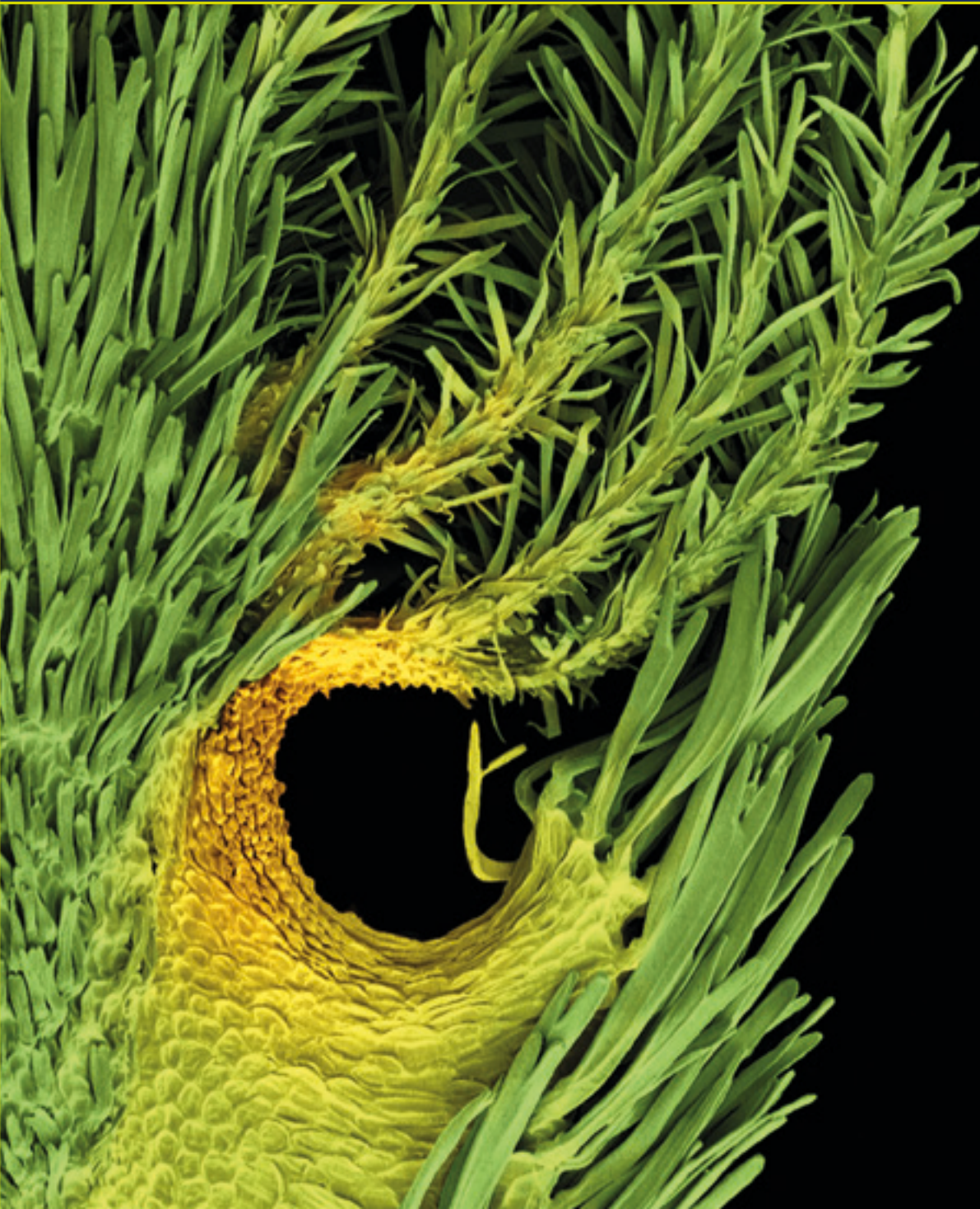


The creative role of research

Understanding research impact in the creative
and cultural sector



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Foreword



There is no doubt that the UK excels at culture and creativity. People come from all over the world, and also visit digitally, to experience, enjoy, and learn from our first class museums, theatre, radio, music and the rest. The UK is also at the forefront of the creative industries, a high-growth sector of the economy that is now essential to the nation's prosperity.

Culture and the creative economy are by definition driven by innovation and new knowledge, and University research is a primary source of new knowledge. Although under pressure from international competitors, UK universities still fare well in global research league tablesⁱ.

Putting the cultural and academic sectors together, academic research plays a pivotal role in the cultural and creative ecosystem, generating new ideas, creating new networks and nurturing talent development. However, as the Arts and Humanities Research Council notes: "The UK boasts a world-leading position in both arts and humanities research and the creative industries. [But] realising fertile connections between the two is neither inevitable nor easy." (AHRC)

I therefore welcome this new report from King's College London into the Creative Role of Research; a report that improves our knowledge about how research affects and impacts both the cultural and creative sectors and the wider world, thereby helping us to understand how those 'fertile connections' can be increased in number and quality.

The report analyses 1582 impact case studies that were submitted nationally to the Higher Education Funding Council for England (HEFCE) as part of the 2014 Research Excellence Framework. It provides a taxonomy for eight areas of impact, including influencing industry practice, transforming public understanding, developing audiences, informing curricula and pedagogy, promoting social change, developing policy, growing the economy, and improving health and wellbeing. It discusses the activities and partnerships that gave rise to those impacts, and offers an account of the forms of evidence used to support the impact claims.

Academics and creative practitioners have always forged relationships, collaborated, borrowed from and influenced one another; but in the past these relationships often came about by chance, and their characteristics and consequences were poorly

understood. This report provides evidence of the immense scale of the collaboration that is going on, and the wide range of academic disciplines that are involved, but it focuses most closely on the impact that these activities have within the world.

Impact takes many forms. It is not only about the direct effect of research – delving into creative practice in order to hone and improve it – because it extends, significantly, into the public understanding of creativity and culture. And impact is felt in many places, with Higher Education itself changed by collaborative research processes. Research produces new products and services, but it also drives talent development. In addition, it aids policy development: this report itself should be used to shape policy, providing as it does a full recognition of the importance both of research and the creative industries, and a better understanding of the connections between them.

In particular, this report disabuses us of the notion that the connection between research and the creative economy is a simple matter of linear transfer from idea to implementation. Collaborations between Higher Education and the creative sector are complex, and their success depends on the quality of relationships, the creation of networks, and the stimulus generated by collaboration as much as on the formality of research processes and methodologies.

