

Institution: University of Leicester		
Unit of Assessment: UoA 15 Archaeology		
Title of case study: The discovery and identification of King Richard III: economic and cultural impact		
Period when the underpinning research was undertaken: 2011-2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): A. Jo Appleby B. Richard Buckley C. Mathew Morris D. Deirdre O'Sullivan	Role(s) (e.g. job title): A. Associate Professor in Archaeology B. Director, University of Leicester Archaeological Services (ULAS) C. Project Officer ULAS D. Lecturer in Archaeology	Period(s) employed by submitting HEI: A. 2012–present B. 1995–May 2020 C. 2004–present D. 1979–present
Period when the claimed impact occurred: 01/08/2013-31/12/2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>Recovering and definitively identifying the skeletal remains of King Richard III (RIII) caused a global sensation, reaching an estimated one billion people worldwide. The discovery and identification brought GBP79 million to the Leicestershire economy, added 1,012 new jobs by 2015 and has been a major contributor to the City of Leicester's tourism economy (valued at GBP651million in 2018). A new RIII Visitor Centre opened in 2014, showcasing the team's findings, with 347,155 visitors by 2020. UoL research continues to underpin Leicestershire's on-going tourism plans for 2019–2025, and is embedded in Leicester Cathedral's 2020–2023 GBP11.3 million National Lottery-funded restoration project, including the construction of a new Heritage Learning Centre. The team's educational materials have reached some 100,000 learners worldwide, and their findings are incorporated into the National Curriculum. The research inspired television and theatre productions, a eulogy by former poet laureate Carol Ann Duffy and musical compositions.</p>		
2. Underpinning research		
<p>In 2012, University of Leicester Archaeological Services (ULAS) undertook excavations at the instigation of the Richard III Society to locate the missing remains of RIII, which were reportedly buried in 1485 in the, subsequently lost, church of the Leicester Greyfriars. The post-excavation research programme has involved colleagues from the School of Archaeology & Ancient History, other University Schools, and outside bodies. The archaeological work, co-ordinated by Buckley, revealed part of the friary buildings and a grave in a plausible location. Excavation and subsequent analysis of the skeleton by Appleby identified the body as almost certainly that of RIII, a conclusion later confirmed by DNA analysis.</p> <p>Research underpinning this project is interdisciplinary, combining archaeology, genetics, history, engineering, geology and forensic science. The archaeological research [R1–R6] has contributed in three distinct ways: 1) identified and characterised the location of the Leicester Greyfriars friary and RIII's remains; 2) made a critical contribution to identification of the remains as those of RIII; and 3) provided new information about his life and death.</p> <p>1. A ULAS desktop assessment (2011) confirmed the likely general location of the friary and identified areas available to dig. Three weeks' excavation in summer 2012, directed by</p>		

Morris, established the location and layout of the friary buildings as well as revealing the skeleton later identified as RIII [R1]. Subsequent excavation (2013; also directed by Morris) provided additional information about the grave and the layout, construction and history of the friary, informed by O'Sullivan's expertise. The archaeological evidence from the friary and grave contributed to the identification of RIII, matching and expanding on historical accounts of his burial.

2. Appleby's skeletal analysis established a biological profile of a male aged c. 25–35 with nine head wounds and two post-cranial wounds, all peri-mortem, highly consistent with historical accounts of RIII's death in battle [R2]. Evidence of late onset idiopathic scoliosis, along with the individual's slight build, corroborated contemporary accounts of Richard as lightly built with one shoulder higher than the other [R3]. This profile, together with the archaeological context of the skeleton in the Greyfriars church, established a highly probable identification as RIII. King's (Department of Genetics and Genome Biology) work confirmed that a rare mitochondrial DNA type matched two modern matrilineal descendants of Richard III's sister. The combined genetic and archaeological evidence gave a probability of 99.99999% that the remains were RIII [R4].
3. Appleby's identification and characterisation of late-onset scoliosis in the skeleton of RIII ended 500 years of argument about the existence, type and extent of his bodily abnormalities [R3]. Isotopic analysis of bone and teeth in conjunction with Evans provided information about his diet, demonstrating significant change when he became king [R5, R6]. Analysis of peri-mortem skeletal trauma gave the first reliable information about how RIII died at Bosworth and likely mistreatment of his body immediately afterwards [R2]. The team's study of the short, poorly constructed grave, and the position of the body within it, demonstrated the lack of pomp involved in RIII's funeral [R1].

