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The role of a Hollywood historical advisor

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From the Editor

At this time of year, many of you would be expecting to receive Issue 30 of Hertford College News, a publication that has served the college community well for several years. Responding to feedback from alumni, we have created this, *The Bridge*, to replace our annual newsletter. In this edition we have invited past and present members from across our global network to share their thoughts and opinions on a variety of current topics, and we very much hope that you enjoy reading their work.

As ever, we are keen to hear your thoughts and feedback on our publications, and do let us know if you have ideas for future articles. Similarly, please keep an eye on our website and our regular e-news for up-to-date information from the college.

The Bridge is published by the Development Office for alumni and friends of the college. The opinions expressed are those of the writers and not necessarily the official views of Hertford College.

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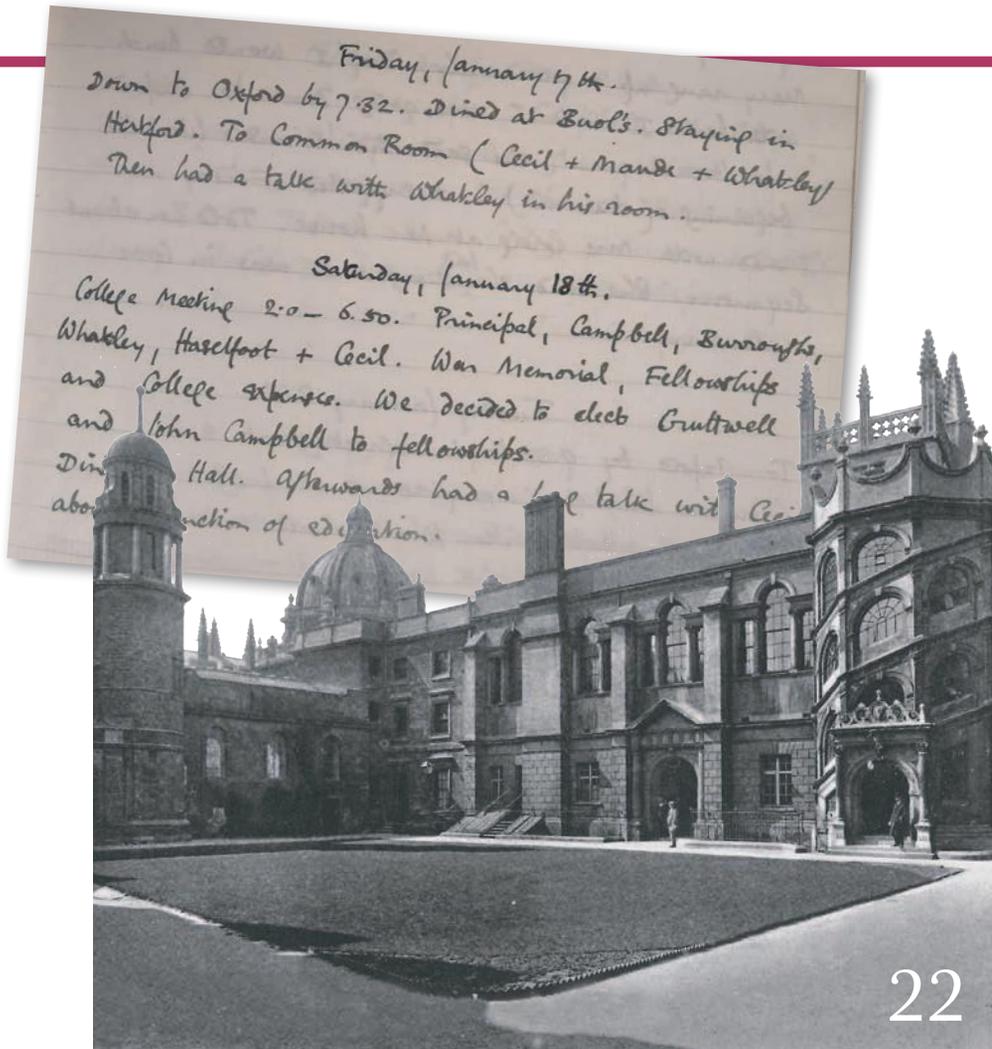
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GIVING COMPA

Will Hutton



NIES PURPOSE:

THE TASK FACING 21ST- CENTURY CAPITALISM

One of the best things about my eight years at Hertford is being surrounded by so many optimistic, clever young men and women who want to make the world better. And yet there are just too few great companies and organisations for them to join who seem to share this desire for change, genuine innovators, genuinely purpose driven and genuinely keen to curate the young. More than in any western economy, Britain's companies' sense of mission has been subsumed into meeting short term financial metrics.

Four years ago, together with Clare Chapman, then a director of BT and now a non-executive director of a number of FTSE 100 companies, and supported by Andy Haldane, chief economist of the Bank of England, we established the Purposeful Company Taskforce. Its aim was simple: to create a group of leading

companies (Unilever, Kingfisher, the Guardian Media Group, Ernst & Young, Hogan Lovell, PWC, Infosys, HSBC, Fidelity and a number of others) who would back us in gathering evidence and launching research to explore the proposition that purpose makes a difference, and issuing guidance to put it into practice, pressing for changes in policy, regulation and law.

Organisations lack a 'north star' of purpose – a guiding light that animates not just its leaders, but all who work in it – and which touches customers and supply chain alike. Company leaders cannot get far if the company's owners do not share purpose. The precondition of a capitalism that works for all is having owners who own in the best sense of that word: accepting they have responsibilities over time for stewarding the assets they own rather than merely sweating and disposing of them when done. Companies are social institutions that live and breathe, not notations on a spread sheet.

One of the shocking results of the early research of the Purposeful Company Taskforce was learning that British quoted companies have the most fragmented and variegated shareholder base in the developed world. Unlike the Germans and even the Americans, British companies

do not benefit from a critical mass of anchor shareholders, so-called blockholders, with whom boards can engage in a constructive dialogue about what the company is on earth to do. What is the core of its business model? How is it to innovate and invest to advance its market position? What should govern the trade-offs, between shareholders and workers, the long- and short-term, varying options for investment, that any management team might confront? Unless a critical mass of shareholder votes are behind the purpose and mission, the company defaults into maximising the share price because that is shareholders' lowest common denominator. Even a shareholder who wants to take his or her responsibilities seriously is too small and insignificant to make a difference. Come what may, you become part of the machine creating our ownerless corporations.

I struggle to think of many great companies or organisations that do not associate themselves with some purpose beyond financial metrics: profits and strong balance sheets are preconditions for successful business, but they are not the purpose of a company any more than the purpose of our lives is making as much money as possible. As positive examples, a few companies have a purpose

which is their reason for being from which they seek to derive their profitability: whether it's John Lewis trying to make its shoppers happy, Unilever committed to making the best everyday things for everyday folk, or the Scott Trust, ensuring that *The Guardian* is edited as it was 'heretofore'. Profit follows purpose. The owners and the managers driving the organisation forward are on the same page. At critical moments it can really matter. When two years ago Kraft Heinz thought it could opportunistically launch a £115 billion takeover for Unilever, within

24 hours it was clear that Unilever's anchor shareholders would not accept any offer: they believed in Unilever and its purpose. Just as well. Two years later Kraft Heinz is under investigation for accounting fraud and deceiving shareholders. Meanwhile Unilever's share price has risen by half – while Kraft Heinz's has fallen by 400%. Unilever, if it wanted, could now bid for Kraft Heinz. Purpose has triumphed.

This is also true in the world of higher education. Hertford College, whose purpose is academic

excellence framed by a commitment to fairness and opportunity, is a great organisation. After all its owners are the fellows who double up as the college's trustees so the alignment between purpose and owners is complete. There are a lot of reasons for Oxford's success as a university, but a critical precondition is that its colleges are run like Hertford – purposed to deliver academic excellence in perpetuity as their reason for being. It is an extraordinary advantage. I know as Principal when planning an improved library or creating a campus for graduates on our North Oxford site between Banbury and Winchester Roads that both are vital for the long run vibrancy of the college – and its capacity to meet its purpose in the twenty-first century. The college can take a long term view secure in its purpose.

Britain, alas, has too few organisations run along these lines. Wherever you look it's the same baleful story – from the lack of a great telecoms manufacturing company (GEC, which played that role, was shattered by an excess of wheeler-dealing and collapsed) so making us controversially dependent on the Chinese company Huawei, to the sale of what might have been a great high tech company, ARM, to a greedy Japanese buyer, Softbank. In the wake of the Brexit vote there has been a recognition on all sides that, left behind, Britain has had a raw deal and the Leave vote was in part a protest. It is the social and political consequence of the way Britain has run its capitalism.



**"ORGANISATIONS LACK A
'NORTH STAR' OF PURPOSE – A
GUIDING LIGHT THAT ANIMATES
NOT JUST ITS LEADERS, BUT
ALL WHO WORK IN IT"**

What has to happen, Remain or Leave, is that Britain has to take a long cool look at the way company ownership is delivered. The Purposeful Company contend that all companies, public or private, should be obliged to incorporate around a declaration of purpose. Its delivery should be systematically reported upon, and shareholders should have regular opportunities – say every three years – to confirm they support the declared purpose. There should be a variety of corporate templates to base incorporation, ranging from today's PLC to a stakeholder company to a public benefit company, extending and codifying the structures already used by the BBC, Channel 4 and Network Rail to all public utilities – a better option than nationalisation. Executive pay should be based not on annual bonuses and soft Long Term Incentive Plans, the chief reason the scale has risen to economically and morally unjustifiable levels, but on the delivery of purpose over a minimum of seven and up to ten years.

All this will make no progress without a transformation of attitudes of owners, and the managers who run funds on their behalf. Britain possesses a £7 trillion asset management industry: we need it to put its shoulder to the wheel too. Asset managers should take their ownership obligations seriously, properly understanding and stewarding the companies in which they invest. The Purposeful Company has already enjoyed some success in persuading the

Financial Reporting Council in the recently published Corporate Governance Code to require companies to declare and report on their purpose: we are aiming to do the same with the forthcoming investor Stewardship Code – and are actively working with some investment management groups to see how this could be made to live in practice.

It's a long hard row, about culture change as much as legal and regulatory change, but there are encouraging straws in the wind. FTSE 250 company the Weir Group has changed its remuneration policy around Purposeful Company principles; the Capita group is putting worker directors on its board; while Severn Trent, one of our top fifty companies, is well on the way to becoming a public benefit company along the lines advocated by the Purposeful Company. But so much more is needed. Britain boasts great broadcasters (the BBC and Channel 4), a great newspaper group (the Guardian Media Group), a great retailer (John Lewis), a sprinkling of great public companies (Unilever, GSK), some superb high-tech start-ups and the world's number one university (Oxford) – but reversing national decline requires so much more. Let's change the ownership system, and all that buttresses it, to deliver purpose. Let's change Britain.



