

Institution: Royal Holloway, University of London		
Unit of Assessment: 34 Communication, Cultural and Media Studies, Library and Information Management		
Title of case study: Transforming the Accessibility and Discoverability of Millions of Archival Television Programmes		
Period when the underpinning research was undertaken: 2001-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
John Ellis Catherine Johnson Nick Hall Rob Turnock	Professor Lecturer/Senior Lecturer Research Officer/Lecturer Senior Research Fellow	2001-date 2002-2012 2014-date 2001-2016
Period when the claimed impact occurred: 1 st August 2013-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>Television is a valuable cultural record and data source for education and knowledge generation. Research at Royal Holloway (RHUL) has directly resulted in Box of Broadcasts (BoB), the world's largest archive of TV broadcasts, and EUScreen, a European equivalent. Between them they make available over 2,500,000 items of TV content. Almost all HEIs in the UK subscribe to BoB, using content ranging from news and documentaries to sitcoms and reality shows, to enhance learning and teaching across the curricula. Approximately 1,700,000 programme streams a year are requested by teachers, lecturers and students. In Europe, the pan-European EUScreen project makes historic TV content universally available. The project has helped to change the perceived value of "ordinary" TV and has enabled many broadcasters to digitize and present their holdings online. In addition to this preservation and dissemination of TV's programme heritage, RHUL research has secured and demonstrated online the material heritage of TV production technologies and working practices.</p>		
2. Underpinning research		
<p>Millions of hours of TV exist in the archives, and more is added every day. This vast resource offers many possibilities for teaching, research and heritage activities. RHUL research has explored the four connected challenges in realising this potential: preservation, restoration, access and usability. In the early 2000s, the archive organisations devoted to the preservation of and access to historic TV still assumed that the main area of demand would be in TV "classics". RHUL research developed a different vision by emphasising the value of "ordinary TV" (magazine programmes, news items, reality TV, sitcoms and light entertainment as well as programming such as prestige dramas and documentaries). Researchers then used an action-research approach to develop the means of searching and accessing the huge collections that would result. Through collaborative research projects and through publications, RHUL researchers drove forward the development of two online resources: Learning on Screen's Box of Broadcasts and the pan-European EUScreen project. Throughout they articulated a vision of television programming as a vast repository of data (R1, R2, R4). "Digitised TV has become data. This data requires interpretation. This data also enables reinterpretation of the TV material on all kinds of levels that were simply not open to the material in its original analogue state" (R4, p.30).</p>		

RHUL research offers the means of evaluating and exploring ordinary TV as an important education resource as well as a source of information about society. Our research has explored how public service and commercial archives can organise online access and what forms of search are most appropriate for a wide range of cross-disciplinary users. R3 explores the problems of organisation and search in an international context, offering a model for their resolution. R4 anticipates the use of artificial intelligence to treat digitised TV holdings as big data for research in other disciplines, for example, linguistics and the science of ageing.

The final element of RHUL's research results from the perception that the digitisation of archival TV also alters it, so that future users of its data need to understand how it was created. The editorial constraints of broadcast TV may have been well researched, but technologies and production practices have not. From 2013 to 2018 a project funded by the European Research Council investigated the Adoption of New Technological Arrays in the Production of Broadcast Television (ADAPT). Project outputs including R5 and R6 explored the strengths and limitations of TV's technologies and working practices, which defined what could and could not be shown. Using an innovative Hands on History method, this research galvanised a network of retired television professionals and dedicated amateur collectors of historic equipment to restore it to working order. They were then filmed using the equipment as they once did professionally, generating over 160 videos explaining how analogue TV used to be made, and creating a tangible contribution to the preservation and understanding of TV's material heritage.

3. References to the research

1. Ellis, J. (2007), 'Is it Possible to Construct a Canon of Television Programmes?' in *Re-Viewing Television History: Critical Issues in Television Historiography*, ed. Wheatley, H., London: I.B.Tauris, pp.15-26. Available from HEI on Request.
2. Johnson, C. and Turnock, R. (eds) (2005), *ITV Cultures: Fifty Years of Commercial Television*, London: Open University Press. Available from HEI on Request.
3. Turnock, R. (2012), 'Curating European Television History Online' in *Transnational Television History: A Comparative Approach*, eds Fickers, A. and Johnson, C. London: Routledge. Available from HEI on Request.
4. Ellis, J. (2012), 'Why Digitise Historical Television?', *VIEW* vol 1, no 1, pp.27-33. DOI: <https://www.viewjournal.eu/articles/abstract/10.18146/2213-0969.2012.jethc005/>.
5. Ellis, J., Hall, N., and Murphy, A. (from 2013), *How Television Used to be Made* www.adapttvhistory.org.uk.
6. Hall, N. and Ellis, J. (eds) (2019), *Hands on Media History*, London: Routledge. Available from HEI on Request.

