

Institution: University of Cambridge
Unit of Assessment: UoA32B
Title of case study: Charles Darwin and Evolution
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>This case study focuses on the impact of research carried out at the University of Cambridge into the history of evolution by Professor James Secord and co-workers, notably the impact of two research programmes: the Darwin Correspondence Project and Darwin Online. These projects have contributed to a substantial reorientation of public discourse on the history of evolution. The impact has been achieved through web resources; museum and library exhibitions; teaching materials for schools and universities; and radio and television programmes. These outputs have encouraged public understanding of the range of contributors to science, including women; an awareness of the diversity of positions in the evolutionary debate; and an appreciation of the complex relations between evolutionary science and faith. The projects have shown that the highest achievements of scholarship can be made freely accessible to a global audience.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>James Secord has been a member of the Department of History and Philosophy of Science since 1992, and a Professor since 2002. His book, <i>Victorian Sensation</i> (2000), is a reinterpretation of the evolutionary controversies, focused on the publication and reception of the anonymous best-seller <i>Vestiges of the Natural History of Creation</i> (1844), which was written by the Edinburgh publisher and author, Robert Chambers. It provides a fresh understanding of the evolutionary debates, particularly in relation to religion, in the period before publication of the <i>Origin of Species</i>; it also is the most thorough study of the reading and reception of a single book (other than the Bible) ever undertaken. The wider consequences of an approach to history of science based on communication are drawn out in the widely cited Secord (2004). This work on evolution has also involved making sound texts of the key works available with introductions, including works by Charles Lyell, Chambers and Darwin.</p> <p>Since 2006 Professor Secord has been Director of the Darwin Correspondence Project (founded in 1974), which is transcribing, editing and footnoting all the 15,000 letters to and from Darwin at the highest academic standards. This currently involves a team of seven editors, as well as associated staff involved in outreach and provision of online resources. The letters are published as books by Cambridge University Press and are also available freely on the web. Professor Secord was also the Principal Investigator for the Complete Work of Charles Darwin Online project, which has made available first editions of all of Darwin's works (and images of many manuscripts) online for free. The project was directed by Dr John van Wyhe, a postdoctoral fellow at Cambridge from 2005 to 2009. As one of the referees wrote in 2009 on the conclusion of the initial funding award, 'This is a resource closely linked to top-level scholarly research, of clearly international significance, and meeting all the key objectives of AHRC funding, including knowledge transfer. It is a matter for celebration that the AHRC has supported this project.'</p> <p>The research has had three aims in contributing to public discussions of the evolutionary controversies of the nineteenth century. The first has been to reorient the history of evolution before publication of <i>On the Origin of Species</i>. The second is to place the work of Charles Darwin in this broader setting, by making available his correspondence and other writings available to a wide audience. The third is to use these sources to provide new understandings of the role of evolutionary discussion in the public sphere and as a global phenomenon. Correspondence provides a model in which relations between different religious and cultural groups can be seen in terms of exchange and interaction, rather than as confrontation.</p>

Impact case study (REF3b)

The editorial research on Darwin has led to an extensive range of associated academic outcomes, particularly in relation to the *Descent of Man* (1871), *The Expression of the Emotions* (1872) and the international debates sparked by these works. This has included publications by Project staff on Darwin's attitudes towards the emotions, on the nature of correspondence as a literary genre (White 2007, 2008), and extensive original material on the website by Dr Sophie Defrance (Research Associate, 2010-13), Dr Philippa Hardman (Research Associate, 2010-13), Dr Alison Pearn (Associate Director and Editor, 1996-) and Dr Paul White (Associate Editor, 1997-) relating to gender, human nature and religion. A significant focus of the underpinning work on the letters has been the global reception of evolutionary theory and its relation to empire and ideologies of progress in the nineteenth century (Secord 2008, Secord 2009), including collaboration with Chinese colleagues in a grant from the British Council, and participation in conferences in Europe, Africa, Asia and North America.

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

[3.1] Burkhardt, F., J.A. Secord, J. Browne, S. Evans, S. Innes, A.M. Pearn, P. White et al. (eds) 1993-2013. *The Correspondence of Charles Darwin, 1860-1872*, vols 8-20, Cambridge University Press.

