



# AN ORAL HISTORY OF BRITISH SCIENCE

A new National Life Stories interview programme

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## Introduction

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National Life Stories is creating a major archive for the study and public understanding of contemporary science in Britain through a new oral history fieldwork programme involving 200 in-depth interviews with British scientists.

Genetic engineering, fusion research, the internet, and climate change are topics daily discussed by the media, and Britain is one of the key promoters of scientific innovation in the world. Yet little is known about important scientific and technological advances that in Britain paved the way to some of the innovations that have caught public attention.

No comprehensive historical survey of British scientific endeavour and discovery exists which draws on personal memory and experience. Nor has the advancement of science in twentieth century Britain been documented to provide a detailed picture of pioneering innovation, research developments, the rise of new research schools and their achievements.

Remarkably few leading British scientists, including several Nobel laureates, have been interviewed at length about their life and work, and very few personal testimonies of scientific discovery exist in the national collection, a lacunae it is urgent to remedy.

In the light of the challenges facing global society, the study of British science in the latter part of the twentieth century bears on key policy debates: from assessing and developing energy sources to the regulation of human biology research. Given its potential importance to the public understanding of science, the historical study of contemporary British science through the reflections of the key protagonists is an under-developed field that this programme aims to address.

The 200 life story recordings will be recorded to the best digital standards for preservation in perpetuity at the British Library. Each audio interview will average 10-15 hours in length, complemented by some shorter video recordings reflecting key events or locations, plus at least one group 'witness seminar' for each of the project's four themed strands:

- *The Factory of Life*
- *Cosmologies*
- *Made in Britain*
- *A Changing Planet*

The recordings will be made available free of charge at the British Library as a research resource: extracts will form the basis for a new BL history of contemporary science web resource available to all worldwide.

Beginning in late 2009 the project will take three years, and generous funding for two of the project strands has been secured from the Arcadia Trust.

*An Oral History of British Science* draws on two decades of fieldwork experience of the National Life Stories (NLS) team at the British Library. National Life Stories, a charitable trust and limited company within the British Library Sound Archive, was established in 1987 to capture the life stories of British people whose experiences would not otherwise be recorded. Since then NLS has recorded nearly 2,000 interviews totalling some 20,000 hours, all of them accessible at the British Library.

Successfully completed archival projects have each led to major archives of recordings, and several books, CDs, educational packs and radio programmes have emerged from the project work:

- the financial capital of the City of London, funded by city firms, which led to the publication *City Lives: The Changing Voices of British Finance* (Methuen, 1996)
- the steel industry, with support from British Steel plc, which led to a CD *Lives in Steel* (1993)
- Holocaust survivors, later the basis for a popular educational web resource *Voices of the Holocaust*
- the Post Office, with support from Royal Mail, which led to a CD, *Speeding the Mail: An Oral History of the Post Office from the 1930s to the 1990s* (BL/The British Postal Museum & Archive, 2005)
- the book trade (a major book is in preparation)
- the oil and gas industry, funded by a range of oil companies, which led to a BBC Radio 4 *Archive Hour*
- the food sector, including an oral history of Tesco, which resulted a several web-based and audio publications including the *Food Stories* educational website.

Current projects underway focus on the lives of visual artists, authors, designers, craftspeople, and architects. Fundraising is underway for a corporate oral history of the water industry. The entire collection is made freely available at the British Library to researchers and the wider public, and the catalogue is available online at [www.cadensa.bl.uk](http://www.cadensa.bl.uk).

NLS benefits from advice from a range of professional and business figures including Sir Dominic Cadbury, Sir John Craven, Sir Roger Gibbs, Sir Harry Solomon, Lady Waldegrave, and David Webster. Sir Nicholas Goodison is National Life Stories Chairman, Bob Boas is Treasurer, and Dr Rob Perks is its Director.

*An Oral History of British Science* is jointly managed by NLS and the BL's Curator of the History of Science, Dr Katrina Dean, and forms part of a wider institutional initiative to better document contemporary history of science and technology. An expert Advisory Committee will be appointed to guide the project.

NLS is dependent on grants and donations to carry out its work. Please visit <http://www.bl.uk/nls> for further details and sample recordings.

### **The case for the project**

Despite the existence of a significant oral history tradition in science studies, the field in Britain is not well-developed. In April 2005 NLS hosted an exploratory roundtable conference at the British Library. Chaired by Sir Nicholas Goodison, *Personal Testimonies of Contemporary Science, Technology and Medicine* was attended by representatives of the UK's leading history of science archives and libraries, and distinguished researchers. The meeting concluded that very few scientific testimonies were held collectively and that a major programme of recording needed to be initiated to capture rich personal memory not available in any printed or manuscript sources.