EVIDENCE OF QUALITY: R1, R2, R3, R4 and R6 are the direct results of competitively awarded grants and are peer-reviewed publications. R5 is the outcome of the ADAPT project, funded by the European Research Council from 2013 to 2018; it was awarded Best Education Website at the Learning on Screen awards 2019. The print outputs have received 149 academic citations between them.

4. Details of the impact

Royal Holloway's research into the preservation, restoration, access and usability of archival TV has resulted in the return of huge amounts of heritage programming back to active and extensive educational, research and public use. Research projects at RHUL have enabled the creation of Box of Broadcasts, the world's largest recording and streaming library of TV material, and the EUscreen collection of historic TV from around Europe. Further RHUL research has contributed to the preservation and public understanding of the disappearing analogue technologies which were originally used to create the programmes now made available on these pioneering platforms. The impact has been achieved through national and multinational collaborations with broadcaster archives and digitisation projects. Beneficiaries of the research include broadcaster archives, archive and information professionals, educational charities, TV

practitioners, and audiences including educational users (students, teachers, researchers) and the wider public.

Learning on Screen's Box of Broadcast (BoB) service, based on the online recording of television programmes for educational use, is the world's largest video streaming library. Unlike other streaming services, it is a permanent library used by 156 subscribing institutions including universities and further education colleges across the UK. Broadcast channels show thousands of hours of TV a day, but most of it soon disappears for ever: the broadcasters' own streaming services make it available only temporarily. Through its recording service, BoB enables users to adapt TV content for education use, and to have it permanently available. As of May 2020, BoB (S1) held 2,385,000 TV and radio programmes drawn from 76 UK broadcast channels. BoB's strength lies in its crowdsourcing approach. Any individual academic user can request that scheduled broadcast programmes be added, and those programmes then remain permanently available to all. BoB handled 153,573 such requests in the year ending May 2020. Described as "a fantastic resource" by the Library Service of Queen Mary, University of London (S6), BoB is a key teaching source for UK education with just under 1,700,000 streams of programmes each year. It contains every genre of programming and is used by all subject areas: business and management are particularly prominent among them. Users have created over 170,000 playlists with subjects as diverse as mathematical modelling, marketing communications, and Black Lives Matter. The creation of BoB is the direct result of RHUL's contention that "ordinary TV" matters and its research into making such content searchable.

Ellis's decisive chairing of Learning on Screen (formerly British Universities Film and Video Council, BUFVC) from 2007 has been crucial in developing BoB. According to [text removed for publication], BUFVC [text removed for publication], Ellis's "[text removed for publication]" (S2). BoB's origins lie in a service which mailed out DVDs of broadcasts to higher education, under a unique education provision of UK copyright law (introduced in 1988). Under Ellis's leadership, BUFVC transformed this to a streaming service, improving the commercially supplied platform in 2013, and subsequently (2016) launching a new version tailored for teaching and research which was developed in-house by Learning on Screen. BoB's evolution is similar to that of Netflix which also began as a DVD mailing service but, whereas Netflix still offers a relatively small catalogue, BoB's crowdsourced collection soon numbered hundreds of thousands of programmes.

RHUL research provided crucial input into the design of the search functions and presentation of BoB's bespoke platform. The platform gives users the ability to select and curate extracts from programmes for a wide variety of educational uses. With such a huge library, searchability is crucial so that users can find the material they need for their teaching and research. RHUL researchers teamed with BUFVC in 2010-11 on an AHRC-funded project, "Consolidated Moving Image and Sound Database Framework", to consolidate BUFVC's nine disparate databases of TV content into an innovative search environment linked to BoB and capable of returning results from film, TV and radio assets and metadata. The definitive version was launched after user testing in autumn 2013. In [text removed for publication] words, it works by "[text removed for publication]" (S2). RHUL researchers have also worked with Learning on Screen to user test each stage of BoB's development.

Through its innovative search environment, BoB is enabling new approaches in teaching and learning in higher education and further education. This impact is highlighted in case-studies publicised by BoB. Chris Willmott, National Teaching Fellow in the Department of Molecular and Cell Biology, University of Leicester, comments how the searchability allows new ways for students to engage with TV material. "I have also had project students beginning to use BoB ... as a research tool. It is becoming feasible to interrogate visual media in a way that is more familiar for, say, newsprint" (S8). At Cardiff University's School of Journalism, Media and Cultural Studies: "BoB has had a positive and transforming impact on teaching staff, technical support staff and students. The availability of such a wide range of broadcast content has helped promote multimodal teaching within the department, as well as underpinning key research tasks. ... BoB has enabled students and lecturers to access examples, key moments and to detect

trends and shifts. It has also facilitated an end-of-module research assessment that has been well received by both students and external examiners” (S9).

