

Five ways in which the medieval is relevant today

CONOR KOSTICK

Dr Conor Kostick is Marie Curie Research Fellow in the Department of History at the University of Nottingham. In 2015 he received a British Academy Rising Star Engagement Award for his project on 'Making the Medieval Relevant'.

The British Academy's Rising Star Engagement Award allowed me to organise a conference to which I invited speakers whose work demonstrates the continuing importance of research into the medieval period for today.¹ Here are five of the case studies that we discussed.

Understanding societal resilience

Dr Daniel Curtis is a postdoctoral researcher on a European Research Council project led by Professor Bas van Bavel, entitled 'Coordinating for Life: Success and Failure of Western European Societies in Coping with Rural Hazards and Disasters, 1300–1800'. He spoke about the project and the value of medieval economic history.

When we see parts of Europe overwhelmed by major floods, or stricken by droughts, it is a reminder that communities are regularly confronted with major hazards, which sometimes have disastrous effects. Some societies are successful in preventing these effects and buffering threats, or they recover quickly, while others suffer various levels of collapse. Why is this?

Modern wealth and technology mean we are far better positioned than our predecessors to cope with a societal challenge such as extreme weather. But even today, hazards and disasters are a tough test for the organisational capacities of a society, both in mitigation and recovery.

The 'Coordinating for Life' project uses historical experience to investigate a key element in societal resilience, namely the way that the exchange, allocation and use of resources take place. It aims to explain why some

1. 'Making the medieval relevant: Connecting early-career researchers studying 400-1500' was held at the University of Nottingham on 14-15 November 2015.

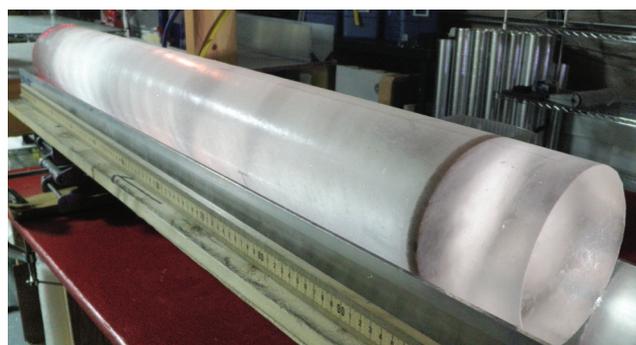


Figure 1
Layers of ash in ice cores provide evidence of past volcanic eruptions. (In this example from the West Antarctic Ice Sheet Divide, the ash was laid down approximately 21,000 years ago.) Photo: Heidi Roop, National Science Foundation.

societies do well in preventing or remedying disasters through these institutional arrangements, and others do not. The idea is to use history as a laboratory in which relevant comparisons can be found and independent variables can be limited. The same kind of shock can be examined, but in regions where there were different outcomes.

Flooding provides highly relevant case studies – with regions such as Frisia (modern day Netherlands, north of the Rhine) learning to adapt to cope with severe storms that could lead to flood events such as that of 26 December 838, which killed 2,437 people.

The project aims to get away from a fascination with the 'special' – witch hunts, burning of Jews, massive riots, etc. – and instead ask why, when presented with the same exogenous shock, societies did not descend into social disorder, chaos and hatred.

Calibrating ice-cores

My own research into past medieval weather has proved of value in resolving discrepancies in ice-core chronologies. This is important, because ice-cores have so much to tell us about past climate, not least in regard to years when major volcanic eruptions have taken place (Figure 1). If we can date such years with precision, we

can then investigate the impact of volcanoes on past societies (Figure 2) – and be warned about our own future in this regard.

Having been interested in the question of whether really harsh environmental circumstances contributed to the mass emigratory movements that were the first two Crusades (1096 and 1147), I had begun to search medieval sources for evidence of extreme weather events – such as droughts, floods and hurricanes.² In time, I compiled thousands of observations from monks, historians, hagiographers, etc.

