

Institution: University of Leeds
Unit of Assessment: 32 Philosophy (including History of Science)
Title of case study: Impact Case Study 4: Using Place to Promote Understanding of Science and its History
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>This case study demonstrates how a concern with the significance of place in the history of science, technology and medicine, as addressed in research carried out by Graeme Gooday, Jonathan Topham and Gregory Radick since 1998, forms the basis of three initiatives over the period 1/1/2008 to 31/7/2013: first, a reappraisal of scientific, medical and technological collections held in Leeds-area museums, in collaboration with curators; secondly, the use of the University's own collections to promote understanding of science and its history among local citizens and schoolchildren, and thirdly the application and transmission of this approach at the national level and beyond.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Traditionally science assigns little epistemic importance to place. On this view, it makes no difference where an observation is made, or a theory formulated, or a claim about nature considered, because scientific knowledge is universally true. Challenging this customary dismissal has been one of the most important developments in historical writing about science, technology and medicine in the last quarter century. Researchers at the University of Leeds, in particular Graeme Gooday (at Leeds since 1994) and Jonathan Topham (at Leeds since 1999), have been at the forefront of these developments.</p> <p>Beginning with a now-classic 1998 paper on how nineteenth-century laboratory scientists made their labs credible as windows onto reality (1), Gooday has steadily expanded his interest in place, most recently in studies of the role of apparently non-scientific locales in the rise of electrical technology. He has shown, for example, how surprisingly important theatres and aristocratic homes were in Britain in the late-nineteenth and early-twentieth century as places that glamorized electric lighting (2) while also serving to reassure (albeit also occasionally alarm) the public about the risks (3). Electricity was thus “domesticated” twice over, for it was only through the electrification of such places that many people came to think of electricity as unthreatening.</p> <p>Topham's primary research agenda, laid out in a widely cited historiographical paper published in 2000 (4), has been to explore the critical role of the processes and practices of print communication in understanding the acceptance, rejection, and appropriation of scientific knowledge claims in different localities. His most recent paper in this area examines the difficulties of interchange between Britain and France during the Napoleonic wars, showing how British responses to French work were conditioned by what Topham calls the “technicians of print”: the typically non-scientific people, from publishers and printers to booksellers and translators, whose locally variable practices conditioned what got to be read by whom and in what form (5). In common with Topham's other studies, this paper has contributed to a reorientation towards understanding knowledge-making in science as a process that is inherently spatial.</p> <p>Gregory Radick (at Leeds since 2000), has also engaged with place, notably in an award-winning book on the origin-of-language debates since Darwin (6). This was original in emphasizing experiments in “the field” – here, the African landscapes inhabited by monkeys – as the source of authority in resolving debates about the origins of language.</p> <p>To advance their collective concern with place in science, Gooday, Radick and Topham in 2006 initiated two long-term projects that have turned Leeds itself into a kind of research laboratory for testing the value of this geographic approach to scientific knowledge. One is a growing set of collaborative relationships with Leeds-area museums (i-iii). The other is the creation of a University of Leeds Museum of the History of Science, Technology and Medicine (‘Leeds HSTM Museum’), making use of University collections within public displays and education events, both</p>

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on and off campus (iv).

3. References to the research (indicative maximum of six references)

Books, articles and chapters:

- (1) Graeme Gooday, "The Premises of Premises: Spatial Issues in the Historical Construction of Laboratory Credibility", in *Making Space for Science: Territorial Themes in the Shaping of Knowledge*, eds. Jon Agar and Crosbie Smith (Basingstoke: Palgrave Macmillan, 1998), pp. 216-245. 9 citations in Google Scholar. *Available on request.*
- (2) Graeme Gooday, *Domesticating Electricity: Technology, Uncertainty and Gender, 1880–1914* (London: Pickering & Chatto, 2008). 8 citations in Google Scholar. *Available on request.*
- (3) Graeme Gooday, "Electricity and the Sociable Circulation of Fear and Fearlessness", in *Geographies of Nineteenth-Century Science*, eds. Charles Withers and David Livingstone (Chicago: University of Chicago Press, 2011), pp. 203-228. *Included in REF 2.*
- (4) Jonathan R. Topham, "Scientific Publishing and the Reading of Science in Nineteenth-Century Britain: A Historiographical Survey and Guide to Sources", *Studies in History and Philosophy of Science A* 31(4) (2000): 559-612 DOI: 10.1016/S0039-3681(00)00030-3. 41 citations in Google Scholar. *Available on request.*
- (5) Jonathan R. Topham, "Science, Print, and Crossing Borders: Importing French Science Books into Britain, 1789-1815", in *Geographies of Nineteenth-Century Science*, eds. Charles Withers and David Livingstone (Chicago: University of Chicago Press, 2011), pp. 311-44. *Included in REF 2.*
- (6) Gregory Radick, *The Simian Tongue: The Long Debate about Animal Language* (Chicago: University of Chicago Press, 2007). Awarded the 2010 Suzanne J. Levinson Prize of the History of Science Society for best book in the history of the life sciences and natural history. *Available on request.*

