cambridge early in the Second World War as per your intriguing article. He'd told me that he had been assigned to Peterhouse; I now learn that this was the agreement regarding all such LSE students. I had always assumed it was down to someone in Admissions with a sense of humour, with my father's name being Peter Howe!

**Andy Howe (Emmanuel 1976)**

## Evolving origins

✉ Your article on Evolving Origins (CAM 98) reminded me of a letter Charles Darwin wrote to his son about playing hockey on ice when he was at Shrewsbury School from 1818.

This was many years before the Canadians, who believed they invented their national sport. In recognition of Charles Darwin's contribution, two French Canadians wrote *On the Origin of Hockey* (published in 2014), in a deliberate nod to Darwin's seminal work. It is understood that when a student at Cambridge, Darwin preferred outdoor sports to studying, so there is every possibility he also played ice hockey on the Fens.

**Nigel Fenner (Downing 1981)**

## Artificial Intelligence

✉ I am reassured by Professor Korhonen's view that "there is no hint of consciousness in any of the AI mechanisms currently out there – or on the horizon of our research", and that "what makes us uniquely human is currently missing from the human artificial intelligence". On the other hand, it's AI's lack of humanity that makes me nervous. Imagine AI falling into the wrong hands, and our finding ourselves in combat with a super-intelligent foe: it would be a battle of 'who's got the biggest computer?' – forget morals or ethics. We are a fragile little planet adrift in a vast, cruel universe, and we need to do all we can to protect our survival. Protecting the atmosphere is one facet of this, but another is to ensure we don't

create machines capable of destroying humanity; because if they can, they will.

**Orlando Murrin (Magdalene 1976)**

✉ Anna Korhonen is illuminating and reassuring about the status of artificial intelligence, but I think she neglects the fact that the power of machines lies in their physical as well as their cognitive capabilities. Unlike humans, they are well adapted for space travel, for instance. In any case, the question of who holds the balance of power may eventually become irrelevant. It's not unknown for the master or mistress to marry the servant. If so, what sort of offspring would that produce?

**Paul Lovatt-Smith (Robinson 1980)**

## Underground pollution

✉ As the originator of the 1995 nanoparticle hypothesis to explain cardiac effects of air pollution, and as someone who investigated particles in the London Underground in 2005, I can inform your readers that nanoparticle concentrations in the tunnels are far lower than in the air in the streets above. They are also lower than in the average kitchen with a gas hob. Underground they are primarily iron, derived from friction of wheels on brakes and rails; above ground they derive from vehicle and domestic emissions,

contain carcinogens and are of proven toxicity. There is not to date any evidence to suggest the tube-generated particles are toxic and, as someone who suffered a heart attack in London in 1999, until vehicle fumes have been eliminated above ground, the tube will remain my preferred method of getting about London.

**Anthony Seaton (King's 1956)**

✉ A famous experiment in the 1920s showed that the air of a fashionable Paris salon supported five million bacteria to the cubic metre. Since we inhale about a hundredth of a cubic metre with every breath, that equates to around 50,000 bacteria each breath. Most of these are tiny rafts of skin scales – about 10 billion of which (about 1.5 grams) peel off each of our bodies every 24 hours. That grey dust that settles on the top of your wardrobe is likely to be 90 per cent skin. No doubt a lot of that black dust in the Underground is skin too. Fortunately most of the bacteria released are commensals – vital to the ecology of the human skin. But more worryingly, when I wrote my book, *The Life That Lives on Man*, in 1976, it had just been found that viruses could travel within skin scales too, though it had not then been established whether these came from the bloodstream.

**Mike Andrews (St John's 1957)**



# £29.8bn The University's impact on the UK economy, including research and development, educational exports, teaching and learning, and tourism.

[cam.ac.uk/stories/cambridge-economic-impact](http://cam.ac.uk/stories/cambridge-economic-impact)



## Aviation and energy

### The King breaks ground on the University's new Whittle Laboratory

His Majesty The King visited Cambridge to break ground on the new Whittle Laboratory, meeting with staff, leaders from the aviation industry and senior government representatives.

The new facility will incorporate the Bennett Innovation Laboratory – made possible through a philanthropic gift from the Peter Bennett Foundation – to bring together a critical mass of talent, giving them the right skills, tools, culture and environment to solve complex multidisciplinary challenges in energy and aerospace.

It can take six to eight years to develop a new technology to a point where it can be considered for commercial deployment in these sectors. But recent trials in the Whittle Laboratory have shown this timeframe can be accelerated by breaking down the barriers between academia and industry.

Senior figures from government and industry also gathered for an international roundtable, as part of an initiative led by Cambridge and MIT. This will present insights based on global aviation systems-modelling capabilities developed through the Aviation Impact Accelerator, a project led by the Whittle Laboratory and the Cambridge Institute for Sustainability Leadership.

“We need to completely transform the innovation landscape in the aviation and energy sectors if we are to reach net zero by 2050,” says Professor Rob Miller, Director of the Whittle Laboratory. “The lab is designed to work at the intersection of cutting-edge science and emerging engineering applications, providing fast feedback between the two and dramatically cutting the time to deliver zero-emission technologies.”

## Are you a 'super memoriser'?

Do you have an exceptional memory? Then join Cambridge scientists in their quest to find out why some people can recite entire books (while some of us can't remember what we had for lunch). Start by taking the online test, and you could be invited to have a brain scan to explore what makes your memory so exceptional.

Take the test at [tinyurl.com/memorysearch](https://tinyurl.com/memorysearch)



## Deconstructed

# PhD student's Insulate Ukraine project is bringing relief to war-torn families

A window that takes just 15 minutes to build is transforming the lives of Ukrainians who need to repair and insulate bomb-damaged properties.

It was designed by Cambridge PhD student and engineer Harry Blakiston Houston, who has paused his studies to work on his Insulate Ukraine project.



His design uses triple-glazed polyethylene to protect against the cold, costs around £12 per m<sup>2</sup> of window, and can be built at home from basic materials.

Insulate Ukraine has already installed hundreds of windows, and seeks partners to support its vital work. For more information, visit [insulate-ukraine.org](https://insulate-ukraine.org)

## Three-minute Tripos

**BEETHOVEN'S GENIUS EXTENDED FROM THE TIPS OF HIS TOES TO THE TOP OF HIS HEAD. DISCUSS.**

**DA DA DA DUUUH!**

What?

**DA DA DA DUUUUUUH!**

Seriously. I get it. You're Beethoven's Fifth. But why?

**Well, we've got a lot in common, me and Van B.**

You're a legendary composer whose oeuvre spans the transition from the Classical to Romantic period?

**Well, no. But we both like a drink, and that's bad news. A team led by Tristan Begg, until recently a Biological Anthropology PhD researcher, has sequenced Beethoven's genome for the first time, using a lock of his hair.**

**We know he drank, and now we may have a link to a genetic risk that could explain why it was harmful to him.**

Some sort of message in a bottle?

**Not quite. According to some of his contemporaries, his consumption was moderate – by 19th-century Viennese standards, anyway. But it may have been enough to trigger a harmful reaction in his liver.**

But surely this breakthrough will have given us insights into so much more than Beethoven's drinking habits! What about his progressive hearing loss – making his later compositions an even more extraordinary achievement?

**They didn't identify a single genetic cause for this hearing loss – though they didn't rule out finding one in the future as this field advances.**

What about his tragic death at the tender age of 56?

**That's one puzzle which could have been solved: there is evidence of a hepatitis B infection and a significant genetic risk factor for liver disease.**

I don't suppose they found any genetic markers for his genius?

**Ah, that remains a beautiful mystery.**

[cam.ac.uk/beethovens-dna](https://cam.ac.uk/beethovens-dna)

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Clockwise from left: Rosy Pearson, Clare, Fourth Year Modern and Medieval Languages; Gwenno Robinson, Pembroke, Second Year Human, Social and Political Sciences; Gruff Roberts, Jesus, Second Year Modern and Medieval Languages.



# Yma o Hyd!

WORDS LUCY JOLIN ILLUSTRATION KATE COPELAND

## Yes, they're still here: the Cambridge Welsh Society has been offering a taste of home for exiles – and others – since 1887.

Mention the word *hiraeth* (pronounced heer-aiht) to anyone from Wales, and you'll get a loving, misty-eyed, faraway look in response. While there's no direct translation, it evokes a deep longing for home, and it's the sort of feeling that binds together members of the Cambridge Welsh Society – Cymdeithas y Mabinogi.

"We exist to promote Welsh culture, but our policy is to be as open as possible," says its President, Gwenno Robinson (Pembroke, Second Year). "So, if you're Welsh, you have ancestral connections to Wales, you'd like to learn Welsh or you're just interested in Wales, come along!"

The Society was established in 1887, although there are reports of a St David's Day Dinner in 1884. It's existed in some form ever since, but in 2015, the Welsh contingent at Cambridge experienced a resurgence following the Welsh government's



Seren Network programme, encouraging high-achieving Welsh students to apply to the UK's top universities. It's proved highly successful. "There are probably more Welsh people here now than there have been for the past 20 years," says Robinson.

The annual St David's Day Dinner is the Society's most well known event, but there are the regular social get-togethers.

"Of course, going to the pub to watch the rugby is very popular," says Robinson. "But we also have events that don't revolve around alcohol." And while she's at pains to point out that the Society isn't exclusively Welsh-speaking, it's keen on keeping the language alive.

In fact, she recently started up a fortnightly Welsh language café, bringing together Welsh speakers and learners in a friendly, judgement-free zone.

"I almost have a 'pinch me' moment when we're doing this Welsh café in the middle of England's heartland, at one of the most traditionally English places in the world!" she says. "And we're still

able to have this vibrant, thriving Welsh community. It's such a nice thing. Welsh is my first language and I used to speak it every single day: in school, with my family and with my friends. Now, I can come and have a coffee once a week with people who speak Welsh and it's a lovely kind of connection."

Of course, Robinson points out, there's no obligation to join the Society if you are from Wales. "Some want to escape Wales! And that's completely fine. But I think the people who come along really value what we do. Many of us come from state schools – we don't have the traditional background of people who come to Cambridge. When I was applying, knowing that there was a Welsh Society here was a massive comfort for me – a nice home away from home."

It's an ethos reflected in the Society's motto: *Gorau Cymro, Cymro oddi cartref* – loosely translated as saying that the most fervent Welsh are those who live away from home and celebrate their Welshness from afar. "It's a well-known Welsh idiom that suggests that once you're out of Wales, your Welshness is just massively magnified," says Robinson. "And that's what so many people tell me when they come to the Welsh Society: they sound more Welsh and they are prouder to be Welsh, hundreds of miles from home."

[cymdeithasymabinogi.wordpress.com](http://cymdeithasymabinogi.wordpress.com)

# Great Hall, Girton

The award-winning writer Okechukwu Nzelu meets Aiseosa Eweka-Okera to celebrate Girton's splendid isolation and the joy of bringing people together.

WORDS LUCY JOLIN PHOTOGRAPHY MEGAN TAYLOR



**T**he Hall feels like one of the only parts of Girton which hasn't changed," says Okechukwu Nzelu (Girton 2007), looking around at the exquisite wood panelling and a table beautifully set for the evening's Annual Students and Parents Dinner, where he'll be speaking. He's right, of course: it's the beating heart of this outlying college, where people matter far more than place. But the catering staff are politely hovering, so a decision is made to continue the conversation between him and Aiseosa Eweka-Okera (Human, Social and Political Sciences, Third Year) in the café.

"Which has also changed!" says Nzelu. "It wasn't here when I was here. When I left, Ash Court was just being finished. Eddington wasn't here. The Mistress is also new, so I'm looking forward to meeting her, too." But, of course, one thing is still the same.

"It's so beautiful here, particularly in autumn. The only open day I went to was Girton. It just felt lovely, warm, human, personal, and I thought: 'Yeah, I can see myself here.'"

That was the easy part: then came the train journey at the start of my first term. "My mum couldn't drive and I just have memories of dragging loads of luggage through King's Cross. So I didn't bring much – just the essential stuff. That's a habit I've always had, whenever I've moved house. I didn't even bring that many books. I mean, the libraries are so good here. Of course, these days, I have far too many books..."

Eweka-Okera looks surprised. "The train? Oh, I don't know how my family and I would have managed that. We had a carful. There was just enough space for us to sit because I had so much stuff. In my first year, I even brought a small fridge."

But of course, Girtonites are no strangers to public transport. As a keen actor and member of the chapel choir (until her second year, when "something had to give"), Nzelu spent a lot of time on the bus – and it was worth it. "I loved having friends in town. And it's those relationships and experiences which have stayed with me. I still get invited to the weddings of people I was in the choir with. We went on tour to Slovakia, where I'd never been before: it was an incredible experience. And we had a little poetry group called Not Averse – I'm so sorry – which was such a friendly, warm and welcoming place."