Then in 2014, an ice-core team led by Dr Michael Sigl got in touch. They had some great chemical analysis of ice layers going back thousands of years. But the problem was one of calibration in order to date those layers. Their own findings suggested that the current standard ice-core chronologies were incorrect by up to seven years for dates reaching back to before c.1250. Could I help?

I had several historical accounts of probable volcanic dust effects (in addition to explicit accounts of the eruption of Vesuvius), descriptions of pale blue suns, or months where the sun was weak, or severe drops in temperature. So, without knowing the dates that the ice core team was interested in, I supplied them with my data and we found we had a match.³

Once the ice-cores are calibrated in this way and the seven-year errors eliminated, those earlier authors, like Professor Michael McCormick, who had conjectured that volcanic climate forcing may have had a profound affect on human societies, can be seen to have been right. And the path is now much clearer for continuing the exploration of the interaction between extreme climate events and society.

Public interest

The public imagination can turn towards matters medieval in an enthusiastic fashion, and this was demonstrated in 2013 with the huge response to the discovery of the remains of King Richard III. So I invited Dr Turi King, geneticist on the University of Leicester project, to talk about the discovery of the body, its identification and the impact of the discovery.

Two segments of our DNA have a very simple pattern of inheritance: both mitochondrial DNA and the Y-chromosome are copied and passed down virtually unchanged down through the generations, and therefore could be used for DNA identification purposes. Mitochondrial DNA is passed down through the female line, and the Y-chromosome through the male line. So to get a DNA match that could confirm the identity of the skeleton found in the car park in Leicester, individuals related to Richard III through an all-female line or an all-male line had to be found who could be used as comparators for the DNA analysis.

2. This data became much richer thanks to funding from a Nottingham Advanced Research Fellowship, a Marie Curie Career Integration Grant, and the advice of my intellectual collaborator, Dr Francis Ludlow.

3. See M. Sigl *et al.*, 'Timing and climate forcing of volcanic eruptions for the past 2,500 years', *Nature*, 523 (July 2015), 543–549.



Figure 2
Mount Rinjani, on the Indonesian island of Lombok, may have been the volcano that erupted in the mid-13th century causing 'a year without summer'. Photo: Masseur64 (Wikimedia Commons).

Richard had no direct descendants, so the team went up from Richard to his great-great-grandfather, Edward III, and then looked for family members from lines that extended down through the Beauforts. The team had a lead from the start: a direct descendant of the female line had earlier been identified, and their own work identified a second female descendant. It was the match between the mitochondrial DNA of these two persons with the skeleton that was the strongest evidence that the body was indeed that of Richard.

The Y-chromosome goes down through the male line, and here the DNA told a different story. There was no match between the DNA of Richard and the current male descendants, which indicates that a 'false paternity' event (i.e. the biological father was not the man whom the sources indicate was the father) took place somewhere in the 19 links between Edward III and his descendants today.

DNA analysis was also able to show that Richard III had blue eyes and, in his early years, fair hair.

The public impact of this discovery was incredible. One measure of the interest was that when, in March 2015, the coffin of the king was displayed in Leicester Cathedral before being reinterred, people queued for up to four hours to see it. More than 35,000 people lined the route of the cortege as it travelled through Leicestershire and then back into the city for a service at the cathedral.⁴

Putting disability in context

Dr Christina Lee lectures on Viking Studies at the University of Nottingham. Her research is focused on disease and disability in the early medieval period. At the conference, she examined the connections between modern perceptions of disability and those of our Anglo-Saxon predecessors, beginning with an outline of five

4. On 12 March 2015, the British Academy held a public event entitled 'The Skeleton in the Car Park: Richard III and the legacy of his re-discovery' to explore the wide-ranging impact of the discovery and its ramifications for disciplines as diverse as archaeology, history, literature and drama. A video of the event can be found via www.britishacademy.ac.uk/skeleton

contemporary disability models: medical (disability is a biological matter); moral (it is a failing); social ('disability' is a concept constructed by society); religious; and 'the Supercrip' (disability brings heroism).