Will Hutton has been Principal at Hertford College since 2011. Prior to his appointment, he was editor-in-chief for The Observer, and was chief executive of the Work Foundation. He currently chairs the Big Innovation Centre and has been leading an inquiry into the gender pay gap on behalf of the BBC.



Historical Fact vs Historical Fiction: The Role of a Hollywood Historical Advisor

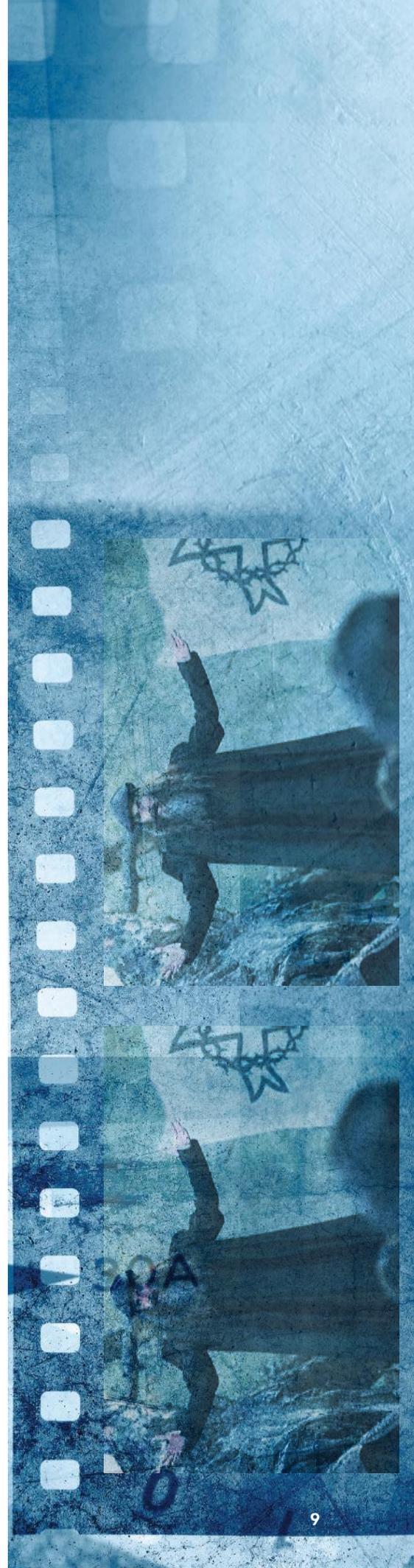
Emma Smith

So my big news is ... I got my first film credit. After a full five minutes of rolling gaffers and best boys and wig makers on the 2018 movie *Mary Queen of Scots*, I squeeze in as 'Historical advisor'. In fact it's a misnomer, since what I actually did was to look over the script several times during the summer and autumn of 2017 and make suggestions that tried to serve the balance the director wanted between natural dialogue and something broadly compatible with the period setting. (The scriptwriter, Beau Willimon, is well-known for modern dramas such as the *American House of Cards*.) So I suggested that 'chambers' was a more sixteenth-century term than 'rooms', and that the use of 'passed' to mean 'died' was a very modern and rather jarring element. I suggested that not much was known of Hadrian's Wall in this period so it probably couldn't serve as a trope for a division between England and Scotland. It seemed to me unlikely that a Protestant nobleman would describe his love for his wife as 'worship', and that 'upset', meaning disturbed, was a rather later coinage.

This was really interesting work for me, since it involved listening to the dialogue and wondering whether it sounded right. Or, more accurately, whether it sounded compatible with the range of largely literary English from the period with which I'm familiar. Particular bits of vocabulary could easily be checked in the *Oxford English Dictionary's* historical definitions, which often reveals how words change over

time: 'intimate', for instance, does not carry its contemporary physical or emotional meanings until the mid-seventeenth century, a hundred years after the events of the film: 'wedding' works as a verb but not a noun for this period. What was more difficult to look up were pieces of syntax and phrasing. I used some digital collections of historical documents and literary texts to search for certain forms of words to corroborate my sense of their unfamiliarity in this context. Sometimes it was hard to propose workable alternatives. We struggled over a line where a servant goes to prepare a bed for Mary – a completely ordinary action, but one that was surprisingly tricky to pitch in a naturalistic way. I made use of a resource some Hertford English alumni may remember from their research into the history of the language, an online historical thesaurus from the University of Glasgow which made it possible to find backwards synonyms. Working on the script brought home to me how little of women's direct speech is preserved from history: the scene in which Mary discusses sex and men with her ladies in waiting was almost impossible to connect to any archival or literary analogue. Women must have had these conversations, but it's hard to hear them at this distance.

Most of my work, then, was with the editorial blue pencil, removing material that was sufficiently anachronistic to draw attention to itself and thus away from the emotion of the scenes. The snippets I proposed as patches were so



insignificant as to go unnoticed in the final script, since that was their purpose. We wanted an unobtrusive script so as to allow the story to unfold: this was not an exercise in historical reconstruction, but nor was it intended as a modern alienation effect. There is one word, though, that I proudly lay claim to in *Mary Queen of Scots*. As John Knox (played as a bearded religious fundamentalist by David Tennant) gets more and more toxic

about Mary's reign, he develops an extended pulpit misogyny to denounce her. I remembered a vileyly evocative word for a prostitute from a court report from the period: polecat. It made the final edit.

Working on a film script was an interesting development of work I've done on several occasions with its director, Josie Rourke, in the theatre. But everything about the film world – budgets, resources,

sense of success or failure, visibility – is on an entirely different scale. And so too is the outcry. Along with some other contemporary films on historical subjects, including *The Favourite* and *Vice*, *Mary Queen of Scots* does not aim primarily at historical accuracy, but at narrative coherence and relevance. Since this is exactly what Shakespeare did with his historical source material, it did not seem to me to be particularly controversial. I wouldn't expect a historical fiction to be historical fact: the clue's in the name. But many people on social media were very annoyed at what they saw as the failings of my role as 'historical advisor', in particular because, as I was told repeatedly, the rival queens Elizabeth and Mary never met in real life, but they do in the film. It reminded me of the scene Shakespeare writes in *Richard II*, contrary to all his sources, where Richard abdicates in front of the laconic Bolingbroke

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(these two never met in real life in this way either). Both historical fictions understand that the rhythm of narrative requires a protagonist and an antagonist, and that it is thematically and emotionally satisfying to bring these arcs together in a meeting.

This storm in a historical teacup was useful in prompting me to wonder whether historical accuracy was expected or assumed by Shakespeare's first audiences, and I've been researching truth claims in historical writing of the sixteenth and seventeenth centuries in preparation for a plenary lecture at a conference on historical drama of the period. It seems that early modern audiences were more sophisticated and knowing consumers of historical fiction than some of their twenty-first century counterparts. My own brush with the modern film industry helped refine some of my go-to analogies about

early modern theatre and cinema, but it has also stimulated some new research about the idea of 'true history' in fictional contexts. If I don't get the call from Hollywood, I'll just have to fall back on scholarship to pay the bills.

My new book *This Is Shakespeare* is just out from Pelican. You can hear me discussing it on the Guardian Books Podcast <https://www.theguardian.com/books/series/books>, on BBC Radio 4 Start the Week, or in person at literary festivals in Bath, Welles, Chalke Valley and Budleigh over the coming months.



Emma Smith is Professor of Shakespeare and Tutorial Fellow in English at Hertford. Her research focuses on Shakespeare and on early modern drama, and she is especially interested in the critical history of Shakespeare, and in our investment in particular readings of his plays. In addition to her academic duties, Emma is Tutor for Equality & Diversity, and is Fellow Librarian.



***RAINBOWS,
UNICORNS,
AND NUCLEAR
REACTORS:
EXPLAINING
PHYSICS USING
MY LITTLE PONY
FAN FICTION***

Sam Henry



"HOW IS A RAINBOW FORMED?"

This is a question I have asked many prospective students applying to study Physics at Hertford. Everyone is familiar with rainbows, and nearly all candidates can say something about how refraction splits white light into its constituent colours, but only the best are able to clearly outline the circumstances that produce a bow in the sky.

One evening, I was looking for a good website on the physics of rainbows, but what I found was rather more interesting: an extensive online discussion about the 'science' of the *sonic rainboom* scene in an episode of a My Little Pony cartoon, where the pegasus Rainbow Dash creates a rainbow through high speed flight. While much of this discussion was not entirely correct, I was impressed to see contributors were showing exactly the skills I looked for in students - taking a knowledge of basic physics and applying it to a novel problem.

That was my introduction into the online community of My Little Pony fans. The show, created by Hasbro in 2010 to market toys, primarily to young girls, has become an internet phenomenon and won fans of all ages around the world.

I have long been interested in using stories to communicate science, as has been done by the Oxford Sparks project. On discovering the world of online

fan fiction, I realised this was an ideal way to try out ideas. Fan fiction sites allows fans of TV shows, books, films and computer games to share stories of their favourite fictional characters. It is a wonderfully inclusive medium where anyone, whether a teenager new to writing, or a published author can post a story.

My first story: *The Art of Rainbow Engineering* was a tale of flying ponies investigating the physics of rainbows by using their magical ability to move clouds to set up an experiment. This was popular, clocking up thousands of hits and many comments. I wrote another about ponies building a nuclear reactor. Soon I found I had a significant online readership.

I kept going, writing more stories about different science topics, as well as blog posts explaining the bits of physics in the show (look closely and you can see some interesting equations on the blackboards in the background). Soon I found my crazy online hobby was reaching a wider audience than my official outreach activities. In July 2018 I gave a presentation about it to an academic audience at the first Oxford Public Engagement with Research Conference. Then this year I was delighted to receive a MPLS Impact Award for my work.

Writing My Little Pony stories is not something I ever imagined would get recognised by the University in this way, but it has turned out to be an effective way to engage a diverse online audience with research. It has also been a lot of fun, which is why I have kept doing it for so long. I like to think I am continuing an Oxford tradition of mixing academic research and childish nonsense, following the footsteps of Lewis Carroll.

BLUE SKY THINKING

It was a beautiful sunny day. The sky above Ponyville was a perfect photogenic image of fluffy white clouds against a blue background, with a touch of brighter colouring where a pegasus tail or two was visible hanging out of a cloud.

Rainbow Dash stretched out her wings and legs, enjoying the feeling of smug satisfaction which comes when resting after a vigorous afternoon of showing off your top stunts to your fans. Next to her Scootaloo lay in the soft white fluff, enjoying the feeling of serene happiness which comes when you're lying next to the most awesome pony in the world who has taken you under her wing.