Eweka-Okera agrees that while rooms bring back memories, it's the people you meet that stay with you for life. "I think the relationships with my directors will stay with me. I didn't expect the pastoral support to be that good. I'm really privileged to have

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**The train? I don't know how my family and I would have managed that. I had so much stuff. In my first year, I even brought a small fridge**

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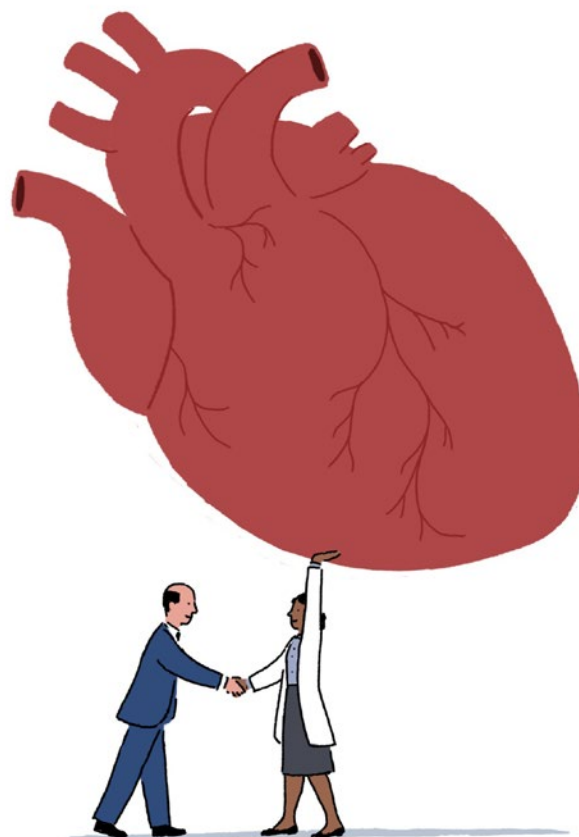


that professional relationship with great people who really care about me beyond the essays that I write. They care about you as an individual. That's something I will always treasure." Girton's relative isolation doesn't bother her either. "Because you're a bit further out, you do tend to make strong friendships or relationships within college," she says. "It's easier if you have people around you that you get along with, because you're far out from the rest of Cambridge. It can feel like a refuge."

For Nzelu, Girton was a space to explore, to try new things, to read – and, of course, to write. "I've been writing fiction since I learned how to write words and sentences," he says. "I thought that was just what you did."

"When I came here, I knew I wanted to write, but I also knew that writing isn't something you just fall into. And here, I read so much. The stuff I liked the most was what inspired me, even though it was very different from what I wanted to write – from Jane Austen to Piers Plowman. When I came here and read so much, I started to develop a sense about what writing can be and what it can do. And that's still going on now – I am still thinking about what I want my writing to be in the world."

**Award-winning author Okechukwu Nzelu's second novel, *Here Again Now*, is out now. Aiseosa Eweka-Okera is studying Human, Social and Political Sciences.**



### Philanthropy

## **Boost for new heart and lung research institute**

A Cambridge institute dedicated to improving cardiovascular and lung health has received a £16m gift from Canadian entrepreneur Dr Victor Dahdaleh.

The Victor Phillip Dahdaleh Heart and Lung Research Institute is home to the largest concentration of scientists and clinicians in heart and lung medicine in Europe and opened in July 2022. It brings together population health, laboratory and clinical scientists, with NHS clinicians and patients, and aims to identify 10 new potential treatments or diagnostic tests for heart and lung diseases within five years.

Dr Dahdaleh praises Cambridge as "one of the greatest universities in the history of civilisation". He says: "Over the years in which I have been supporting education and medical research around the world, I have realised the UK is a global leader in the prevention, identification and treatment of heart and lung diseases.

"I'm supporting this new Institute because, through collaboration with Royal Papworth Hospital and other leading institutions, it will enable a concentration of expertise that will make medical advances of international importance in these fields."

[cam.ac.uk/16-million-gift](https://www.cam.ac.uk/16-million-gift)

### In brief

#### **THE BRAIN PRIZE 2023**

A Cambridge scientist has won the world's most prestigious neuroscience award: The Brain Prize 2023, awarded by the Lundbeck Foundation. Professor Christine Holt was recognised for research that has revealed the precise mechanism by which brains 'wire up' during development, and actively maintain their wiring throughout life. This has provided key insights into the causes of neurodegenerative diseases.

#### **VARSITY SUCCESS**

Cambridge triumphed over Oxford in five sporting fixtures over a thrilling weekend of Varsity sport in March. The Light Blues won the 141st men's Varsity Rugby Match in a hard-fought encounter, followed by The Boat Race the following day, where Cambridge won the 77th Women's Race, the 168th Men's Race and both Reserve races.

#### **FOUR-DAY WEEK TRIAL**

Fancy a four-day week? It reduces workplace stress and illness – and doesn't adversely affect a company's revenue, say a team of Cambridge social scientists running the world's largest trial of the four-day week. In fact, 92 per cent of the companies trialling the policy say they intend to continue it after the trial.

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**Professor Angelos Michaelides**  
is 1968 Professor of Chemistry.

# It's in the water: how to solve our planet's biggest challenges

INTERVIEW **LUCY JOLIN** ILLUSTRATION **KATE COPELAND**

**M**any of our planet's biggest challenges are related to water and ice, and I'm fascinated by our quest to fundamentally understand it, in all its forms. There is more than enough water on Earth, for example, but not enough of it is drinkable, or in the right place to become drinkable at low cost. If we knew more about water, perhaps we could help with these global challenges.

At the ICE (Interfaces: Catalytic and Environmental) Group, we are still discovering new and fundamental aspects of water – such as a new form of ice. Recently, our collaborators at UCL, led by Professor Christoph Salzmann, carried out an experiment using a technique known as ball-milling – grinding crystalline ice into small particles using metal balls in a steel jar. Ball-milling is often used to make amorphous materials, but it had never been applied to ice. His team found that the ice had turned into a white, powdery substance that hadn't been seen before – and asked our lab to investigate.

When our PhD student, Dr Michael Davies, simulated the process on a supercomputer, he discovered that a new kind of ice with a different structure to any existing forms had been created. When liquid freezes, it can freeze into a crystalline solid where all the H<sub>2</sub>O molecules are arranged on a lattice – or it can freeze into a disordered solid, where molecules aren't arranged on a lattice. This second ice – amorphous ice – is what we found. It's characterised by its density, as it doesn't have the conventional symmetry by which we describe most solids. We currently know of two families of amorphous ice structures: one has a density greater than liquid water, and one has a density lower than liquid water. This new structure sits in the gap between the two – hence 'medium density amorphous ice' or MDA.

This discovery is hugely significant: it changes our understanding of liquid water. The structure of liquid water is itself still debated. One hypothesis is that liquid water, under certain conditions, is not a uniform,

homogeneous substance but a mixture of two different types of liquid – one that resembles high-density amorphous ice and another that resembles low-density amorphous ice. Throwing a new form of amorphous ice into the mix muddies the waters – quite literally – and presents a new conundrum for our understanding of liquid water itself. But MDA is also of interest in itself – because when it crystallises, it releases energy. It is essentially a high-energy material, and the energy stored in it could be harnessed.

That's one of the big challenges right now – using water for energy; splitting H<sub>2</sub>O into oxygen and hydrogen and using hydrogen as a fuel. If you can find a cost-effective way to get hydrogen out of water, then this has enormous potential to solve one of the world's biggest energy challenges.

Last year, we produced a paper that predicted that water under nanoconfinement would relatively easily produce another form of ice – though this hasn't yet been experimentally verified under nanoconfinement. That would produce a phase of ice known as superionic water – a lattice of oxygen atoms with a gas of hydrogen atoms. We want to understand how we can make this material – and characterise it – experimentally. What are the precise conditions under which it will form? And then, how can it be exploited?

And this discovery doesn't just give us insights into water on Earth. When we talk about discovering water in space, we usually mean liquid water because, as we already know, there is an abundance of frozen water in space, and that ice is mostly amorphous ice. We concluded that events that randomly shear crystalline ice – which ball-milling mimics – are relevant to the production of MDA. And there are similar types of events, like giant tidal waves, inside the giant planets in the solar system. There is a chance that there could be a lot of undiscovered MDA out there in the universe, too – raising yet more questions about this extraordinary, ubiquitous but mysterious substance.

**If you can find a cost-effective way to get hydrogen out of water, then this has enormous potential to solve one of the world's biggest energy challenges**



Foundation Year student Freddie King (Sidney Sussex) with his tutor, Dr Shyane Siriwardena.



# Best in class

Everyone's path to Cambridge is different and, as a stepping stone to study, the Foundation Year programme is giving outstanding students a chance they might not have expected.

WORDS SARAH WOODWARD PHOTOGRAPHY CAMILLA GREENWELL

**W**hile sixth form student Freddie King (Sidney Sussex) was weighing up his options for next steps, the thought of coming to Cambridge never occurred to him. But then his teacher mentioned the Cambridge Foundation Year, a brand new course and what seemed a golden opportunity. Suddenly the goalposts shifted.

"Up until then I hadn't thought about Cambridge – I had ruled myself out," says King, who was studying History, English Language, and Creative and Performing Arts at One Sixth Form in Ipswich. "But then I looked it up and saw the eligibility criteria were more encouraging. Disrupted education because of Covid didn't count because everyone was in the same boat, but I qualified through a combination of my school and my family's financial situation. I applied, but I didn't let myself get stressed out about it – I didn't think for one minute I would be accepted."

But accepted he was, although he took his time once the offer was made. "After the initial huge excitement of the offer, I felt I didn't want to jump the gun. The course is free, but my father was wary about me taking another year in higher education. And I was terrified!"

Overcoming that fear, however, King joined 46 other pioneering Foundation Year students last September, under the watchful eye of course Director Dr Alex Pryce. "It was so exciting seeing the group moving from being names on a spreadsheet into real students," she says. "They are shaping up to be really promising, >

## These students are intellectually flexible, and it's fantastic to watch. Most change takes a long time, but this feels like a much more rapid engine

and many are unrecognisable in their confidence levels from when they arrived. Studying at Cambridge is helping them to realise their academic potential and allow them to show what exceptional students they can be.”

The aim of the Foundation Year is to offer a stepping stone to Cambridge for those who have experienced educational disadvantages and whose circumstances have prevented them from realising their full academic potential to date. “We know there are hundreds of things that can make students ABB not A\*AA,” says Pryce. “They might have experienced close family bereavement, have caring duties, been in care themselves, moved schools several times or be refugees, for example. The school or college they attend might regularly perform poorly at inspection or have a below-average number of students staying in education. In these sorts of exceptional contexts, students don’t have the circumstances to realise their true, innate potential or to focus on their studies in ways that others can, and they miss out on the top grades they would otherwise have been capable of.”

Pryce points out that the Foundation Year is part of the University’s programme of widening participation. “We did a lot of research, and we know that our wide but targeted eligibility criteria means we can reach students with exceptional potential. We are not taking broad brush strokes – it is about offering individual opportunities to people who otherwise might not even try to apply to Cambridge.”

People like Amira Mumin (Murray Edwards), another of the first cohort, who hadn’t told anyone that she was even applying for a place. “I just decided to do it, I didn’t think too much about it. I told them when I got in. It was less pressure and best for me.”

After finishing her sixth form studies in History, Psychology and Sociology in London, Mumin had read about the Foundation Year online. “I got lucky. I was on a gap year, working in various jobs in London, applying to universities second time round. And while I was researching courses I came across Cambridge and saw I met the criteria for the Foundation Year. And I thought to myself: ‘If I can just take that chance...’”

Mumin found that just being in Cambridge took a bit of getting used to. “In terms of fitting in as a person of colour, it is something you must get ready for before you arrive. I grew up in London and the people I was used to being around look very different from here.”

The Foundation Year is open to UK residents only; this year the scheme received around five applications per place, which aligns with the average for undergraduate places. The admissions process is through a cross-collegiate panel, with 12 Colleges currently taking part in the programme. Students apply for a multi-disciplinary pre-degree course in the Arts, Humanities and Social Sciences, with options to choose papers from across several disciplinary streams. There are no tuition fees and students receive a scholarship to cover rent and other living costs.

“We knew we wanted to do something a bit different with our Foundation Year and a key part of the consultation process was agreeing on and setting up the multi-disciplinary approach,” says Pryce. “Students who have less support tend to gravitate ›







Foundation Year student Emilie Ford (Newnham) with her tutor, Dr Stuart Palmer.



Course Director Dr Alex Pryce with Foundation Year student Khalid Hussain (Wolfson)

## Now they are starting to think at a higher level about complicated concepts, rather than just giving their emotional response. In short, they are starting to think like Cambridge students

towards those undergraduate courses that are more job-orientated, like Law. Meanwhile, some subjects don't see as many applicants because they are simply not taught in many schools and colleges at sixth form – take Modern Languages, Music and History of Art. We give Foundation Year students the opportunity to explore their academic options.”

Dr Stuart Palmer, Director of Admissions at Murray Edwards and Foundation Year Teaching Associate, spent much of last spring and summer working with his colleagues to design the teaching modules. “It was a challenge because this was something completely new for Cambridge, but also very rewarding. In academia you are very rarely given the time and space to sit back and think about a new teaching programme.”

Palmer, whose own research focuses on popular politics and religion in early modern Britain, has been teaching the evolution of corporations and the history of corporate law. “Last term it was post-Windrush poetry – I set the historical context for the 1950s. That's quite a long way from my comfort zone in terms of research but here we teach as a team. The broad range of skills among my colleagues makes a real difference.”

All the Foundation Year students are taught centrally on a site in West Cambridge and Palmer says supervisions are never quiet.