Research grants

- (i) AHRC Collaborative Doctoral Award with Gooday as PI: "The Medical Instrument Trade Catalogue in Britain, 1880-1914: Its Changing Form, Role and Significance in Technologizing Healthcare", with the Thackray Museum, 2006-9, ca. £45,000 (Topham as co-I).
- (ii) AHRC Collaborative Doctoral Award with Topham as PI: "Subscription Libraries as Agents of Cultural Transformation in the Age of Revolutions: The Case of Leeds, 1768-1832", with the Leeds Library, 2010-13, ca. £50,000.
- (iii) AHRC Collaborative Doctoral Awards with Radick as PI: "A History of the Scientific Collections of the Leeds Museum, 1819-1921: Acquiring, Interpreting and Presenting the Natural World in the English Industrial City", with Leeds Museums and Galleries, 2007-13, ca. £50,000 (Topham as co-I); "Industrial Illness in Cultural Context: 'La Maladie de Bradford' in Local, National and Global Contexts (1875-1919)", with the Thackray Museum, 2008-11, ca. £50,000.
- (iv) A range of small external research grants in support of the Leeds HSTM Museum, from the British Society for the History of Science, the Leeds Philosophical and Literary Society, and other bodies.

4. Details of the impact (indicative maximum 750 words)

The impact was initially focused on localities in Leeds and West Yorkshire, with University staff and students working together with museum professionals to optimise the educational potential of science, technology and medicine collections through geographically informed research. Subsequently, the adaptation of similar research-based approaches in the museums sector on a national scale has built on the success of these initiatives, including further collaborations and the development of public learning resources

A) Yorkshire Museums and their Staff

Through strategic targeting of funding, especially of the AHRC's CDA scheme, **Gooday, Topham** and **Radick** developed collaborations with curators and other museum professionals to train Leeds-based PhD students. Their subsequent research revealed new place-based value in the collections of three local museums:

Thackray Museum: **Claire Jones** (PhD 2006-10) helped staff to understand their medical trade catalogues (the largest collection in Europe) as historical objects in their own right. In a post-project interview, the Joint CEO reported that Jones's work had enabled the Thackray "to consider ways in which greater public access to the catalogues might be facilitated" **(A)**.

Leeds City Museum: Mark Steadman (PhD 2007-13) identified several extinct specimens hitherto unrecognized in the museum's collections, including a complete skeleton of the moa. In interview, the Head of Collections reported that Steadman's research had influenced "the development of learning programmes for formal and informal audiences, identifying areas for further research, and sparking further public enquiries." There were even benefits for the professional development of staff, including a curator whose published paper on the moa "would have been impossible without [Steadman's] research." **(B)**

Stephen Beaumont Museum: Mike Finn (PhD 2008-12) has collaborated with this Wakefield museum, holding items from the former West Riding Asylum. Using its pathology records, Finn has shown how the asylum's daily practices were interwoven with research on brain function which made it famous in the 1870s. In a post-project interview, it was reported that Finn's research "had bolstered work on constructing a business case to advocate support for the museum", and that, "the museum is now able to develop interpretation that juxtaposes historical with contemporary experiences of mental health treatment." Finn has continued this collaboration with AHRC impact funding. **(C)**