"The wispy ones are the cirrus clouds," said Rainbow, staring up into the sky. "They're real high, and can move fast. It's fun to chase them. Then there are the cumulonimbus clouds. They're good to hide in, and make lightning—perfect for playing pranks. And there are stratocumulus clouds, which make good race markers."

Scootaloo listened happily while Dash preened her feathers.

"Rainbow Dash," she said, staring upwards with a thoughtful expression. "Why is the sky blue?"

Dash stopped working on her wings and paused, unsure how to answer this.

"Because it's an awesome colour for a sky," she said eventually.

"Yes, but why?"

Dash didn't know. Why didn't they teach this stuff at flight school? Slightly annoyed, she rubbed Scootaloo's head with a hoof.

"Hey, that's an egghead question!"

"Don't you know?"

"Of course I know." She paused and Scootaloo turned to face her waiting for the answer. "At least, I mean, I know how I can find out. You see, being awesome isn't about knowing everything—that's what eggheads do—it's about knowing enough to do what you want, and having friends who can tell you everything else if you need it. So

if I want to know why the sky is blue I just have to go and ask Twilight." She lay back in the cloud, pleased that she had managed to think up a good response.

"Can we go and ask Twilight?"

Dash lifted her head off her cloud pillow and stared into Scootaloo's bright-eyed, inquisitive face.

"You really want to know, don't you?"

"Yes."

"Come on."

She lifted the little filly onto her back, and jumped off the cloud.

Five minutes later they found Twilight Sparkle, busy cataloguing the new books inside the library. She had just devised a new classification system, in which each book was labelled by a coloured alphanumeric code on the spine to identify its subject matter, language and author, and was now enjoying relabelling her entire collection.

"Hey Twi," said Rainbow. "Tell us why the sky is blue."

Twilight grinned at the unexpected pleasure of an afternoon science test.

"It's due to the wavelength dependence of the scattering of light by the nitrogen, oxygen and other molecules in the atmosphere. Shorter wavelengths—which make up blue light—are scattered more than the longer wavelengths—which make up red light. Hence the sky looks blue. Except when we look at a sunset, when we see the red-orange light transmitted through a long distance of air."

Scootaloo whispered to Rainbow Dash, "What does that mean?"

"Err..." Dash looked around the library hall looking for help. She caught sight of Pinkie Pie sitting on a cushion reading a comic. "Just a moment..." She flew across to her and whispered into a pink ear, "What the hay did that mean?"

"Duh," replied Pinkie, bouncing across the room to join Twilight and Scootaloo. "You shine every colour onto the sky, and the air kicks the blue all over the place and lets the red through. You just need a whole sky-full of air to

“

“Hey Twi,” said Rainbow. “Tell us why the sky is blue.”

see it. It also works with water and flour, milk or coffee cream. It probably also works with chalk, but I’ve not tried that, and cream tastes better than chalk anyway.”

“Err, what?”

To illustrate the principle Pinkie donned a chef’s hat and apron, produced a large glass bowl of water from behind a bookshelf, and tipped in a bag of flour. She mixed this vigorously, sending droplets of flour and water flying around the room. (Twilight quickly cast a spell to shield her books with a protective force field.) Then throwing aside her apron and hat, she strapped a headlamp around her pink mane, jumped over to pull the curtains across the window, plunging the room into darkness. She then shone her light into the water. A bluish-white colour was reflected back.

“Oh,” said Scootaloo, “now I see.”

“And from the other side...” Pinkie jumped around the bowl to the side opposite Scootaloo and crouched down to shine the light through the water so the light Scootaloo saw was the orange colour of her coat.

“Sunset!”

“That’s not quite the same thing,” objected Twilight. “Flour particles are much bigger than air molecules, so the light is scattered by a different process. It just happens to give the same result.”

“That’s good enough for me,” said Dash.

“And me,” agreed Scootaloo.

“Where did you learn that trick Pinkie?” said Dash.

“Baby-sit the Cake twins and you learn everything you



Dr Sam Henry is Lecturer in Physics at Hertford College and a Detector Development Scientist in the Particle Physics sub-department. His job involves developing particle detectors and related gadgets for experiments tackling fundamental questions in science. His fan fiction work recently won him an award in the University’s annual Mathematical, Physical and Life Sciences Division Impact Awards.

STATE OF PARANOIA:

HOW THE IRISH QUESTION RETURNED TO DESTABILISE THE UK

In the context of Brexit, the identity politics of the Democratic Unionist Party and Sinn Féin no longer seem quite so outlandish.

By Ian McBride & Colin Kidd

Among the prosperous adult democracies of the West, the unstable statelet of Northern Ireland was until recently an all-too-vivid outlier: a stropky adolescent dependant that caused no end of trouble. Custody over the delinquent was notionally contested by the United Kingdom and the Republic of Ireland, but this tug of love was far from heartfelt. British politicians and officials regarded sovereign authority over Northern Ireland as a dutiful chore, not a prize; and their Dublin counterparts – notwithstanding the all-Ireland claims of Articles 2 and 3 of the pre-1999 Irish Constitution – were in practice happily partitionist. Neither state, in truth, desired full Treasury-draining responsibility for the six troubled counties. Some social scientists went so far as to categorise the province as a ‘paranocracy’, a democracy of sorts in which paranoid fears – particularly Protestant anxieties about what Ulster’s Roman Catholic minority might be plotting – produced perverse distortions in political debate. Politics was reduced to a zero-sum game, heedless of economic rationality – something that seemed to play virtually no part in Northern Irish politics.

Things look different today, not so much because Northern Ireland has mellowed, though it has to some degree, but because some of the West’s foremost democracies have themselves become arenas for paranoid ranting, populist volatility and irrational identity politics.

When peace came to Northern Ireland in 1998 under the auspices of the Good Friday Agreement, there were reasonable expectations that Northern Ireland would gradually normalise, becoming more like other western democracies. Convergence has indeed occurred in recent years, but in good part because in mainland Britain and the United States populists have brought shouty xenophobia, the rhetoric of betrayal and a disregard for the realities of economic interdependence to the centre of the democratic arena. Paranocracy, alas, provides a disturbingly accurate description of democratic politics in the era of Brexit and Trump. The immediate post-1998 era in which Ulster has normalised has been succeeded since the Brexit referendum by one in which Britain has become partially Ulsterised, its politics disfigured by visceral tribal divisions.

No longer, in such a context, do the identity politics of the Democratic Unionist Party (DUP) and Sinn Féin seem quite so outlandish. But this does not mean that it is safe to treat Northern Ireland and the peace process with complacency. Northern Ireland is not, and never has been, as British as Finchley. For a start, the province’s politicians remain in thrall to sectarian determinations of winners and losers. Brexit, moreover, has seriously exacerbated divisions between the unionist and nationalist communities. In the Brexit referendum of 2016 the people of Northern Ireland voted Remain by 56 per cent to 44 per cent. But the vote did not split evenly across the Catholic and Protestant communities: 89 per cent of nationalists voted Remain, but only 35 per cent of unionists. The unrealistic yearnings and fantasy Britishness that Brexit has kindled among English Conservatives had never been entirely doused among Ulster’s bowler-hatted unionists. Meanwhile the efforts of the Irish Taoiseach Leo Varadkar to find a solution to the border question have reignited unionist paranoia.

Ulster unionism – the caricature notwithstanding – is far from monolithic. It ranges from the integrationist unionism, once championed by James Molyneaux and Enoch Powell of the Ulster Unionist Party (UUP), to the Paisleyite brand of Democratic Unionism which expresses the Protestant distinctiveness of Northern Ireland’s majority, and is as such instinctively devolutionist. When Arlene Foster (significantly, a defector from the UUP to the DUP) shudders with revulsion at an economic border in the Irish Sea, she articulates integrationist sentiments that sit oddly with the DUP’s pride that Ulster is spared the abominations of legalised abortion and gay marriage. By contrast, the DUP’s founder, the seemingly uncompromising Ian Paisley, saw possibilities for tactical divergence across the Irish Sea. During the British foot and mouth crisis of 2001 he tried to take advantage of the fact that the outbreak had not spread to Northern Ireland, telling Tony Blair: ‘Our people may be British, but our cows are Irish.’

Does unionism understand its own real interests? The most perceptive of unionist commentators, Professor Arthur Aughey, recently issued the stark warning in the *Belfast Telegraph* that what unionism needs most is constitutional stability. For the DUP to flirt with the hardest

of Brexiteers is, he warns, to align itself with the most disruptive force in British politics.

Yet there are worrying signs that the prejudices of the DUP and some hard right-wing Brexiteers are indeed closely aligned, and that the UK's position as a neutral arbiter of the fate of Northern Ireland has been blemished. As the Northern Irish backstop loomed ever larger as the principal obstacle to a smooth Brexit, Tory Know-Nothings have made outrageously insensitive and provocative statements about Ireland. Priti Patel – a former cabinet minister seemingly oblivious of the Irish potato famine of the 1840s – suggested that the UK use the threat of food shortages in Ireland as leverage against the Republic in the battle of the backstop. Little wonder that the former Taoiseach Bertie Ahern has called for the compulsory teaching of Irish history, not only in Irish schools, but in British schools too. A bit of needle – all the sharper for being post-colonial – has entered once again into political relations between Britain and Ireland.

In December we convened a witness seminar in Oxford, at which key participants from the Northern Ireland Office and Dublin's Foreign Affairs Ministry provided the backstory to the complex, multi-stranded process that led to the Downing Street Declaration of December 1993 – whose 25th anniversary we were commemorating – and eventually to the Good Friday Agreement of 1998. The event was held under Chatham House Rules, but one clear general finding did emerge: that, however tense negotiations were at times between London and Dublin, a personal chemistry existed between the prime minister, John Major, and the Taoiseach, Albert Reynolds, which also informed British-Irish contacts at other levels, among ministers and officials. Bonding of this sort, evidenced by John Major's recent trip to County Longford to give the first Albert Reynolds Memorial Lecture, sustained diplomacy when national interests diverged sharply. Personal warmth enabled harsh words to be said without compromising the process as a whole.

The current bristling on both sides of the British-Irish relationship falls in the middle of Ireland's decade of centenaries, which runs from 2012 to 2022 and takes in the Ulster crisis (1912-14), the Easter Rising (1916) and the



establishment of both Northern Ireland (1921) and the Irish Free State (1922). Today there are strange and uncanny echoes of the past. The Ulster crisis came about because Irish Nationalist MPs, with 81 seats (compared to the meagre ten held by the DUP), held the balance of power in the House of Commons. Their price for propping up a Liberal government was 'home rule' for Ireland; and Liberal leaders such as Asquith and Lloyd George reluctantly accepted that it was no longer possible to withhold from the Irish what they had demanded for 30 years. On the other hand, there was also widespread acceptance across all parties that the Protestants of the north could not be coerced into a parliament dominated by Catholics, and that some special arrangement for all, or part, of Ulster would have to be found.