I hope that the report will inspire researchers from a wide range of academic disciplines to embrace new opportunities to partner with the creative and cultural sector and, at the same time, illuminate for artists and creative professionals the many ways in which academic research can inform and develop their practice.

Research is an adventure, a step into the realm of uncertainty; and it often leads to unexpected conclusions and unlooked-for destinations. It is that spirit of open inquiry that produces advances in the human spirit, which ultimately are more important than financial return. Impact emerges in this report as not only a utilitarian measurement (which we need), but also as a multi-faceted enquiry, full of nuance and interest.

Prof. John Holden, Cultural Fellow, King's College London, Visiting Professor, University of Leeds and Honorary Professor, University of Hong Kong

ⁱ timeshighereducation.com/world-university-rankings/world-reputation-rankings-2017-results-announced



“The ways in which universities contribute to the cultural sector are well documented – through the generation of relevant knowledge, as partners and collaborators, through provision of publicly accessible spaces and, not least, through the education of creative graduates (who also find employment in sectors way beyond the creative industries). The contribution of the cultural sector – its people and organisations – to universities is perhaps less well understood. Since arriving at King’s five years ago, I’ve been privileged to work with colleagues across the university to develop a distinctive approach to culture and cultural partnerships, embedding collaborations that have been transformative in both education and research. For students, these partnerships help to increase creativity, flexibility and employability, developing their networks and offering a chance to test learning in environments beyond King’s. For academics, art and artists can provoke imaginative perspectives

on research questions as well as new mechanisms to communicate findings to a broader public. The contribution that arts and culture can make to problem solving and innovative thinking is in no way restricted to disciplines within the arts and humanities. Research at Michigan State University found that creative experiences are ‘significantly correlated with producing patentable inventions and founding new companies’ and that lifelong participation in the arts ‘yields the most significant impacts for innovators and entrepreneurs’. The university’s new Strategic Vision is underpinned by this approach to partnership and its potential to help King’s achieve its ambitions on the road to its 200th anniversary, in 2029.”

Deborah Bull, Assistant Principal (London), King’s College London



“During my time at Arts Council England we became a truly research-driven organisation, thanks to an expanded unit in Manchester which informed all our policy initiatives. At the same time we saw the crossover between technology and creativity take flight...with games, Virtual Reality and other embryonic sparks yet to be fully realised. To this I might add the diligent consumer research we rely on in media to shape our programme offer.

All well and good. But perhaps the research I value above all recognises the serendipitous discoveries that intriguing research projects, with no obvious initial utility, eventually yield. So, yes to research; yes to funded research and please don’t make it solely utilitarian.”

Sir Peter Bazalgette, British television executive and author



“The King’s College London survey of the creative role of research shows the extent to which academic research is engaging with the cultural and creative sector and role the creative sector plays in maximising the impact of academic research. The opportunities and benefits of such collaboration are mutual. This

report provides a platform for discussion as to how the huge body of existing research informs creative practice and public understanding.”

Jenny Waldman CBE, Director, 14-18 NOW, Cultural Fellow at King’s



“I am one of a number of academic scientists who have been working for several years to integrate conversations about science – by which I mean, broadly, the scientific method of enquiry, as well as the discoveries of modern science – into popular culture. I included my work in communicating science through my writing and broadcasting into an impact case study for my physics department’s submission into the last REF exercise. As such I had to stress just how integral my research has been in enabling me to achieve what I have

in public engagement. I continue to carry out research in theoretical physics within the nuclear physics group at the University of Surrey and I also publish papers in a new field of research called quantum biology. For me, the joys of fundamental research and of enthusing the wider public about what I do are integral to each other.”

Jim Al-Khalili OBE, Professor of Physics and Professor of Public Engagement in Science, University of Surrey, Cultural Fellow at King’s



“In my work with King’s I have had first-hand experience of the ground-breaking new ideas that can be catalysed through the collaboration of scholars, artists and arts professionals. From a new vision for the future of Carnival, to the creation of a Museum of Homelessness, to enhanced communication between young people and clinicians through interactive forum

theatre, the breadth and depth of new work emerging at the interface between Higher Education and the creative and cultural sector in the UK is innovative, pioneering and vital.”

Hilary Carty, Director, Clore Leadership Programme, Cultural Fellow at King’s



“As somebody working in the creative industries, I’m acutely aware that we still rely far too much on anecdote and optimism rather than solid research and analysis as a basis for thinking about the future. For a sector whose success depends, almost by definition, on the generation of new knowledge and an understanding of new and unexpected dynamics, that’s crazy. Robust

research doesn’t just give us a better understanding of what works in our world and why, it’s the window that allows the academic world to better understand the needs, recognised and unrecognised, of the creative economy.”

John Newbiggin OBE, Chairman, Creative England



“The roles of research and collaboration are a rich – and urgent – part of the cultural and educational landscape in the UK today. Many artists and academics regularly come together to share their knowledge, and to create multi-arts projects that are innovative, thought-provoking and entirely unique. Even better, their explorations often cross cultural, intellectual and national boundaries, as well as create

new audiences for their work. The higher education sector in the UK is a brilliant crucible for forging new ideas and partnerships: in dance, music, literature, visual arts and more.”

Professor Joanna MacGregor OBE FRAM, Head of Piano, Royal Academy of Music, University of London, Cultural Fellow at King’s



“The hope is that these growing creative catalyzations, inter-disciplinary partnerships and deep collaborations with culture will open up the academy to the broader public in ways that might truly alter our understanding of research and education. We are entering an age of burgeoning cross-disciplinary collaboration – of new creative mechanisms for the analysis, presentation, and

dissemination of research, of new forms of academic output that will utterly explode traditional intellectual silos.”

Dr Gus Casely-Hayford, British curator, cultural historian and Director of the National Museum of African Art in Washington, Cultural Fellow at King’s



“Making art is in many ways like research: it is a process of exploration, experiment, and discovery. I look forward to closer collaboration between creative practitioners and multi and interdisciplinary researchers. Collaboration and exchange, based on mutual respect and trust, can enrich arts practitioners

and academics alike, providing challenge and stimulus. The opportunity to reflect on practice and incubate new ideas leads to unexpected outcomes and innovation.”

