



UNIVERSITY OF
BIRMINGHAM

original
SINCE 1825

Lest we forget

SPRING 2014

CONTENTS

	Commemorations and controversies	3
	WWI air combat course is distance learning 'first'	6
	Hall of memory	7
	University pioneers Great War commemoration centre	10
	How battle trauma spawned surgical advance	12
	Ghosts of the past haunt modern medicine	14
	Lest we forget?	15
	Paradox of scientist's spirited approach	17
	From the draft to drones	19
	Robot warfare: a weapon of mass deterrence?	21



FOREWORD

By the end of the First World War, more than 64,000 wounded soldiers had been treated on the site of the University of Birmingham; the campus buildings having been requisitioned by the War Office and converted into a substantial medical facility.

As the inscription over the entrance to the Great Hall records: *'From August 1914 to April 1919 these buildings were used by the military authorities as the 1st Southern General Hospital. Within these walls men died for their country. Let those who come after live in the same service.'*

More than 150 University staff and students were among those who gave their lives during the conflict; their names inscribed on the War Memorial in the Aston Webb building.

As we embark on a four-year programme of national and global events commemorating the centenary of the Great War, it is a fitting time to reflect on the many other ways in which the University contributed to the war effort. While academic work was suspended from 1914 to 1918, the expertise of our staff was brought to bear in a variety of ways: from the design of tank radiators and engine parts to investigating the technology of poison gas and aiding in the development of wireless telegraphy.

This issue of *Original* offers an insight into the University of Birmingham's role in the First World War and explores how the conflict went on to fuel 100 years of ground-breaking research across the academic spectrum; work that continues today.

Birmingham is now synonymous with academic excellence in the field of war studies. Our expertise has enabled us to launch the UK's only Centre for First World War Studies. Through this we run a Masters degree in British First World War Studies, the only course of its kind in the country. We are contributing to a British Library e-learning project on the First World War. Each Tuesday evening in spring for the next five years we will be running a free, open-to-all series of lectures by leading First World War scholars. We have a dozen PhD students working on various aspects of the War. In addition, we are involved in a major international project to digitise precious archives relating to the War.

The University has recently been named as one of five centres nationally to be funded by the Arts and Humanities Research Council (AHRC) to co-ordinate the co-production of research with communities to commemorate the legacy of the First World War. The centre will be based in the new Library of Birmingham and is funded for three years in the first instance with a grant of £500,000.

You can also read about a unique partnership between the University and BBC Knowledge and Learning to deliver the UK's first distance learning programme on the conflict.

Professor David Eastwood
Vice-Chancellor

COMMEMORATIONS AND CONTROVERSIES

The First World War centenary offers an opportunity for us, not only to honour the men and women who made sacrifices on our behalf, but to leave a legacy of better understanding of a complex and controversial conflict, writes **Professor Jonathan Boff**.



*'They shall grow not old,
as we that are left grow old:
Age shall not weary them,
nor the years condemn.
At the going down of the sun
and in the morning,
We will remember them.'*

These familiar words, repeated all over the English-speaking world in remembrance services each year, will have a particular resonance (over the next few years) as we mark the centenary of the First World War. They were written by Laurence Binyon in a poem first published in September 1914, after just a month of the conflict, when the author can have had no idea of the scale of

sacrifice that would be demanded of all the nations involved. The debates about how we should commemorate that sacrifice over the next four years raise interesting questions about how we can and should engage with the past; and about the part historians can play in the process. This article examines some of these issues.

The idea that we should commemorate the centenary in some way has received broad support. Inevitably, there are some who either see no point in remembering such a long-ago event or equate doing so with glorification of war. You wouldn't expect a historian like me to have much sympathy with the former view. The second objection, however, is more interesting. It's tempting to dismiss it:

the assumption that commemoration equates to celebration is clearly simplistic. It does, however, raise a useful point: commemoration is a public act, which involves making choices. Obviously, deciding how to commemorate an event such as the First World War involves decisions that may provoke controversy, perhaps along political lines. Also, though, the decision to commemorate at all is inherently political: why mark the anniversary of one event rather than another? We all know that the beginning of the Great War will be widely marked throughout Great Britain. In Scotland, at least, the 700th anniversary of Robert the Bruce's victory at Bannockburn will no doubt attract attention. But will anyone, even in Windsor Castle, mark 300 years of Hanoverian rule?

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...from previous page

'THE POPULAR VIEW REMAINS THAT OF BLACKADDER'S WAR (WITHOUT THE JOKES); A FUTILE TRAGEDY OF MUD, BLOOD, INCOMPETENCE AND POETRY.'

That the UK government was alive to the possibility of controversy was perhaps a factor in its initial hesitancy. While countries such as Belgium and France pushed ahead with plans for national events to mark the centenary, British planning initially lagged well behind. Only under pressure from retired military men and senior historians, such as Professor Sir Hew Strachan, of Oxford University, did the Government move away from its early position that the centenary should be led by local communities, rather than central government, and by organisations such as the Imperial War Museum. In November 2012, Prime Minister David Cameron committed £50 million, some of it new funds, to support the centenary and laid out the mission: 'Our duty with these commemorations is clear: to honour those who served; to remember those who died, and to ensure that the lessons learnt live with us for ever.'

It's hard to argue with Cameron's purpose. How it should be executed, however, is more contentious. In part, this is because the memory of the war itself remains contested. The popular view remains that of Blackadder's war (without

the jokes); a futile tragedy of mud, blood, incompetence and poetry. Over the last 30 years, however, Britain's First World War has been subject to radical revision by a generation of academic historians.

Three key insights animate their revisionism. First, it's called a 'world war' for a reason: it extended far beyond the trenches of France and Flanders, touching the lives of people all over the globe. In both absolute and proportional terms, many countries suffered greater loss in blood and treasure than Britain. Both Germany and France, for instance, did so, yet both are almost entirely absent from popular narratives of the war.

Secondly, even when one considers only the British experience, there's much more to the war than the Western Front. Less than five per cent of the British population ever served there¹. Yet the war touched nearly everybody, and there's still much research to be done to deepen our understanding of, say, the Home Front.

¹ Adrian Gregory, *The Last Great War: British Society and the First World War* (Cambridge: Cambridge University Press, 2008), p. 293

Thirdly, the soldiers who endured the trenches were not mere passive victims, as the myth would have it. They were brave and resourceful men, many of them volunteers fighting for a cause they believed in, who found ways to express their individuality and agency even amidst the carnage of war. Even the generals, so often derided as 'donkeys' incapable of grasping the realities of modern warfare, over time learnt, adapted and eventually triumphed, defeating the vaunted German army in battle.

These new perspectives, however, seemed at first to have passed the Government by. Ideas for major national commemorative events almost all centred on clichéd disasters of the war such as Gallipoli, the Somme and Passchendaele. Some historians have suggested that one or more of the undoubted victories of the war, such as the Battle of Amiens (8–11 August 1918) should also be marked. There are hints that such suggestions might be gaining some traction in Whitehall. If the intention is thereby to restore some balance, however, the true point is getting missed. The centenary offers an opportunity for us, not only to honour

and pay tribute to the men and women who made sacrifices on our behalf, but also to leave a legacy of better understanding of this complex and controversial conflict. Rather than splitting the war into Bad Days and Good Days, historians need to provoke, and participate in, debate throughout the warp and weft of the centenary. They must provide the context so often and easily lost in popular memory. They need to explain, for example, why battles like the Somme had to be fought; that the well-known disaster of its first day was merely the start of a long campaign, punctuated by notable British and French successes, which nearly broke the German army; and that the lessons learnt, even from defeats, contributed to later progress.

Of course it'll be difficult to strike the right balance between sorrow and pride, tears and triumphalism over the next four years. But if historians at universities like Birmingham do our jobs right and show the war, and the men and women who fought it, in the proper historical context, we will have made a lasting contribution to how society views its past, comprehends its present and envisages its future. We will contribute also to a no-less-important end: By making the effort properly to understand the humans of the past on their own terms, not on ours, we honour their sacrifice all the more.