Subsequently NLS commissioned a mapping and scoping study, *The Oral History of Science in Britain: A Scoping Study* (Simone Turchetti, Centre for the History of Science, Technology and Medicine, University of Manchester for NLS, September 2007). The study confirmed that there are currently very few oral history collections in Britain looking specifically at professionals working in science and technology; and that those projects that have been developed in the past were short-lived and narrow in scope, many leaving no more than ten professionals interviewed. And many of these recordings are not properly conserved or publicly accessible.

A comparative analysis of history of science programmes in the US, where oral history initiatives are well-developed, shows that Britain lacks archives of significant recollections even from those members of its scientific community that have achieved international recognition by winning Nobel Prizes. The position is even more worrying if one considers that since 2000 seven British Nobel laureates have died and some of them have left no personal recollections of their life, career, and scientific attainments. Another twenty leading British scientists have died in the same period, also leaving little or no recollections of their research activities. Moreover, as the Royal Society celebrates its 350<sup>th</sup> anniversary in 2010, very few Fellows' (FRSs') lives and careers have been documented in detail and there are no plans to launch a major interviewing programme.

Our scoping study found one exception to this general picture. The history of medicine seems to be better documented through oral history than other fields of science and technology. This is largely due to the Wellcome Trust's history of medicine programme, but it is worth emphasising that even in this field there are still significant gaps, including the recent history of biotechnology applications.

Overall the findings of the scoping study have further convinced NLS and the BL that the establishment of a comprehensive oral history programme on British science and technology is now urgent.

## **The scope of the project**

In order to make a significant contribution to the study and public understanding of science, it is proposed to interview **200 scientists** in the context of a wider BL documentation strategy for the contemporary history of science and technology; and to disseminate the findings of this research and interview material through online access and new web resources.

As well as filling obvious gaps in our knowledge of major developments and innovations by interviewing the key players in British science, this project aims to account for the character of scientific research since the Second World War. Collaboration in teams, often in the context of large institutions; international competition, cooperation, and fields of inquiry; growth in funding; relations between science and government; industrialisation; and the commercial contexts of research have all been important in shaping science. In addition, not only has scientific research become increasingly specialised, scientific breakthroughs have taken place at the cusp between traditional disciplines rather than within well-established fields.

As a result, it is proposed to organise the project around **four themed sub-projects**, with around fifty interview subjects each, to reflect the character and emerging issues of science in the twentieth century.

### ***1. The Factory of Life***

*The Factory of Life* will investigate the transformations that have typified biomedicine, paying special attention to how new technologies have changed medical practices and provided a new understanding of biological objects. The application of new technologies in diagnosis will be explored in detail. The term *factory* also refers to the 'industrialisation' of the processes of treatment and cure, as well as the idea that these processes can be engineered. Advances in genetic engineering will be central to this study, especially in relation to the rise of 'big Pharma'. Advances in the traditional pharmaceutical industry (from painkillers to Viagra), paving the way to new drugs and treatments, will also be investigated. This project sub-theme will elucidate the ways in which biomedicine has developed in the twentieth century at the crossroads between the need for new therapeutic treatments and the pressure of the biomedical market.

### ***2. Cosmologies***

*Cosmologies* considers new systems of thought that have emerged in correspondence with the development of a number of theoretical fields (mathematics, mathematical physics, cosmology, astronomy, statistics, high-energy physics). 'Cosmology' is not intended here as a scientific discipline, but – metaphorically – as reasoning around comprehensive systems of scientific thinking, providing an image of the 'whole' either at macro-level (universe) or at micro-level (structure of matter). Given the high level of abstraction of many new theories, an analysis of the relation between ideas and reality

would be appropriate. What do scientists see as 'real' in their very abstract models? Special emphasis will be given to the debates on the nature of the universe emerging in cosmology, as well as mathematical physics. And on the structure of matter emerging in high-energy physics. The interviews will also elucidate different models and approaches as well as debates and controversies that have arisen from new theories and experimental observations.

### ***3. Made in Britain***

*Made in Britain* considers important discoveries in science and technology that have been pivotal to new industrial applications. It will cover some applied sciences (such as condensed matter physics) as well as engineering fields (chemical, electrical, civil and structural) and the interviews will be selected from amongst a wide range of professionals. Aspects of the history of computing will also be addressed. The title refers to the fact that an analysis of these breakthroughs in science should also be looked at as something that has boosted national pride, while arising from research conducted by experts of different ethnic backgrounds. The sometimes problematic relationship between ways in which discoveries have been propagandised and the ethnic background of the discoverers will be explored. Given the significance of industrial applications deriving from these discoveries, ways in which inventions have been protected through patents, and whether the existing intellectual property agreements were satisfactory to the interviewees, will also be explored. The economic exploitation of the inventions will be analysed in terms of impact on British industrial concerns.