Sue Hoyle OBE, Cultural Fellow at King’s



'Madness & Modernity', © Wellcome Collection



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'Performing Migration' © Mark Loudon

Executive summary

The Research Excellence Framework (REF) is a national assessment exercise that measures the quality of research undertaken across all UK universities. In 2014 this included, for the very first time, an enquiry into the *impact* of academic research beyond Higher Education (HE) in the form of brief narrative case studies.

Impact was defined by the Higher Education Funding Council for England (HEFCE) as ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’. The two key criteria highlighted by HEFCE for the assessment of impact were *reach* and *significance*. Though the definitions of these terms differed between each academic panel tasked with scoring research impact (see Section 4.1), they broadly focus on the scale and diversity of beneficiaries, and the ways in which academic research has made a difference for an individual or community, policy or practice.

A total of 6,975 impact case studies were submitted to the REF 2014 exercise, most of which are now available in the public domain in a searchable online database. This database provides a rich source of information about the ways in which researchers have engaged with projects and programmes in the creative and cultural sector, many of which had their genesis long before impact was incorporated into research assessment practices.

This report seeks to understand the relationship between all fields of research and their impact within the creative and cultural sector. Based on an analysis of 1,582 impact case studies from the above database that were identified in this study as being germane to the sector, the report illuminates the different types of impact described, discusses the activities and partnerships that gave rise to those impacts, and offers an account of the forms of evidence used to support the impact claims. It does not, however, seek to make judgements about the quality of the REF impact projects described, nor does it contain guidance on writing impact case studies. Rather its goal is to better understand the longstanding ways in which academics and creative practitioners have forged relationships, collaborated, borrowed from and influenced one another.

We hope that *The Creative Role of Research* will inspire researchers from a wide range of academic disciplines to foster new opportunities to collaborate with the creative and cultural sector and, at the same time, illuminate for artists and creative professionals the manifold ways in which academic research can inform and develop their practice.

Headline findings

For the creative and cultural sector

- The creative and cultural sector plays a significant role in maximising the impact of research in the UK. REF 2014 demonstrated that there was a degree of interaction with the sector appearing in a quarter of the total number of impact case studies available for analysis.
- *Informing creative practice* and *transforming public understanding* were the primary areas impacted through researcher involvement in the creative and cultural sector in REF 2014.
- The creative and cultural sector was linked to research from a wide range of academic disciplines. While there are strong disciplinary links between research in the arts and humanities, considerable interdisciplinary activity also takes place between the sector and all fields of academic research.
- Creative and cultural sector collaboration with HE enabled knowledge exchange on a broad range of topics, from science and politics to human rights and social responsibility, which in turn facilitated new creative responses to issues of social and political significance.

For the HE sector

- The impact of research in the arts and humanities, the research discipline primarily associated with creative and cultural sector, scored more highly than any other discipline in REF 2014, having received the highest concentration of world-leading rankings (4*) for the reach and significance of its research.
- HE partnerships and collaborations with local and regional cultural organisations were far outnumbered by projects describing work with a national or international partner. This indicates the important role that national cultural organisations play in bringing research to wider audiences but also suggests there is an as yet untapped opportunity for universities to develop more work with sector organisations based outside of the capital.
- Research impact on or through the creative and cultural sector is seldom achieved through a single, focused activity or mechanism: it is

the product of various interdependent, yet often disparate activities spanning multiple areas.

- Research impact was not evaluated by just one yardstick but through a web of indicators. While evaluation of *reach* was largely evidenced through quantitative data, evaluation of *significance* was more nuanced, ranging from evidence that acted as an endorsement or a pledge to think or act differently in the future, to reflections on longer-term change. However, across all evidence types, evaluation of research impact was most often anchored in the immediate period after an event or activity, rather than over a longer term.

Using the REF alone to understand the nature of exchanges between universities and the creative and cultural sector is limited to showing what research has done for the creative and cultural sector and not what the sector can do for research. Developing a two-way dialogue may enhance understanding of the benefits of partnership to the development of research and the generation of new knowledge.

Further breakdown of key findings

Which academic research disciplines have an impact on or through the creative and cultural sector?

- While research impact on and through the creative and cultural sector had close ties with research in the arts and humanities, the sector nevertheless interacted with almost all fields of academic study. 75 per cent of the case studies that were identified in this study as being relevant to the sector came from the arts and humanities, with the remainder coming from other fields.
- The academic disciplines with the greatest interaction with the creative and cultural sector in REF 2014 were:
 - English language and literature (15 per cent sample, 238 case studies)
 - history (14 per cent sample, 222 case studies)
 - art and design: history, practice and theory (11 per cent, 176 case studies).

Beyond the arts and humanities, other prominent disciplines were:

- geography, environmental studies and archaeology (5 per cent sample, 79 case studies)
- psychology, psychiatry and neuroscience (3 per cent sample, 41 case studies)
- physics (1 per cent sample, 23 case studies).

What form did research impact take in or through the creative and cultural sector?

- There were eight key areas in which researcher engagement with the creative and cultural sector had an impact. Listed by the most prominent type first, these include:
 - influencing industry practice
 - transforming public understanding
 - audience development
 - informing pedagogy and curricula
 - social change
 - policy development
 - economic growth
 - improving health and wellbeing.
- ‘Influencing industry practice’ within the creative and cultural sector was the primary area in which research had an impact, with research collaboration and practice-led research making a marked contribution to innovative practice.
- The creative and cultural sector played an important role in ‘transforming public understanding’ by translating research into impacts on opinions and behaviour, and brokering wider audiences for academic research (‘audience development’) through the translation of research findings into more widely accessible formats. The prevalence and quality of such impacts suggests that research collaborations are being utilised to address issues of social and political significance by combining research with creative practice.

How did researchers engage with the creative and cultural sector?

- The partnerships that researchers engaged in, be it on a local, national or international scale, were the product of both direct and indirect engagement with the creative and cultural sector:
 - 89 per cent of case studies described a collaboration that researchers had initiated directly or proactively contributed to.
 - 67 per cent reported researcher involvement in an advisory capacity or as a featured expert.
 - 18 per cent included examples of indirect forms of collaboration, with no contact between the researcher and the practitioner.

What was the geographic spread of researcher engagement with creative and cultural sector partners?

- In REF 2014, researchers primarily engaged with cultural organisations in the UK that have a national or London remit. Of the regional creative and cultural partners in the UK cited by researchers, 79 per cent were based in England.
- Just over a third of collaborations or partnerships with the sector were located outside of the UK, spanning six continents. These were concentrated in Europe, with 47 per cent of international partner organisations situated in one of 19 European countries.