'...THE SOLDIERS WHO ENDURED THE TRENCHES WERE NOT MERE PASSIVE VICTIMS, AS THE MYTH WOULD HAVE IT. THEY WERE BRAVE AND RESOURCEFUL MEN, MANY OF THEM VOLUNTEERS FIGHTING FOR A CAUSE THEY BELIEVED IN...'

Further reading:

For a fascinating exploration of how popular perceptions of the war have been formed, see Dan Todman, *The Great War: Myth and Memory* (London: Hambledon Continuum, 2005). A good introduction to revisionist literature on the First World War is Gary Sheffield's *Forgotten Victory: The First World War: Myths and Realities* (London: Headline, 2001). My favourite three single-volume histories of the war, all of them reflecting the latest scholarship, are Michael Howard's beautifully concise *The First World War* (Oxford: Oxford University Press, 2002), Hew Strachan's *The First World War: A New Illustrated History* (London: Simon & Schuster, 2003) and David Stevenson's *1914–1918: the History of the First World War* (London: Allen Lane, 2004). No doubt many more books about the war will be published over the next four years.



A ration party of the Royal Irish Rifles in a communication trench during the Battle of the Somme.

WWI air combat course is distance learning 'first'

UNIVERSITY AND BBC FORM PARTNERSHIP FOR ONLINE ACADEMIC PROGRAMME

The University of Birmingham has linked with the BBC to create an academic first – a unique distance learning course marking the centenary of the First World War.

The 'Wings of Modernity' course, developed by the University's Centre for War Studies in conjunction with the BBC, was announced during a press conference outlining the BBC's forthcoming World War One Centenary coverage. It will be a pilot Massive Open Online Course (MOOC) looking at the evolution of airborne conflict, published on the FutureLearn platform.

BBC Controller of Learning Saul Nassé said: 'The BBC continues to be excited about the development of MOOCs – Massive Open Online Courses – that will

enable mass participation in learning online. We are keen to explore opportunities with a number of university partners as part of our World War One coverage. The first one to be developed will be with the University of Birmingham. The short course will cover the deployment of air power during the First World War and attitudes to the use of new technology.'

Dr Jonathan Boff, Lecturer in War Studies at Birmingham, commented: 'This exciting initiative will give us a chance to share our passion for First World War history with the widest possible audience. It also enables us to continue our pioneering use of digital technology both to support existing students and to attract new ones. Students stimulated by the MOOC can easily pursue their interest by exploring our



wide range of full-time and part-time undergraduate and postgraduate degrees, online and face-to-face, in war studies and the history of warfare.'

Director of the Centre for War Studies at Birmingham Dr Peter Gray added: 'The University of Birmingham has, in the Centre for War Studies, the largest and longest-established centre for specialist research and teaching on the First World War anywhere in the world. It is also internationally renowned for excellence in the study of air power.'

'The 'Wings of Modernity' MOOC will bring together our strengths in both areas to allow students to explore not only the Great War in the air, but also the impact the war had on aviation more generally, and, more broadly, still to examine developing attitudes to technology in a time of revolutionary change. Although we often take aeroplanes for granted today, the story of how we got to this point is a fascinating one whose roots lie in 1914–18.'

In a separate but related development, the Centre for War Studies is providing academic advice and support to the BBC's digital content for the First World War centenary. This will cover a range of material designed for audiences from as young as five years up to those as old as the war itself, and is evidence of the commitment of both organisations to explaining the history of the Great War to the widest possible audience.

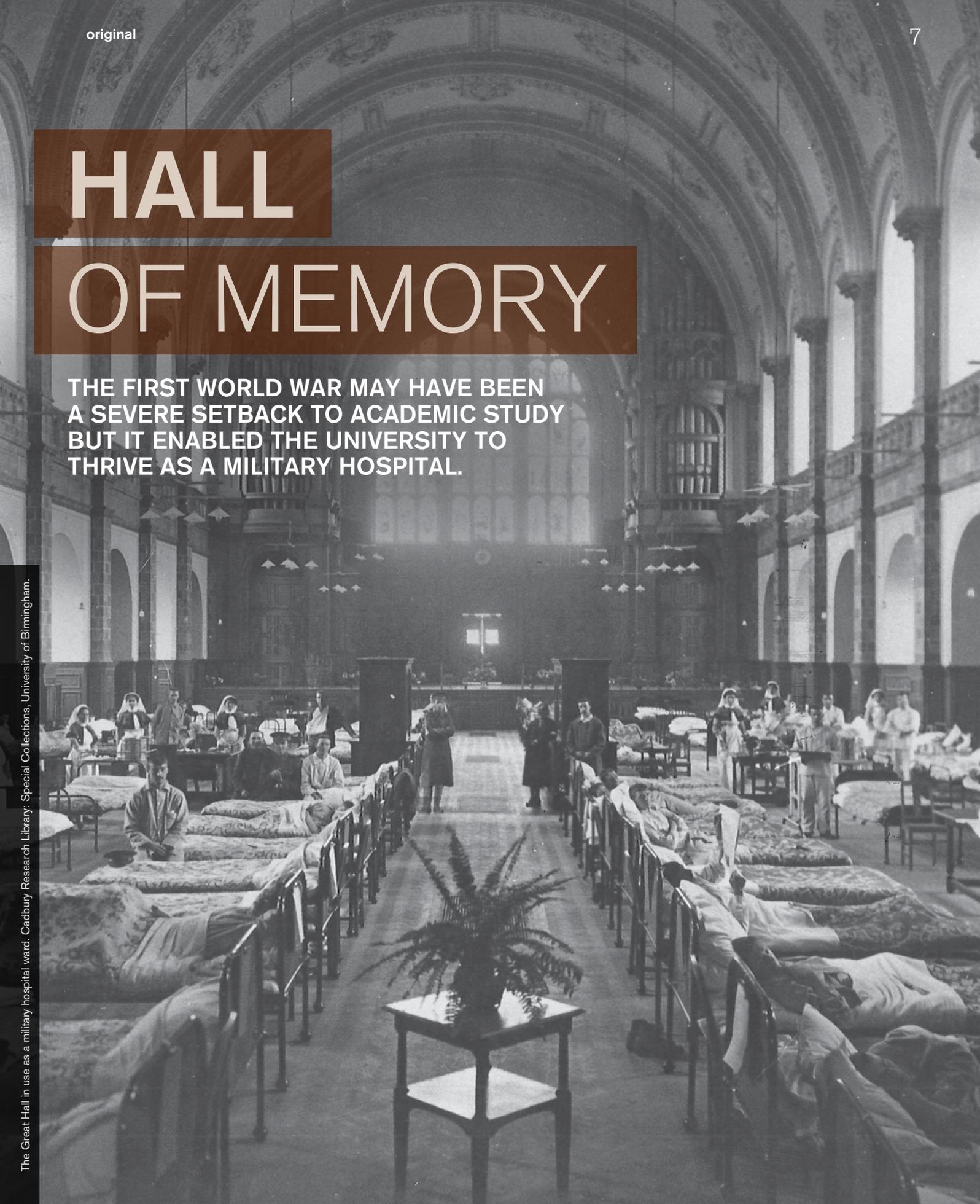


Vintage WWI fighter plane

HALL

OF MEMORY

THE FIRST WORLD WAR MAY HAVE BEEN
A SEVERE SETBACK TO ACADEMIC STUDY
BUT IT ENABLED THE UNIVERSITY TO
THRIVE AS A MILITARY HOSPITAL.