BoB’s library of British TV is huge, but access is limited, for legal reasons, to the UK education sector. RHUL’s research has emphasised the need for universal access to TV’s programming heritage. As a founding partner in the European EUscreen project (2009 to 2016), RHUL’s researchers were able to develop universal and permanent online access to programmes from the archives of European broadcasters. With researchers from Utrecht University and the National Technical University of Athens, RHUL developed a collaboration with 17 European broadcaster archives. At the outset, these broadcasters had widely varying preservation and digitisation practices, with particular problems being faced by archives from newly acceded member states in Eastern Europe. The EUscreen network developed best practices in digitisation and cataloguing. It built a universally accessible web portal to provide cross-boundary online access to archival material. The project twice gained funding from the EU’s Framework 7. The content selection policies were developed by RHUL working directly with archivists to establish what content they would provide. For the EUscreen web portal, RHUL managed the standard metadata fields and the search terms used in the translation thesaurus that is at the heart of the multilingual search facility.

The actively curated EUscreen web portal now gives access to over 60,000 items which were viewed 282,319 times during the period June 2019 - June 2020 (S3). The archival network created during the EUscreen research phase now continues as an independent foundation with 31 institutional members including RHUL meeting regularly and organising conferences for both study and technical exchanges. According to [text removed for publication] of the Polish National Film and Audiovisual Archive, “[text removed for publication] (S4)”. The content acquisition tool developed for EUscreen has been adopted by Europeana, the European digital library as its means of ingesting video material, and the growing EUscreen collection continues to be added to Europeana’s holdings.

EUscreen’s work in securing the heritage of television also included the launch of a journal that acts as a forum between professional archivists and academic historians. *VIEW: Journal of European Television History and Culture* is a biannual online peer reviewed journal, with 16 issues by the end of 2020 and another 4 in production. It is “recommended reading” (S7) for FIAT/IFTA, the global network organisation for broadcast archives. Ellis remains one of the three editors in chief. The EUscreen project’s development of *VIEW* as a forum for archivists and academics was driven by the perception that TV material from the analogue era is often difficult to appreciate for modern users, and that its value as data can only be realised with reference to how it was originally created.

RHUL researchers have also worked to provide new ways of understanding how TV was made in the era of analogue technologies. RHUL used an innovative “hands on history” approach to demonstrate how TV used to be made using analogue video and 16mm film technologies. RHUL researchers worked with amateur collectors and retired technicians to restore a whole range of technologies and then film them being used as they once were every day. The result is an extensive collection of videos which have been absorbed into the Europeana digital library as well as presented through the *How Television Used to be Made* website (R5). These provide a valuable means of encouraging public understanding of the real constraints under which most archival TV material was produced.

These videos are also frequently used as reference material by art directors, as is evidenced by [text removed for publication], the owner of the 1960s outside broadcast truck used in several of them: “[text removed for publication]” (S5). The RHUL project also restored [text removed for publication] outside broadcast truck North 3 and other technologies to working order so that they could subsequently be used in these productions. This RHUL research has enabled this preservation of the material heritage of TV production as a further dimension to its achievements in the access and usability of historic TV material.

5. Sources to corroborate the impact

S1 Evidence, [text removed for publication], Learning on Screen, 9 June 2020: evidences the vast size of the Box of Broadcasts collection and the intensity of its use in education.

S2 Testimonial, [text removed for publication], Learning on Screen, 5 October 2019: corroborates Ellis's key role in the digital transformation of BUFVC/Learning on Screen.

S3 Evidence, [text removed for publication], Project Development, Beeld en Geluid, Netherlands, 23 June 2020: shows the extensive use of the EUscreen website and main pages' access June 2019-20.

S4 Testimonial, [text removed for publication], FINA (Polish Film & TV Archive), 18 June 2020: evidences the transformative effect of EUscreen for many broadcaster archives, and corroborates RHUL's role in the project.

S5 Testimonial, [text removed for publication], On The Air, 10 October 2019: evidences the effect of involvement in RHUL's ADAPT project on this business dealing with vintage broadcast technologies.

S6 Evidence, <https://elearning.qmul.ac.uk/guide/box-of-broadcasts-bob/>: a typical example of the enthusiastic presentation of Box of Broadcasts by a university E-Learning Unit to its student and staff users.

S7 Evidence, <http://fiatifta.org/index.php/media/archivalreads/>: how the international TV archivists' organisation recommends VIEW journal to its professional membership.

S8 Case-study in use of Box of Broadcasts in teaching and learning by the Department of Molecular and Cell Biology, University of Leicester. <https://learningonscreen.ac.uk/wp-content/uploads/2019/09/BoB-Case-Study-Chris-Willmott-Screens.pdf>

S9 Case-study in use of Box of Broadcasts in teaching and learning by the School of Journalism, Media and Cultural Studies, Cardiff University, <https://learningonscreen.ac.uk/wp-content/uploads/2019/09/BoB-Case-Study-Cardiff-WEB.pdf>