“When you give them a difficult concept, they are not shy to offer their thoughts and not afraid to challenge each other or change their positions. These students are intellectually flexible, and it's fantastic to watch. Most change takes a long time, but this feels like a much more rapid engine.

“We take students who, for a variety of external reasons, didn't perform to the standard they were capable of in their prior qualifications, and through an intensive one-year course bring them to Tripos level. They start out with very different academic profiles from their peers – they come from a very diverse range of backgrounds. Hopefully they will challenge the perception of what a typical Cambridge student looks like. Working with exceptional students is always a privilege and especially so with these students.”

Pryce, a Fellow of Homerton who studied contemporary Northern Irish poetry and feminism for her own DPhil, has also relished the classes. “Multi-disciplinary classes can make for interesting discussions. I was teaching a seminar about south-east Asian religion and fiction recently and there were students interested in literature, in theology, in social sciences, as well as several students who could bring their personal experience to bear.”

When they arrived, many of the students didn't have the confidence to express their ideas or the experience to refine them, she says. “Now they are starting to think at a higher

level about complicated concepts, rather than just giving their emotional response to the question. In short, they are starting to think like Cambridge students.”

Freddie King says he has been working harder than ever before. “It's a very full-on course. I know this is Cambridge, but it really stands out from other foundation courses that might seem like softer options. I am doing much more reading and writing, and I am also getting better at planning when I work.”

King had applied to study law at other universities before being accepted on the Foundation Year. “Now I am thinking about reading Philosophy. I have really enjoyed Dr Shyane Siriwardena's supervisions on the British education system seen through a philosophical lens. I am doing some Plato for my extended project to make sure philosophy is what I want to read.”

He is applying to other Russell Group universities as well as Cambridge for his undergraduate course. “I love being here, but I am trying to keep my options open and looking at other courses like philosophy with law. I hang behind after supervisions to get advice from the lecturers – Stuart has been really helpful because he has so much experience.”

The students live in College and have plenty of opportunity to share experiences with the undergraduates. “I was so sure I wouldn't get in I didn't bother to choose a College, so I feel really lucky to be at Sidney Sussex,” says King. Everyone has been really nice and interested in what I am learning, especially the different academic structure. And I would have been in the College panto if I hadn't had fresher's flu!”

Mumin, who is at Murray Edwards, found that integration with other Cambridge students can physically be harder for those on the Foundation Year, simply because they are taught away from the Sidgwick Site, in their own group in West Cambridge. Still, she is thrilled with the course so far.

“I have every intention of staying on in Cambridge. I study what excites me, and one of the great things about the foundation course is that you get to explore. It is completely different from sixth form – a lot of pre-reading and one-on-one teaching. And I have decided I really like studying law.”

Mumin is involved through the Somali Society in reaching out to pupils from Year 11 and above at schools in deprived London boroughs. “As someone who has witnessed the programme first hand, I am here to tell them it is possible to get to Cambridge. It needn't be just an aspiration. Just look at me!” ©

***The pilot of the Foundation Year has been made possible by the generosity of many donors, including a cornerstone donation from Christina and Peter Dawson. If you would like to support the Foundation Year, visit [philanthropy.cam.ac.uk/give-to-cambridge/foundation-year](http://philanthropy.cam.ac.uk/give-to-cambridge/foundation-year)***

**A £2bn turnover. Global reach. More than 30,000 brilliant – and independent – thinkers. And a governing system that has evolved over 800 years. As new Vice-Chancellor Professor Deborah Prentice takes up the reins, we ask: what does it really take to lead one of the greatest universities in the world?**

WORDS LUCY JOLIN ILLUSTRATIONS MARCOS MONTIEL





**T**his University has had a Vice-Chancellor for centuries – ever since Hugh de Hottun in 1246, to be precise. Generally a head of a College, the man in question (and until Dame Rosemary Murray in 1954, it was always a man) would serve for a year or two before returning to College life. Yet unlike so many other aspects of Cambridge life, there is no medieval manuscript laying down the parameters of the Vice-Chancellor's role. Indeed, the job as we know it today is relatively new – and very much a role designed to meet the demands of leading a complex, future-thinking and global university.

The University's first full-time Vice-Chancellor – Sir David Williams – was elected by the Regent House in 1992. Since then, just six people have filled the role (the seventh will be Professor Deborah Prentice, who formally took up the mantle at the beginning of July), each serving an average of seven years. ›

So what does the job entail? Cambridge combines the scale and complexity of a multinational with the baked-in independence of a broad-based political party, so leading it is intricate and challenging. The University is a self-governing institution: a community of scholars running their affairs through a combination of committees, boards and other groups to the benefit of all. It's the Vice-Chancellor's job to make sure that the

## If there's anywhere in the world where people should be campaigning and objecting and challenging, a university is that place

community works – now and over the very long term. And it does work: an idea that has been through multiple committees is likely to stick longer than the decision of a single person.

The Vice-Chancellor chairs some of the most important committees, including the Council and General Board, helping to stimulate debate and decision-making. "I am in the room making sure this discussion happens," says Acting Vice-Chancellor Dr Anthony Freeling (St John's 1975), who, prior to returning to academia, spent more than 30 years in business. "That's where the Vice-Chancellor's influence lies. And I spend a lot of my time suggesting to person A they need to talk to person B – sometimes with me in the room,

preferably without me in the room. The key is being able to make the connections."

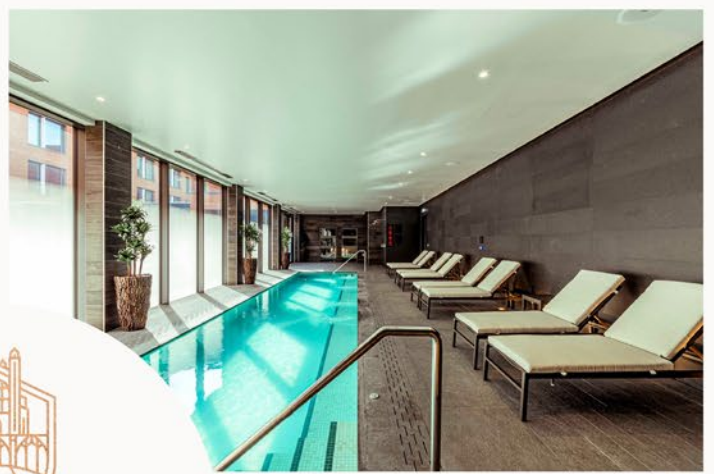
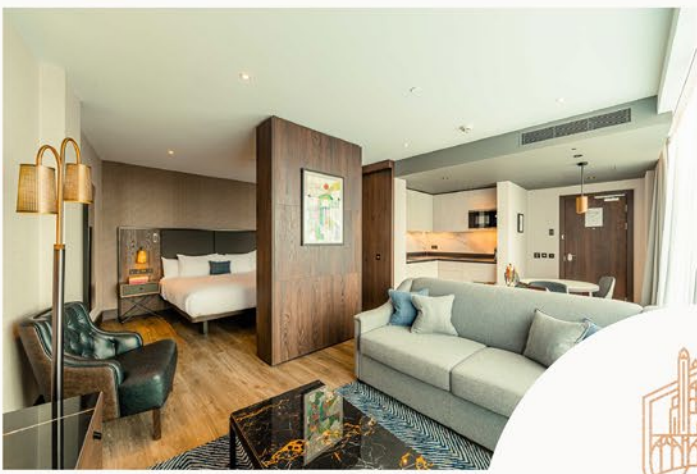
It goes without saying, therefore, that the Vice-Chancellor must be a people person: able to think on their feet at committee meetings, individual meetings, fundraising events, alumni events and media interviews. But listening is just as important – many problems can be defused when people feel they are being listened to. "And if there's anywhere in the world where people should be campaigning and objecting and challenging, a university is that place," says Freeling.

A good Vice-Chancellor, Freeling points out, will be an active listener – able to build relationships of trust across the entire University and able to turn that trust and listening into action. "You need that ability to communicate, not just in terms of talking to the media or to a town hall meeting or to a committee, but also to listen to people and make decisions on the basis of what people are saying."

The Vice-Chancellor must also be troubleshooter, ambassador, advocate, fundraiser and spokesperson. They bring a global outlook, while remaining deeply embedded and active at a local and regional scale. And they must be collaborative, bringing together specialists and different parts of the University to make things happen. And finally, says Freeling, they must be prepared to move efficiently between these roles, multiple times, every day. "One moment you're presenting a loyal address to the King, writing letters to the Prime Minister about Horizon Europe or visiting 11 Downing Street to make a case for the next Budget, and the next you're being sprayed with champagne ›







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by a boat crew,” he says. “I’d say you spend about half your time in that external-facing part of the role, because much of the time, the Vice-Chancellor is the person that people expect to see out there representing the University. So you’ve got to be out there.”

## One moment you’re presenting a loyal address to the King and the next you’re being sprayed with champagne by a boat crew

The very best leaders often talk about vision, and that’s vital at Cambridge, too. “A Vice-Chancellor needs a touchstone: a sense of what is important,” says Freeling. “It could be a strategic vision of the future of the University, or a vision around the type of culture we want to have. This is a leadership role, but one in which it’s crucial to take people with you. Getting the University to have a shared purpose or mission or vision is very much what you’re about.”

Then, of course, a Vice-Chancellor must juggle commitments and priorities with extraordinary skill: it’s telling that Freeling can point out, very precisely, that there are just 168 hours in the working week. “When an undergraduate joins MIT, they are told that being at MIT is like drinking from the firehose. Being Vice-Chancellor is like a firehose. An enormous amount of information pours through every single channel, straight at you. You have to be good at absorbing that information. And more importantly, you need to work out which bits of information you’re going to even spend time trying to absorb.”

Ultimately, he says, the role of the Vice-Chancellor always comes back to people: bringing brilliant, bright, creative people together for the common cause that is Cambridge and the incredible impact its work has had – and will have – on the world. “Together, we identify problems, challenges and solutions,” says Freeling. “We discover options, test them, and implement them with the people who will have to work on them. Yes, Cambridge has buildings and expensive machinery, which are important. But what’s really important is the people and the brilliant things they do – and the Vice-Chancellor’s role is to enable them to do them.” ☺



**Professor Deborah Prentice becomes Vice-Chancellor in July, succeeding Dr Anthony Freeling, Acting Vice-Chancellor.**

Professor Deborah Prentice, an eminent psychologist, takes up the role of Vice-Chancellor from July, having spent the past five years as the Provost of Princeton University.

Professor Prentice joined Princeton as a lecturer in Psychology in 1988 and was appointed Assistant Professor of Psychology the following year, after completing a PhD at Yale. She was appointed Associate Professor in 1995 and Professor of Psychology in 2000. She became the Alexander Stewart 1886 Professor of Psychology and Public Affairs in 2012 and chaired the Department of Psychology for 12 years until her appointment as Dean of Faculty in 2014.

Her academic expertise is in the study of social norms that govern human behaviour – the impact and development of unwritten rules and conventions and how people respond to breaches of those rules. She has edited three academic volumes and authored more than 50 articles and chapters, and she has specialised in the study of domestic violence, alcohol abuse and gender stereotypes.

“It is a huge honour to be nominated to lead such a renowned institution,” says Professor Prentice. “I welcome the challenge of helping Cambridge write the next chapter of its long and proud history. Higher education around the world faces many challenges but I firmly believe there are also great opportunities to demonstrate how our leading universities can together harness their expertise to solve global problems. I hope that I can play some part in leading that dialogue.”



**The material of the future is here... though chances are you've never heard of it. Gallium nitride has the potential to transform energy use through its incredible efficiency, and Professor Rachel Oliver has dedicated her life to the cause.**

WORDS MEGAN WELFORD PHOTOGRAPHY SARA AGUTOLI

Professor Rachel Oliver has devoted her career to understanding and expanding the use of gallium nitride (GaN), yet even she was surprised at the outcome of her 2016 experiment. It was an experiment that would have potentially world-changing consequences.

“We were trying to make a quantum dot light source,” says Oliver, Professor of Materials Science in the Department of Materials Science and Metallurgy, and Director of the Cambridge Centre for Gallium Nitride. “A quantum dot gives out just one photon at a time – the smallest amount of light possible – and it can be a superb tech tool, but we were missing one component. It was seven years ago and the equipment we needed to make it was very expensive and no one would lend it to us.”

The key to the quantum dot light source was to find a way to make GaN – a highly efficient semiconductor and the core component of blue LEDs, the world’s most energy- and resource-efficient light source – more porous. GaN is made up of the soft metal element, gallium, which occurs naturally in the Earth’s crust, bonded to a structure of nitrogen atoms, grown in layers of crystals. To make it porous, you usually etch deep trenches for acid to pass through and eat holes in the material, using high-energy ions. But Oliver’s team were missing the machine that generates the high-energy ions.

“So we made some materials and tried some other stuff to get the acid through the non-porous layers,” she explains. “It shouldn’t have worked... but it did. The acid went through the layers, without us making any holes. A member of my team was asked: ‘How is it possible?’ and he said: ‘I don’t know – it’s magic!’ I told them it wasn’t magic, it was science, and the real challenge was that we now needed to understand it.”