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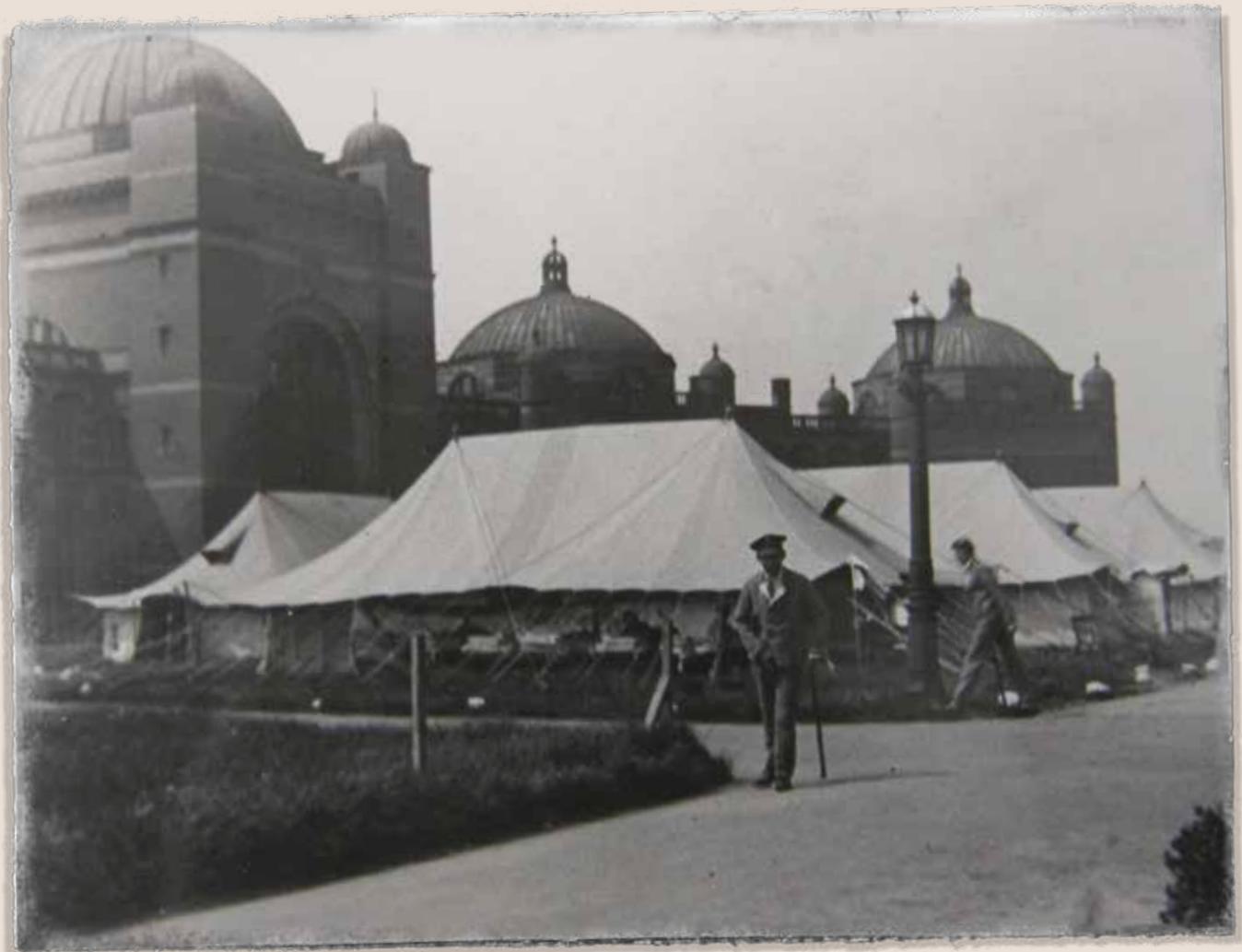
In August 1914, the University buildings at Edgbaston were taken over by the military authorities as the 1st Southern General Hospital under a territorial scheme that had been prepared some years earlier. The whole of the site was handed over to the War Office and, with many alterations, was converted into a great hospital.

The contents of the Great Hall were removed, workshops were dismantled; desks gave place to beds, undergraduates

and gowns to nurses and hospital 'blues'. The spirit of eager activity was replaced by one of suffering and repose.

At the end of the year there were more than 600 patients and accommodation for 800, figures that increased and extended rapidly from year to year, until, on January 1, 1918, there were 1,358 beds. At the end of the war, 64,000 patients had passed through the university quarters of the hospital which, by then, had been expanded into many sections.

There was a Royal visit on July 22 1915, when the King went round the wards and chatted with the patients. On special occasions such as the anniversary of the outbreak of war, visits of distinguished generals and the presentation of military honours, there were impressive parades of staff and patients in the hospital grounds. A Rowland Mason Memorial Hut, erected in August, 1917, became the venue for many varieties of entertainment for patients.



Tents erected outside the Aston Webb Building to provide overflow accommodation.
Cadbury Research Library: Special Collections, University of Birmingham.



Injured soldiers outside campus buildings converted to university hospital. Cadbury Research Library: Special Collections, University of Birmingham.

Two past adjutants of the Officers' Training Corps (OTC) were killed in action in the first months of the war. Of the members of the senior staff, the only one qualified for active service was Professor Chatelain who after a winter in the trenches was taken ill and died in hospital. These were only the first in a sad tale of losses that mounted year by year and of which a permanent record endures in the University's War Memorial, with more than 150 names of staff and students fallen in the war.

In addition to the men who fought, there were large calls on the staff from the technical side. Many of the professorate were occupied on war work, some of it of considerable importance in the research field. Professor Burstall was in charge of experiments in regard to the design of tank radiators. The Civil Engineering section under Professor Lea was engaged in studying the application of aluminium and light alloys in aircraft and engine parts. Professor Frankland was Deputy Inspector of High Explosives and responsible for the Birmingham area. Working under him was a large staff experimenting in poison gases. Sir Oliver Lodge was appointed a member

of the Admiralty Board of Invention and Research in 1915 and his services were especially valuable in the science of sound and the development of wireless telegraphy. Others whose expert abilities were utilised in military or government departments included Professors Cadman and Frank Tillyard, and Sir William Ashley.

No academic work was done at Edgbaston during the war years. Practically everything was in abeyance 'for the duration'. With so many engaged in fighting or military occupations, the Mason College buildings were adequate for teaching needs and for the nucleus of student life centred at Edmund Street. Some classes were held at the Municipal Technical School, but generally the war was a severe setback to the pursuit of academic studies. After the Armistice, the hospital was gradually given up, and a great deal of expense was necessary to put it all right again.

Extract from *The University of Birmingham: Its History and Significance*, by Eric W Vincent and Percival Hinton. Birmingham Cornish Brothers Ltd, 1947.



Improvised ambulance carriage designed by E M Tailby of Edgbaston. Cadbury Research Library: Special Collections, University of Birmingham.

University pioneers

GREAT WAR COMMÉMORATION CENTRE

Academics and community groups in Birmingham – led by the University – will collaborate as never before to mark the centenary of the First World War. March 21 will see the public launch at the new Library of Birmingham of one of only five centres across the country set up to commemorate the Great War and its legacy.

The library will be the focus for workshops, exhibitions and wide-ranging research on how the conflict has shaped the past 100 years in a £500,000 project funded by the Arts and Humanities Research Council (AHRC).

That the University is co-ordinating the ambitious scheme is thanks to Professor Ian Grosvenor, Deputy Pro-Vice Chancellor for Cultural Engagement, who led the consortium bid application for funding to set up the commemoration centre.

'The five centres will work with communities to collaboratively co-produce research on World War One and its legacy,' explains Ian. 'What that means is that community groups will come

forward with ideas, and we will work with them to deliver their project, which might be the history of a war memorial, the famous Zeppelin raids over Walsall or how children on the Home Front were affected by the war.'

'THE FIVE CENTRES WILL WORK WITH COMMUNITIES TO COLLABORATIVELY CO-PRODUCE RESEARCH ON WORLD WAR ONE AND ITS LEGACY.'