What were the activities or mechanisms that enabled research to have an impact?

- 68 discrete activities or mechanisms (see Section 3.1) led to research impact on or through the creative and cultural sector. These research mechanisms were rarely cited in isolation, with an average of six mechanisms being presented per case study.
- The most prevalent impact mechanism cited was public talks, which occurred in 43 per cent of case studies analysed.
- Activities related to ‘music, performing and visual arts’, ‘film, TV, video, radio and photography’ and ‘museums, galleries and libraries’ emerged as hot spots for sector engagement with research.

How did researchers evaluate and evidence impacts involving the creative and cultural sector?

- 18 distinct evidence types (see Section 4.1) were specifically used to describe or evaluate the presence and extent of research impact involving the creative and cultural sector.
- Impact generated from creative projects was not evaluated by just one yardstick but through a web of indicators, with an average of five evidence types supporting each case study.
- Evidence of *significance* was the most common means of evaluation, underpinning the impact narratives in 97 per cent of the case studies in the sample; evidence of *reach* appeared in 88 per cent of the case studies analysed.
- Evaluating research impact in the creative and cultural sector was as much about validating and contextualising the activities that enabled an impact as it was about supplying evidence that corroborated impact directly. While testimonials were the most common way in which a change in opinion, practice or policy was illustrated, other forms of evidence, such as indicators of reach, critical reviews or levels of income, predominantly communicated the scale, quality or repute of the activities that enabled an impact.

What were the limitations of the evaluation methods and evidence used to describe impact?

- The narrative approach to describing reach precluded an analysis of the data gathered on anything but a thematic basis due to the inconsistency of the quantitative measures used.
- Information about reach offers little indication of the demographics represented by quantitative measures; this is essential if we are to fully grasp the public benefit of research. The case studies also offer limited evidence of how researcher engagement has contributed to wider economic activity within the sector: researchers seemed reluctant to use financial indicators if there was not a clear and causal link between the research and income generation, even in cases where wider economic activity was likely to have occurred.
- The evaluation of significance was predominantly anchored in the immediate period after exposure, typically communicating an endorsement or a change in opinion for the short term.
- The most effective examples of change confirm that, even within the constraints of the REF’s reporting guidelines, evaluation is not something that occurs at a set point at the end of a project, but is a reflexive process that is more usefully set in motion at the beginning of a project, and extends long beyond its end.

Key areas identified for further investigation include:

- An enquiry into how the strong, yet underutilised links between practice-led research in the arts and mental health services are helping to improve provision for mental health illness.
- A review of the ways in which activities in the creative and cultural sector help build communities.
- An analysis of whether the relative deficit of impacts on policy, economy and health were a product of barriers to working in these areas with and through the creative and cultural sector.
- A review of the ways in which engagement with research may play into a bigger impact strategy for creative and cultural sector organisations.
- An analysis of how frequently creative and cultural organisations draw upon academic research without direct collaboration with the author of the research.

Answers to these questions fall beyond the remit of the REF, but are critical for gaining a more complete picture of how research informs work in the creative and cultural sector.

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Introduction



'Latin London: Improving the Visibility of Latin Americans in the UK' © Cathy McIlwaine

Researchers and creative practitioners have a long history of collaboration, yet it was not until 2014 that the impacts and fruits of these collaborations were formally assessed within Higher Education (HE), following the introduction of the ‘impact’ agenda to the UK government’s Research Excellence Framework (REF). This report uses the evidence gathered as part of this exercise to chart the current state of the interactions between HE and the creative and cultural sector, identifying opportunities to strengthen those links and more effectively measure their impact.

“Departments in the arts and humanities had the highest concentration of world-leading impact rankings, with this discipline seeing the largest cluster of departments awarded 4* rankings for their submissions to the impact component of REF 2014.”

The first nationwide assessment of the ‘impact’ of research beyond the academic community was launched in the UK in 2014 as part of the government’s Research Excellence Framework (REF). The REF is a national assessment exercise that measures the quality of research from all UK universities, the results of which inform the allocation of government research funding. In 2014, for the very first time, this included an enquiry into the reach and significance of academic research beyond HE in the form of brief narrative impact case studies.

6,975 impact case studies were submitted to REF 2014; all were subsequently made available in an online database¹ commissioned by the Higher Education Funding Council for England (HEFCE), with the exception of 296 case studies of a confidential or sensitive nature. Far from being the residue of an administrative exercise, this repository yields unprecedented and rich information about the longstanding ways in which academics and creative practitioners have forged relationships, collaborated, borrowed from and inspired one another.

The role of the creative and cultural sector in maximising the impact of research was clearly apparent in the REF. Not only was the sector present in just under a quarter of all impact case studies available for analysis, research from the arts and humanities, the discipline most closely associated with the creative and cultural sector, performed particularly highly in terms of impact: departments in the arts and humanities had the highest concentration of world-leading impact rankings, seeing the largest cluster of departments awarded 4* rankings for their submissions to the impact component of REF 2014.²

With this in mind, our guiding questions were as follows:

- Which academic research disciplines have an impact on or through the creative and cultural sector?
- What form did research impact take?
- How did researchers engage with the creative and cultural sector?
- What was the geographic spread of researcher engagement with creative and cultural sector partners?
- What were the activities or mechanisms that enabled research to have an impact?
- How did researchers evaluate and evidence

impacts involving the creative and cultural sector, and what were the limitations?

- What was the time lag between the originating research and impact, and at what stage in the research lifecycle did impact occur?

1.1 Background and context

The REF was designed to show accountability for the use of taxpayers’ money for research and to inform the allocation of government funds to research in a way that was proportionate to public benefit. Historically, this was achieved through peer review of outputs such as books or journal articles and assessing the institutional environment in which the research had been cultivated; however, in the 2014 exercise this was broadened to include an assessment of the impact beyond academia (see Appendix 1).

Impact was defined in REF 2014 as ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’.³ This included, but was not limited to: ‘the activity, attitude, awareness, behaviour, capacity, opportunity, performance, policy, practice, process or understanding; of an audience, beneficiary, community, constituency, organisation or individuals; in any geographic location whether locally, regionally, nationally or internationally’. Impacts on research itself, or on advancing academic knowledge within the HE sector, were not eligible, neither were impacts on students, teaching or other activities within the submitting institution.