3. References to the research

R1. Buckley, R., Morris, M., Appleby, J., King, T., O'Sullivan, D., and Foxhall, L. 2013. 'The king in the car park': New light on the death and burial of Richard III in the Grey Friars church, Leicester in 1485. *Antiquity* 87: 519–538. DOI: <https://doi.org/10.1017/S0003598X00049103>

R2. Appleby, J., Rutty, G.N., Hainsworth, S.V., Woosnam-Savage, R.C., Morgan, B., Brough, A., Earp, R.W., Robinson, C., King, T., Morris, M. and Buckley, R. 2015. "Perimortem trauma in King Richard III: a skeletal analysis". *The Lancet* 385(9964): 17–23. DOI: [https://doi.org/10.1016/s0140-6736\(14\)60804-7](https://doi.org/10.1016/s0140-6736(14)60804-7)

R3. Appleby, J.E.P., Mitchell, P.D., Robinson, C., Brough, A., Rutty, G., Harris, R., Thompson, D. and Morgan, B. 2014. "The Scoliosis of Richard III, last Plantagenet King of England. Diagnosis and clinical significance". *The Lancet* 383(9932): 1944. DOI: [https://doi.org/10.1016/S0140-6736\(14\)60762-5](https://doi.org/10.1016/S0140-6736(14)60762-5)

R4. King, T.E., Fortes, G. Balaesque, P., Appleby, J. and Schürer, K. 2014. "Identification of the Remains of King Richard III". *Nature Communications* 5: 5631. DOI: <https://doi.org/10.1038/ncomms6631>

R5. Lamb, A.L., Evans, J.E., Buckley, R., and Appleby, J. 2014. Multi-isotope analysis demonstrates significant lifestyle changes in King Richard III. *Journal of Archaeological Science* 50: 559–565. DOI: <https://doi.org/10.1016/j.jas.2014.06.021>

R6. Appleby, J. 2019. "Osteobiographies: local biologies, embedded bodies and relational persons". *Bioarchaeology International*. Vol. 3(1): 32-43. DOI: <https://doi.org/10.5744/bi.2019.1004>

4. Details of the impact

Heritage, tourism and economic impact

Discovery of RIII's skeleton beneath a Leicester carpark and the identification of his remains significantly contributed to Leicestershire's transformation into a national and global tourism destination. The Leicester and Leicestershire Tourism Growth Plan (2019) stated: "The economic potential of Leicester and Leicestershire was significantly enhanced by the discovery of the remains of King Richard III... and his reinterment in Leicester Cathedral in 2015. The value of this remarkable story to the area... provided a spotlight that enabled both the City and the County to showcase the area's rich heritage and tourism potential" [E1e].

A 2015 Leicester City Council (LCiC) report showed that the discovery and identification of RIII drove significant economic impacts. In the period between the discovery and March 2015, 622,562 additional visitors to RIII-related events in Leicester spent GBP54,625,048; an additional 1,012 FTE jobs were created; an estimated GBP79,082,740 gross value added to Leicester's economy; and volunteering valued at GBP118,566 [E1A].

Although impacts and data relating to the discovery began in the REF2014 census period, UoL research has delivered significantly greater impacts since August 2013. 2020 LCiC [E1Eii] and 2019 Leicestershire County Council (LCoC) [E1Eiii] reports showed that the RIII discovery and identification, along with other regional attractions, contributed to the region's overall tourism growth. Since 2013, there has been "an increase of 26.9% in value from the tourism sector, an 18.6% increase in visitors and a 12.6% increase in employment" [E1Eii]. In 2018 alone, 34.9 million people visited Leicestershire [E1Eii] and 11.5 million people visited the city of Leicester, valued at GBP651 million—significantly driven by the discovery of RIII [E1Eiii].

LCiC invested GBP4 million in the new **King Richard III Visitor Centre (RIIIVC)** at the Greyfriars site which showcases the team's research [E1A]. The RIIIVC's permanent exhibition is explicitly designed around the team's research on RIII's burial [R1]; his Bosworth battle wounds [R2]; a 3D model of CT scans of his bones to reconstruct his scoliosis [R3]; and the team's identification procedures [R4] [E1B]. Between its opening on 26th July 2014 and 31st December 2020, the RIIIVC had welcomed 347,155 visitors from the UK and beyond. Overseas visitors came from as far away as the USA, Australia, and China [E1C]. In 2018, the RIIIVC won the Group Leisure and Travel Awards' 'Best Museum or Gallery' by reader vote, beating the British Museum and Tate Britain [E1C]. *Lonely Planet* added the RIIIVC to their 'Ultimate United Kingdom Travel list' in 2019, stating it "reveals... one of the world's greatest archaeological detective stories" [E1Eiii]. The discoveries published in [R1] prompted Historic England to designate the Greyfriars site as a Scheduled Ancient Monument in 2017 [E1D].