The team used microscopy, another area of Oliver’s expertise, to understand exactly what was going on. “People think semiconductors need to be made of extremely perfect, uniform materials, without any flaws,” explains Oliver, “whereas GaN has a lot of defects in the crystal. Everyone is always very worried about that. But what we eventually saw through the microscopes was that the defects actually created these tiny pipelines, about a billionth of a metre in size, and that’s how the acid, or etchant, was getting through. And in doing so, it also left the non-porous layer intact.” ›

Let there be light

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### It is GaN!

A wafer of GaN, used as the substrate for microelectronic devices used in microchips.

Their discovery makes the use of porous GaN much more feasible in industrial processes, partly by simplifying the process and partly because the smooth non-porous layer increases its device compatibility. And it marks the latest stage in Oliver's lifelong devotion to the cause. "I was always interested in the stuff around me," she says. "Things like, why is that milk see-through? Why is that stone chilly when it's cold, but metal is so freezing that your fingers stick to it? I was interested in concrete stuff you could touch and poke and eat for dinner."

She settled on gallium nitride as a focus during her DPhil at Oxford. "I was interested in the mistakes in GaN," she says, "the variations in the substructure, and how at a very small scale they can affect the properties of the material. And optoelectronics has a huge range of applications. It has the potential to have the biggest impact on global energy use."

It's not just about faster computers, she says, but energy and resource efficiency. "Compared to other compounds in semiconductors, GaN uses less electrical energy. The GaN blue LED, if used in its best condition, can make devices 80 per cent efficient. For comparison, a traditional 'Edison' light bulb is about five per cent efficient, which means about only five per cent of its electrical energy is turned into light. In a compact fluorescent bulb, the ones that take ages to come on, that rises to about 20 per cent. In a GaN lightbulb, it's 40 to 50 per cent."

Considering that, in the UK, we use about 20 per cent of our electricity for lighting, the potential energy savings are obvious. "In the developing world, it's more like 40 per cent," says Oliver. "Kerosene lamps are still much in use, and they are polluting and dangerous. Low-voltage GaN devices can run off solar power, so the energy could be stored from day to night. This means you could bring light to areas that currently don't have it, which could have huge social impact. People could work in the day and then study at night, for example. Nobel-prize winner Hiroshi Amano, who invented blue LEDs, showed photos of Mongolian children at evening school in yurts lit by them. GaN is a social good!"

Then there's resource efficiency. "The global supply chain for semiconductors is difficult," says Oliver. "Materials like gallium are rare, they're in the earth's crust. You get gallium by mining zinc, so there's a finite amount. Semiconductor chips are mainly made in high-tech factories in Taiwan, but they're used inside so many

devices, from phones to washing machines to cars. The pandemic showed up the fragility in the supply chain, and the UK and the US are worried about the security of it, too."

Oliver's porous GaN discovery is intellectual property owned in the UK, which gives Britain a foothold in the global semiconductor supply chain. It's also the reason Oliver has been advising the US and EU governments on their respective 'chips' acts, which aim to boost resilience in semiconductor technology and applications. And as the Chair of the Royal Academy of Engineering in Emerging Technologies, she is exploring how porous GaN can improve the performance of LEDs and the efficiency of the production process.

"There's not much room to improve blue LEDs," she says, "but if you could get amber and red to perform the same, you could have a full colour display in one system, and this would vastly improve technology like virtual, augmented and extended reality. You would be able to superimpose the internet onto everyday vision. For example, a surgeon doing an operation could access graphics and data to help make decisions through a headset without having to look away. There are obvious entertainment and leisure applications, but you could also use these screens for immersive remote work environments, so a Teams call would feel like you were

## **I told them it wasn't magic, it was science, and the real challenge was that we now needed to understand it**

sitting together in a conference room. You would be able to gesture, to have what would feel like a normal 'in person' interaction. This is what [Facebook's Mark] Zuckerberg is talking about when he refers to 'the metaverse'."

Oliver is also figuring out how to retain and reuse the GaN that is discarded during the etching process. "Efficiency is about getting the most out of the crystal, as well as using less energy to make the same amount of light," she says.

Now, she is bringing her technology to the market through her spinout company, Poro Technologies. "Equality and diversity in science and engineering is a big feature of my work," she says. "I try and implement it in how I run my research group and my company. There are plenty of people from minority backgrounds with innovative approaches who just don't get appreciated, so we lose people with ideas and don't get clever science. The overwhelming majority of spinouts are founded by white men, but we are a woman and two Chinese men. People thought semiconductors had to be homogenous but it wasn't true for GaN, and it's not true for science either." ©

**Professor Rachel Oliver is Director of the Cambridge Centre for Gallium Nitride.**

# All in the best possible taste?

**When is it OK to laugh? Who gets to make the jokes? When is enough? What is never funny? Modern comedy might tussle with what is and isn't appropriate, but it's got nothing on the 18th-century Great Laughter Debate.**

WORDS VICTORIA JAMES

**W**hen Oscars host Chris Rock made a joke about actor Jada Pinkett's alopecia at last year's Academy Awards, it concluded not with a punchline but a slap – thrown at Rock by Pinkett's incensed husband, Will Smith. The incident made global headlines. Was the gag funny or offensive, the world wanted to know. Was Smith justified in lashing out? Should Rock have joked about such a sensitive subject?

Sadly, no one at the time was citing an obscure yet fervent British debate of nearly three centuries earlier that might have provided answers. Known as the Great Laughter Debate, it was a moment in the early-to-mid 18th century when questions of how humour worked, when it should be deployed, by whom, and to what purpose became the focus of public fascination and literary and philosophical discourse.

"These decades are a more complex and much darker period than people often imagine," says Dr Rebecca Anne Barr, University Lecturer in English and Fellow of Jesus. "There exists this Bridgerton fantasy of a polite and genteel era, partly because people are obsessed with the aesthetics of the country house and the beautiful paraphernalia of lives of luxury. But that's not the full texture of the time. It's an age of the rise of the public sphere, of satire and political debate, and of essays on social conduct and politeness. And once you start to read outside the canon of literary texts, you find coarse, violent, and deeply impolite and cruel forms of humour."



It's a period of turmoil. The beginning of the century had seen a new royal dynasty, with the accession of George I in 1714. "The arrival of the Hanoverian monarchy is a paradigm shift," says Barr. "It used to be called the 'bloodless revolution' – though in truth, plenty of blood was shed, not in England but in Scotland, Ireland and elsewhere. By the middle of the century, we've entered a period of public anger that really speaks to our current moment. There's concern about corruption, a perceived collapse in public morality, and a sense that all these things contribute to a worrying social malaise."

**Jestbooks are not dissimilar to how memes work nowadays. Memes can repurpose images and tropes – you insert whoever you're laughing at into a meme and turn humour against them**

That unease and concern is voiced in a remarkable array of ostensibly comedic literary and artistic forms, for both private and public consumption. Alongside witty

novels and ingenious variety shows, are farces, jestbooks and savage satirical cartoons. "The jestbook is a compendium of the underbelly of humour," explains Barr. "The jokes in them can be silly and ridiculous, but also deeply cruel. This is playground humour, with fight and bite. They contain jokes laughing at minority accents, at disabilities, and at women's incapacities and vanities."

Jestbooks could be enjoyed privately but were also intended to be read to others. Literacy had surged during the preceding decades, and while it was still centred in the male middle classes, it was probable that in a community or labouring gang, at least one person would be able to read. "Reading aloud was an art – the reader would put on funny voices and perform," says Barr. "In their topicality, these jestbooks are not dissimilar to how memes work nowadays. Memes can repurpose images and tropes – you insert whoever you're laughing at into a meme and turn humour against them. More than merely ways of laughing at others, they can become powerful political tools."

And politics was at the dark heart of how laughter was understood in the 17th century, in the overbearing figure of philosopher Thomas Hobbes, whose works propounded unsparing insights into human nature and civil society. "The definition of humour advanced by Hobbes in his most notorious work, *Leviathan*, was influential and disturbing," notes Barr. "He thought laughter ›

**“My wife and Mercer and I away to the King’s playhouse... But one of the best parts of our sport was a mighty pretty lady that sat behind us, that did laugh so heartily and constantly that it did me good to hear her”**

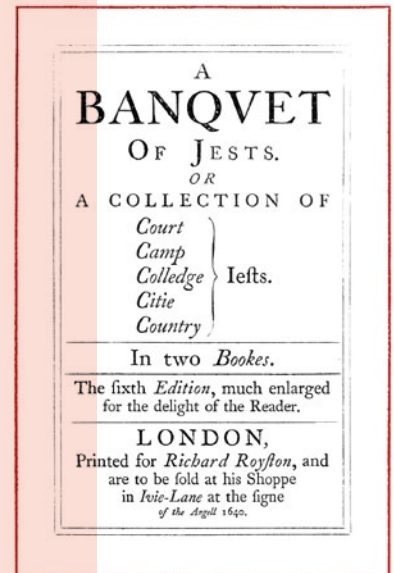
*Diary of Samuel Pepys, 16 September 1667.*

**The Laughing Audience**

**William Hogarth, c.1766–1799**

Hand-coloured mezzotint with etching. "Printed for Carington Bowles at No. 69 in St. Paul's Church Yard, London."

*Image: The Trustees of the British Museum*



**A Banquet of Jests**  
Sixth Edition, 1640

First published in 1630, the book was so successful that it was reprinted 16 times during the 17th and 18th centuries, often with additions and revisions.

Images: Library of Congress



COLLEDGE JESTS.

Lib. I. Part III.

*A Tutor and his Scholler.*

A YOUNG lad of a Colledge in Oxford, when he should have bene in the publicke Hall at disputations, a little before the time, fell a sleepe, and by that meanes failed of comming downe. His Tutor being then *Moderator*, missed him, and after exercise was done, went up to his study; where finding him asleep, he waked him, chid him for sleeping at that time of day, and angrily

*A Tutor and his Scholler.*

askt

“I may therefore conclude, that the passion of laughter is nothing else but sudden glory arising from some sudden conception of some eminency in ourselves, by comparison with the infirmity of others”

Thomas Hobbes, *Leviathan*, 1651.

was about hostility and antipathy, almost a state of war. He advanced a theory that humour is rooted in superiority – you laugh at someone and have this momentary feeling of elation, vaingloriousness, thinking yourself better than them.”

By the early decades of the 18th century, Hobbes, dead for almost half a century, still had cultural cachet. “He was ‘the Monster of Malmesbury’, a figure people knew even if they hadn’t read him, who was believed to hold horrible, materialist ideas about society,” says Barr. But by way of reaction to the long Hobbesian shadow, writers and thinkers were now seeking a more complex and benevolent theory of laughter. “They were exploring the notion that laughter can come from surprise, the sight of something that reveals incongruity and absurdity. As such, laughter wasn’t hostile or pernicious, it was almost a form of recognition.”

One of the earliest proponents, perhaps precipitating the Great Laughter Debate, was Francis Hutcheson, an Ulsterman who went on to become

Professor of Moral Philosophy at Glasgow University. His 1725 essay, *Reflections Upon Laughter*, originally penned as letters to a Dublin journal, was responding in part to the negative tradition of laughter. “You had

**The Earl of Shaftesbury, who wrote droll and gentle humour, saw laughter as a test of truth – if you mock somebody it’s not necessarily that you’re a monster, you’re simply trying to get at what’s true**

philosophers who were discussing laughter, sociability and how we get on with other people,” says Barr. “The Earl of Shaftesbury, who wrote droll and gentle humour, saw laughter as a test of truth – if you mock somebody it’s not necessarily that you’re a monster, you’re simply trying to get at what’s true.”

These early analyses and counter-theories sparked wider reflection. “Laughter became a recurrent topic,” Barr explains. “Popular periodicals like *The Spectator* were discussing the nature of humour and the limits of polite mirth in the theatre and public life more generally. There was

94 *Witty Feeres.* [Part III.]

askt him why he was not at disputations. The youth after a little yawning and stretching, replied, Truly sir, *I did not dreame of it.*

*The Principall of an house.*

A PLEASANT fellow came to the Principall of a House, and pretending that he had received wrong by some of the society, complained unto him in this manner: Sir, sayd he, I have benee abused by a company of Rascalls, belonging to this house, and knowing you to bee the *Principall*, I thought good to acquaint you, &c.

of





**THE ART OF INGENUOUSLY TORMENTING!!**

Pub. by T. Tegg, 33, Cheap-side.

1808

**“Keep up in your mind the true spirit of contradiction to everything that is proposed or done; and although, from want of power, you may not be able to exercise tyranny, yet, by the help of perpetual mutiny, you may heavily torment and vex all there that love you”**

Jane Collier, *The Art of Ingeniously Tormenting*, 1753.

**The Art of Ingeniously Tormenting  
After George Murgatroyd  
Woodward, 1808**

Etched by Thomas Rowlandson and inspired by the novelist Jane Collier’s satirical book giving advice on how to nag.

Image: The Metropolitan Museum of Art

an acknowledgement that there is a peculiarly English humour – something in the soil, or the people, that means we laugh at things in a particular way.” In the wake of philosophical discussion about consciousness by thinkers such as René Descartes and John Locke, people were pondering what laughter suggested about humanity. “If laughter truly is part of the human condition, what does that tell us about us?” says Barr.