Contrary to what Arlene Foster now insists about Ulster's status in the UK, the assumption back in the 1910s was that partition would be a temporary measure, limited to a five- or ten-year implementation period, which would allow unionists time to reconcile themselves to home rule. More ironic still is the fact that early 20th-century British politicians of all stripes identified with unionist fears: even Liberal leaders associated Catholicism with lethargy and corruption, and doubted whether the Irish might acquire any of the Anglo-Saxon aptitude for self-government. Today, in the wake of the Brexit fiasco, the very notion of an Anglo-Saxon genius for government seems like a sick joke; throughout, the supposed parish-pump politicians of the Republic have shown themselves considerably savvier in Euro-diplomacy than their big-league British counterparts.

From its outset the peace process has been deeply intertwined with European integration. The Good Friday Agreement is premised on British and Irish membership of the European Union, and was foreshadowed by Article 3 of the Downing Street Declaration: the Taoiseach and the prime minister 'consider that the development of Europe will, of itself, require new approaches to serve interests common to both parts of the island of Ireland, and to Ireland, and the United Kingdom as partners in the European Union'. The experience of German reunification in 1990 had demonstrated that longstanding partitions could be overcome by concurrent agreement between both parts. In general, moreover, the sense that the UK and Ireland were partners in Europe helped to dispel any lingering impression that there was something colonial in relations between Dublin and London.



What could Germany do for Ireland, McGuire 1916

However, the Good Friday Agreement adopted one route to peace at the risk of foreclosing others, which is why Northern Ireland's stability cannot be casually taken for granted. In particular, the agreement was not predicated on any serious attempt to integrate the communities of Northern Ireland into a liberal society of individuals. Quite the reverse: it recognised the brute reality of communal division and effected a peace on the basis of recognising and enshrining collective rights. Peace did nothing to subvert the belligerent identities that had driven the conflict, or to dismantle the various lines of demarcation – physical or psychological – that separated Ulster's Protestants and Catholics.

The two communities are no longer at war with one another, but Belfast is still a city divided into Protestant, Catholic and neutral territories by urban motorways, by ingrained mental maps and by peace walls. The visitor to Belfast's Bombay Street – on the Catholic side of a grim peace wall which divides it from Cupar Way on the Protestant side – could be forgiven for thinking that here was the physical embodiment of an armistice, imposed from above on recalcitrant tribes.

Ironically, the only line of demarcation which the Good Friday Agreement has in time rendered invisible is the land border between Northern Ireland and the Republic. The Irish border is almost a hundred years old. Its erratic course – bisecting farms and houses – does not follow natural features; nor does it reflect the wishes of the local communities on either side of it. For the first 75 years of its existence the Irish state insisted that the partition

of Ireland was illegitimate, and Irish diplomats were instructed never to utter the words 'Northern Ireland'. Ulster Catholics attempted to dismantle the border by democratic or by violent means – although the distinction between democracy and violence was not always easy to explain to half a million Catholics trapped in a statelet designed to guarantee a permanent Protestant majority. Resented by Dublin and unloved by London, the border has nevertheless lasted longer than the Soviet Union or Yugoslavia. Its violent history contains important lessons for contemporary British politics. Not the least of these stems from the fact that the partition of Ireland was itself originally a 'backstop' measure, a temporary expedient to be implemented while the demands of unionists and nationalists were reconciled.

The bargain struck in 1998 involved Irish nationalists, north and south, granting formal recognition to the border for the first time since its creation seven decades earlier, in return for guarantees that the border itself would slowly wither away. The paradox was that the border was now more firmly established than ever, despite its new meaninglessness as a military frontier and as an economic, cultural or psychological boundary. The transformation of Northern Ireland that followed the Good Friday Agreement was partly a result of the cross-border bodies – whose role in promoting business and tourism and administering EU funds was welcomed by unionists as well as nationalists. But it was also a result of the constructive ambiguity at the core of the Downing Street Declaration and the Good Friday Agreement: the recognition of the right of the people of Ireland to self-determination (a traditional republican shibboleth) qualified by the confirmation that a united Ireland could

The practical outcome of the agreement was that Northern Ireland's position in the UK was secured

not be established without the consent of a majority in Northern Ireland (the core principle of Ulster unionism). As John Larkin, the attorney general of Northern Ireland, has spelled out – with greater attention to legal accuracy than is found in Arlene Foster’s desperate assertions of a sacrosanct unity that must remain unblemished – Northern Ireland ‘is the only region of the United Kingdom equipped with a constitutional departure lounge’, albeit one ‘with an electoral lock on the entrance’.

The practical outcome of the agreement was that Northern Ireland’s position in the UK was secured; the Irish right of self-determination, on the other hand, was a purely platonic matter, belonging only to the plane of theory and ideas. But the platonic realm matters enormously in Ireland, a land of clashing symbols and contradictory historical narratives. The peace process began with London’s announcement in 1991 that Britain had ‘no selfish strategic or economic interest in Northern Ireland’. This statement was intended to counter the IRA’s presentation of British rule as a legacy of imperialism. But it also encapsulated the severing of the emotional ties that had once bound sections of British opinion to the cause of the Ulster statelet.

The distancing of London from Northern Ireland would increase after 1998. It would extend even to the bitter ‘memory wars’ now fought over the meaning of the Troubles. The inquiries into Bloody Sunday and other state killings; the debates about whether the ‘victims’ of the Troubles ought to include members of paramilitary organisations injured or killed ‘in action’; and the plans to develop the Maze prison as a heritage site – together these eroded the official view that the Troubles had been a black-and-white conflict between democracy and terrorism. The self-esteem of Unionists is closely bound up with the sacrifices they feel they have made for the British state. Defending the record of the security forces becomes for Unionists an existential issue, while the British state has prioritised its position as a neutral arbiter between the two camps – at least until the Conservative deal with the DUP. Nor should we underestimate the significance to the DUP of Brexit itself – an unapologetic act of British sovereignty, suggestive of a symbolic reversal of recent tendencies.

Ultimately, what underlies the Northern Irish problem are the province’s shifting demographics. It seems likely that Protestants and Catholics will reach numerical parity in the next census of 2021 – the centenary of partition. But the crude aggregates obscure some salient differences. Catholics form a majority of the working-age population, while Protestants constitute a clear majority among pensioners, among whom Unionist anxieties blur with the kindred disorientation that underpins Brexit.

Over the past 50 years support for a united Ireland has ranged between a third and two-thirds of Catholics, with the remainder preferring the stability – and welfare-state generosity – of the status quo. But there are already signs that Brexit has toughened the Catholic attitude to Britain. On the other hand, younger Protestants are not only turned off by the narrowness of the DUP but are accepting of today’s South as a relatively open and secular society. The arithmetic is not simply a matter of how many Protestants and Catholics there are in Northern Ireland at the next census, but the intensity of feeling on either side, including – what is rarely reported – levels of ambivalence about traditional aspirations.



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HERT FO IN 1919

By Lucy Rutherford



Hertford College Group,
1919 [Hertford College
Archives]. The American
officers are wearing their
distinctive high collared
'doughboy' uniforms.

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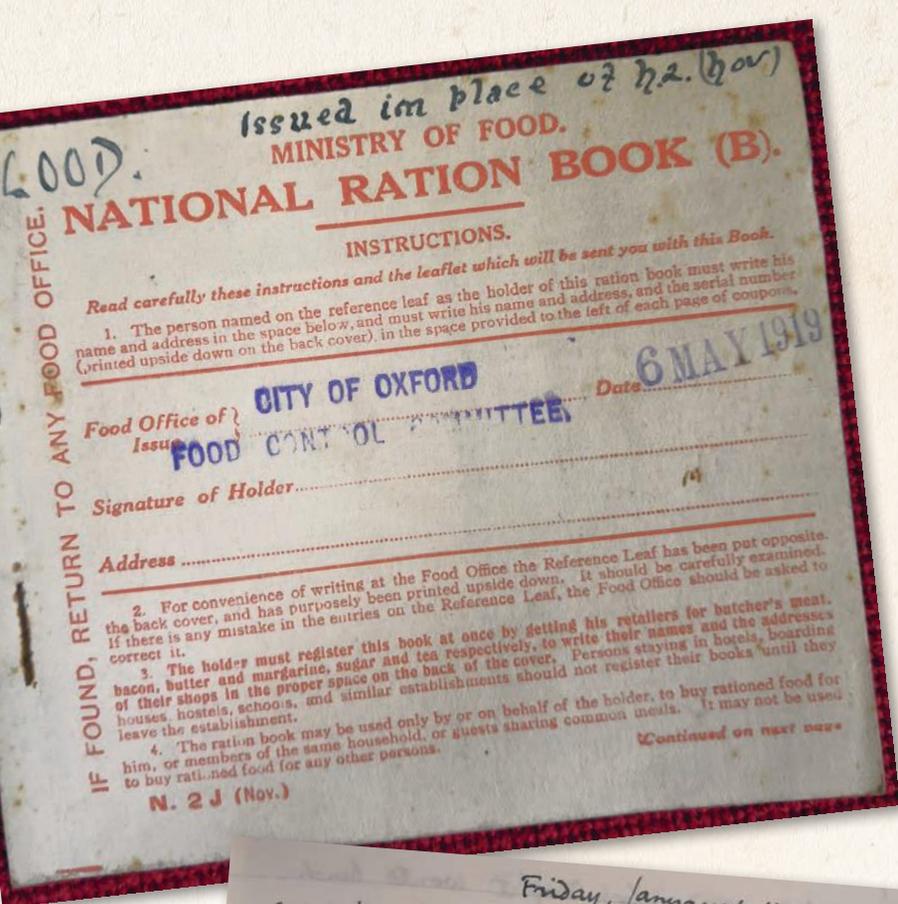


In January 1919 around 30 students arrived, of whom 20 had matriculated before the war. A further 38 arrived in April, including 11 American Officers studying on short courses by arrangement with the War Office. The pre-war students were allowed the unique privilege of counting their years of military service towards their degree, but many of them had returned merely as a stopgap while they decided on a profession or waited for an offer of employment. Altogether there about 70 undergraduates by the summer term; but as the college photograph for 1919 shows, it was an uneasy mix of older students who had seen military service, students too young to have fought in the war, and the American Officers. Trinity Term 1919 must surely have been one of the most unusual terms in the college's history. With such low student numbers it was impossible to put together sporting teams, although the college managed a four to compete in races on the river. There were very few dons or scouts around, so all meals were eaten in Hall and the gates shut at 11 pm. The college was shabby, food was restricted and there was little energy or money for improvements. Nevertheless, 'it was a most enjoyable term. To men who had spent several years in the Army it was like a dream to live as an undergraduate in mufti, even in a place so badly in need of paint and a mowing machine as Hertford then was'. [Hertford College Magazine May 1921]

By October 1919 there were about 100 students, rising to 120 the following year. As the college was understaffed and lacking in accommodation numbers were kept deliberately low. This was, as the Magazine remarked, very bad for sport, but very good for the students who benefited from the individual attention from tutors that this brought. As always, the pressure on accommodation was acute and some freshmen were forced to live in lodgings more than two miles away from college. Hertford's dire financial state meant that plans to develop the Holywell site and the Octagon had to be put on hold. The college did what it could with available resources: the new quad was enlarged and somewhat improved by the removal of the Holywell Press buildings and an old bicycle shed. As an emergency measure the top floor of the Octagon was taken over and linked up with college buildings

Hertford College [Hertford College Archives], circa 1919.