### ***4. A Changing Planet***

*A Changing Planet* considers the advancement of the earth system sciences in the light of recent concerns associated with environmental and climate change. The interviewees will be selected amongst a number of earth science experts (climatologists, meteorologists, geologists, geophysicists, geochemists, ecologists, glaciologists and oceanographers) to explore two chief points: how, when and why the Earth has become a subject of scientific investigation; and how this investigation has been pivotal to the rise of concerns about the impact of humans on the environments. For example, it would elucidate research on the quantity of ice on the polar caps and then discuss how these findings have been used in the context of scientific discourse on the melting of these caps and the corresponding rise of sea levels.

Due to the emerging nature of this field of study in the UK, further research is required in order to identify the full range of interviewees, especially in the fields of meteorology, ecology, geology, geophysics, geochemistry and oceanography. This will be one of the first tasks of the interviewer for *A Changing Planet*, in consultation with researchers and specialist history societies such as the History of Meteorology and Physical Oceanography Special Interest Group of the Royal Meteorological Society.

## **Methodology**

Oral history has long been recognised as a productive method of investigating recent science because it provides valuable insights into personal inspiration, controversy, and varying practice within a broad social context. The power of personality, the importance of team-working, the roles of accident and serendipity, the political and funding-related cut-and-thrust of scientific endeavour are all rarely accessible through 'traditional' archival sources or published works. Oral history gets to the heart of what drives and motivates scientists. And comparing differing accounts of key episodes in science allows a richer picture to emerge, bringing out the collective nature of scientific inquiry.

The project will collect up to **200 interviews** over a three-year period, starting in 2009. Each audio interview will average ten to fifteen hours in length made over several sessions using the latest flashcard digital technology; and will range broadly over each individual's career history, education, background and family. This biographical, or life story, approach has proved rewarding for previous projects and enormously valuable for researchers seeking a more rounded view of an individual and their contribution.

Interviews will normally be conducted in the individual's own home or office but, if required, a state-of-the-art speech studio is available in the BL's new Centre for Conservation. Interviews will be content-summarised and fully catalogued and, where funds allow, fully transcribed to assist researchers. Interviewees will be asked to assign copyright in their recording to the BL to allow full use by researchers, but where an interview contains confidential material, they may also request partial or full closure of their interview for a period of years. We have found that this can often encourage unusually frank and candid accounts of huge future research value.

In addition to in-depth life history audio interviews, the project will further explore those key areas suggestive of multiple or conflicting accounts by organising four public '**witness seminars**' (one per strand) that bring participants together for collective reflection of their recollections.

Furthermore the local, spatial and experimental aspects of striking episodes uncovered by life story interviews will be followed up with some **video recordings** documenting particular instrumentation, specific geographical settings and key turning points.

Importantly the project will seek to identify **lesser-heard voices**, for example women scientists, by mapping networks of researchers and research teams using the 'key players' as starting points. The lists of proposed interview candidates involved in recognised achievements in British science is therefore only indicative, the aim being to identify additional team members, assistants, critics and competitors for interview.

## **Outputs**

- **The Archive**

All the project's recorded interviews will be archived in perpetuity as part of the British Library's collections. Digital playback copies of each of the in-depth interviews will be made available to researchers within the British Library via the Sound Archive's onsite *SoundServer* service, and (subject to copyright clearance) to remote users via the BL Sound Archive's online catalogue ([www.cadensa.bl.uk](http://www.cadensa.bl.uk)) and other digital service delivery points. Rich content description will enable rapid searching.

- **Documentation of UK science**

The interviews will be situated in the context of the British Library's wider documentation strategy that aims to map in broad outlines aspects of British science after World War Two. This will involve gathering and representing online biographical, bibliographical, and archival information that is available in publicly accessible sources and repositories. The findings of the scoping study in addition to information about and links to existing oral history resources relating to the British science will be added. Archival documentation in the custody of scientists will be identified. To the extent that granting access to this information is agreed by the interviewees following the provisions of data protection legislation and ethical codes, this information will be linked to the public sources online. Interviewees will be offered access to advice from British Library curators about the disposition of their personal collections.

- **A new BL history of science web resource**

This proposal envisages a new web resource within [www.bl.uk](http://www.bl.uk) which provides access to the oral history interviews, links the interview data to other relevant digital objects, and acts as a gateway to other resources and scientific holdings.

- **Exhibitions and publications**

Interview material, subject to interviewee consent, will have the potential to feature in the Library's future exhibitions (onsite and virtual), in audio and printed publications, and as a resource for broadcasters, writers and users of all kinds.