Some of the most trenchant contributions to the Great Laughter Debate came not from theoreticians and philosophers of humour, but practitioners – in particular, the comic novelists we think of as defining this era. Perhaps the best known is Henry Fielding, author of *The History of Tom Jones*, and of *Shamela*, a parody of Samuel Richardson’s pious tale of virtue, *Pamela*. “Henry Fielding believed one of laughter’s virtues was its deflation of pretension and affectation,” says Barr. “He saw it as a ‘natural’ part of an embodied experience and a dimension of shared humanity – a communal pleasure that he wants to redeem from mid-century moralists like Richardson.”

**If laughter truly is part of the human condition, what does that tell us about us?**



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## The gendered preconceptions around what gets defined as funny is still an issue today. When literary critics go back into the archive, they sometimes lose their sense of humour

Less well known today but just as significant, Barr believes, are Henry's sister Sarah Fielding and her friend and fellow author, Jane Collier. Barr's upcoming research project as the Crausaz Wordsworth Interdisciplinary Fellow in Philosophy will examine the participation in the Great Laughter Debate of Collier, Fielding and other female writers, including Eliza Haywood and Frances Sheridan. It will ask how the philosophy of laughter might look different if studied in novels by women.

"The gendered preconceptions around what gets defined as funny, which these women were exploring at the time, is still an issue today," Barr points out. "When literary critics go back into the archive, they sometimes lose their sense of humour. Sarah Fielding is an example of an author who has suffered from the presumption that men are funny and women aren't; that men are interested in laughter and women aren't. People almost automatically presume she's always serious rather than tongue-in-cheek."

Collier wrote a popular 'anti-conduct' book titled *The Art of Ingeniously Tormenting*, a guide to making the lives of your nearest and dearest an absolute misery. "You read about the horrible things people do – the banality, the vanity, and you recognise them, and have a good laugh," says Barr. And Eliza Haywood wrote "brutally funny books that are also really dark", penning yet another satirical response to Richardson's *Pamela*, titled *The Anti-Pamela; or Feign'd Innocence Detected*, which offers up uneasy laughs and a prickling awareness of your own complicity in a hypocritical society.

Sarah Fielding's final novel, *The History of Ophelia*, contains what one scholar of humour has called "the most unexpected rape joke in 18th-century women's writing" – an extended joke about the attempted assault of an elderly woman. Barr describes it as "very Benny Hill, played for laughs", yet it's

plain, she says, that Fielding is attempting something serious with this farcical scene. "It's funny... but. It works as a caveat and

### At moments of cultural transition, especially moments of cultural conflict, laughter becomes more powerful

a warning about the lack of moral authority, given that the would-be rapist is a justice of the peace, and if you made a rape case allegation you'd go to a justice of the peace. The genre of the rape joke is horrific, but it's being used in a really interesting way here to unpick power, teaching us to recognise things about ourselves, society and authority."

Can the Great Laughter Debate teach us things today? Barr believes so. "At moments of cultural transition, especially moments of cultural conflict, laughter becomes more powerful. We are in a waning economy, where inequality is widening and society has become more bitter and seemingly irreconcilable, as in the 18th century. The polarisation of public discourse means laughter is again contentious – we are self-conscious about what we laugh at, and whether we are even 'allowed' to laugh."

Yet if laughter is a way of highlighting divisions and dissatisfactions, Barr believes it is also worth considering whether laughter can work in an ameliorative, consensus-building way. Right now, she concludes, "it's a good time to think about what we find funny, and why". ☺



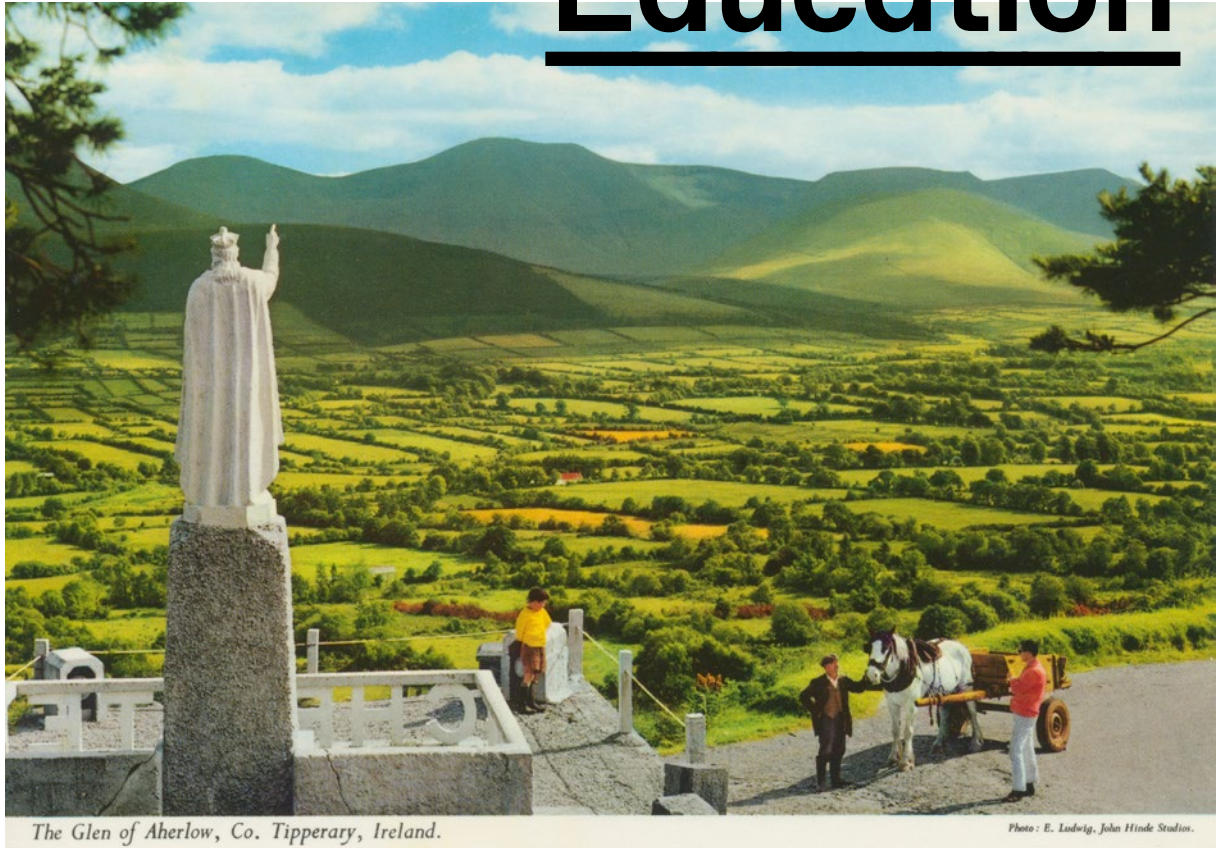
**Dr Rebecca Anne Barr is Crausaz Wordsworth Interdisciplinary Fellow in Philosophy.**

*Image: Patricia Pires Boulhousa*

CAM PRESENTS:

# Emergency

# Education



*The Glen of Aherlow, Co. Tipperary, Ireland.*

*Photo: E. Ludwig, John Hinde Studios.*

# Ireland

British ignorance of Irish history and politics is legendary (it's a topic of academic study and Taoiseach Leo Varadkar even commented on it in public). Indeed, phrases such as the 'Irish' question and 'Irish' borders bizarrely leave out any suggestion of British involvement. So, to mark the 25th anniversary of the Good Friday Agreement, CAM delivers a piece of emergency education, asking leading Cambridge experts to give us their views on the issues that matter.

WORDS LUCY JOLIN POSTCARDS JOHN HINDE

# The Good Friday/Belfast Agreement was not just about peace

Dr Niamh Gallagher, Lecturer in Modern British and Irish history

Most people in Britain think the Good Friday Agreement just ended a sectarian conflict called the ‘Troubles’. This is based on the reductive idea of an ancient conflict between two ‘tribes’, but takes no account of the various structural factors, inequalities and domestic and international contexts that actually did give rise to something that became conflict in the 1970s and 1980s, or the very real problems that were solved by the Agreement.

Northern Ireland was created by Westminster in 1920 as a majoritarian regime answerable to the Unionist population alone. Though safeguards to protect the rights of minorities were included in the 1920 Government of Ireland Act, they were extinguished by the ruling Unionist party, which remained in power for 50 years. There was gross discrimination against minorities – of which Catholics were the largest – in everything from voting rights and housing allocation to employment.

This was the backdrop to the civil rights protests of the 1960s, when both liberal Protestants and Catholics lobbied for ‘one man, one vote’ and ‘British rights for British citizens’. They were infamously attacked by Ulster loyalists and members of the northern police force, the Royal Ulster Constabulary. Then came the huge policy failures of both the Stormont and Westminster governments: the introduction of internment, the arrival of the British army with no clear remit of action, and horrors like the Ballymurphy and Bloody Sunday killings. Gross policy failures changed the nature of the conflict in the early 1970s, providing new dynamics that reinvigorated northern republicans who formed the Provisional IRA. Defeating the IRA soon became the British mantra. The ‘two tribes’ idea explains very little about how those early years of civil disturbance turned into something far more complicated and violent.

Jump ahead to 1998 and even the ‘solution’ to the ‘Troubles’ is more complicated than a peace accord. The Good Friday Agreement is an international agreement of which the multi-party agreement in Northern Ireland is just one part. It is a radical reinterpretation of political relations across these islands. For a long time, Unionists had feared the intentions of the Republic of Ireland. Articles two and three in its 1937 constitution laid claim to Northern Ireland. The Agreement arranged for two referendums, one of which was held in the Republic to remove these articles (94 per cent of people voted to remove them). In the north, the Agreement recognised the legitimacy of both minority and majority constitutional aspirations. It was deemed fine to want to stay within the UK and equally fine to favour a united Ireland. It abolished majoritarian government and introduced power-sharing. The Agreement inaugurated changes to policing, justice and human rights, all of which were qualitatively new additions to previous ‘solutions’ for solving the conflict.

Why violence hasn’t entirely disappeared is a more complicated question related to historical peculiarities, class, poverty, political failure, crime, drugs and, at some level, ideology. But in 1998, ‘peace’ was able to come about because real structural problems were solved. The two ‘tribes’ idea explains little about what was achieved. >



*The Round Tower (9th Century), Ardmore, Co. Waterford, Ireland.*

Colour Photo by John Hinde, F.R.P.S.



*Gougane Barra, West Cork, Ireland.*

Colour Photo by John Hinde, F.R.P.S.

# There is no such thing as the ‘Irish Question’



**Richard Bourke, Professor of the History of Political Thought**

There is this thing called the ‘Irish question’ that episodically impinges on British politics. But that is a misformulation, because there is no ‘Irish question’ as such. There’s an English question, because England is the largest player in these islands. It’s the most populous, latterly the most economically powerful, and the earliest centralised power in these islands. So the English question concerns how it will manage its adjacent territories: by separation, or – as it has periodically decided – by union, in various ways.

Prior to 1801, there was a federal union with a colonial parliament: an Irish Protestant parliament. Catholics were not properly incorporated into these jurisdictions and were not trusted: they were hostile to a Protestant crown. In the aftermath of the French Revolution and because of a rebellion in Ireland, Britain changed its policy, as Ireland having its own subordinated

parliament looked like a security threat to Britain. An incorporating union was brought about in 1801 – as a solution to the English question.

Then, as a result of various forms of Irish discontent through the 19th century, there was a series of policy responses by the Westminster Parliament. Some favoured ameliorative measures with continuing union and some, principally the leader of the then Liberal Party, Gladstone, began to favour home rule. The solution was to create an Irish Parliament again, which was to be separate yet with federal links to the British Imperial Parliament.

That was intensely debated – and divided opinion in Britain and Ireland, leading to a threat of civil war in Ireland and arguably a threat of certainly very serious civil disruption in Britain as well, including in England. The solution arrived at in the early 1920s involved a strong measure of independence for Southern Ireland along with the partition of the island, forming the Irish Free State, later becoming the Irish Republic, together with Northern Ireland. Following a civil war within Ireland over the terms of that settlement, this arrangement lasted until the 1968-1972 period, when it faced the possibility of collapse.

So the Irish question – which, we now see, is a product of prior British and English questions – came back on the agenda in 1968, but was settled once more with the Belfast/Good Friday agreement of 1998. Yet ‘the question’ then reasserted itself once more with the culmination of the Brexit debate: Britain, dominated by England in this regard, sought to reconfigure its relationship to the EU, promoting the need for a new relationship with the Republic of Ireland and, as soon became clear, with Northern Ireland as well. The Irish question appears once more as a product of debate about how Britain should manage its own domestic sovereignty and redesign its international political and trading relations.

I therefore get tired of the ‘Irish question’ – basically because there is no independent Irish question. If there were, it would mean that Ireland was driving the discussion each time, as though there had been a series of virtual Irish referenda since the 16th century posing all these different questions. Quite the contrary: the Irish question is the product of British statecraft.



British Railways Ma



Clearing the Corral Fence, Dublin Horse Show, Ireland.



Boat, Dun Laoghaire Harbour, Co. Dublin, Ireland.

Colour Photo by John Hinde, F.R.P.S.