These small-scale community projects will be funded by the Heritage Lottery Fund to the tune of between £3,000 and £8,000 per scheme.

Ian, who wrote the bid, is the principal investigator, and heads a team of two co-investigators, both from the University, and academics from four other universities in the region – Birmingham City, Newman, Worcester and Wolverhampton. In addition, there are 24 cultural partners,

including the Cheltenham Festivals, the BBC and the Ecumenical Commission.

In fact, marking the 100th anniversary of the Great War was on Ian's agenda 18 months before the AHRC and HLF invited bids to open centres around the country. 'In January 2011, I co-convened a working group with Toby Watley of the Birmingham Museums Trust and Chris O'Neil of Birmingham Institute of Art and Design to see what we as a city were going to do to commemorate World War One,' he recalls. 'We invited people we thought would be interested to come along – and we've been meeting every two months since then, trying to co-ordinate what we are going to do. As a result, we are probably the best-organised city in the country.'

'So when the call went out for bids for what was originally seven commemoration centres, I already had in place local partners who wanted to put on events and conduct research about World War One, and all of them were very interested in the idea of a centre in Birmingham.'

As well as exploring afresh the impact of the First World War on communities in Birmingham and the Midlands, Ian and his team have also had to identify themes of national importance.

'We've identified certain themes we think we can lead on: one is gender and the Home Front – what happened to families – which is being led by Professor Maggie Andrews from the University of Worcester. Another is commemorations, led by Dr Joanne Sayner, and a third is the whole issue of religion and belief – the rise of spiritualism, the role of army chaplains, Quakers and pacifism – and that's being led by Dr Michael Snape. Birmingham is a good place to do this because of its cultural diversity and its non-conformist history.'

'IT'S NOT JUST ABOUT WHAT HAPPENED BETWEEN 1914 AND 1918; IT'S THE LEGACY OF THE WAR.'

Marking the anniversary of the war itself is important, but the commemoration is more far-reaching than that, says Ian.

'It's not just about what happened between 1914 and 1918; it's the legacy of the war. For example, by 1916, training programmes for soldiers with disabilities were being held in the Jewellery Quarter; by 1930, child guidance clinics had been set up – almost certainly the result of the emotional turmoil caused to youngsters during the Great War.

'How did people in the 1930s mark the First World War and was it different from how they marked it in the 1970s? How has the interpretation of World War One and its causes changed over the years? 'When I wrote the bid, I had to write about what would make our centre distinctive, and I wrote about the city's cultural diversity and the fact that Birmingham has the youngest population in Europe, raising

'OUR ROLE IN THIS CENTRE IS TO SUPPORT COMMUNITIES ENGAGING IN THOSE INTERPRETATIONS. THIS IS NOT ABOUT WE WON; IT'S TO CRITICALLY STEP BACK AND THINK ABOUT WHAT THE ENORMOUS CONFLICT MEANT AND STILL MEANS...'

the question of what it means to young people in Birmingham. How does World War One connect with their lives? And what's the relevance of the war to Birmingham's black population?'

Ian acknowledges that such a commemoration is politically sensitive, because the past is always open to interpretation.

'Our role in this centre is to support communities engaging in those interpretations. This is not about "we won"; it's to critically step back and think about what the enormous conflict meant and still means – and what it does for our sense of community. I think only good will come out of it.'

The centre – based in the new library because the building is a magnet for visitors to the city – is being co-ordinated by Dr Nicola Gauld. It offers, says Ian, a 'fantastic' opportunity for the University to work more closely with the wider community and conduct research in a different way.

'Civic engagement is part of the University's strategic framework, and this is a fantastic opportunity for us to engage with the city. Research council funding now comes with an expectation of public engagement. But many of us have never worked this way – so one of the big



outcomes of this will be to give academics the experience of working on a small scale with communities in order to produce research.

'So this centre and attendant projects are about marking a significant event in history, but also about offering opportunities for outward-looking universities such as Birmingham to engage with the wider community and build relationships that will be important for the future.

'As the principal investigator, I'm responsible for managing it and the budget and making sure we deliver the project, along with working collaboratively with all the other centres.'

As well as doing justice to the memory of World War One, Ian is confident the commemoration will lead to further funding and raise the profile of the University and its partners.

'The centre will have to have a legacy – that of understanding the best ways of working with universities. That will be very valuable and has the potential to change the way we conduct research.'

By Ros Dodd

How **battle trauma** spawned

SURGICAL ADVANCE

Prosthetic masks casts, World War I



The First World War brought medical research opportunities on an unprecedented scale but also severely challenged doctors unskilled in treating serious war wounds, as Dr Jonathan Reinarz tells **Ros Dodd**.

The Great War saw battlefield injuries, infections and trauma on a scale never before witnessed. British doctors struggled not only with the high numbers of wounded troops arriving at military hospitals across the country, but with new conditions such as shell shock, 'soldier's heart' and trench foot.

At the same time, medical staff were faced with a dearth of effective medicines, while medical equipment and practices such as X-rays were rudimentary and used infrequently. Medics were forced to think on their feet and even appeal to the local civilian population to grow medicinal herbs, as happened throughout Warwickshire.

'One of the hardest myths to dispel is that war brings medical advancement,' asserts Dr Jonathan Reinarz, Director of The History of Medicine Unit within the University's School of Health and Population Sciences. 'It certainly makes people more resourceful, and doctors

learned a lot of lessons during World War One, especially those who would not have been given much responsibility in peacetime, such as students, but medical historians really challenge this idea that war brings about improvements in medicine.'

What war does do – and this was certainly the case in World War One – is provide informal research opportunities that contribute to post-conflict medical advancements. For example, doctors saw thousands of soldiers returning from the trenches blind, deaf, paralysed or unable to speak – yet without any physical injury to explain the symptoms. It wasn't until 1915 that the first paper on 'shell shock' was written, by a medical officer called Charles Myers (although he didn't invent the term).

'When you are seeing the same kinds of cases repeatedly coming before you, you start to identify patterns,' says Jonathan. 'For instance, doctors were seeing a huge number of men with the symptoms of

venereal disease (VD) and trauma that they hadn't been taught about during their medical training. So they were learning about new conditions as they went along, and afterwards were able to use that information to take medical knowledge forward.'

However, medical techniques still in their infancy at the turn of the 20th century, such as the system of triage, became standard practice in the Great War, while the time taken to treat soldiers was greatly reduced with the development of mobile medical equipment: mobile X-ray units were used to locate bullets and shrapnel, for example. Today's maxillofacial surgery to repair facial fractures, using external fixation, was pioneered during World War One, although it took much longer to perfect.

Plastic surgery was also first performed during the Great War: a naval officer, Walter Yeo, who suffered terrible facial

injuries during the naval Battle of Jutland, was given new eyelids with a 'mask' of skin grafted across his face and eyes in a procedure known as 'tubed pedical'.

'So modern medicine was starting to emerge during World War One, but it was still early days for procedures such as blood transfusions, and doctors still didn't really understand shock and the treatment of burns,' explains Jonathan. 'People think of these as developments that came out of war, but the fact was that doctors were hard-pressed to deal with the sorts of injuries they were seeing.'