Friday, January 17th.
 Down to Oxford by 7.32. Dined at Bud's. Stayed in
 Hertford. To Common Room (Ceil + Maudie + Whakley)
 Then had a talk with Whakley in his room.

Saturday, January 18th.
 College Meeting 2.0 - 6.50. Principal, Campbell, Burroughs,
 Whakley, Haselfoot + Ceil. War Memorial, Fellowships
 and College expenses. We decided to elect Gaultwell
 and John Campbell to fellowships.
 Dined in Hall. Afterwards had a long talk with Ceil
 about function of education.

Ration card [Hertford College Archives], 1919, belonging to one of the American soldiers studying at Hertford in summer 1919.

John Dewar Denniston's personal diary, Vol 1917-1919 [Hertford College Archives], entry for 17-18 Jan, 1919.

in Holywell, creating two new staircases. These rooms (described as 'medieval' in the College Magazine) were makeshift and the buildings in general were in a poor state of repair after years of military occupation.

Domestic economies were severe. Rationing had been introduced

in the war and was still in force in 1919. Pre-war standards of catering had been impossible to maintain and were not reintroduced. The shortage of servants meant that hall dinners were less elaborate and breakfast was served in hall as a common meal – sadly it was 'no longer customary to entertain to three-course breakfasts'. Lunch, however, was still 'consumed decently in private'. The college authorities were also very aware that living costs for students had soared after the war, and domestic changes were a conscious attempt to keep these costs down as far as possible. They did permit the setting up of a committee which for the first time gave students a voice in domestic matters – although it was noted in the Magazine that 'We do not gather that these official soviets have accomplished much. The chief aim seems to be to get a better dinner at half the price'. One result at least was an attempt to improve the supply of hot water and the introduction of shower baths in order to meet 'the extra demand for cleanliness which has resulted from the war'. The Library, which had been in a shocking state, was greatly improved during this year by the efforts of Denniston; who made strenuous efforts to obtain grants for book purchases and arranged the bequests of the book collections of three former students killed in the war.

Tangible reminders of the war were all around, not least in the dilapidated buildings and food shortages and the presence of

uniformed American Officers and returning British servicemen. By the summer Sir Thomas Jackson's War Memorial tablet and chapel reredos had been completed and installed, although not yet dedicated; and the War Memorial Exhibition Fund had been established. A less pleasing memento was a German trench mortar presented to the college by the War Office, which was stationed in the Old Quad by the library. The college authorities were less than impressed by this gift and planned to move it at some point to their hoped for sports ground. (Where the mortar ended up remains a mystery). Less tangible, but nonetheless painful, was the return of so few of the pre-war students and the absence of so many – epitomised in a college group photograph taken around about this time, showing an empty chair left in memory of Percy Fitzpatrick, killed in France in 1917.

Nevertheless, by the end of 1919 a more normal student life was beginning to re-emerge. Most of the pre-war student societies had lapsed in 1914 and many, such as the Shakespeare Society and the Harts Sailing Club were never reformed; but the Tyndale and Fox debating societies were resumed. A new historical society – the Hobbes – was set up but does not appear to have lasted for very long. The sporting societies were proving harder to re-establish, due to the small numbers of undergraduates; and athletics, although still popular, never assumed the importance in college life that it had had before the war.

The war had encouraged significant social change within the college. Prior to the war there had been a respectful distance maintained between junior and senior members, but in the Hertford of 1919 this demarcation was breaking down in response to the social changes. In addition, the University was now recruiting from a wider variety of schools and this was generally seen as a positive change: 'No post-bellum development gives more ground for optimism than this tendency of Oxford to become really representative of the nation'. The older undergraduates in



Detail from Hertford College group photograph [Hertford College Archives], circa 1918, showing the empty chair left in memory of Percy Fitzpatrick, a South African Rhodes scholar killed in action in 1917; and whose death led his father to suggest the idea of the Two Minute Silence to the British Government.

Hertford College [Hertford College Archives], circa 1919.





Hertford College [Hertford College Archives], circa 1919.

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particular were noticeably more willing to criticise the university's institutions and traditions – a trend which was given a more cautious welcome by the college authorities. It was in this year, perhaps in response to pressure from returning servicemen, that the Junior Common Room, previously an exclusively elected club, was thrown open to all members of college. The elective club continued as the Junior Common Room Dining Club, despite a motion passed by the new JCR that it should be abolished. Whilst many of the more light-hearted student societies had not been reformed, the students held numerous philanthropic and political meetings throughout this year, on topics relating to the League of Nations, The Religion and Life Movement and other topical issues. The highly popular Hop Picking Settlement was revived, a home missionary endeavour which had been set up by the Chaplain before the war, through which undergraduates lived and worked

for a period with a group of seasonal hop pickers from Peckham. Overall the post-war student body, young and old, had a tendency to take life much more seriously than its pre-war counterparts had done:

‘The casual visitor might also notice that undergraduates are more numerous than they were, that their average age is considerably higher, that they make less noise, attend more lectures and take it less for granted that nothing can possibly be improved in this best of Universities’. [Hertford College Magazine May 1921]



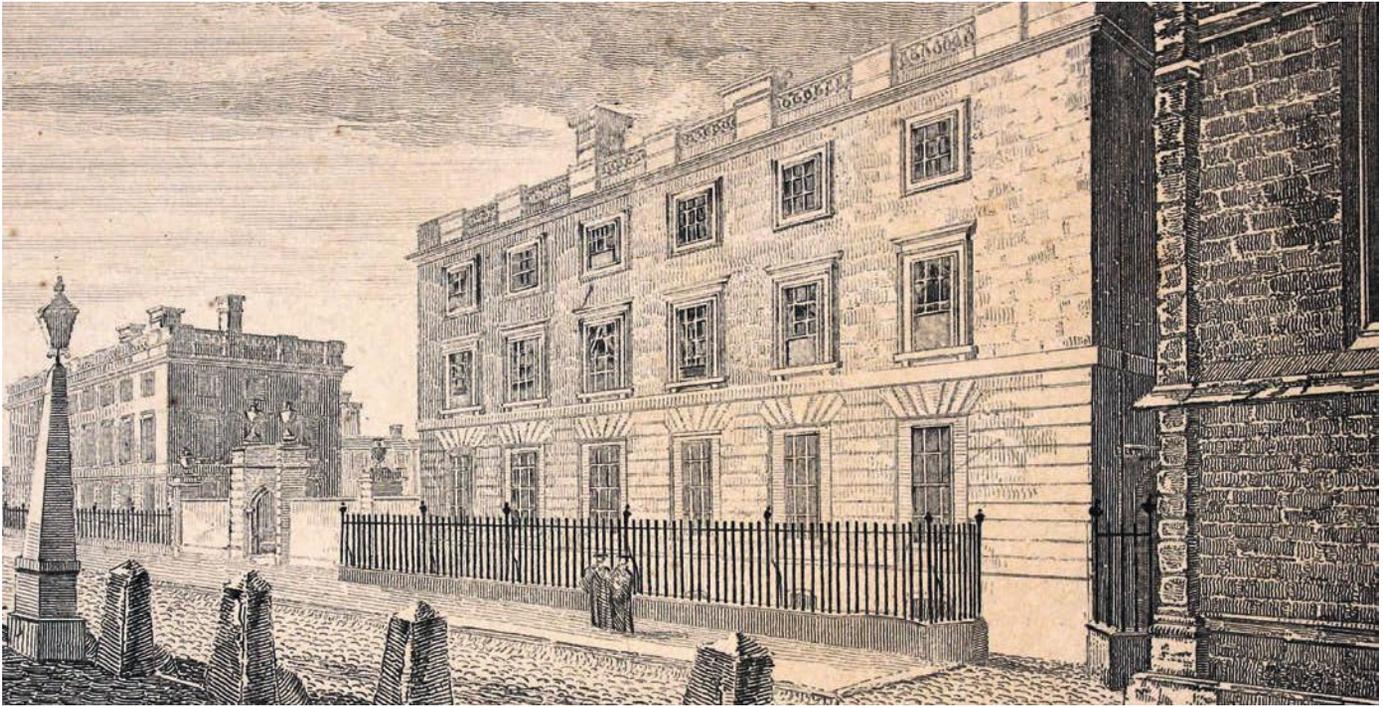
Dr Lucy Rutherford read Theology and Church History at the University of St Andrew's before completing her PhD in Medieval Church History at the University of Edinburgh. She was archivist at Bath Abbey for 14 years before arriving at Hertford College in 2015 where she now curates and manages the college's extensive archival collections.

LOOSE CHIPPINGS ON THE ROAD TO A COLLEGE HISTORY

By Christopher Tyerman

The early stages of researching any subject tend to be accompanied by serendipity and surprise. My initial prospecting in the seams of Hertford's complicated past has proved no exception, a complexity compounded by the current college being the heir of two different medieval halls. From the thirteenth century, academic halls were lodging houses for students, licensed by the university and run by individual resident senior members essentially for profit. As well as accommodation and discipline, most provided varying degrees of tuition to supplement the instruction given by the university. Without restrictive statutes and, lacking permanent endowment, open to all paying applicants, halls were the dominant domestic feature of Oxford until the sixteenth century when colleges, by taking increasing numbers of undergraduates, assumed a dominance they never subsequently relinquished. While many halls proved ephemeral, the longer lasting ones developed into quasi-collegiate corporate institutions with distinctive communal identity. Modern Hertford claims the inheritance of two such halls, the legal successor to Magdalen Hall and the geographic tenant of the site of Hart Hall, later the first Hertford College (1740-1816). Magdalen Hall had first emerged in the 1480s, next to Magdalen College, on what is now the site of St Swithun's Quad, originally as a house for students wishing to study at the college's grammar school over the wall, while Hart Hall, a lodging house for students by 1300, had been run in its early centuries chiefly as an annexe of Exeter College. The two halls had similar institutional trajectories.