# The Great Famine was about finance – not just food

Dr Charles Read, British Academy Postdoctoral Fellow at the Faculty of History and Affiliated Lecturer at the Faculty of Economics

On 16 August 1845, *The Gardeners' Chronicle and Horticultural Gazette* reported “a blight of unusual character” on the Isle of Wight. A few weeks later, that blight had appeared across Europe – and, most disastrously, it had spread to Ireland. This was the beginning of the Great Irish Famine, which killed and displaced millions.

The 1840s were a decade of shortages – French grain harvests also failed in 1846-47. These shortages caused inflation not just in Ireland but across Western Europe. This was, of course, a problem for the British government. It had to work out how to redistribute resources to make sure the vulnerable could afford higher prices in the short term – and do so in a way which didn't cause financial or fiscal instability. In March 1847, the British government announced plans to raise a £14m loan to pay for Irish famine relief.

But what caused the U-turn later that year that meant that central government spending on the famine was cut to virtually nothing rather than expanded to £14m a year? Historians have posited that it was anti-Irish racism, or laissez-faire ideology – the idea that the market would provide. But the real cause was far more straightforward. The 1847 budget contained both unfunded tax cuts and an expansion in the relief effort funded by borrowing, rather than tax rises. Consequently, interest rates surged and financial markets panicked, causing many banks and businesses to go under. Corn brokers who lent on trade in corn overleveraged themselves and came crashing down. The result? Central government slashed spending on Irish famine relief to almost nothing, to try and calm the markets – and the majority of famine mortality in Ireland occurred after this change in 1847.

Those mistakes made in 1847 reoccurred in the autumn of 2022, with Liz Truss's disastrous mini-budget. In autumn 2022, the macroeconomic backdrop was similar: a shortage of energy because of the Ukraine-Russia war, leading in turn to food shortages. Inflation rose: at the time of writing, it is over 10 per cent in the UK. The announcement of unfunded tax cuts, plus a large amount of borrowing to pay for energy imports from the rest of the world, also triggered a financial panic. A U-turn and an austerity autumn statement followed, and the consequence, again, was higher winter mortality rates.

So the real lesson of the Great Famine should be that when a country is suffering scarcity and inflation – just like today – a government must redistribute resources to help the poor. But you must do it in a way which is fiscally sustainable and isn't going to imperil financial stability. The damage caused in 2022 was entirely preventable, predictable and avoidable if that lesson had been learned – and acted upon. >



Colour Photo by John Hinde, F.R.P.S.



O'Connell Bridge and Street, Dublin, Ireland.

Photo: R. Beer, John Hinde Studios.

# The Windsor Framework will reduce the impact of the border – but it won't rub it out

Catherine Barnard, Professor of European and Employment Law

I did dozens of town hall forums and public engagements in the run-up to the Brexit referendum, and I can recall only one instance where I was asked about the potential of Brexit for Northern Ireland. And that was from someone with a Northern Irish accent. There was a remarkable lack of interest or curiosity.

We were promised that Brexit would keep all the benefits of EU membership but without any of the obligations. And this was always untrue – because the Brexiteers hadn't sorted out what sort of Brexit they wanted and most of them had little idea about the legal significance of leaving the single market and the customs union.

So what was that significance? The 'Brexit trilemma' holds that you can have only two of the following three things: no hard border between Northern Ireland and Ireland; no customs border in the Irish Sea; and the UK leaving the European single market and customs union. Boris Johnson committed the UK to leaving the single market and the customs union. So that meant there had to be a border somewhere. The logical place would be between the north of Ireland and the south. But that was effectively ruled out by the Good Friday Agreement. So there had to be an east to west border – down the Irish



*Desmond Castle on River Maigue, Adare, Co. Limerick, Ireland.*



*Meeting of the Waters and Old Weir Bridge, Killarney, Ireland.*

*Colour Photo by John Hinde, F.R.P.S.*

Sea. Johnson got round the Brexit trilemma by refusing to accept that there would need to be a border down the Irish Sea.

But the impact assessment that accompanied the text of the Withdrawal Agreement – where the Northern Ireland Protocol is located – makes it abundantly clear there would be an east-west border and there would be costs associated. That border particularly affects goods going from GB to NI, but it also affects some goods going from NI to GB.

The Windsor Framework aims to reduce the impact of that border. It hasn't rubbed it out entirely and from that point of view, Rishi Sunak did oversell what he'd achieved. There will be checks, particularly on agrifood products, but they will be reduced. And the Windsor Framework will introduce a green lane for goods going into Northern Ireland: if goods are staying in Northern Ireland, then the paperwork will be significantly reduced.

Are relationships between the UK and the EU thawing? I don't think we should get carried away. But I think there's a certain amount of Brexit fatigue and desire on all sides to move forward.



# The country in Western Europe which has changed more in the past 40 years than any other? Ireland



Colour Photo by John Hinde, F.R.P.S.

Daniel Mulhall, Parnell Fellow and former Irish Ambassador to the US

While it's understandable that the British people know less about Ireland than maybe they ought to, our shared responsibilities in Northern Ireland will always require the two countries to know each other better than they perhaps otherwise would. And everyone in Britain ought to know that Ireland has probably changed more in the past 40 years than any other country in Western Europe.

First, economically: when Ireland joined the European Union in 1973, it was way behind the rest of the EU countries in its level of economic development. Now, it has caught up with those countries that were once significantly more advanced than Ireland. Alongside the impact of EU membership, this has transformed the way Ireland sees itself and its relationship with Britain.

And there's been a kind of social revolution. Things that were deeply divisive up to the late 20th century – contraception, divorce, abortion – are no longer controversial. That same revolution has hit politics, too. When I was growing up in the Ireland of the 1960s, there were two big parties, Fianna Fáil and Fine Gael. It was always either one of those parties in government on its own, or the other party in coalition with the Labour Party and maybe some other smaller parties.

Today, those two historically dominant parties are in government together – it was the only way they could put together a majority capable of forming a government. In the last election, they got less than 50 per cent of the total vote. We now have eight or nine parties, plus a lot of people with independent political positions. The next election is not for another two years, but at this stage, the prospect of Sinn Féin being the dominant political party in Ireland is very real. In Ireland's electoral politics, Sinn Féin is seen primarily as a left-wing party.

Then there are changing attitudes towards Britain and Northern Ireland. When I was growing up, there was a sentimental attachment to Irish unity, which was strong but not very well thought out. Now

people are much more aware of the challenges involved in that venture and, mostly, they are inclined to see unity as a longer-term proposition.

I take a moderate nationalist position in that I see a certain geographical logic in a future scenario for Irish unity. But it will take time for the necessary debate to mature. Much preparatory work would be required to make it viable and difficult issues will need to be teased out. More immediately, I hope that we will see a return of devolved government in Northern Ireland and the evolution of more normal relations between the EU and the UK, and between Ireland and the UK, now that agreement on the Windsor Framework may finally have put to bed those interminable wrangles over Brexit. ›



Inchiogeela Lakes near Ballingeary, West Cork, Ireland.

Colour Photo by John Hinde, F.R.P.S.

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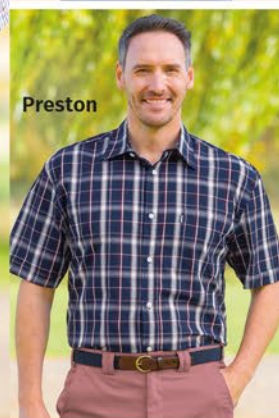
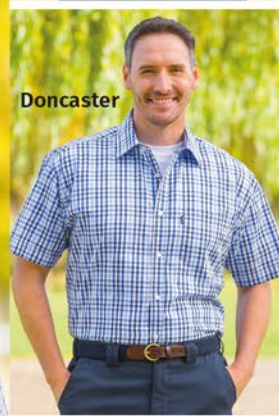
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### John Hinde (1916–1997)

Hinde was an English photographer who began taking photographs while travelling around Ireland with a circus. His idealistic and nostalgic photographs capture the vividness of the Irish countryside, blending Irish stereotypes with the lush, seemingly endless, landscapes.

*Images: The John Hinde Archive / Mary Evans Picture Library.*

# Gladstone was right about Ireland

Eugenio Biagini, Professor of Modern and Contemporary History



*Ashford Castle on Lough Corrib, Co. Mayo, Ireland.*

*Colour Photo by John Hinde, F.R.P.S.*

In the lifetime of Prime Minister William Gladstone (1809-1898), more than a million Irish people – British subjects, that is – died of disease and starvation during the Great Famine of 1845-52, and millions more emigrated over the following decades. Moreover, despite mass emigration, the domestic conditions of Ireland remained unsettled, with land agitation and a resurgent nationalist movement demanding major concessions from London.

Gladstone devoted the last part of his career to two issues: land reform and home rule in Ireland – that is to say, devolution. As he memorably remarked: “We are bound to lose Ireland in consequence of years of cruelty, stupidity and misgovernment and I would rather lose her as a friend than as a foe.”

Yet, he was dismissed by his adversaries as a charlatan and by many modern historians as both delusional and self-interested. At the root of these attitudes there was an assumption that in so far as Ireland was ‘a question’, it was a nuisance,

something on the margins of British history, and no serious politician could waste his time with its demands.

So, in the 19th century, there were all sorts of reasons why enemies of change would dislike Gladstone, especially after he adopted a series of radical reforms between 1881 and the end of his career.

And then, of course, the focus of his attention – the Irish – were seen as characters who should be kept at safe distance. They were usually caricatured as brutal, incorrigible, semi-criminal types or stage Irishmen – amusing but quite helpless. Entertaining, even, but not to be taken seriously. And Gladstone seemed to engage with them as if they were people deserving of the same amount of attention as the inhabitants of London did.

Today, a similar attitude has survived among the educated elite. Gladstone saw the horrors of the Great Famine in his lifetime. And during the 20th century, the British public witnessed two civil wars in Ireland – 1916-1923 and 1968-1998 – that brought death and destruction to thousands of British subjects. During the 30-odd years of violence in Northern Ireland, euphemistically called the ‘Troubles’, nearly 3,600 people lost their lives, the largest number of UK nationals killed in warfare since the Second World War.

Given the continuing relevance of these issues, you would expect the academic establishment in this country to be seriously concerned about them. Instead, just as in the days when Gladstone’s detractors mocked his political proposals, Ireland is still externalised and quarantined – as if it were something we can somehow expel from our understanding of ourselves.

Ireland is not yet seen as a vital part of British history, in the way we are now thinking of the British Empire as part of ourselves and our collective past. And that is why there is a knowledge gap which affects our present-day policy making as much as our understanding of the historical development of the United Kingdom. ☹



*Traditional Jaunting Car Touring Lower Lake, Killarney, Ireland.*

*Colour Photo by John Hinde, F.R.P.S.*

# Maud Millar (Clare 2007) swaps opera for operating systems to launch a revision app for students

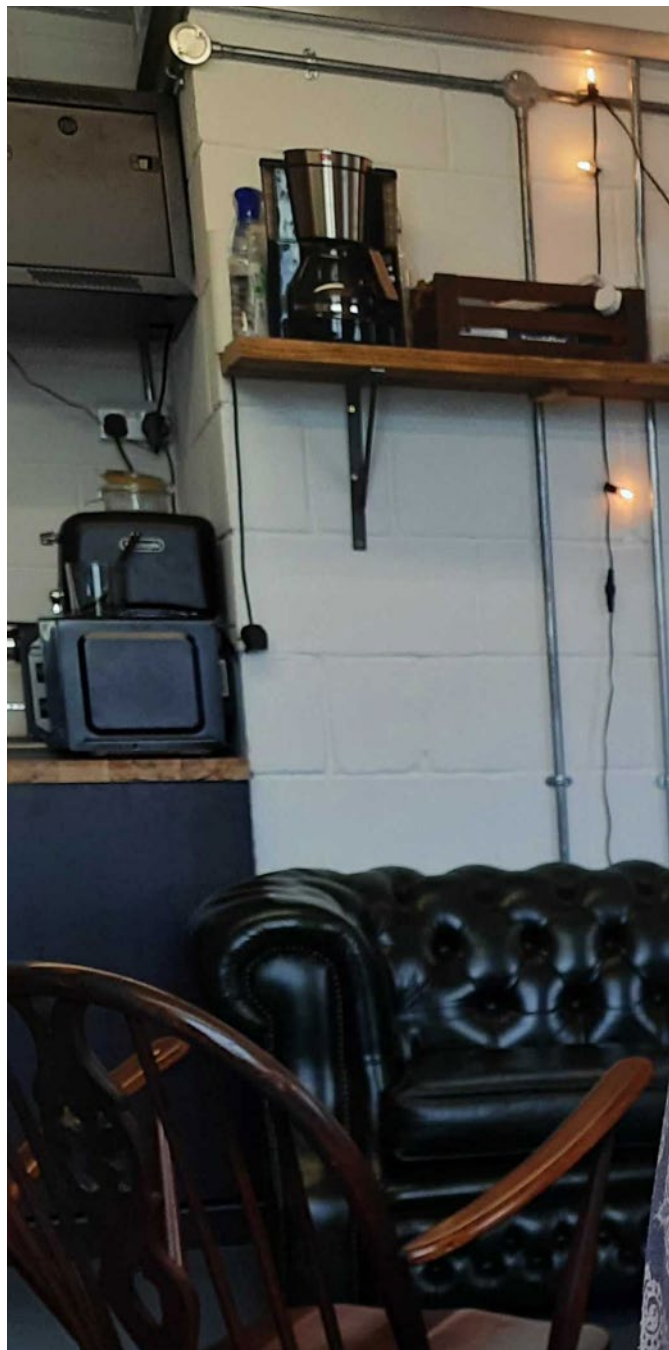
WORDS LUCY JOLIN PHOTOGRAPHY SARAH PETERS

**I**t's so important that students think about the impact they want to have – rather than what job they want," says Maud Millar (Clare 2007), CEO of productivity tech company Adapt. "A generation ago, you'd leave university, join a graduate training scheme and that would be it. But this generation has moved between different careers, and there's more freedom if you don't get bogged down at the point you leave university."