Impact was reported as free-text case studies, typically four pages in length. These case studies were submitted into one of 36 disciplinary areas, which were assessed by appointed experts in the field, working under the guidance of four main panels (see Table 1).⁴ Each case study was divided into five sections:

1. Summary of the impact
2. Underpinning research
3. References to the research
4. Details of the impact
5. Sources to corroborate the impact.

Since the results were published in December 2014, interest has been building in the body of case

¹ impact.ref.ac.uk/CaseStudies

² 15 departments from the arts and humanities received the top 4* ranking for impact, which indicates that the case studies submitted were world-leading in terms of their originality, significance and rigour. The next highest was the social sciences with 12 departments, followed by biological sciences and medicine with 11. Just two departments within physical sciences and engineering were awarded 4*. See results. ref.ac.uk/

³ HEFCE, *Assessment Framework and Guidance on Submissions* (2011): p. 48. Available at ref.ac.uk/pubs/2011-02/.

⁴ ref.ac.uk/

Table 1: Panels and academic disciplines

Panel A: Biological Sciences and Medicine
Clinical Medicine
Public Health, Health Services and Primary Care
Allied Health Professions, Dentistry, Nursing and Pharmacy
Psychology, Psychiatry and Neuroscience
Biological Sciences
Agriculture, Veterinary and Food Science
Panel B: Physical Sciences and Engineering
Earth Systems and Environmental Sciences
Chemistry
Physics
Mathematical Sciences
Computer Science and Informatics
Aeronautical, Mechanical, Chemical and Manufacturing Engineering
Electrical and Electronic Engineering, Metallurgy and Materials
Civil and Construction Engineering
General Engineering
Panel C: Social Sciences
Architecture, Built Environment and Planning
Geography, Environmental Studies and Archaeology
Economics and Econometrics
Business and Management Studies
Law
Politics and International Studies
Social Work and Social Policy
Sociology
Anthropology and Development Studies
Education
Sport and Exercise Sciences, Leisure and Tourism
Panel D: Arts and Humanities
Area Studies
Modern Languages and Linguistics
English Language and Literature
History
Classics
Philosophy
Theology and Religious Studies
Art and Design: History, Practice and Theory
Music, Drama, Dance and Performing Arts
Communication, Cultural and Media Studies, Library and Information Management

studies submitted to the impact component of REF 2014 as research objects in their own right. Within the creative and cultural sector, for example, the Museum University Partnership Initiative (MUPI) published a report in 2016, in which the case studies were used to survey the current state of partnerships between museums and researchers in the UK.⁵ Yet the bigger picture of research impact in the creative and cultural sector has remained, until this report, unexplored. What types of impact

does the sector enable? What role do researchers fulfil within the sector, and how do we measure the reach and significance of this activity? As the first research assessment exercise in which impact beyond academia was measured, REF 2014, while not without its flaws, offers some of the most comprehensive insight ever gathered to enable us to begin to answer these questions.

1.2 Approach

The selection of case studies for analysis in this report was informed by previous research undertaken in the Policy Institute at King's College London, from which we identified 1,582 case studies that were germane to the creative and cultural sector.

With more than six million words in the 'Details of the impact' sections alone, the Policy Institute study used topic modelling to uncover hidden themes – or 'topics' – that occur throughout the 6,679 impact case studies available for analysis. 60 impact topics or areas where research influences society, such as medical ethics, climate change, clinical guidance, and women, gender and minorities, were identified.

Drawing on the outcomes of this topic modelling exercise, the research sample for this report was selected by collating all 1,582 case studies tagged with topics relating to the creative and cultural sector. The selection of case studies was therefore not based on the underpinning research or submitting department, but on themes described in the body of the case study that are relevant to the sector.

Of the 60 topics identified in the first report, nine topics were selected as being relevant to the sector:

- 'Arts and culture' (231 case studies)
- 'Cultural and heritage preservation' (171 case studies)
- 'Film and theatre' (139 case studies)
- 'Historical archives' (285 case studies)
- 'Literature' (166 case studies)
- 'Media' (630 case studies)
- 'Museums and exhibitions' (192 case studies)
- 'Music, dance and performance' (134 case studies)
- 'Print media and publishing' (253 case studies).

After closer reading, three of these topics were renamed for the purpose of this report to better reflect the content of the case studies that they identify. In the remainder of the report, 'Cultural and heritage preservation' will be referred to as 'Heritage and conservation', 'Literature' as 'Fiction, poetry and literature', and 'Arts and culture' as 'Visual arts'.

In addition to analysing the entire sample quantitatively to understand the relationship

5 National Co-ordinating Centre for Public Engagement, Share Academy, *Museum-University Partnerships in REF Impact Case Studies: A Review* (2016). Available at publicengagement.ac.uk/sites/default/files/publication/mupi_ref_review.pdf



between the discipline of the originating research and the impact area, over a quarter of the sample (417 case studies) was read and analysed in more depth (see Appendix 2 for further information about the analytical 'coding' process).⁶ Besides capturing the earliest date cited under the 'References to the research', this qualitative analysis focused on the narrative information supplied under the 'Details of the impact', in which we captured:

- Types of impact reported
- Activities and mechanisms that enabled the impact
- Sector partners
- Types of evidence used to evaluate impact.

We analysed this section of the case study submission form as a standalone statement, unless it required further contextualisation. The supporting information presented under 'Sources to corroborate the impact' was not included in the analysis, as it tended to repeat what was already described in more detail under 'Details of the impact', and frequently made reference to sources that were not in the public domain, such as email exchanges or confidential data collected by partnering organisations.

1.3 Caveats

Using the REF case studies as material for analysis comes with a number of important caveats. These limitations should not undermine the analysis but help to frame its interpretation.

1. The case studies can be a problematic source for analysis as they were written for assessment, not analysis. The impacts reported were therefore selective, compiled according to a specific set of requirements and guidelines⁷ that were published to assist in preparing impact case studies. This means that some activities within the sector may have gone unreported.
2. Impact was reported in a free-text format. As a result, much of the information captured is described inconsistently, especially quantitative and geographic information. Comparisons of the scale or reach of the impact were therefore not possible with the data available.