The Christian officials in the world of the Anglo-Saxons considered people with disabilities to be significant, mainly in the context of the healing value of prayer, shrines and relics. Lee pointed out, however, that this makes it difficult to understand the perception of disability more generally in society. If we base our understanding simply on reading Anglo-Saxon texts, then the difficulty is that so many of them are framed in this healing context and draw on Biblical antecedents.

Archaeology is therefore crucial to gaining a better understanding of the subject, despite the challenges of uncovering the presence of diseases based on skeletal remains. There is no evidence to indicate that the impaired were excluded from Anglo-Saxon society. There are burials that demonstrate care for those we might consider as having a disability. This is consistent with the Anglo-Saxon belief that it was positive to experience disability, as a reminder of the importance of avoiding eternal suffering.

Attitudes to disability might also have been affected by social status in the Early Middle Ages. Law codes imply that persons of elite backgrounds with disabilities were treated more favourably than those from poor backgrounds. Gender, too, might well have been significant here. The legal responsibilities of a male in the period included being able to swear an oath and be witness. Deafness, or being mute, or similar conditions would exclude males from the legal process, but would not necessarily impact on the role played by women: Lee suggested that what was disabling to men in the Anglo-Saxon period may not have been disabling to women.

What this research allows us to do is to take a step away from our own perceptions of disability, and appreciate that the 'normal' / 'not normal' dichotomy, which is extremely prevalent when discussing disability, is in fact a reflection of a particular historical moment and not a universal feature of all societies.

Discovering a treatment for MRSA

One of the greatest challenges facing humanity today is the emergence of bacteria with resistance to antibiotics. All the gains of modern medicine are under threat, according to the World Health Organization. One way forward might be to look again at the medicinal practices of the medieval world. Why? Because although they were ignorant of so much of modern theory, it seems that centuries of practice by medieval doctors arrived at treatments for infections that were effective. This is the conclusion of Dr Freya Harrison and her microbiologist

colleagues at the University of Nottingham.

Dr Harrison tested an eye salve described in the 10th-century Anglo-Saxon *Bald's Leechbook*:

Take cropleek and garlic, of both equal quantities, pound them well together, take wine and bullocks' gall, of both equal quantities, mix with the leek, put this then into a brazen vessel, let it stand nine days in the brass vessel, wring out through a cloth and clear it well, put it into a horn, and about night time apply it with a feather to the eye.

A major challenge in reproducing the recipe was in sourcing authentic ingredients. Modern crop varieties of leek and garlic were used, despite the fact it is quite likely they are somewhat different to the medieval versions. For the wine, the team used an organic vintage from a historic English vineyard. Squares of brass sheet (later determined not to effect the outcomes) were inserted to simulate the presence of the brass vessel. Commercially available cow's bile salts (sold as a supplement for people who have had their gall bladders removed) were used for the 'bullocks' gall'.

The first indication that the recipe might have some validity was that after nine days the mixture had killed all the soil bacteria introduced by the leek and garlic.

Having made three batches of salve, the team applied it to cultures of three commonly found and hard to treat bacteria, *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Pseudomonas aeruginosa*, both in synthetic wounds and in infected wounds in mice. The results were then compared to a control treatment using the same recipe, but without the vegetable compounds. On their own, the ingredients had no measureable effect. But when combined, the mixture was startlingly effective: only about one in a thousand bacteria survived application (which makes the salve as effective as the current antibiotic of choice for treating MRSA).

Moreover, the combination of ingredients was far more effective after nine days, rather than immediately. In other words, the information in the recipe was crucial and accurate.

The team are now seeking funding to deepen our understanding of exactly how this medicine works, and to identify and test a whole new body of medieval medical recipes.

Network

The result of the British Academy-supported weekend is a new network of early career medievalists, looking to highlight the relevance of their own work and to collaborate in new projects. There is a JISCMail account for the group, and readers interested in joining it are welcome to contact me (conor.kostick@nottingham.ac.uk).