Millar certainly didn't have a career in mind when she graduated. After leaving Cambridge, she became a professional opera singer. "I didn't know what else I wanted to do," she remembers. "To be honest, I think I did it because it was something I could do, and everyone told me I should do – even though it wasn't my passion." However, the uncertain, peripatetic life wasn't for her, so she took what she loved about singing – communicating with people, inspiring them to love music – and applied for the Teach First programme.

Being thrown in at the deep end as an English teacher was, she says, "thrilling" for the first two years. But she wanted to widen her impact beyond the classroom. Working for a startup providing content to A Level and GCSE students, she quickly realised that what students needed wasn't more content, but a way to organise that content. So Millar founded productivity app Adapt, which creates smart revision timetables for exam students. The app launched in January 2020 – and was downloaded 100,000 times before the pandemic hit and all exams were cancelled.

But Millar kept the business going. Now, Adapt is used by more than 60,000 students in 5,000 schools around



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**Not everyone will like you, and that's fine. Find people that you like and have a small circle of trusted confidants – and screw the rest!**

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the world – and numbers are growing all the time. For the past two years, she's been using her expertise to help students at Fitzwilliam prepare for the Fitzelate student entrepreneurship competition. "I work with them on how to get business-ready, how to raise money and how to start a business."

Her advice for graduates? Not everyone is going to like you – and that's fine. In fact: "Embrace it!" she says.



“Women can be very hung up on making everyone like them. As an entrepreneur – and as a teacher as well – if I’d spent too much time worrying about whether the students like me or whether the board likes me or whether the investors like me, I’d never get anything done.

“You can get fixated on being perceived in a certain way, and that just doesn’t matter. Find people that you like and have a small circle of trusted confidants – and screw the rest of the world!”

Everyone should consider doing Teach First, Millar says: it’s a way of giving back to an education system that you have benefited from as well as an incredible career developer. “When you leave university, education is one of the only things you know how to do. You’ve done it relatively recently. You understand young people. You can make a difference to them.

“I saw so many floppy-haired new grads, still in student mode and who were always late at the start of term, absolutely transformed in the few short weeks it took to get to Christmas – they were there bang on time with their suits and their marking data packs! If you’re struggling to know what to do, my advice would be to try teaching for a couple of years. You will gain a wealth of skills and do something genuinely transformative.”

A Cambridge degree, she points out, can give you the confidence to believe in yourself and your ideas. “There are not many female tech CEOs, but I don’t tend to think of myself as being particularly female or feminine. Cambridge empowers you to be an independent worker and an independent learner, and to believe that you have the capacity to do the things that you might not necessarily have been told throughout your childhood that you were able to do. It’s a very special thing.”

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# This idea must die: “Learning styles determine outcomes”

**Professor Duncan Astle says an over-reliance on adapting teaching methods to specific individuals is misplaced.**

WORDS LUCY JOLIN ILLUSTRATION GEORGE WYLESOL

**V**isual, auditory, reading/writing and kinesthetic. The concept of learning styles has been with us since the late 1990s and early 2000s, when it was accepted that to optimise learning, teachers must identify the particular learning style of a child and align the way they presented information accordingly.

Only, it's a myth. There is no evidence whatsoever to back it up. The idea has been extensively and empirically tested to see if children learn the most in conditions that align with their preferred 'learning style'. They don't. Yet a systematic review published in the journal *Frontiers* in 2020 found that teachers still believe they do. In fact, the review found that 89 per cent of teachers self-reported a belief in matching instruction to learning styles.

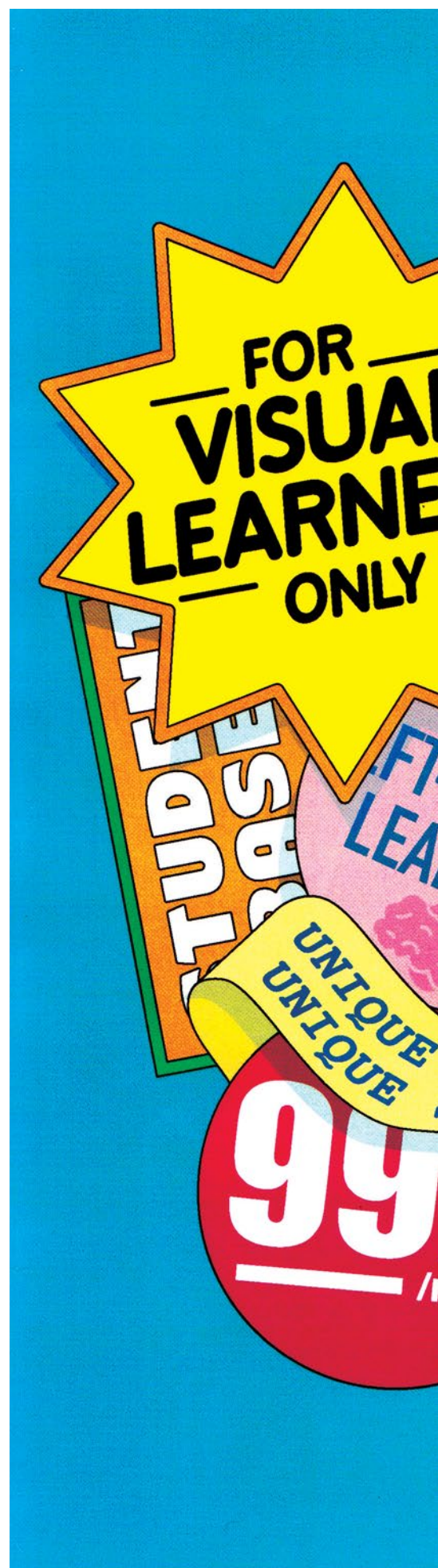
Why did this myth take hold? It was, of course, marketed extremely cleverly, and it is instantly understandable. There's something appealing about dividing people into categories, like star signs. Plus, like many myths, something true is hidden inside it. That is the fact that children learn best in enriched, inclusive environments, in which the teacher thinks carefully about how they present a breadth of different materials and addresses key concepts from many different angles and perspectives. But it is nonsense to say that children are not learning because the 'learning style' doesn't align with what the teacher is doing.

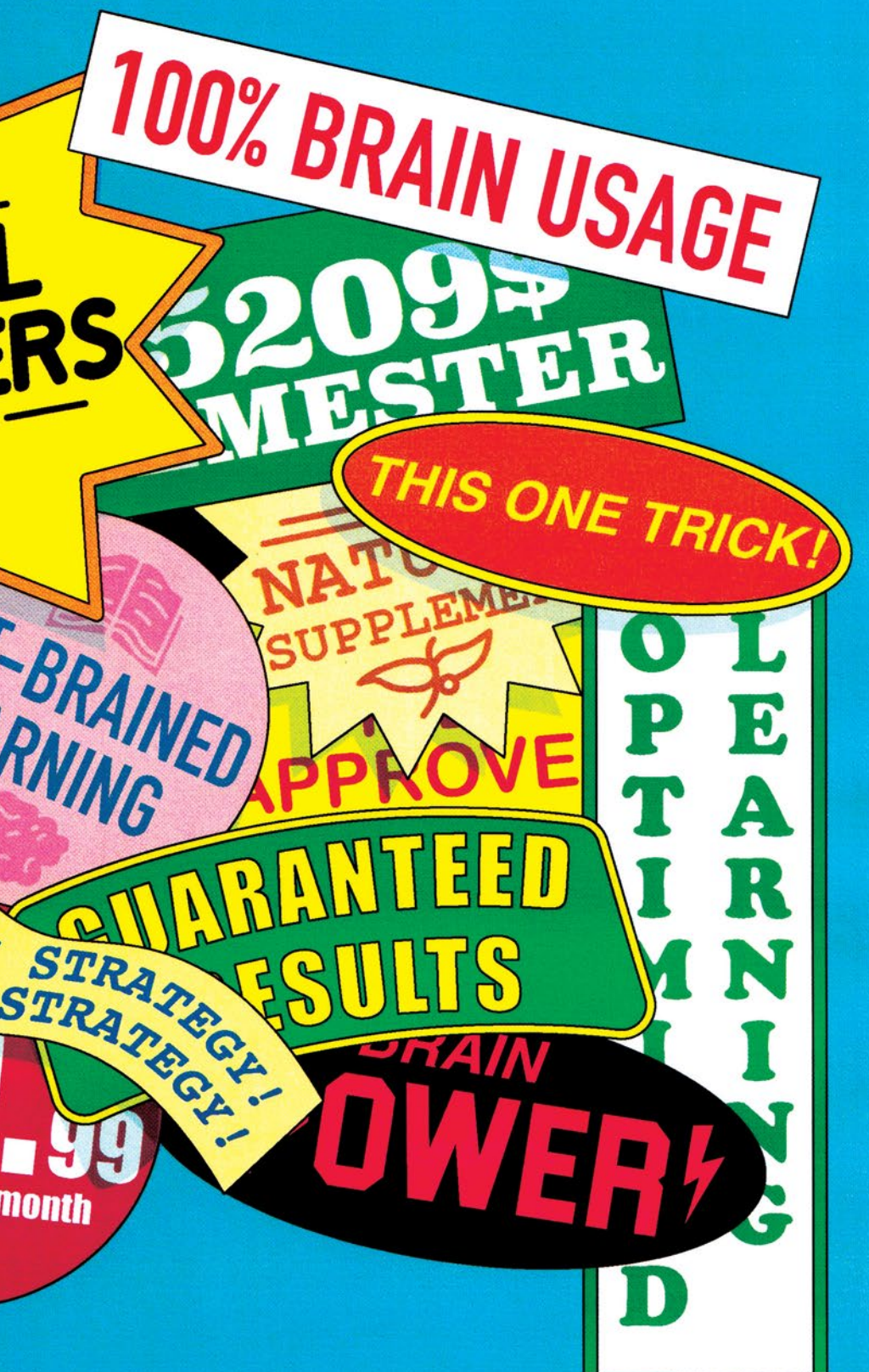
One might argue: 'Even if this idea is bogus, is it really doing any damage?' Well, firstly, these interventions are not always cheap, and those resources could be better used. I am reminded that around

the same time as the concept of learning styles was growing in popularity, something called Brain Gym proliferated in schools: tools and techniques for teachers to use based on pseudo-neuroscience. Your left hemisphere is for logic, the reasoning went, and your right hemisphere is for emotion. You need to connect them by doing exercises that involve you using both halves of your body. Of course, to learn how to do this, a school must pay thousands every year for training, subscriptions and resources.

There is, however, a deeper problem with ineffective interventions. Say a child is struggling and is told to just watch videos, or do exercises, or take fish oils, or whatever the non-evidence-based intervention is – and it doesn't work. What does that do to the child who has been told that this is the silver bullet for their difficulties? If a child is told they are a visual learner and the teacher starts delivering information that's not in their preferred style, what's the point in them paying attention? In short, bad interventions are not neutral, they can be counterproductive.

There is a broader issue here. Who gets to decide what counts as an effective intervention in an education setting? If you had a new drug, you'd take it to NICE, which has a very clearly laid-out pipeline and framework for deciding on the evidence threshold needed to roll something out nationwide. In education, there is no similar process. The Education Endowment Foundation has a good and useful website where they rate interventions based on evidence strength. But other than that, there is nothing.





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## Vast amounts of time and money are still invested in bogus interventions and frameworks

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Teachers, meanwhile, have minimal resources and time, and are bombarded with new initiatives and ideas. They do not have the time to explore the evidence base. Teacher training would be a golden opportunity to carefully decide what it is worth teachers knowing about and investing their time in. But what goes into teacher training is usually determined by the university that's running the PGCE course. There is no central agreement on what goes into teacher training – so it's challenging to change.

A lot of the stuff we do in the lab is nerdy neuroscience, a long way from translation. But we want to help teachers in the classroom, too. So we also work from the teacher's perspective. What do we know about the kinds of cognitive difficulties the children in their class might have? Or why some children might feel excluded from classroom learning? What can the teacher do to make sure that no child gets left behind? What barriers do children face in the classroom and how might teachers help to reduce those barriers? And how do our findings translate into easy-to-implement, cheap, and – vitally – evidence-backed interventions? If we really want to help our children, it is these aspects of learning we should be engaging with. Vast amounts of time and money are still invested in bogus interventions and frameworks. There must be a better way.