Both established effective operational independence during the sixteenth century but managed to survive the general cull of private halls in the period through their links to the collegiate protection of, respectively, Magdalen and Exeter. Magdalen Hall only finally achieved complete formal independence from Magdalen College in 1694; Hart Hall, despite recognised as a separate institution by the 1550s, encountered sustained opposition from Exeter when Principal Newton attempted to transform the hall into a college in the 1720s, only securing collegiate status in 1740. Coincidentally or not, Magdalen Hall had sought a similar change, narrowly missing out on a substantial legacy that in the end went to endow Worcester College (in 1714). In other respects, Magdalen Hall and Hart Hall were very different. Hart Hall was notorious as a nest of Roman Catholic recusants



in the second half of the sixteenth century. It also, at least from the 1570s, attracted a steady stream of students from Ireland, many of them merchants' sons from Dublin, Wexford and Waterford, and by no means all of them crypto-Catholics. The special Irish connection was noted at the time, an irrelevant historical precedent for modern



ties. Magdalen Hall, by contrast, became a noted centre of radical puritanism in the early seventeenth century, when it was also contained one the largest student communities (at times well over a hundred supposedly in residence) in the entire university. However, there was no universal hall type: both the radical philosopher Thomas Hobbes (1603) and the royalist politician Edward Hyde (1622), later the Earl of Clarendon, Charles II's chief minister and first great historian of the Civil War, were members of Magdalen Hall (admittedly Hyde only because he failed to get into Magdalen College).

The other great difference between the two halls is that Hart Hall, later the first Hertford College, because of its dissolution in 1816 has left negligible archival trace outside central University records, whereas Magdalen Hall has bequeathed its

post Restoration buttery books and its library, catalogued and endowed by Principal Henry Wilkinson in the 1650s. The central University records do allow some domestic insights: in 1552, apparently, Hart Hall's chef was a 'cookesse' called Maude, an unlikely – and short-lived- feminine intrusion into an otherwise universal male preserve. Information on students' lives tends towards the anecdotal, and not always entirely credible, as with the early eighteenth-century gossipy diarist Thomas Hearne's story of a the Hart Hall Gentleman Commoner (ie paid more for a higher level of domestic comfort) c. 1697 who was discovered to be a cross-dressing 'Gentlewoman Commoner' (Hearne's 'joke') only after some months of attending lectures, doing academic exercises 'and all things as other scholars', was discovered to be a cross-dressing woman only when she gave birth. The child's father was a fellow Hart Hall student with whom she shared rooms, her 'Chamber-Fellow' or, as the phrase then was, 'Chum'.

Any fresh examination of received wisdom invites the slaughter of aged sacred cows (e.g. Jonathan Swift was only a member of Hart Hall in that he used the hall that had no restrictions on membership to back the incorporation of his Trinity Dublin degree; he may never have set foot in the place and certainly had no active educational association) but also new discovery. I suppose I should have known that Magdalen Hall boasted a Regicide (John L'Isle 1622, a commissioner at



Charles I's trial, although he did not actually sign the death warrant); the founder of New Haven, Connecticut, John Davenport (migrated from Merton 1615, BD, MA 1625), after whom a college at Yale is named; and the first person to receive a degree from Harvard University (Benjamin Woodbridge 1638, MA 1648; Harvard BA 1642). What united each was the heavy-weight puritan education for which Magdalen Hall was famous/notorious in the 30 years before the Civil War. Such careers possess interest beyond the parochial. The transatlantic links, reinforced after the Restoration, when a number of now displaced ex-Magdalen Hall divines sought refuge and employment overseas,

fit a wider process of increased global exchange and European colonisation. The role of Magdalen Hall's puritan scholars, such as John Wilkins, in the early history of the Royal Society is well known. Their interests were not unique, as the hall produced a stream of mid-seventeenth century medical doctors and scientists. The fate of Magdalen Hall's alumni mirrors that of the institution and nation, at odds with royalist establishment before the Civil War, effectively outlawed when Charles I occupied Oxford in 1643 only to return in triumph after Parliament's victory in 1646: at least three of Parliament's intruded Heads of House (at Magdalen, Wadham and Trinity) were old members

of the Hall, while the famous physician Thomas Sydenham (1642) was intruded as a fellow of All Souls. All lost their berths after the Restoration, when Magdalen Hall's distinctive radicalism came to an abrupt end, a sobering example of the unpredictability of events even in Oxford.

Inevitably, the more one looks the more is revealed about the lives and personalities even of familiar past members. Robert Plot (Magdalen Hall 1658, tutor 1661-76), first professor of Chemistry and first Keeper of the Ashmolean, geographer, scientist, collector, emerges as a light-fingered pluralist and avaricious snob (a

view hardly contradicted by his rather complacent expression in the print in the SCR); or Josiah Pullen, Vice-Principal for an astonishing 57 years (1657-1714), whose portrait hangs in the Old Hall. Pullen, an adept trimmer, ran the hall after the Restoration as one of the few pre-1660 senior members trusted by the new royalist regime, enjoying more or less complete freedom as successive Principals treated their office as lucrative sinecures; they kept the students' rents and left Pullen to run the rest of the business. In doing so he amassed a healthy income, investing in Oxford property and supplementing his earnings as minister at St Peter in the East (now Teddy Hall's library). Principal Richard Newton, (1710-53) the self-confident, austere, irascible, unbendingly aggressive reformist founder of the first Hertford College, would have been at home in a Fielding novel. These and many more such companions will, I hope, enliven my journey through the college's history.

Yet history is not confined to jolly evocations of past celebrities, eccentrics or bores. While inescapably reflecting as well as often resisting political and social changes (Reformation, Hanoverian Succession, industrialisation, Brexit etc), during many passages in its history Oxford has been a serious pioneering academic institution; so too, at times, have Magdalen Hall, Hart Hall and Hertford College, or, at least, some of their members. One more recent example will suffice. It is sometimes believed that until well

after the Second World War, Hertford was not a scientific college. However, appearances can deceive. As Tony Simcock has pointed out, between 1890 and 1909, Hertford produced twelve honour students in Physics, usually as second degrees after Maths: only New College and Jesus produced more. Among these were a future science fellow at New College (P J Kirby), the last Royal Astronomer of Ireland (H C K Plummer), the first Oxford research student of J S Townsend, the first Wykeham professor of Physics (H E Hurst), and an FRS (H R A Mallock, a precision engineer who measured cracks in St Paul's Cathedral to one millionth of an inch). Over the same period, 1890-1909, Hertford produced more demonstrators in the Clarendon and Electrical Laboratories (6) than any other college. The inspirations behind this flowering of science were two long-standing fellows and collaborators, the pure mathematician J E Campbell (FRS 1905, fellow 1887-1924) and the physicist C E Haslefoot (fellow 1888-1936), the former a distinguished researcher, the latter a committed and, in his heyday, dynamic tutor who taught Physics across the University, in their different but complementary ways pioneers both.

As this neglected aspect of Edwardian Hertford shows, the past will constantly spring surprises. I look forward to many more.



Professor Christopher Tyerman is Professor of the History of the Crusades and Fellow Archivist at Hertford College. His main research interests have related to crusading as a cultural, religious, political and social phenomenon of medieval western Europe between the eleventh and sixteenth centuries. He has lectured and published widely on various aspects of the crusades, from motivation and perception to their social and intellectual structures. He has also written in particular on crusading in relation to high and late medieval England and later medieval France as well as on crusading historiography from the middle ages to the present day. He is currently preparing a publication on the history of Hertford College, due to be published in 2024 for the college's anniversary year.



On the importance of reaching out in science

By Kathryn Boast

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hether we like it or not, science and technology are integral to our lives, and it is hard to imagine a future where that is no longer true, apocalypses aside. It is perhaps surprising then that

much of science often is – and is seen as – the preserve of the wealthy ‘pale, male and stale’, when it affects each and every one of us. Of course, there’s nothing inherently wrong with being an old, white man – some of the people I most admire are old, white men – but sometimes the status quo needs to change.

Science, technology, engineering and maths are often bundled together and given the acronym ‘STEM’. The importance of STEM subjects at school and beyond is widely recognised, and industry is often touted as facing a ‘STEM skills shortage’. In an economy with a growing tech sector, skills such as computer programming, software development, engineering, information security or communications are in high demand. People with the right skillset are in such short supply that recruiters are struggling to fill posts, setting the sector back an estimated £1.5bn a year in recruitment, temporary staffing, inflated salaries and additional training costs.

Against this backdrop of high demand, the lack of diversity in our STEM students and workforce is astonishing. Women, people from black, Asian and minority ethnic (BAME) backgrounds and people from lower socioeconomic backgrounds are under-represented in a whole swathe of sciences. These groups contain so much untapped potential. Industry’s needs aside, we owe it to these people to open up science and STEM to everyone.

But why is there a problem? Surely science already is open to everyone? In the words of disgraced physicist Alessandro Strumia, ‘It is not as if they send limousines to pick up boys wanting to study physics and build walls to keep out the women.’ Literally, that is clearly nonsense. But figuratively? Are

there walls that keep women out? Though the barriers to STEM might not be obvious to those for whom they didn’t exist, that doesn’t deny their reality for others.