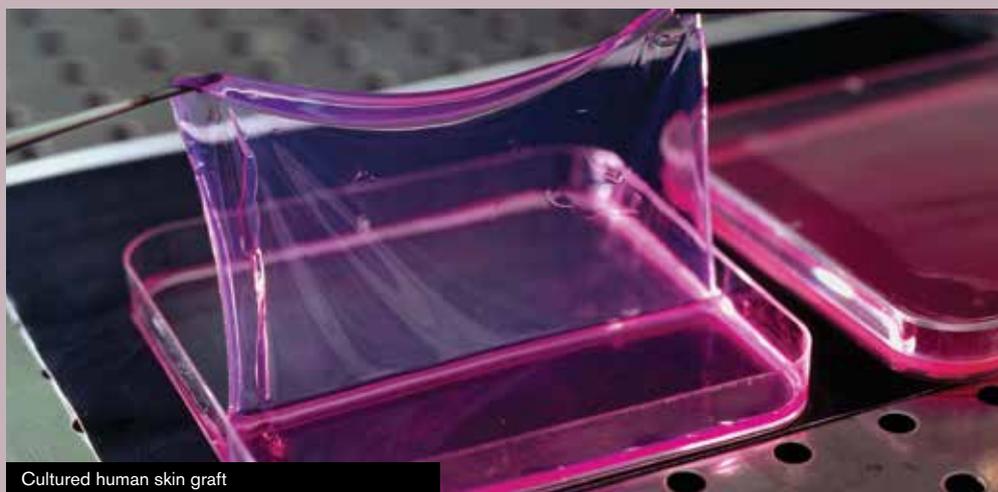
The terrain on which most of the Great War battles were fought – the soggy fields of northern France and Belgium and the insanitary trenches – resulted in long-term problems from wounds unlike those witnessed in, say, the Boer Wars.

'Because the Boer Wars were fought in South Africa, where the climate was very different, there was less infection of bullet wounds than was the case in World War One, where the fighting took place in fields that had been fertilised and polluted with microbes over centuries, resulting in far more infected wounds. There wasn't the easy healing that had been experienced in South Africa.'

But at the same time, doctors became better at cleaning wounds and cutting away dead and infected tissue before stitching them.

As well as the challenges of mass injuries and new medical conditions, doctors also had to cope with a health system that had been turned on its head by war. Only relatively well-equipped and well-staffed centres such as Birmingham were able to adapt quickly. In fact, Birmingham – where the 1st Southern General Hospital was located – reorganised its system so efficiently that it was used as a model for other mobilisation hospitals.

'Before the war, there was a system that was well-organised and was working fine, and then when the war started, it was completely disrupted,' says Jonathan. 'By the end of the 19th century, Birmingham was calling itself the "second city" and had



Cultured human skin graft

set itself apart from other provincial cities by having a network of hospitals: as well as two general hospitals, the Queen's and the General, there were lots of specialist hospitals, such as the Orthopaedic, Children's, Women's and Dental hospitals. The University also had a medical school. So this was why Birmingham was chosen as one of the key centres when the War Office drew up its mobilisation scheme in 1907.'

With a large pool of trained medical staff to draw upon, the University's Great Hall was receiving its first military patients by October 1914.

But despite the relative wealth of medical knowledge in Birmingham, 'miracle' drugs such as penicillin to deal with infections hadn't yet been invented and many of the drugs doctors had hitherto relied on were made by German pharmaceutical companies like Bayer and therefore unavailable due to the interruption of European trade brought about by the war.

'So what you saw was a shortage of even standard medicines,' says Jonathan. 'That is why one of the annual reports from the hospital contained a list of herbs for people in Warwickshire to grow. Donors were also requested to supply old sheets for bandages. In some senses, then, people were forced to go back to an earlier form of medicine.'

And, of course, the more war casualties that arrived, the less able doctors were to treat the local civilian population.

'Birmingham General Hospital, for example, set aside 100 beds for soldiers, which meant 100 fewer beds for the local population.

'On the other hand, before the war, hospitals had been struggling financially and now they were being publicly funded – Birmingham General received £3,000 annually for its war work – and many took advantage of this to start or expand services, such as setting up VD clinics.'

Medical staff also benefited from visits from overseas doctors who were temporarily based in the region and able to spot shortcomings in the system.

'Up until the start of World War One, Birmingham's medical staff had been very local. One of the best things that happened during the war was that medical experts came from outside and were able to see deficiencies in the system and to show local doctors where there was room for improvement. Local doctors would also have seen facilities abroad and been able to compare what they had experienced in Birmingham.

'Overall, then, I don't think you can say there was medical progress during the Great War – that came afterwards – but what you can say is that the medical professionals made the most of what they had at their disposal. The medical students of the day would have gone on to become highly competent doctors. Some of them, of course, would have drawn on these experiences in the 1940s.'

Ghosts of the past haunt modern medicine

ALTHOUGH CLINICAL PRACTICE HAS MOVED ON DRAMATICALLY FROM THE FIRST WORLD WAR, RECOVERY FROM INFECTED WOUNDS CAN STILL BE COMPLICATED.

Professor Laura Piddock, deputy director of the Institute of Microbiology and Infection and Professor of Microbiology in the School of Immunity and Infection, is a leading researcher in the fight against antibiotic resistance. Her current research focuses on understanding mechanisms of antibiotic resistance as a basis for drug discovery.

When she was asked to take part in a panel discussion at the Cheltenham Literature Festival last October, Professor Piddock also gained a deeper understanding of the challenges faced by surgeons in the First World War. She was part of a discussion on *Wounded*, a book by medical historian Emily Mayhew which looks at injuries and infections during the War. The book tells the story of casualties and those who cared for them, and Professor Piddock described it as 'absolutely riveting'.

The book also led Professor Piddock to look at some of the similarities and differences in bacteriology then and now – and how wartime developments inform the fight against antibiotic resistance in current times.

She said: 'In World War One, there were no antibacterial drugs, only antiseptics such as Dakin's solution (sodium hyperchlorite and boric acid). Alexander Fleming, whose discovery of penicillin was still some 14 years away, worked in a special wound laboratory in Boulogne, and showed that for Dakin's solution to be

most effective it had to be combined with irrigation and debridement. Recent work has suggested a re-evaluation of Dakin's solution for treatment of wounds in combat zones could be beneficial.'

In fact, it was Fleming's experiences in World War One which ultimately led to the discovery of penicillin as he was motivated to research ways to inhibit or kill bacteria. Professor Piddock explained: 'He showed that traditional treatment of infected wounds with topical solutions of antiseptic was ineffective and did not prevent gangrene. He showed that this was because, firstly, white cells in pus had antibacterial activity and antiseptics damaged white blood cells, thereby reducing their ability to kill bacteria, and, secondly, cloth fragments and dirt were driven deep into the patients' tissues causing infection which antiseptics could not reach.'

Professor Piddock also said it was interesting to note that First World War laboratories looked similar to laboratories today (other than using wooden furniture, which is not used nowadays as it has been replaced with impenetrable materials), and many of the same infection problems which existed then, persist today.

She said: 'There were no rapid ways of identifying bacteria, and it could take between 24 hours and six weeks depending on species. However, even now, we have few rapid tools and we must firstly distinguish pathogens from commensal bacteria.'



Today, although modern medicine has moved on dramatically from the First World War, a host of other issues can complicate recovery from wound infections. Whereas, as *Wounded* describes, in the First World War bacteria from the farmland on which battles raged were the main cause of infections, entering the body via shrapnel wounds; nowadays, modern soldiers are more likely to suffer blast injuries into which material contaminated with bacteria is blown.

Professor Piddock said the rise of antibiotic resistance meant that the advances made since the First World War in drug development and treatment of some types of bacteria were now significantly reduced.

She said: 'We still use many of the same technologies that Fleming used, including microscopy and culture to diagnose the pathogen in the first instance.'

'In the 21st century, the same bacterial species can also cause wound infections, but increasingly multidrug resistant Gram negative bacteria complicate recovery. There are several drugs effective against Gram positive bacteria, but increasing numbers of Gram negative bacteria infections means our therapeutic options are, to some extent, as limited as in World War One.'

As told to Kara Bradley

LEST WE FORGET?



Do war memorials have less relevance once the conflict has passed from living memory? Not according to Birmingham research fellow **Emma Login**.

Few people alive today have any memory of the First World War. Yet from August this year no one in the UK will be able to avoid its commemoration.

Organisations across the country are feverishly planning centenary events, and communities are busy building new war memorials or refurbishing and rededicating existing ones.