**Professor Duncan Astle is Gnodde Goldman Sachs Professor of Neuroinformatics at the Department of Psychiatry and Fellow of Robinson College.**

# “The music was a visceral scream of being alive”

**Bassoonist Rachel Gough (King’s 1984) discovered a deep love for music at King’s, even if it meant the odd all-nighter.**

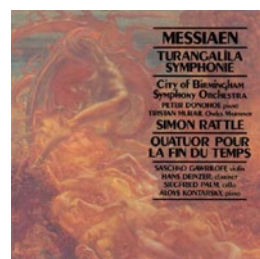
WORDS MEGAN WELFORD



## ***Illuminare, Jerusalem* Judith Weir**

Even now, when I walk into King’s College Chapel, it takes my breath away. I’m not religious, but that building does something to me. Judith Weir created a beautiful piece of music, often played in Chapel, that for me represents the cavernous verticality of the space –

from the boy sopranos’ iridescent high tone clusters down to the low organ notes. During my second year, I was page-turning and pulling out the organ stops for the Festival of Nine Lessons and Carols, which was being broadcast. The organ scholar said to me beforehand: “Because it will be heard by hundreds of millions of people, one wrong note, even if it only lasts a second, will last the equivalent of your entire life.” I didn’t make a mistake, but it is still the most stressful thing I’ve ever done!



## ***Turangalila-Symphonie* Olivier Messiaen, conducted by Sir Simon Rattle**

Messiaen was a very religious man and this piece has an ecstatic energy, from the Indian rhythmic patterns to the ondes martenot electronic keyboard shining over the top. The CD came out in 1986 and I would play a short piece

from the fifth movement at a volume so loud it was possibly illegal. Certainly the walls would shake. That time of being a late teenager/early adult was full of such intense emotions, and this music was a visceral scream of being alive.



## ***Fly Me to the Moon* Frank Sinatra**

We thought listening to Frank Sinatra was cool, and that we were cool, sitting around too late at night, sorting out the world – that feeling, when you’re discovering friends, and through them remaking the world as it should be.



## ***Ondine from Gaspard de la Nuit* Ravel, performed by Ivo Pogorelich**

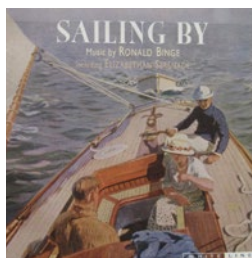
During my first year, everyone had this CD, with its photo of Ivo looking reticent and broody on the cover. Ondine has a shimmering, bittersweet melody – something like that awkward, lonely feeling you can have sometimes in the middle of a lot of people and busy-ness.

My first year was a huge swirl of comings and goings. We didn’t have phones, so if someone was out you would leave a note on their door. I had a notepad pinned to my door, and I’ve still got the piles of notes – sometimes poems – people would leave. I put this music on when I needed to breathe for a moment.

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## **On Radio 4, *Sailing By* marked the start of the Shipping Forecast, so if I heard it, it meant the essay was going badly**

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## ***Sailing By* Ronald Binge**

In the midst of rehearsals, I would sometimes have to pull an all-nighter to make a deadline, and would have Radio 4 to keep me company. *Sailing By* came on well after midnight to mark the start of the Shipping Forecast, so if I heard it, it meant the essay was going badly.

It was a hectic time: I dropped Anthropology at the end of my first year; I was playing in the European Union Youth Orchestra; and running the University chamber orchestra, which we took to London for the first time. I could sense that I was going to be a performing musician. I was spending time with insanely talented people who are soloists and conductors but also architects and bankers now, and it was a huge amount of fun. Music-making is one of the most extraordinary things a human being can do.

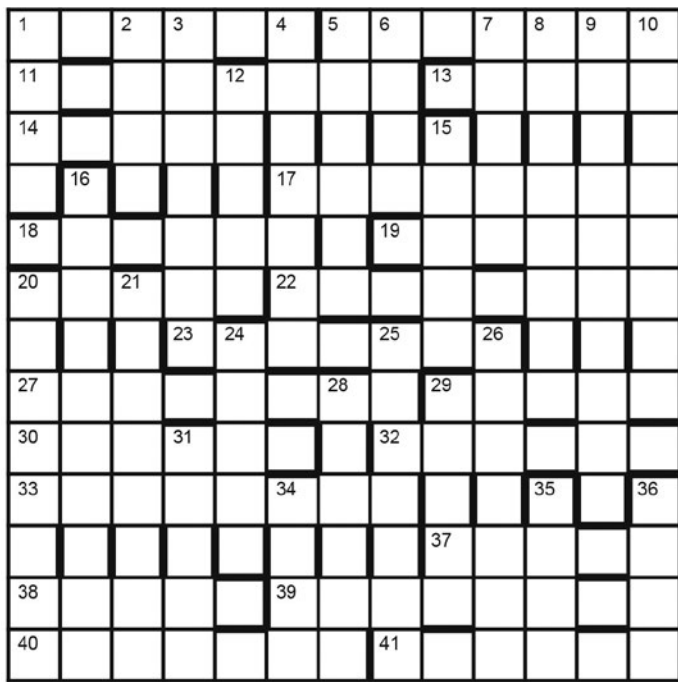
**Rachel Gough is Principal Bassoon of the London Symphony Orchestra and Fellow of the Royal Academy of Music.**



# Action Stations

## by Nimrod

Single extra letters produced by the wordplay in each clue spell, in clue order, seven items from a sequence of eight improper nouns. The missing item is to be represented in the completed grid by highlighting five groups of cells, together with the name of a thematic occasion and a name that connects them (33 cells in total, symmetrically disposed). 25 is in *Collins*.



**Across**

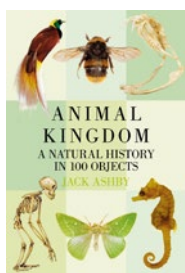
- 1 Hooligans refuse to cover fare for return (6)
- 5 Charge a budding businessperson? Manuel's expressed surprise (7)
- 11 Recurrent violence is spreading thanks to a degree (8)
- 13 Silly women jamming Spar counter (5)
- 14 Cut out meat from part of organ (5)
- 17 Train crew redeployed during peacetime (8)
- 18 Flier from north country parts to the summer in Brittany (6)
- 19 Clan leader I name is stunning quality! (6)
- 20 Who doesn't like clubs abandoning singer? (5)
- 22 Drinks welcoming Italians over - they've just arrived (8)
- 23 Working teams loading endless waste (7)
- 27 Check out demo interrupting brief mass for anti-war writer (8)
- 29 Connoisseur's face when presented with wine in a box! (5)
- 30 Baron hits reversing vehicle; earl wants a stiff drink (6)
- 32 Miltonian language's accepted by Master for entry in dictionary (6)
- 33 Repair to Chinese lantern newly relit \_\_\_\_\_? (8)
- 37 Most commonly lacking interest? Taking rather too much! (5)
- 38 Perversely secure tiny case (5)
- 39 Indicating who's doing amateur form of eventing (8)
- 40 Reflectively get kit off and fête naked body sent from heaven? (7)
- 41 Thinking new order should be given to one's soldiers (6)

**Down**

- 1 Lassie's cuddle curses University dons (4)
- 2 Self-esteem getting a boost in the edges of one's moulding (4)
- 3 Spoke wisely or wrote this, concealing answer (7)
- 4 Martyr from across the pond supports very boring task (7, 2 words)
- 5 Negative effect on pay rises in top plant (6)
- 6 When contemptible type engaged in crime (4, 2 words)
- 7 No longer busy, sad to say, in Scottish branch (5)
- 8 Unconventional wisdom Sir phrases inappropriately (8)
- 9 Defeats beer supply to dispense drink to the very young (10)
- 10 The elderly valued Pied Piper's boy coming round (8)
- 12 Finish run, but not notice having more miles on the clock? (5)
- 15 Begins to cycle annual income (5)
- 16 In Crouch End, reduced lager finally consumed in four-packs? (10)
- 20 Woman's stake hired something from Will's garden? (8)
- 21 In Gospeller's view straitjackets may kill (8)
- 24 Stinging former practice on Web (5)
- 25 Sailors served up mutton and also retribution? One escaped (7)
- 26 Greeting from Indian cove - uplifting experience (7)
- 28 Timeless melody in the end found wanting, let's be blunt (6)
- 29 Ahead of pilgrimage, start to con a local language (5)
- 31 Trainee war correspondent must appear in court (5)
- 34 Corps stop gas (4)
- 35 Flowers not opening for pollinating honey guides (4)
- 36 Votes for paper split, then given another order (4)

All entries to be received by 1 September 2023. Send your entry:

- **by post to:** CAM 99 Prize Crossword, University of Cambridge, 1 Quayside, Bridge Street, Cambridge CB5 8AB
- **online at:** [magazine.alumni.cam.ac.uk/crossword](http://magazine.alumni.cam.ac.uk/crossword)
- **by email to:** [cameditor@alumni.cam.ac.uk](mailto:cameditor@alumni.cam.ac.uk)

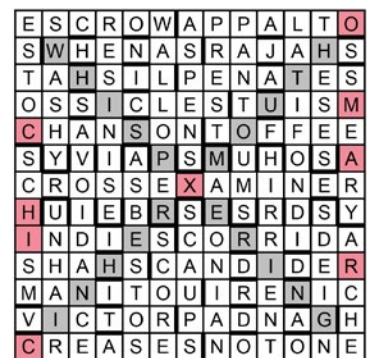


The first correct entry drawn will receive a £75 CUP book token and a copy of *Animal Kingdom: A Natural History in 100 Objects* (The History Press Ltd) by Jack Ashby, Assistant Director of Cambridge's Museum of Zoology. Two runners-up will receive a £50 CUP book token. Solutions and winners will be published in CAM 100 and online on 15 September 2023 at: [magazine.alumni.cam.ac.uk/crossword](http://magazine.alumni.cam.ac.uk/crossword)

**Solution to CAM 98 Crossword**

**"Two Wrongs Don't Make a Right"**

The "two wrongs" are represented by the larger and smaller representations of X, the latter in the central square completing the name of the husband, CHICO MARX, given by letters omitted from wordplay. Extra letters in wordplay and those in the larger "X" give Chico's denial: "I WASN'T KISSING [THE CHORUS GIRL], I WAS/ WHISPERING IN HER MOUTH."



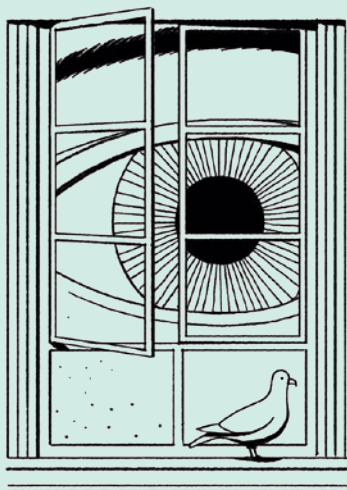
**Winner:** Michael Hands (Corpus 1965)  
**Runners-up:** Rod Beards (Selwyn 1980), David Pennyquick (Clare 1958)

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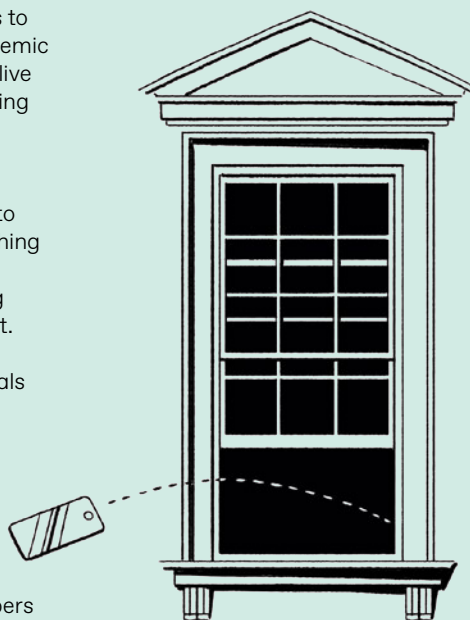
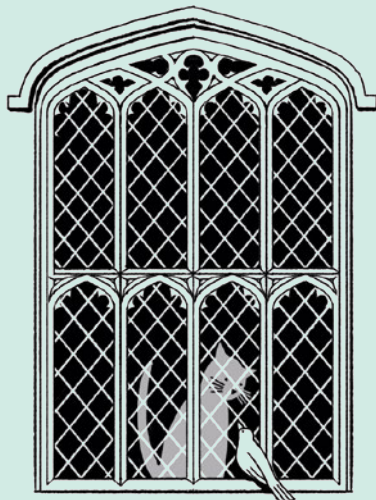
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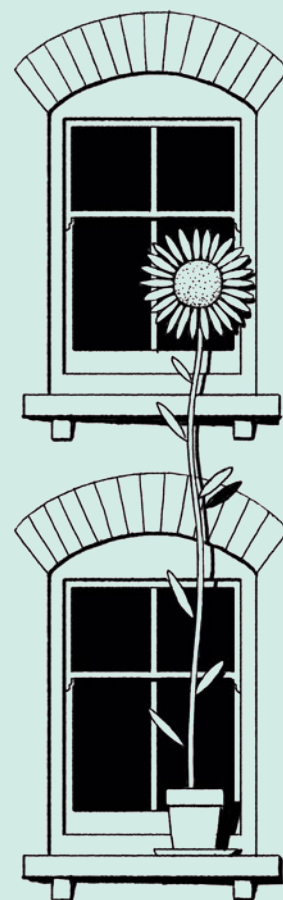
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Photograph: violinist Rachel Podger ©Monika Jakubowska.

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