- Queen's Award for Higher and Further Education 2003
 - Modern Language Association, Morton N. Cohen Prize for a distinguished edition of letters 1991
- Darwin Correspondence Project website: <http://www.darwinproject.ac.uk/>

[3.2] Pearn, A.J. (ed.) 2009. *A Voyage Round the World: Charles Darwin and the Beagle collections in the University of Cambridge*, Cambridge University Press.

[3.3] Secord, J.A. 2000. *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation*, University of Chicago Press.

- Winner of the 2002 Pfizer Prize of the History of Science Society for the best book in history of science
- Winner of the 2002 award for the best book in history from the Association of American Publishers' Professional/Scholarly Publishing Division
- Over 80 reviews in scholarly and general periodicals

[3.4] Secord, J.A. 2004. 'Knowledge in Transit', *Isis* 94, 654-672. [10.1086/430657](https://doi.org/10.1086/430657)

[3.5] Secord, J.A. (ed.) 2008. *Charles Darwin: Evolutionary Writings*, Oxford World's Classics. Introduction, notes, bibliographies and edited texts.

[3.6] van Wyhe, John et al., The Complete Work of Charles Darwin Online (2002-) <http://darwin-online.org.uk/>

[3.7] White, P.S. 2007. 'Letters and the Scientific Life in the Age of Professionalization, in R. Crone (ed.), *New Perspectives in British Cultural History*, Cambridge Scholars Press.

[3.8] White, P.S. 2009. 'Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity', *Isis* 100: 811-826. [10.1086/652021](https://doi.org/10.1086/652021)

Funding for Darwin Correspondence Project between 1993 and 2013: £6,960,000 from AHRB, AHRC, Bonita Trust, British Academy, British Ecological Society, Cambridge University Press, Mellon Foundation, NERC, Isaac Newton Trust, NEH (USA), NSF (USA) Royal Society of London, Sloan Foundation, Pew Charitable Trusts, Templeton Foundation, Wellcome Trust, and others. Funding for completion of the Project in 2022 has been secured.

Funding for Darwin Online between 2005 and 2008: £283,000 from AHRC.

Impact case study (REF3b)
4. Details of the impact (indicative maximum 750 words)

The research into the history of evolution in Cambridge has had a profound impact on public understanding of science as a cooperative, collaborative enterprise involving men and women from different backgrounds. Several hundred articles have appeared in print, from the *New York Times* and the *Guardian* to the *Frankfurter Allegmeine Zeitung* and the *Sun* [5.4, 5.6]. Professor Secord, Dr Pearn, Dr White and other members of the Darwin Correspondence Project staff feature regularly on television and radio programmes in many different countries. In the Darwin bicentennial year of 2009, in Britain these included *In Our Time*, *Women's Hour*, the *Today Programme*, *Bang Goes the Theory*, and *The Story of Science* [5.3, 5.5]. The Project's research is consulted by documentary producers and feature filmmakers, and has served as the basis for several dramas. For example, the major television dramatization 'Darwin's Darkest Hour', was produced in by National Geographic (in association with NOVA) with using extensive material from the Correspondence Project. In 2008 the Project commissioned the playwright Craig Baxter to write *Re:design*, based on the correspondence between Darwin and the American botanist Asa Gray. This has been widely performed on both sides of the Atlantic, having been translated into Danish, German, Spanish and Turkish; performances in all these languages occurred during 2009 [5.1].

Cambridge has a strong record of outreach relating to the history of evolution and the Darwin bicentenary offered a unique opportunity to build on this. Two popular selections of letters were issued, as well as an illustrated version of the complete letters relating to the *Beagle* voyage, which sold over 4,500 copies. A major exhibition [3.2] was mounted in the University Library in Cambridge, which attracted a record of over 22,000 visitors; a smaller exhibition about Darwin's public reputation was staged in the Whipple Museum of the History of Science. In 2012 the Darwin Project participated in a further exhibition in the University Library, 'Books and Babies: Communicating Reproduction'. As chair of the science programme at the Cambridge 2009 Darwin Festival, Professor Secord ensured that themes from history and philosophy became a feature of this public meeting, which attracted 1500 participants from 39 countries; every major session began with a reading from a Darwin letter. There have been over 880,000 viewings of the Festival recordings. In January 2009 he also spoke on his research on 'Global Darwin' in the Darwin College public lecture series. This hour-long lecture [5.5] has been downloaded over 23,000 times.