In 2014 alone, **Leicester Cathedral** drew 398,500 more visitors than in 2012 (an increase from 29,500 to 428,000 total – a 14-fold change), and between 2013 and 2018 it attracted 1,223,560 total visitors. [E1B]. In March 2015, approximately 43,000 people attended reinterment events at the Cathedral, and the burial service was viewed by more than 600 million worldwide. In the year following the identification, **Bosworth Battlefield Heritage Centre (BBHC)** ticket sales increased 62% (2013: GBP95,375; 2014: GBP154,425) and retail sales increased 74% (2013: GBP74,215; 2014: GBP129,440), with smaller rises in visitor numbers in subsequent years [E1F].

The "remarkable King Richard III discovery and [his] connection with Leicester and Leicestershire" [E1F] continues to drive **regional economic and tourism investment and planning**. The Leicester and Leicestershire Tourism Growth Plan 2019 has designed "a critical mass" of RIII experiences through to 2024 [E1Eii]. The Leicester Tourism Action Plan 2020-2025 is "anchored by the King Richard III story". This includes relocating the city's tourist information centre to the RIIIVC "for the 130,000-plus visitors now coming each year, many drawn to see the tomb of RIII" [E1Eiii]. LCoC created a Conservation Plan for BBHC to foster "a local economy that supports . . . protection of the archaeological resources" stating that the Battle of Bosworth "has accrued even greater significance following the discovery of the remains of Richard III" (August 2013) [E1Ev]. Leicester Cathedral's 2020-2023 Strategic Plan confirmed that RIII is a core driver for its GBP11.3 million project, funded by the National Lottery Heritage

Fund (2016), to restore the Cathedral and build a Heritage Learning Centre, stating: “*The Cathedral changed enormously leading up to, during and in the aftermath of March 2015 when King Richard III was reinterred ... This new situation has become increasingly embedded and we are now into the next major redevelopment phase entitled ‘Leicester Cathedral Revealed’*” [E1Ei, iv].

Outreach and education impact

A- and AS-level *Wars of the Roses* History curricula incorporated the team’s research (September 2015). The RIIVC also incorporated the research into educational and outreach programmes, which, since opening in July 2014, have reached approximately 12,000 learners. In the 2018/2019 academic year alone, they reached 3,324 (62% KS 1&2; 23% KS 3&4; 15% FE/HE, July 2019) [E2A]. The underpinning research was a key feature of the seven-day RIII exhibit at the Royal Society’s ‘Festival of Science’ (June 2015), with 13,000 visitors, where of those responding to the visitor survey 85% strongly agreed or agreed that the exhibition had increased their interest in ‘science’. The replica skeleton and research displays travelled to Birmingham’s ‘Big Bang Fair’ (2014, c.70,000); Galway Science and Technology Festival (2017, c. 20,000); and Bulgaria’s Sofia Science Festival (2017, c.17,000) [E2B]. The University of Leicester RIII website and educational materials have had 1,782,871 unique page views from the UK (39.5%), the USA (33.1%), Australia (7.1%), and worldwide (August 2013 – December 2020) [E2C]. By December 2020, more than 83,000 people had enrolled in the research team’s six-week MOOC, *England in the Time of King Richard III*. Participants’ satisfaction scores averaged 4.7 out of 5 with reviews demonstrating the positive impact of participation, for example: “[T]his course has reignited my passion for history and archaeology and led me to apply to do a Masters Degree in an archaeology discipline” [E2D]. In 2015, the Scout and Guiding associations launched a Richard III challenge badge drawing on the RIII research and story, with approximately 2,000 challenges completed in Leicestershire alone by May 2020 [E3].

Cultural impact

Press and media coverage in March 2015 relating to the reinterment alone totalled 2,071 stories and reached 358 million people. By 2017, press and media coverage of the discovery and reinterment reached an estimated one billion people around the globe [E4]. In November 2013, ULAS won the Queen’s Anniversary Prize: “*The University of Leicester is recognised for its long record of exceptional research, commercial archaeology and public engagement in history and heritage, highlighted by the work of the team that discovered the remains of King Richard III beneath a car park*” [E5A]. BBC’s *History Extra* website visitors voted RIII as their number one historical figure of interest in the ‘Top 100’ poll 2015 – 2017, and in July 2020, they voted ‘Did RIII order the murder of the Princes in the Tower?’ as “*history’s greatest mystery*” with 35% of the votes, “*almost three times as many as the building of Stonehenge*” [E5B].