3. A small number of case studies relating to the creative and cultural sector may not have been picked up in the topic modelling, the purpose of which is to identify high-level themes and patterns in the data.⁸ Topic modelling is based on probability and therefore subject to chance and variation; as such, the output can differ slightly each time the analysis is run. What is captured also depends on how many topics are specified and how well suited this number is to the data. Accordingly, certain areas of the sector may not be as well represented as others.

4. REF 2014 was the first time that impact had been included as a category in the assessment of research; as a consequence, there was considerable uncertainty across the HE sector about how impact would be assessed and what would and would not count. This is likely to have led to risk aversion and to a curatorial approach by universities to their impact case study submissions. Many examples of research impact will have therefore gone unreported and as such are unavailable for analysis.

5. Once research has been released into the public domain, it is only ever possible to capture a partial picture of how it is used to inform policy, practice or production beyond the university walls, thereby limiting a fully comprehensive understanding of research impact overall.

Further, we do not link case studies to their ranking by the expert panels. Since information about the ranking of individual impact case studies is not in the public domain, our criteria for showcasing case studies was instead focused on those that were well evidenced, that reflected trends in reporting, or that showed unusual or inspiring approaches to working with the sector.

What this report offers is not, therefore, tactical approaches to perform well in the REF, nor does it attempt to assess the quality of the case studies that underpin the analysis. Rather, we have valued the introduction of the impact agenda to REF 2014 as a unique opportunity to take stock of the ways in which academics and creative practitioners have worked together, long before it was incentivised by assessment practices.

⁶ We began with a sample of 432 case studies. This included 48 case studies from each of the nine impact topics that were identified as being relevant to the sector via a process of topic modelling. 16 case studies from each topic were selected where it was identified as the most relevant topic in the case study's narrative, 16 where it was the second most relevant and 16 where it was the third. The sources were otherwise selected at random. During the analysis we also identified and excluded 15 false positives, leaving a final sample of 417 case studies.

⁷ See ref.ac.uk/pubs/

⁸ For further information about the topic modelling underpinning our analysis, see: King's College London, and Digital Science. *The Nature, Scale and Beneficiaries of Research Impact: An Initial Analysis of Research Excellence Framework (REF) 2014 Impact Case Studies* (2015). Available at kcl.ac.uk/sspp/policy-institute/publications/Analysis-of-REF-impact.pdf

—2—

Research impact in the creative and cultural sector



'Cultural Policy and Practice Exchange
between Britain and Brazil' © Ellie Kurttz

This section identifies the nature of research impact in the creative and cultural sector, both in terms of the fields of research *flowing into the sector* and the types of impact *generated from within the sector*. Section 2.1 offers a quantitative analysis of all 1,582 case studies relating to the creative and cultural sector, tracing the research disciplines that had an impact on or through work in the sector. Section 2.2 identifies the types of impact claimed, presenting a qualitative analysis of a smaller sample of 417 case studies, supported by illustrative examples. The case studies that are featured are intended to reflect common, innovative and unusual ways in which researchers have achieved impact; they were not selected on the basis of their performance in the REF, nor are they necessarily indicative of how impact was claimed across the sample as a whole.

“We found that the creative and cultural sector is linked to research from a wide range of academic disciplines.”

2.1 From which research disciplines did impact originate?

The research disciplines that underpinned impacts involving the creative and cultural sector were inherently multidisciplinary. We found that the sector is linked to research from a wide range of academic disciplines, with 75 per cent of impacts originating from research in the arts and humanities and the remaining 25 per cent coming from diverse disciplinary areas.

Figure 1 shows that each impact topic was associated with research from at least two academic panels, with six of the nine topics linked to research from all four.

Drilling down further to a disciplinary level, we found that:

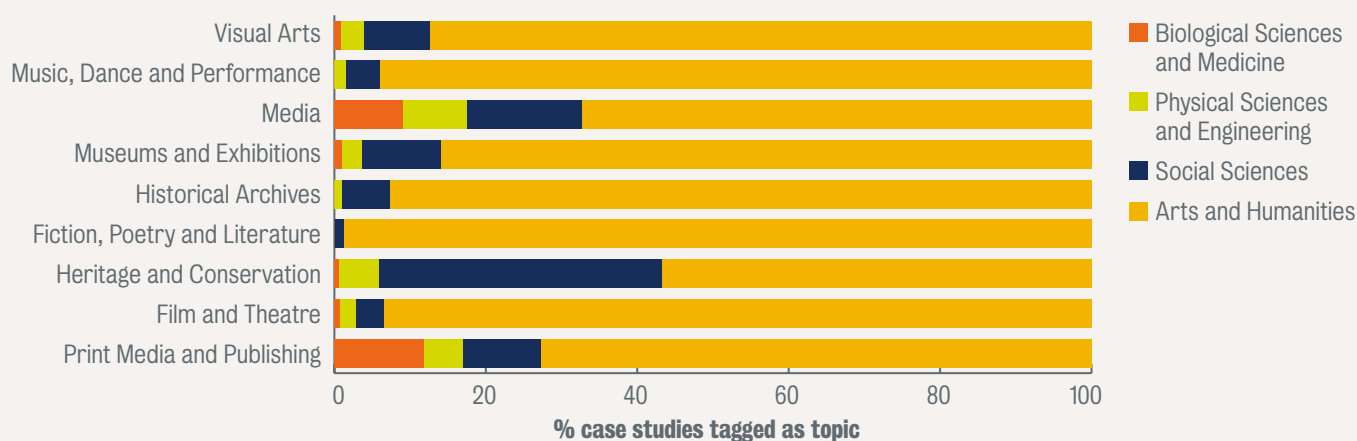
- Just one of the 36 disciplines listed in Table 1 (see page 06), civil and construction engineering, was absent in our sample.
- There were clear links between disciplinary areas within the arts and humanities and related areas of the creative and cultural sector, such as research from history having an impact within ‘Historical archives’ (122 case studies), or art and design having an impact within the ‘Visual arts’ (100 case studies). The impact topic ‘Media’ spanned the most academic disciplines. Within the arts and humanities, history (100 case studies) had the greatest impact on media;

yet outside of the arts and humanities, areas of research that achieved impact via the media were psychology, psychiatry and neuroscience (24 case studies), physics (20 case studies), politics and international studies (20 case studies) and sociology (13 case studies), among several others.

- Some common impact pathways originating from research disciplines outside the arts and humanities linked case studies from geography, environmental studies and archaeology to impacts within ‘Heritage and conservation’ (55 case studies) and ‘Museums and exhibitions’ (13 case studies).
- Among the less common impact pathways, there are intriguing examples of research reaching unexpected areas of the sector, such as work from the biological sciences feeding into the topic ‘Visual arts’ (1 example), or from computer science and informatics into the topic ‘Film and theatre’ (1 example).