Put ‘scientist’ into your favourite image search engine, and you will be presented with pictures of people in white coats staring at glassware full of colourful liquids or maybe squinting down microscopes. For a start, there is so much science that has nothing to do with white coats and test tubes that gets entirely missed out of this stereotypical portrait. But if you start to look at the people, chances are the line-up doesn’t look terribly diverse, with a disproportionate number of Einstein-lookalikes. This is what people think of when they think ‘scientist’. Scientists are either lab rats or lone geniuses with crazy hair. If that’s not how you see yourself, well then maybe you’re not cut out to be a scientist... Scientist gender stereotypes are ingrained from an early age. When asked to ‘draw a scientist’ in a recent US study, although 58% of school-age girls drew their scientist as female, only 13% of boys did. (This is nevertheless a vast improvement on a similar study undertaken in 1966-77, in which 99.4% of scientists were drawn as male.) The stereotypes are also international: data from 66 nations in a 2014 study indicated strong associations between science and men across the board. If your self-concept and your idea of what a scientist should be like are so distinct, are you very likely to

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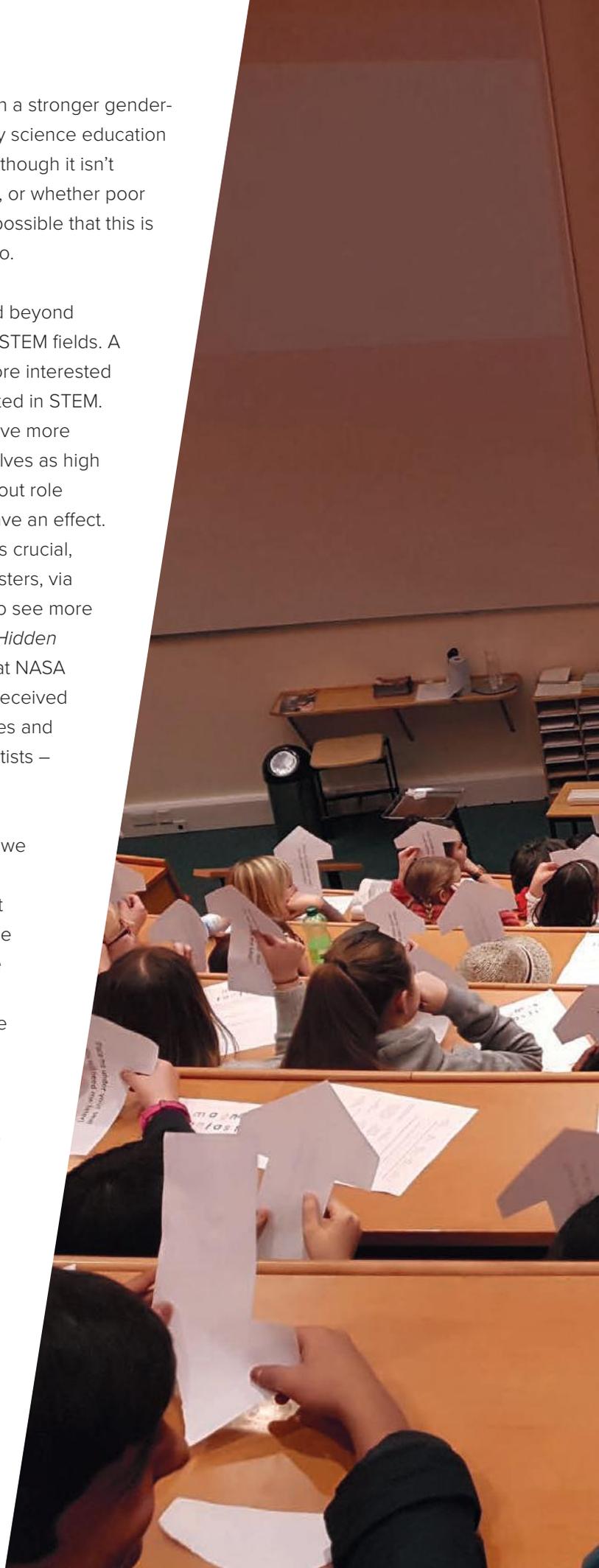
But why is there a problem? Surely science already is open to everyone? In the words of disgraced physicist Alessandro Strumia, ‘It is not as if they send limousines to pick up boys wanting to study physics and build walls to keep out the women.’

pursue science? The same study showed that in countries with a stronger gender-science stereotype, there are fewer women enrolled in tertiary science education and lower female employment in the researcher workforce. Although it isn't clear whether the stereotype impacts the employment figures, or whether poor employment figures drive the stereotype (and it seems quite possible that this is a vicious circle), the stereotype of science as male needs to go.

The saying goes 'If you can't see it, you can't be it'. Above and beyond stereotypes, role models play a key part in paving a path into STEM fields. A survey by Microsoft in 2018 demonstrated that UK girls are more interested in STEM subjects when they have a role model who is interested in STEM. In addition, girls with role models in STEM were found to believe more strongly in their STEM abilities: more of them evaluate themselves as high performers across every STEM subject compared to girls without role models. These role models didn't have to be real, either, to have an effect. The portrayal of female scientists in our films and books is thus crucial, and there is clearly an appetite for it. From *Gravity* to *Ghostbusters*, via blockbuster Marvel adventure *Black Panther*, we are starting to see more women scientists centre stage on our screens. The 2016 film *Hidden Figures*, which tells the story of black female mathematicians at NASA during the Space Race, grossed \$236 million worldwide and received three Oscar nominations and two Golden Globes. These stories and characters are not just a niche interest for a few feminist scientists – their appeal is global.

But while our STEM workforce remains relatively non-diverse, we have a problem. Either the visibility of diverse role models will remain relatively low, because there statistically just aren't that many people of colour or women in certain fields, or else those minority scientists will be called upon to do a disproportionate amount of 'limelight work' that gives them a platform to stand as role models but takes them away from their research. There is not a straightforward way out of this dilemma, and minority groups are bound to lose either way.

Role models also play into career aspirations. The same study by Microsoft found that more girls can imagine themselves in a STEM career if they have a STEM role model. Nevertheless, an appreciation of what a STEM career might look like is often missing. I know from experience that if you ask a classroom of 12-year-olds what career they might have if they do a physics degree, you will by and large get two answers: physics researcher and physics teacher. Of course, this is only a tiny fragment of the opportunities opened up by studying a physics degree – or any STEM



electromagnetism



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Outreach in science and STEM is becoming increasingly valued, understood and professionalised.

degree for that matter. But as far as students are aware, these are the main routes out of a physics degree, and if they're not paths you want, why would you invest in the first place? There is a lack of adequate careers provision in many schools and this will hold for anything beyond the most typical STEM careers. From special effects designer to patent lawyer or science journalist to games developer, the paths open from STEM apprenticeships and degrees are countless, but if students aren't aware of the possibilities, you are reliant on them choosing to study the subject in spite of an apparent lack of career prospects. This can only limit the appeal of pursuing STEM studies in further and higher education.

I've outlined here three important challenges that feed into the problem of a lack of diversity in STEM; pervasive, narrow stereotypes, a paucity of relatable role models and a lack of awareness of career opportunities all contribute to the ongoing under-representation of women, BAME people and those from lower socio-economic backgrounds. These all present sometimes invisible but nevertheless extant barriers to pursuing STEM subjects, particularly if you don't match the majority

who have already made it. But these are barriers that we can – and must – break down.

Outreach in science and STEM is becoming increasingly valued, understood and professionalised. In August 2018 I was appointed as Hertford College's STEM Outreach Officer to head up the college's work on supporting and encouraging those from groups currently under-represented in STEM to study these subjects in further and higher education. STEM outreach takes many forms and increasingly focuses on facilitating public engagement with research. This can be anything from learning about a research topic to undertaking 'citizen science' projects, in which non-experts can access and analyse data, often through a helpful, step-by-step framework, leading sometimes to new discoveries and scientific papers.

STEM outreach also builds connections between scientists and those outside of science, which is critical for eroding some of the barriers to participation in STEM. Outreach gives people a chance simply to see real-life scientists. This might not sound like much, but it shows that scientists are normal people, with lives and interests and hobbies beyond their research. It also shows that science is not just microscopes and test tubes of colourful liquid. It's fields and dinosaurs and maths and telescopes and programming and oceans and populations and graphs and so much more. By connecting scientists and non-scientists, we can build relationships and break down stereotypes. Chances are the scientist they see or meet or talk to is not going to be Einstein. Science may not yet be very diverse, but it is more diverse than one dead, white man.

This 'humanising' of scientists makes them more relatable, which is also important if they are to serve as a role model for future scientists. Moreover, the more scientists a young person sees, the more likely they are to find one they can look up to. Connecting directly with STEM professionals also offers the chance to learn more about potential career paths in a very tangible way. At Hertford, we are working to make best use of our amazing resources of researchers and students through STEM outreach programmes designed to tackle the

problems we've discussed. We are running a video competition called 'Unsung Heroes of Science', which asks 16-18-year-olds to bring to light scientists that history has forgotten. This helps them to recognise that there is much more diversity in science than textbooks usually record, and the resulting videos they make will bring these scientists' stories to a much wider audience. We're also working on a project that brings together STEM researchers and school science classes through live online text chats, and an initiative to bring parents and children together in a STEM careers workshop. Over the coming months we hope to show that these programmes are helping Hertford to play our part in working against the barriers that keep people out of STEM.

There are many reasons to work together to tear down these barriers. The STEM skills gap faced by industry and employers needs bridging if we are to have a vibrant tech sector and thriving economy. A further economic motivator is that companies with diverse teams simply perform better. In a survey of 1,000 companies across 12 countries, management consultants McKinsey demonstrated that gender and ethnic diversity are clearly correlated with profitability. So even the most hard-nosed business person with no moral compass should be backing initiatives to bring in a more diverse workforce! At any rate, the social justice motives for opening STEM subjects and careers to anyone and everyone are clear: everyone has a right to science. In fact, this is enshrined in the UN declaration of human rights, which says that 'Everyone has the right freely to... share in scientific advancement and its benefits.' To my mind, 'sharing in scientific advancements' means more than just having the latest smartphone or the fastest broadband or access to revolutionary medicines. Sharing those advancements means appreciating and understanding them, being scientifically literate, and having science as part of our shared culture. Moreover, a population with positive attitudes towards science is more likely to share in those advancements, and the benefits can be societal as well as personal. Vaccinations are, I think, a good example of this. A population with an awareness of risk, a penchant for critical thinking and an appreciation of good science is highly likely to ensure that all children, so far as is possible, are vaccinated against diseases

such as measles. One in ten children with measles ends up in hospital and there is no treatment for the infection. Complications of measles include lung infections, diarrhoea and vomiting, ear and eye infections, febrile seizures and even hepatitis, meningitis and vision loss. In spite of this, some parents refuse their children the protection of vaccination. Not only does this put their children at risk, but it also increases the risk for children and adults who for medical reasons cannot receive the vaccine. Would this happen in a society that wholly values and shares in scientific advancements?

Working to make sure that everyone knows science is 'for them' is one of the key goals of STEM outreach. We want people to think not only that they can be a scientist or do science if they want to, but also that science is normal. Science is not just for boffins and brainboxes and clever clogs Einsteins. Anyone can share in the beauty and wonder and downright usefulness of science. And those of us who are lucky enough to have found a place for ourselves in STEM owe it to everyone else to pull down the barriers from the inside.



Dr Kathryn Boast is STEM Outreach Officer at Hertford College, a post created recently thanks to a generous donation from an alumna, and the Quantum Materials Outreach Officer at the Physics Department. She has a background in particle physics, having worked on the LUX-ZEPLIN dark matter search experiment as part of her DPhil. Kathryn now specialises in STEM outreach, with a particular focus on reaching out to under-represented groups. She's worked with the Oxford Women in Physics Society since its inception, and runs an annual event called 'Marie Curious', with hands-on STEM activities and inspiration for local girls.