The RIII story and the research underpinning it [R1 – R5] stimulated significant cultural responses. It generated new publications and music, largely aimed at general audiences. Books include Mike Pitts’ *Digging for Richard III: How Archaeology Found the King* and David Horspool’s *Richard III: A Ruler and his Reputation*, as well as literature aimed specifically at children, such as former Children’s Laureate Michael Morpurgo’s *The Fox and the Ghost King* (fiction) and Rosalind Adams’s *Children’s Book of Richard III* [E7]. It inspired three artistic responses for RIII’s 2015 reburial service at Leicester Cathedral: *Ghostly Grace*, a choral piece by Judith Bingham; an anthem by Judith Weir; and *Richard*, a eulogy by Poet Laureate Carol Ann Duffy, read by Benedict Cumberbatch, with more than 265,000 views (December 2020). Nico Muhly composed the song, ‘Old Bones’, using the words of ULAS lead Richard Buckley and RIII Society’s Philippa Langley, for countertenor Iestyn Davies [E8].

The project also inspired major dramatic productions and television documentaries [E4 – E8]. *The Hollow Crown* (BBC2, 2016), starring Benedict Cumberbatch, used the team’s analysis of RIII’s skeleton [R2], and opened with a shot of his spinal curvature. The production reached 0.84 million viewers in one week, and 0.94 million in 28 days [E6A]. The Leicester research also

inspired Ralph Fiennes' 2016 portrayal of Shakespeare's *Richard III* at the Almeida Theatre. Fiennes stated: "*They found the spine and it is very curved, so we tried to base his physicality as close as possible to the evidence that came out of the excavation in Leicester*" [E6B]. The performance, which featured a reconstruction of the excavation site on stage, sold 21,850 tickets and its live broadcast reached 50,000 additional viewers worldwide [E6B].

Channel 4's *Richard III: The New Evidence* (August 2014), featured Leicester research [R1, R3–R5], reaching 1,760,000 viewers in seven days [E6C], while PBS (USA) ran the director's cut, *Secrets of the Dead: Resurrecting Richard III* (September 2014). Both starred actor Dominic Smee as RIII. Smee, who shares the King's condition, stated that the analysis of the RIII's condition profoundly impacted his confidence and his acceptance of his own body. Removing his shirt during filming "*was a defining point in my life. This was the first time that I had been truly honest and open about a part of me that I had kept hidden for so many years*" [E6C]. Smee stated the experience made him feel like he was reliving RIII's last moments, and he is now "*confident enough to give lectures about his experiences and the research*" [E4].

4. Sources to corroborate the impact

Heritage, tourism and economic impact

E1A. Leicester City Council Economic Impact of RIII Report 2015.

E1B. Leicester Cathedral Report 2015.

E1C. Collated RIII Visitor Centre materials: RIIIVC Report 2015; BBC News Story about the investment 22 July 2014; Group Leisure and Travel Award 2018.

E1D. Historic England Scheduled Ancient Monument 1442955, 13 December 2017.

E1E. Tourism plans and actions: i. Leicester Cathedral Strategic Plan 2018 – 2020; ii. Leicester and Leicestershire Tourism Growth Plan 2019–2023; iii. Leicester Tourism Action Plan 2020–2025; iv. Leicester Cathedral Heritage Lottery Fund announcement, 2016; v. Bosworth Battlefield/LCC/Heritage Country Park strategy August 2013.

E1F. LCoC Heritage Support Officer emails: Bosworth Battlefield Heritage Park data, April and August 2020; Hinckley and Bosworth Community and Wellbeing Strategy 2016-20.

Outreach and education Impact

E2A. Compiled RIIIVC Management Reports, March 2016 – September 2019.

E2B. Royal Society's Trustees' report and financial statements, 31 March 2016.

E2C. UoL RIII website data, 1 August 2013 – 31 December 2020.

E2D. FutureLearn enrolment data and feedback.

E3. Scout and Guiding challenge badge news and email from County Office Manager.

Cultural impact

E4. Representative news features. Collated media data reports: University of Leicester/Precise Media RIII Reinterment report, March 2015; Efficiency Exchange Report by Ather Mirza, 8 June 2017.

E5. A. November 2013 Queen's Anniversary Prize. B. Collated public interest votes from BBC History Extra 2015 – 2020 and expert nominations June 2020.

E6A. *The Hollow Crown*, BBC2, 21 May 2016. Collated interviews, features, and BARB viewing figures.

E6B. *Richard III*, Almeida theatre, 2016. Collated features, reviews, live broadcast, images, and email from Almeida Theatre Marketing Manager, 11 May 2020.

E6C. *Richard III: The New Evidence*, Channel 4, 17 August 2014 and *Resurrecting Richard III*, PBS (USA), September 2014. Collated features and interviews.

E7. Materials evidencing popular books.

E8. Materials evidencing poetry and music: Judith Bingham's *Ghostly Grace* collated feature stories March and August 2015; Kings Place seating plan; Poet Laureate Carol Ann Duffy's eulogy, *Richard*. <https://tinyurl.com/ydenhupu>; Recording of Benedict Cumberbatch reading at reinterment; <https://www.youtube.com/watch?v=38nodTfpro4>