B) Leeds-area Public Audiences via the Leeds HSTM Museum

The HSTM Museum (<http://arts.leeds.ac.uk/museum-of-hstm/>), under the Directorship of Claire **Jones**, has been used to enhance public engagement with the history of science focused on local themes. Objects from the collections are publically displayed around the University campus, and are used off-site in jointly curated exhibitions. Public lectures and educational resources relating to collections by **Gooday** and others are available online. **(D)**

Bragg and X-ray crystallography: In March 2013, Museum staff presented a programme of events for school, adult and family audiences in connection with the University's celebrations of the invention of X-ray crystallography and as part of the Leeds Festival of Science and National Science and Engineering Week. **(E)** Supported by the Wellcome Trust, the programme was extended to run at Leeds City Museum in July 2013, and prompted a BBC Radio 4 interview with Visiting Fellow Dr Kersten Hall, along with two Leeds-based senior academics, in which historical aspects of the Bragg's work were discussed **(F)**.

"Lights on at Lotherton": In July 2012, Museum staff collaborated with staff at Leeds Museums and Galleries (LMG) on a new form of school science instruction inspired by **Gooday's** 'Domesticating Electricity' research. In the pilot workshop held at Lotherton Hall, nineteen year-5 pupils from Grange Farm Primary in Seacroft (an area of multiple deprivation) took a worksheet tour of the house and its electrical furnishings, handled vintage electrical apparatus from the HSTM collections, made lampshades and took part in a debate. One of the teachers commented: "The pupils found it fascinating to see how electricity was incorporated into the home ... We, as teachers, also learned a lot and have now incorporated elements of the workshop ... into [our] own teaching." **(G)** Lotherton Hall staff have incorporated elements of **Gooday's** research within a new permanent exhibition about electricity in the country home (attracting 6797 visitors in June and 5044 in July 2013), for which he presented a complementary public talk in May 2013. A 'science comic' of the domestication of electricity has also been produced as a further educational resource.

(H)

C) Applying the Leeds Model Nationally

Further events and collaborations have extended the reach of the impact, to the national level. Thus, **Jones** presented a paper (now published) on the Leeds approach to museum professionals tasked with interpreting academic heritage at the Universeum conference in Norway (June 2012). The workshop 'University Engagement with Museums and Audiences' was also convened at Leeds in conjunction with the Science Museum in January 2013 as part of AHRC-funded research network, 'Public History of STEM'. In July 2013 the School hosted the Science, Technology & Industry Subject Specialist Network Conference (funded by Arts Council England), which included a presentation by **Gooday** and tours of the HSTM on-campus displays. In addition, since October 2012, **Gooday** and MacDonald have worked on the Kew Observatory, in partnership with the Royal Society, resulting in an online resource that won first prize in the British Society for History of Science's 'Travel Guide' competition in July 2013 (**I**). Looking to the future, the success of the Lotherton Hall project has attracted the attention of Cragside (National Trust), expressing interest in an initiative for using NT country houses to teach electrical science.

5. Sources to corroborate the impact (indicative maximum of 10 references)

(A) Joint CEO, Thackray Museum, Leeds, interview summary available upon request

(B) Head of Collections, Leeds Museums and Galleries, interview summary available upon request

(C) Service Improvement and Business Development Manager, Southwest Yorkshire NHS Trust, interview summary available upon request.

(D) A selection of videos from lectures and demonstrations relating to the Leeds HSTM Museum, and viewer numbers, can be found at: <http://www.youtube.com/user/hpsmuseumleeds> (accessed 24/09/13).

(E) See: <http://www.leeds.ac.uk/festivalofscience/> (accessed 24/09/13) and: http://www.leeds.ac.uk/site/scripts/home_info.php?homepageID=399 (accessed 24/09/13).

(F) A summary of the interview on the Radio 4 news programme 'PM' can be found at: http://www.leeds.ac.uk/arts/news/article/3527/leeds_father_and_son_pioneers_of_x-ray_crystallography_featured_on_radio_4 (accessed 24/09/13).

(G) Year 5 teacher at Grange Farm Primary School, Leeds, testimonial available upon request.

(H) <http://bizhorne.com/comics/science/>

(I) The prize, awarded at the International Congress on the History of Science, Technology and Medicine in Manchester (21-28 July 2013), was for MacDonald's Travel Guide entry: <http://www.bshs.org.uk/travel-guide/kew-observatory-richmond> (accessed 24/09/13).