This interdisciplinarity is reflected on a case study level in the alluvial diagram in Figure 2. The connections drawn in Figure 2 reveal associations between certain arts and humanities disciplines and related areas of the sector, albeit embedded within a muddle of interdisciplinary activity. For example, a thick yellow line connects the research disciplines of music, drama, dance and performing arts on the left axis with the impact topic ‘Music, dance

Figure 1: Representation of academic panels per topic



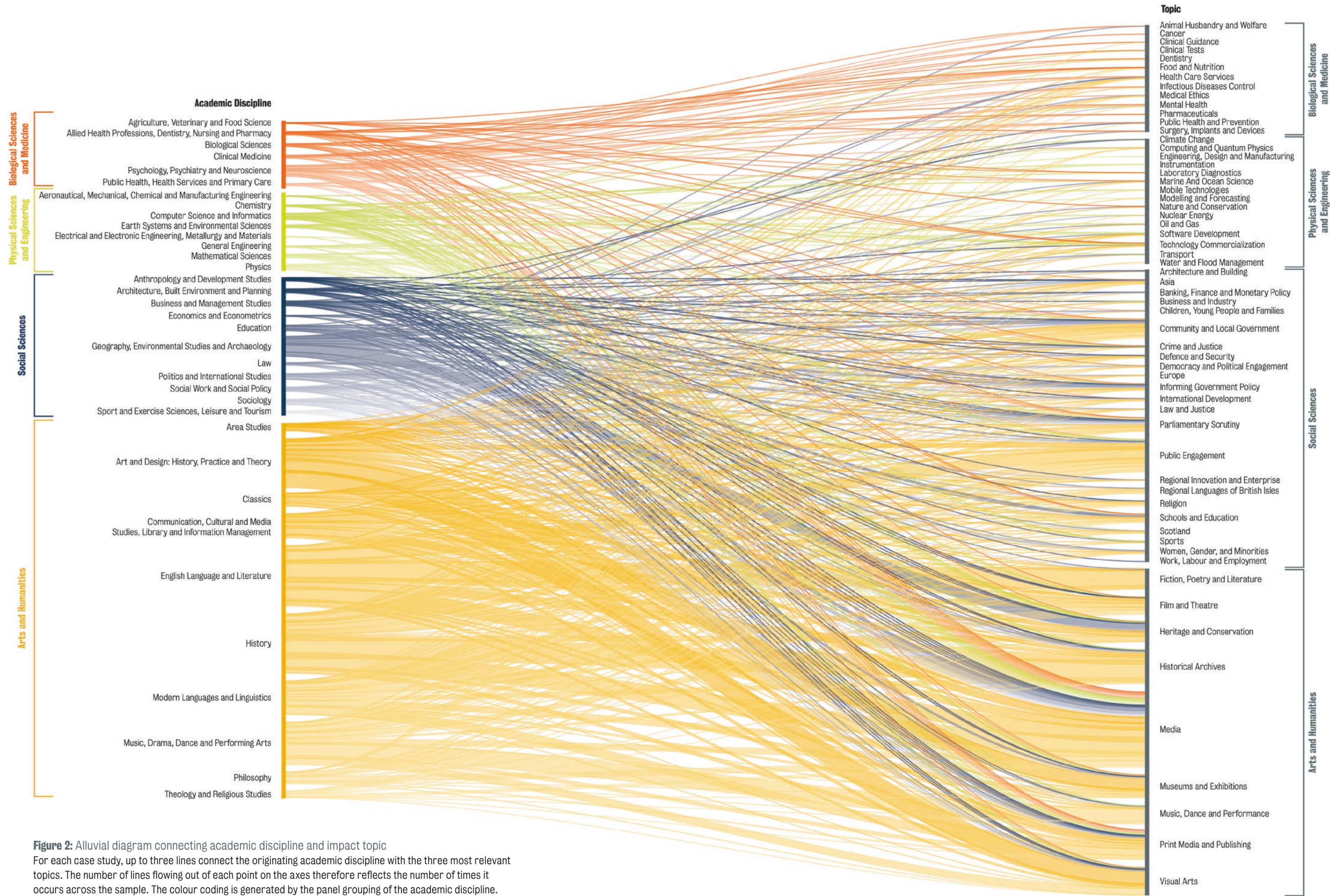
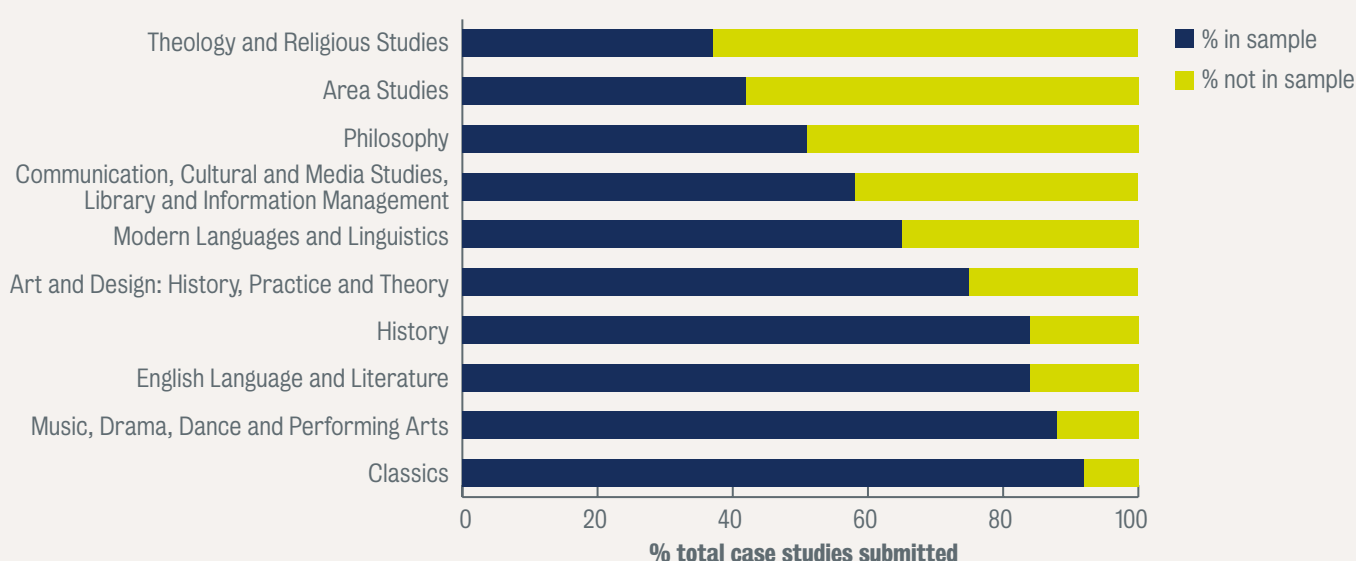