Autism

By Georgia Harper



I was diagnosed on the autistic spectrum aged nine, which makes me one of the lucky ones. A combination of historical ignorance, stereotypes, unclear pathways and long waiting lists mean that many autistic people, especially women aren't diagnosed until well into adulthood (if at all). Although autism was once thought of as rare, we now know that around one in a hundred people are autistic – so the chances are you already know at least one autistic person, whether you (or they!) are aware of their autism or not.

Autism is essentially a neurodevelopmental condition which affects how people experience the world and interact with others. It's not an illness or a tragedy; it's just the way my brain is wired, a part of who I am that can't be separated from my identity or personality. For me, autism means I process information differently; everyday sounds, textures and changes can form an overwhelming wave of sensory information that, in

the worst-case scenario, leads to a meltdown. However, being autistic also means I get an intense joy out of my interests that most people don't quite understand, and I can listen to the same song on repeat for a ridiculously long time without getting bored.

Every autistic person is different just as every non-autistic person is different. Thankfully, as a society, we are beginning to move away from the assumption that all autistic people are like Rain Man, but instead, a binary of stereotypes is taking its place. Autistic people tend to be seen as either 'high-functioning' and experiencing no difficulties beyond social awkwardness, or 'low-functioning' and completely incapable of understanding or making decisions. People assume that an Oxford graduate can't really have anything in common with those they deem 'really autistic', the ones who make seemingly meaningless vocalisations and movements and descend into panic because something as simple as the weather

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has changed unexpectedly; but I share all of those traits. I tend to think of the spectrum as a colour wheel – circular, not linear, with everyone having different strengths and weaknesses in different areas. Just like everyone else, the way we function also varies from day to day, task to task, environment to environment. The truth is, autistic people don't divide neatly into 'high' and 'low'; we're everything and everywhere in between.

Equally, the barriers and difficulties experienced by autistic people often span across the spectrum.

Autistic people face stark inequalities in physical and mental health; in particular, autistic people without a co-occurring learning disability are nine times more likely to die by suicide than the general population. Employment rates are also shockingly low, with a 2018 report from the Association of Graduate Careers Advisory Services finding that just 31% of autistic graduates find full-time employment within six months, the lowest proportion of all disability groups. However, these outcomes are not inevitable; with the right support, autistic people can thrive.

In many ways, I thrived at Hertford. Choosing a smaller college was definitely the right decision for me; I wasn't thrown into a cohort of hundreds of first-year law students, but a much more manageable cohort of eight, and we could get to know each other quickly. Outside of my studies, the Oxford Doctor



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Who Society allowed me to meet people who shared one of my special interests in a structured, predictable environment, and many of the friends I'm still in touch with today (as well as some I've met since leaving) have come through WhoSoc. The things I was laughed at for, or rejected for, back at school either went unnoticed or were just accepted by my new university peers, which was an incredible feeling.

On the other hand, moving away to university and living independently for the first time was a major transition which brought a whole set of new challenges. Without the rigid routines of school to fall back on, I had to figure out my own routines from term to term. If things got overwhelming and I shut down, I had to learn to pick myself up again at least for shopping and cooking and eating if not for studying. Then there was the biggest new

challenge: the unprecedented opportunities I had for socialising also came with a wall of social anxiety. All of this and more came to a head in particular during my third year studying in Paris; I had some amazing experiences there, but finding myself in such a different environment without my usual support network was a real wake-up call, particularly when others are expecting you to be having the time of your life and most of your friends are finalists who are recognised to have 'real problems'!

Nevertheless, throughout my four years at Hertford, I never really engaged with the Disability Advisory Service. In hindsight, it perhaps would have been useful even to just talk to someone about what support may or may not be helpful through my degree; in general, I find that there's a lot of encouragement to request reasonable adjustments but not a lot of explanation as to what those could look like! This lack of engagement was in large part because I didn't think it was for me. I didn't need any support through school – or rather, I didn't need any academic support through school, and that seemed to render me ineligible for everything else – so I assumed I wouldn't benefit from anything here either. Besides, all those inaccurate 'high-functioning' assumptions meant I was never given a statement of special educational needs (now replaced with Education, Health and Care



Plans); as an adult, this essentially left me without proof of diagnosis, and I knew that would shut me out of most services anyway. When I left Oxford to study for an LLM in London, I ended up being reassessed and rediagnosed to access disability services; I can't fault the work of anyone involved, but it all could have been avoided if my needs weren't dismissed as a child, or the bureaucracy barriers weren't so high as an adult.

As it was, though, peer support was ultimately my lifeline; not just from online groups such as Oxford Women Self Care and Oxford Students' Disability Community (now part of the Oxford SU Disabled Students' Campaign), but also from the many people who lent a hand or an ear along the way. Individuals can make a huge difference, through basic things like believing people who

tell you they find something difficult – even if you find it easy or even enjoyable – or simply not mocking people for their interests or the way they move. If you organise social events, either formally in societies and clubs or just through being one of the more proactive people in your friendship group, consider accessibility: does it really always have to be a noisy, packed nightclub every time? Does it always have to be pre-drinks with music and things to be spilt on people? Does it always need to be large-scale, or can it be smaller sometimes?

For a multitude of reasons, autistic people aren't always going to come forward with their diagnosis; instead, to remove some of the barriers autistic people face at university and beyond, we need to build a more inclusive, accepting approach for everyone.



Georgia Harper (2012) read Law with European Law at Hertford, graduating in 2016, after which she studied Human Rights Law at the University of London. She now works as Policy and Public Affairs Officer at Autistica, a charity which funds research to give autistic people the chance to live long, happy, healthy lives.

A Right to Care: The Case for Universal Childcare

By Susan Reed

When I entered one of New York City's domestic violence centres last spring, I was surprised to see a children's nursery. The glass-encased room had bright coloured toys, a copy of Good Night Moon, and countless puzzles. In short, it looked like any other day-care setting I had ever seen. But as I walked through the rest of the unit, it became clear that this space had a more complex purpose.

I was visiting as part of my role as a Project Manager for New York City's \$850 million initiative called ThriveNYC. The programme's goal is to expand mental health care access to all types of New Yorkers and the methodology has been to charge city government agencies to re-think the way they operate and to expand their scope of services. We have done things like place hundreds of social workers in family homeless shelters, had the NYPD subcontract with a provider to educate over 80,000 crime victims about available support resources, tasked the public hospital system with screening thousands of new mothers for postpartum depression, and ensured that all 1,800 public schools have access to mental health services for students. What struck me that day when I visited the centre was that parents were free to get the help they needed to leave abusive relationships and to address financial hardships because the department recognized that without

offering childcare, those individuals would not likely be able to tend to those crucial life decisions.

For this and many other reasons, I have increasingly become a staunch advocate for Universal Affordable Childcare for all children under the age of five years old. Proposed by the likes of progressive Senator and now-Presidential nominee Elizabeth Warren, a policy that provides high-quality heavily subsidised or free care across all economic strata just



30%
OF AMERICAN KIDS
ARE RAISED BY A
STAY-AT-HOME PARENT.

makes sense. In the United States, the average cost of childcare out of the home hovers around \$1,200 per month and in-home care by babysitters is around \$800. When faced with the choice of doling out that amount of money or staying out of the workforce, many parents - and to be more specific, many mothers - choose to stay at home to rear children. Currently, 30% of American kids are raised by a stay-at-home parent. While this is a sharp decline from the past (Bureau





Senator Elizabeth Warren

of Labour Statistics has found that in 1967, roughly 50% of mothers stayed at home), it still illustrates that many feel their career choices are limited once they decide to start their families.

There are economic, feminist, socio-political, racial, and class arguments to be made for expanding access to childcare. Take for example a 2016 study by the Economic Policy Institute that projects that if childcare costs were capped at 10% of family income, the United States would see a gross domestic product (GDP) gain equal to \$210.2 billion and a corresponding \$70 billion annual increase in federal tax revenue. On top of this, we know that having more women in the workplace increases efficiency overall. The World Economic Forum has reported that women on average generate 10% more work product compared to their male peers.

In our own work in New York City, we launched and implemented Pre-K for All which now serves 70,000 four years olds per year and we suspect that by offering a high-quality education program (note: Pre-K has a curriculum and goes beyond the scope of childcare) mothers who otherwise would have

stayed home are 15% more likely to engage in either part-time or full time work with the knowledge and security that their children are well cared for. It is important to point out, though, that there are women who choose both to send their children to Pre-K and not to work outside of the home and still other mothers who decide to keep their children with them during the day. What makes a policy like Universal Affordable Childcare a progressive move is that it allows women and parents in general to make the choice that is right for them free from the burden of financial pressure.



**FOR EVERY \$1
INVESTED IN EARLY
CHILDCARE, THERE IS
A \$7 SOCIAL RETURN
ON INVESTMENT**

Universal Affordable Childcare also tackles an age-old issue at the intersection of race and class: many women who are privileged enough in the US to have in home care for their children are white and those domestic workers who care for their kids are disproportionately

women of colour. In many instances, these workers need to rely on either family (for example, they get help from older siblings who really should be free to be kids themselves) or bring their kids with them to work. This leads to disparities in levels of care of children of different races and classes and Universal Affordable Childcare would seek to redress those inequalities.

On the implementation side, there are various arguments for how to fund an endeavour this monumental. I believe that there two major components that need to be put in place. On the one hand, families would need to be responsible for a portion of funds based on a sliding scale relative to their income. On the other hand, the federal government would need to shift its political balance and recognize what studies have long shown: that for every \$1 invested in early childcare, there is a \$7 social return on investment. What was so clear to me on that site visit was that the parents who were there were able to address great priorities in their lives because the centre recognized that children do well when their parents are free to do well.



Susan Reed (2012) studied as an undergraduate at Harvard University, where she graduated cum laude with a degree in History and Literature. She first came to Oxford as a visiting student at St Catherine's while an undergraduate, and subsequently returned, this time to Hertford, to read for a Master of Studies degree in US History. She has spent much of her professional life working in policy advice and mental health awareness, and currently works for both the Office of the Mayor of New York and the New York City Fire Department in raising awareness for mental health.

UPCOMING EVENTS AT HERTFORD

2019

JUNE

28

PRE-TOUR
CHOIR
CONCERT

AUGUST

03

HERTFORD
AT BRIGHTON
PRIDE

SEPTEMBER

07

HERTFORD
SOCIETY BLACK
TIE DINNER

19

1969 50TH
ANNIVERSARY
GAUDY

20

GAUDY FOR
MATRICULATION
YEARS 1998-99

OCTOBER

19

1994
25TH
ANNIVERSARY

NOVEMBER

01

MATHS
REUNION

DECEMBER

07

CHRISTMAS
DONOR DRINKS

2020

JANUARY

11

GAUDY FOR
MATRICULATION
YEARS 2000-01