David Cameron has pledged to spend over £55 million on 'a truly national commemoration' that 'like the Diamond Jubilee celebrations, says something about who we are as a people'. This appropriation of First World War

memory to enhance patriotic national narratives has been both celebrated and criticised and has once again raised questions regarding the role of military commemoration within contemporary society.

The expectation to commemorate and memorialise both past and present conflicts has become so normalised it is easy to forget that it has not always been viewed in this way. There has never been a clear consensus about what a memorial actually stands for and despite widely-held beliefs, they have not always been thought of as highly relevant.

My research examines the whole development of war memorialisation and commemoration of the common soldier from its beginnings in the mid-19th century through to the present, in the UK, France and the US. By taking this wider temporal approach, I am able to chart the changing attitudes towards commemoration and I am especially interested in what happens as the conflict begins to pass from living memory. In particular, I examine why we choose to commemorate past wars many years after the conflict and how we engage with memorials once the names listed on them have faded from memory.

...from previous page

It is often suggested that war memorials have less relevance as time passes from the events they commemorate, but throughout the course of my research I have discovered that this is not the case. Memorials and their associated ceremonies do have relevance and meaning to individuals today – sometimes more so than when they were first constructed – but this relevance and meaning has changed significantly over time.

Preparations for the commemoration of the First World War began during the conflict itself, with many keen to mark the loss of those who had made the ultimate sacrifice for King and country. High numbers of volunteer forces and huge casualty rates resulted in memorial construction on an unprecedented scale. Many understood that for those who had lost loved ones, given the decision not to repatriate the bodies of the dead, a war memorial provided a surrogate graveside at which to mourn and a focus for their grief. Yet few believed that such monuments would have any form of longevity past the generation that had experienced the war first hand.

In Birmingham, Sir Whitworth Wallis, Director of the Municipal Art Gallery, writing in 1917 pessimistically predicted that any attempts at lasting remembrance were 'vain hopes' and that 'a few distinguished generals... will be recalled from time to time, but the millions of the rank and file will cease to be remembered'.

We might like to imagine communities coming together to sacrifice their last pennies to build the most fitting tribute to their fallen heroes, but this was not always the case. In fact memorialisation was often dominated by local politics, and communities frequently struggled to collect sufficient contributions to feed the grandiose memorial ambitions suggested by town and parish councillors.

The post-war depression meant that more mundane concerns often bypassed the lofty ideals of grand-scale



commemoration. During the 1930s it was no secret that among the working classes, and particularly among ex-servicemen who had failed to find work upon their return, many saw widespread commemoration and memorialisation as wrongly prioritising the dead above the needs of the living. Mass Observation Archives demonstrate that the hypocrisy of commemorating the 'war to end all wars' while simultaneously preparing for a second conflict was not lost on the masses.

For many younger respondents, it was not even this hypocrisy or a political motivation which drove their lack of interest, it was simply the feeling that it was not relevant to them personally and so was not something with which they could be involved. When the *Daily Herald* ran a newspaper article in 1937 asking its readers if they thought the Armistice Day ceremony at the Cenotaph was irrelevant and should be abolished, 68 per cent of respondents agreed that it should. Yet when I questioned individuals regarding whether or not Remembrance Day was still relevant within contemporary society, only 17 per cent felt this was the case, and more than half of these felt this was a bad thing.

Clearly our attitudes towards commemoration change significantly over time and it is only by taking a wider temporal approach that such changes can be seen. Today, remembrance of the First World War is obviously thriving and

there is now an entire industry based around its memory and the remembrance of its dead. While we might like to see this as a continuation of a long history of remembrance, or a return to the post-First World War sentiment, it should be remembered that this is not in fact true to the historical record. Commemoration and memorialisation are not static but constantly changing and this is what makes them such fascinating topics of study.

During the inter-war period, attitudes towards commemoration were openly debated, and many questioned what exactly it was that war memorials stood for and exactly how they should be used. Our attitudes towards commemoration vary significantly from country to country and change throughout time as they react and respond to current political and social contexts. By taking a comparative approach, it is possible to demonstrate that memorialisation is a far more complex phenomenon than a single national perspective might suggest.

The UK's forthcoming centenary events should not be viewed in isolation but should be seen as part of a continually evolving process of commemoration and memorialisation; one which will be approached differently by each of the participating nations.

Emma Login is a research fellow in the Department of Classics, Ancient History and Archaeology.

PARADOX OF SCIENTIST'S SPIRITED APPROACH

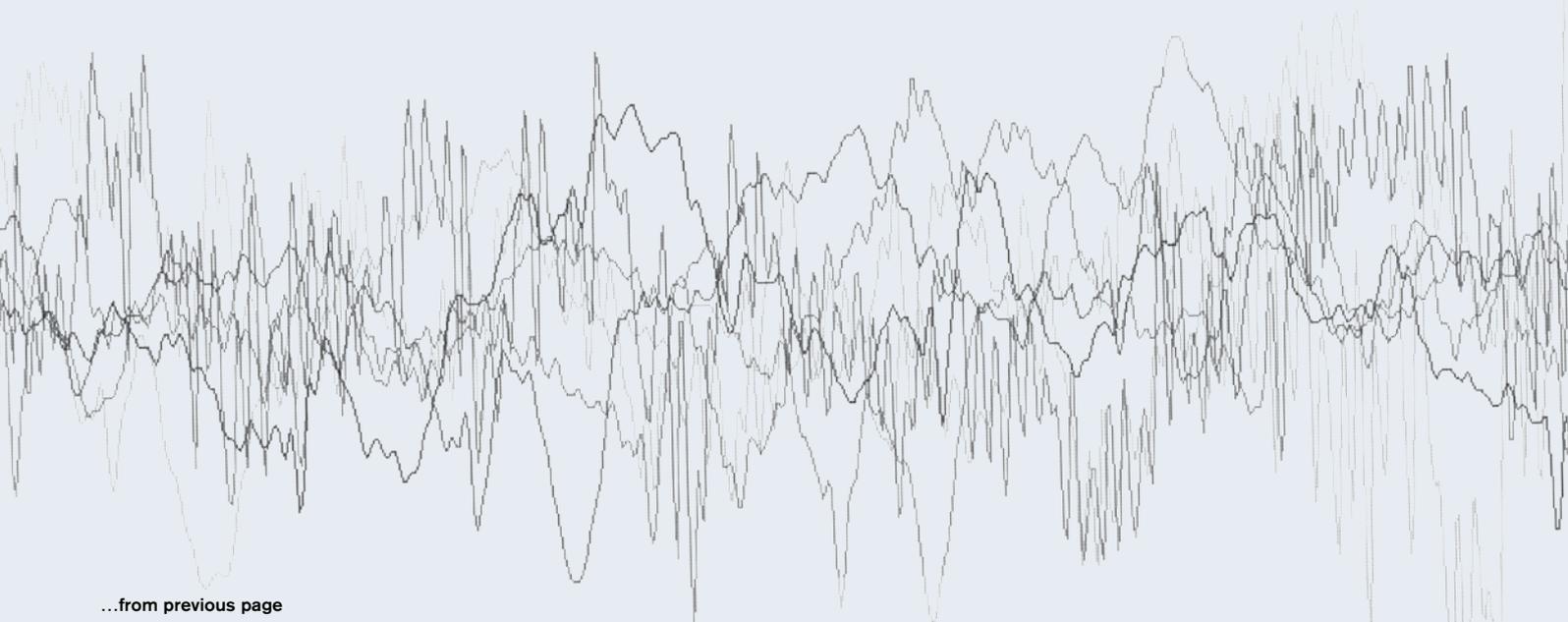


WHEN HIS YOUNGEST SON WAS KILLED IN THE FIRST WORLD WAR, THEN VICE-CHANCELLOR OLIVER LODGE REVEALED AN INTEREST CURIOUSLY AT ODDS WITH HIS REPUTATION AS A LEADING PHYSICIST, AS **PROFESSOR MIKE GUNN** EXPLAINS.