The Darwin Online Project has had a transformative effect at all levels of public understanding across the world, with several hundred million hits since 2008 [5.4]. In a continuing process of providing fresh materials to a wide public, this project has made clearly sourced editions of Darwin's published writings and manuscripts (including those in the University Library at Cambridge) freely available for the first time. The materials have substantially improved the quality of discussion about Darwin and evolution on the internet and in schools.

Impact on Cultural Life

Professor Secord's approach, with its stress on the public audiences and wider contexts of Darwin and Darwinism, was fundamental to a major exhibition held by the Fitzwilliam Museum and the Yale Center for British Art staged in 2009, 'Endless Forms: Darwin, Natural Science and the Visual Arts'. He was instrumental in the discussions that led to the exhibition and was appointed as its chief consultant on the history of science, advising the curators at every stage. He contributed a podcast (on his research [5.12] and gave several public lectures and gallery tours. Attracting a record-breaking 93,000 visitors to the Fitzwilliam, including many from around the world, 'Endless Forms' was named Exhibition of the Year by *Apollo* magazine, and its catalogue [5.8] won the Berger Prize for the best book in British art history of the year. As the curators said, 'We share the honour with contributing authors, colleagues at the Yale Center for British Art and especially with the book's scientific advisor Professor James Secord'.

Impact on Education

During the past three years, the Darwin Correspondence Project has initiated a major programme of outreach in schools and colleges. In part, this builds on earlier experiences, including the provision of major online resources relating to evolution and religion, and a 'Write a Letter to Darwin' programme in 2009 involving use of the online correspondence and sponsored by the University of Exeter and South West Schools. The current Cambridge-based initiative provides full downloadable packages available for key stages 3 and 4 and A/AS level in Science, English, and History. The material has been developed through close consultation with teachers and has been piloted by Sally Stafford, the Project's full-time education officer from 2010 to 2013, in selected UK schools. As the materials were released in May 2013 the scale of classroom use is not yet available, but external evaluation [5.10] has confirmed that students and teachers found the letters revealed the human side of science, developed skills in writing, experimenting and asking questions, and in understanding the role of collaboration and debate in science. A further body of materials relating to university teaching about Darwin, gender and women was released in August 2013 [5.7, 5.9], with coverage in national newspapers and on national TV news.

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

[5.1] Baxter, C. 2007-13. Re:design: <http://www.menagerie.uk.com/productions/archived/redesign/> and <http://www.darwinproject.ac.uk/dramatisation-of-the-correspondence/>

[5.2] Bragg, M. 2009. *In Our Time: A Companion to the Radio 4 Series* (London: BBC Books).

[5.3] Bristow, Jeremy, 2009. 'Darwin's Struggle: The Evolution of the Origin of Species'; multiple showings, last screened BBC Four television, 6 Aug. 2013.
<http://www.youtube.com/watch?v=UDrULMJcBg8>

[5.4] Complete Work of Charles Darwin Online press coverage, <http://darwin-online.org.uk/press.html>

[5.5] Darwin Correspondence Project podcasts: <http://www.darwinproject.ac.uk/podcasts>

[5.6] Darwin Correspondence Project website: <http://www.darwinproject.ac.uk/>

[5.7] <http://www.darwinproject.ac.uk/darwin-and-gender-intro>

[5.8] Donald, D. and J. Munro (eds). 2009. *Endless Forms: Charles Darwin, the Natural Sciences and the Visual Arts* (New Haven and London: Yale University Press).

[5.9] Hardman, P. 2013. 'Using Darwin's Letters in University Teaching: A Case Study'
<http://www.darwinproject.ac.uk/harvard-resources-page>

[5.10] Macindoe, Jennifer. 2012. *Charles Darwin Correspondence Project: Evaluation of Online Resources for Secondary Schools* (pdf available on request).

[5.11] Oxley, Peter, 2010. 'The Story of Science: Episode 3: How Did We Get Here', <http://www.youtube.com/watch?v=4LVWuPHLiCw> last shown 30 May 2011. Includes segment on publishing and reception of *Vestiges* based on Prof. Secord's work.

[5.12] Secord, J.A. 2009. (<http://www.darwinendlessforms.org/podcasts/episode-1/>)