Isaac Newton, born in 1643, has been portrayed as living at a pivotal moment in history when the influence of magic and superstition was displaced by science. Because he lived at that moment, he reflected both of those influences: in his belief in alchemy on the one hand and his creation of physics as a discipline on the other.

Oliver Lodge, born two centuries later, represents a counter-example to this aspect of Newton's historical uniqueness. Lodge illustrates that, well away from Newton's time and within a single person, one can

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...from previous page

encompass the ability to make a major contribution to science and hold beliefs seemingly, today, inimical to a scientific outlook on life. In Lodge's mind these characteristics were intimately related, and were publicly exposed in his reaction to his son Raymond's death in World War One.

Lodge would not have been out of place as a physicist in the 21st (as against the 20th) century. He carried out distinguished work in both pure and applied physics, working on understanding electromagnetic waves and their use in telegraphy. He advocated the foundation of the National Physical Laboratory and he had a deep interest in public engagement with science. For example, within two

weeks of Röntgen's paper on the discovery of X-rays, Lodge had created an oversubscribed public exhibition of X-ray photographs, using money from an industrial benefactor: Hartley of jam renown.

However, there was another side to his interests, which was less appreciated by many of his colleagues: spiritualism. This, developing from an earlier interest in telepathy, captured his attention five years before he demonstrated the first transmission of signals by radio waves in 1894. Indeed he was led to believe the spirits inhabited the same substance, the aether, in which he thought the electromagnetic waves propagated.

These beliefs were expressed most publicly when his youngest son, Raymond, was killed in the First World War. Lodge was led (with the rest of his family) to believe they could communicate with Raymond via a medium. Their experiences were summarised in the very successful 1916 self-help book *Raymond*, written for other bereaved families.

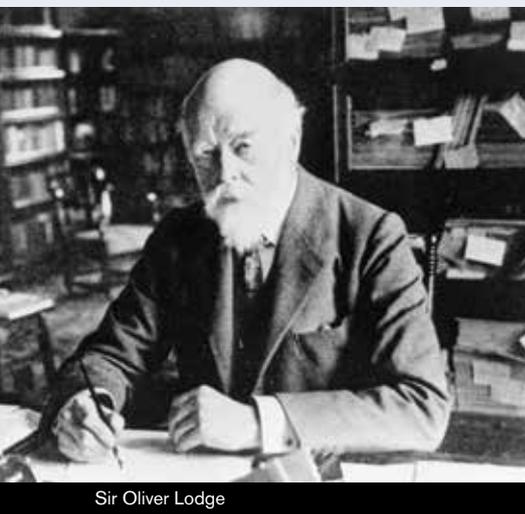
From the vantage point of the 21st century this all appears to be very misguided. The Michelson-Morley experiment disproved the existence of the aether at the end of the 19th century, with Einstein's explanation, via relativity, coming a few

years later. This left Lodge stranded scientifically for the last 40 years of his life, as well as undermining the basis of his quasi-scientific view of spiritualism.

One might dismiss Lodge as an unfortunate example of a scientific dinosaur, garnished with a touch of the eccentric. However an examination of the list of the past presidents of the Society for Psychical Research reveals he was far from alone. Pillars of the scientific establishment such as the Lords Rayleigh are there, and at least one Nobel Laureate takes his place in the list, along with several eminent astronomers over the last century.

A final disquieting observation, from the perspective of our times, is that Lodge's political views appear well ahead of his time. While he was Vice-Chancellor of the University of Birmingham he was a prominent supporter of the Suffragette Movement, and involved the undergraduates in running the University in an almost 1960s manner. This juxtaposition of views, (scientific or political) which we might regard separately as silly, or sensible, or admirably progressive, leads one to ask how the conventions, political or scientific, of current day scientists will be viewed in 100 years' time.

Mike Gunn is Professor of Theoretical Physics at the University of Birmingham.



Sir Oliver Lodge



FROM THE DRAFT TO DRONES

PROFESSOR DAVID DUNN REFLECTS
ON THE LEGACY OF 100 YEARS OF WAR.

CENTENNIALS, LIKE ANY ANNIVERSARY, PRESENT USEFUL OPPORTUNITIES FOR REFLECTION ON THE EVENTS THEMSELVES, BUT ALSO ON WHAT HAS CHANGED IN THE INTERVENING PERIOD.

In thinking about the Great War it is interesting to reflect how the length and nature of that conflict shaped subsequent views on the nature of war itself.

The First World War, looking back to the Franco-Prussian War 40 years earlier, was meant to be short and decisive and 'over by Christmas'. In the event, its combination of industrialisation, mass mobilisation and 19th-century military thinking meant that it was long, static and grotesquely destructive of blood and treasure. Indeed the effort to avoid a repeat of this human disaster and the bid to avoid war and confrontation at all costs, paradoxically, fed the tragic slide into conflict 20 years later. In the same way that the political origins of the Second World War were sown in the revulsion at the Great War, warfare itself

has evolved and changed through a variety of mutations over the succeeding century in an attempt to avoid a repeat of this earlier mass slaughter.

Leading much of that change in warfare has been air power, a technology which saw its military debut above the trenches of the First World War in France. From those modest beginnings, however, it has been the evolution of air power that has proved the game-changing military technology of the last 100 years. As a result, a century after the Great War, the use of unmanned aerial vehicles, or drones, for targeted killing in a counter-terrorism or counter-insurgency role marks the antithesis of the mass killing of conscript armies on an industrial scale in the fields of France. Notions of the 'front line', designated combatants, agreed rules of engagement and conflict between national armies of nation states are now mostly absent from modern wars.

And yet despite this antithesis, the use of 'drones' as the evolved form of modern warfare is almost as contentious as the mass slaughter of the trenches a century ago, precisely because it is so surgical, precise and distant, and removes the need for the large-scale deployment of mass armies in expeditionary warfare.

To fully understand that evolution, however, it is necessary to look beyond the book ends of a century of development. Like modern drone technology, the use of air power in the First World War started off in the reconnaissance role. The French word 'sortie' – 'to go out' – became the name for an aerial mission over enemy lines because of these origins. The range of the aircraft and the immediate need for (their) intelligence meant that these forces served just behind the front line and air forces were an intimate part of the battlefield.

...from previous page

From there, combat in the air and its use against targets on the ground has evolved. By the 1930s the development of the long-range bomber was part of the spectre that fuelled appeasement. The devastating bombing of Guernica in Catalonia by the Luftwaffe in 1937 led to the fear that 'the bomber would always get through' and was itself the prelude for the total destruction during the Second World War of entire cities such as Dresden, Coventry, Hamburg and Tokyo by aerial bombing. Air power presented the technology to inflict a greater scale of industrial killing on an enemy than even that which had been achieved in the trenches, and controversially this was possible at much less risk to the forces of the attacking side. As a consequence, the contentious morality of the mass bombing of civilians became an established feature of the air power debate. The ending of the Second World War with the atomic bombing of Japan accentuated this moral dilemma and yet this threat dominated geopolitical rivalry for the next half century, where the fragile peace of the Cold War was upheld by the threat of reciprocal nuclear annihilation.

Despite being one of the principal means of threatening nuclear destruction, air power itself continued to develop. America fought wars from Vietnam to the Gulf War using air power to leverage its technological advantage.

In Libya in 1986, Bosnia in 1995, Kosovo in 1999 and Libya in 2011, the West's forcible interventions have been limited entirely to air power, precisely because this technology allowed maximum intervention for minimal risk and cost to the intervening side. Air power has evolved to allow discrimination in targeting in a way that has changed the very nature of modern warfare. The carpet bombing of enemy cities no longer plays a role in modern war planning. The massing of armies no longer makes sense when such activity merely presents opportune targets for states with precision air power. And in an age when many enemies of the state are often

insurgents and terrorists, the ability to loiter unobserved monitoring 'pattern of life' activity is a feature that lends itself to the newest dimension of air power, those operated at physical distance but in near real-time control. Civilians still die in modern warfare and technological advantages also mean that vulnerabilities and casualties are purposefully unequal. Warfare, however, on a global scale, has become a more professional activity principally undertaken by conscious participants. Technology is used to discriminate those who are targeted and its effects are no longer felt by every family of the nations involved as was the case in the years 1914–1918.

Technology like drones allows the military draft and all its consequences to be a thing of the past. By its nature, why and how people are killed in warfare will, rightly, always remain controversial. But in thinking about the modern use of drones it is equally important to remember the historical contexts of those debates.



Professor David Hastings Dunn is Head of the Department of Political Science and International Studies at the University of Birmingham. Through the Institute for Conflict, Cooperation and Security at Birmingham he is a member of the Birmingham policy commission looking at the impact of drone technology on UK public policy. He is also a co-investigator with Professor Nicholas Wheeler and Professor Stefan Wolff of an ESRC project on drone use in Afghanistan, Pakistan and Yemen.

ROBOT WARFARE: ✈️ A WEAPON OF MASS DETERRENCE?

A UNIVERSITY OF BIRMINGHAM POLICY COMMISSION IS EXAMINING THE STRATEGIC, OPERATIONAL AND ETHICAL CHALLENGES POSED BY THE INCREASING USE OF REMOTE-CONTROLLED DRONE AIRCRAFT IN MILITARY AND CIVILIAN CONTEXT.

If drones had been available for intelligence-gathering during World War One, 'many, many lives could have been saved'. The use of unmanned air vehicles (UAVs) might even have helped to break the stalemate on the Western Front and prevent a war of attrition.

So says Professor Sir David Omand, the UK's former Security and Intelligence Co-ordinator and director of GCHQ, who is chairing the University's latest policy commission, entitled *The Security Impact of Drones: challenges and opportunities for the UK*.

'This technology provides the ability to gather intelligence about what's on the other side of the hill,' he explains. 'If you think back to the Western Front, was it always clear to the commanders what situation they were sending their men into – such as the degree of fortification, whether the enemy troops were occupying the trenches? Had the military been able to acquire that sort of information through the use of drones, many, many lives could have been saved.'

'If drones had been available to both sides, there's an argument for saying the immobility could have gone on for longer, but there's also a case for saying that it might have prevented the Western Front solidifying into a war of attrition.'

The Great War commanders and strategists could never have dreamed

that within a century it would be possible to gather intelligence from and deploy weapons to far-flung countries using unmanned machines capable of almost pinpoint precision and accuracy. The rise of robot warfare has been so rapid that the ethics surrounding it are still being formulated and hotly debated. Yet the US Air Force now trains more drone 'pilots' than bomber and fighter pilots combined.

'We have designed the last manned combat aircraft we'll ever build,' observes Sir David, who has an honorary doctorate from the University of Birmingham.

'Will the US rely ever more heavily on UAVs to deliver ordnance from the air? Almost certainly.'

The reasons for war might not have changed since 1914, but the way conflict expresses itself certainly has done. 'One obvious way is in cyber space. Another is in terrorism, sometimes by proxy: states will vie with each other and sponsor terrorism. You have new means by which to exert influence, and this is one area where drones may become important.'

Drone warfare differs from conventional air power because it can greatly reduce the level of violence needed to secure an objective, due to the prompt nature of the

**'WE HAVE DESIGNED
THE LAST MANNED
COMBAT AIRCRAFT
WE'LL EVER BUILD.'**



...from previous page

response and the precision with which a payload can be delivered.

'Take the US, for instance, which considers itself to be at war with Al Qaeda: you could probably say that at the moment the trend in policy is to use special forces, drones and cyber attacks, thus avoiding having to express conflict through large-scale armed intervention,' says Sir David. 'I think it's an open question as to how effective that's going to be, but the technology is here, and there is no doubt that as more nations acquire these capabilities, we may see conflict move on to a different level. If objectives can be secured with lower loss of life and damage, I suppose that is an advance.'

Conversely, the very ease and precision of this new mode may lower the threshold for violence. 'Will nations and other groups be tempted to resort to force precisely because it doesn't involve the prospect of huge loss of life and damage and, as a result, the threat of large-scale retaliation? We just don't know how this will evolve.

And although the risk to innocent civilians may be less through the greater precision of the UAV, it is not zero: all human activity runs the risk of error. There is, therefore, always a great responsibility on the shoulders of those who authorise the use of armed force – and that will be no different with UAV technology.'

Sir David, who has also held the position of Deputy Under-Secretary of State for Policy in the Ministry of Defence, says UAVs are being used by the British military to protect troops on the ground.

'In Afghanistan, the British Army is using UAVs to detect signs of trouble and then, if necessary, to deal with the threat before casualties are taken. My feeling is that to be able to protect your forces more effectively must be a good thing.

'The US has gone further and taken a different view to us on the relevant international law and is using the drone technology from attack Al Qaeda-associated terrorists in Pakistan and elsewhere, even when they are not posing

'BUT CAN DRONE TECHNOLOGY ACTUALLY PREVENT WAR – OR STOP A CONFLICT ERUPTING INTO WIDESPREAD VIOLENCE?'



an immediate threat to life. The jury's still out as to whether, in terms of long-term strategy, this is wise; but it's certainly been effective in the short term.'

But can drone technology actually prevent war – or stop a conflict erupting into widespread violence?

'There is interesting speculation about whether if we'd had this technology at the time of the Rwandan genocide in 1994, we would have been able to intimidate the rebel leaders early on and stop the move towards the massacres.'

In future, says Sir David, it is possible that even where parliaments are reluctant to put soldiers' lives at risk by intervening in, say, a civil war, drones might be used to intimidate one side into backing down.

'Would the Bosnian Serbs have dared to commit the massacres at Srebrenica if drones had been flying overhead? There is an argument for saying they wouldn't – that they would have been intimidated by knowing they were being observed, as they would have been warned that evidence would be played back at a war crimes tribunal.'

Among the issues being considered by the University policy commission – which is due to be completed by autumn 2014 – is how robot warfare affects the psyche of non-combatant 'pilots'.

'We will be looking at whether it is safer to have the 'pilot' – or pilots – on the ground, so that there is more than one person to check the evidence; where it's all done very calmly and the pilots are not highly stressed; where strikes will be more accurate and precise,' observes Sir David. 'That's the upside of such a scenario. But some would argue that there is the risk of getting into video game mentality because you're not a trained fighter pilot with the disciplines that go with the long training, and you're not actually taking the risk of being there; you're sitting in a room



'THIS TECHNOLOGY ISN'T JUST ABOUT HOW WE FIGHT WARS; IT ALSO HAS IMPLICATIONS FOR THE POLICE AND THE INTELLIGENCE COMMUNITY IN TERMS OF SURVEILLANCE.'

many a continent away and you go home to your family at 5pm. Does that introduce a sense of unreality?

'If you have a fully trained fighter pilot sitting on the ground, he will have experienced the hazards of war. But the next generation may not have been trained to fly combat missions. So will they share the same ethos? Maybe you have to compensate for the detachedness by having a greater oversight of what is going on. I certainly think the training has to be done very carefully; there has to be an ethical formation of the individual, not just technology training.'

What is beyond question, though, is that future wars will now be conducted very differently from previous ones.

'And, of course, this technology isn't just about how we fight wars; it also has implications for the police and the

intelligence community in terms of surveillance,' says Sir David. 'It already has many valuable commercial uses and many more will come as the cost and complication of the technology reduce. Policies for the safe exploitation of these opportunities are needed. That is why the policy commission's work is necessary and urgent.'

By Ros Dodd

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