Figure 2: Alluvial diagram connecting academic discipline and impact topic
For each case study, up to three lines connect the originating academic discipline with the three most relevant topics. The number of lines flowing out of each point on the axes therefore reflects the number of times it occurs across the sample. The colour coding is generated by the panel grouping of the academic discipline.

Figure 3: Representation of arts and humanities subjects in creative and cultural sector impact topics

and performance’ on the right, indicating that this pairing occurred in over half (97 out of 172) of the case studies in our sample from this academic discipline. But while there was a strong connection between research in this field and related activity within the sector, research originating from music, drama, dance and performing arts also had an impact in many other areas:

- The ‘Visual arts’ had a strong connection to research from music, drama, dance and performing arts (44 case studies, 26 per cent of the case studies submitted in this category), as did ‘Media’ (36 case studies, 21 per cent), ‘Film and theatre’ (32 case studies, 19 per cent) and ‘Public engagement’ (32 case studies, 19 per cent).
- Research in music, drama, dance and performing arts also impacted beyond the creative and cultural sector, the most prominent topics being ‘Community and local government’ (16 case studies, 9 per cent of the case studies submitted in this category), ‘Schools and education’ (7 case studies, 4 per cent) and ‘Informing government policy’ (6 case studies, 3 per cent).
- Of the 134 case studies that impacted on ‘Music, drama and performance’ practice, 28 per cent similarly originated from research within indirectly related fields: English language and literature was most prominent (12 case studies, 9 per cent of case studies captured under this impact topic), followed by modern languages and linguistics (6 case studies, 4 per cent), art and design (6 case studies, 4 per cent), and education (4 case studies, 3 per cent).

This pattern was also repeated in several other disciplines. While just under half of the case studies from English language and literature were

linked to the corresponding topic ‘Fiction, poetry and literature’ (117 out of 238), this field of research also impacted upon:

- ‘Media’ (87 case studies, 37 per cent)
- ‘Public engagement’ (69 case studies, 29 per cent)
- ‘Historical archives’ (49 case studies, 21 per cent)
- ‘Community and local government’ (20 case studies, 8 per cent)
- ‘Print media and publishing’ (19 case studies, 8 per cent).

There were areas of research in the arts and humanities that were not, however, well represented in our sample. As shown in Figure 3, Theology and religious studies, and Area studies were the least well represented. The remaining disciplines from the arts and humanities, by contrast, had an average representation within our sample of 75 per cent, Philosophy being the lowest at 51 per cent and Classics the highest at 92 per cent. Case studies from under-represented research disciplines would benefit from further investigation to identify hot spots for their impact beyond the creative and cultural sector.

Figure 2 also captures the flow of research from disciplines beyond the arts and humanities into the sector. This is visible in the combination of red, green and blue lines flowing into the bottom nine topics in the right-hand axis: research from biological sciences and medicine is linked to all but three of the impact topics relating to the creative and cultural sector; physical sciences and engineering is linked with all but one; and social sciences intersects with all nine impact topics. This suggests that while there are strong disciplinary links between research in the arts and humanities and related areas of the sector,

considerable interdisciplinary activity is also taking place between the sector and all fields of academic research.

The disciplinary nuances displayed in Figure 2 add a new interpretation to the wider analysis of research impact. The previous analysis of research impact across all case studies submitted to REF 2014, from which our topic analysis was derived, suggested strong interdisciplinarity, with many disciplines leading to a variety of diverse impact topics.⁹ However when, in this study, we focused in on the creative and cultural sector, we found that this interdisciplinary activity coexisted with strong disciplinary links between the academic field and the area of the sector. It would be instructive to see the extent to which this is mirrored in other sectors to better understand the interdisciplinary origins of impact.

2.2 What form does research impact take?

The types of impact described by researchers took various forms. Whereas some reported influencing practice *within* the creative and cultural sector, others discussed the ways in which their work had come to inform policy, education or public understanding *through* the sector; some researchers described transforming the outlook of an individual, whereas others appealed broadly to economic growth or impacts in healthcare, conservation or politics.

We captured all of the impact claims made in our qualitative sample of 417 case studies,¹⁰ subsequently grouping them into eight main types (see Figure 4). Our criteria for coding these impact types was deliberately broad and driven by the content of the case studies. The impact types captured were also not mutually exclusive: a single case study tended to include a range of impact claims, with an average of three claims cited per case study.

2.2.1 Influencing industry practice

Influencing industry practice was the most common type of impact to appear in our sample, featuring in 249 case studies (60 per cent of the case studies analysed). Two-thirds of these spoke to influencing a creative approach or enhancing the professional development of a practitioner. Yet other forms of impact on the sector included informing programming, commissioning or acquisitions, inspiring an artwork or project, bringing an innovation to the sector, or creating opportunities for growth – be it establishing networks or spaces for performance, or boosting the profile of an individual.

These claims were common among researchers active as practitioners in their own right, underpinning just over two-thirds of all practice-led case studies, which made up one-fifth of the sample overall. A typical example of a practice-led case study can be found in Case Study 1, which features the work of Lois Weaver, a performance artist, writer, director and activist from Queen Mary University of London. As a practitioner and mentor, Weaver has developed new spaces for the production and presentation of live performance, and supported the expansion of live art programming among curators.¹¹

Physical and computer sciences also had a strong presence in the provision of services to the sector. For example, in 2004 researchers from the Centre for Numerical Modelling and Process Analysis at the University of Greenwich helped to facilitate the restoration of the Cutty Sark, producing a digital model that predicted how the intricate elements of the ship's complex structure would respond to variations in temperature, pressure, vibration and humidity over time (see Case Study 2).¹²

2.2.2 Transforming public understanding

Transforming public understanding was the second most common type of impact, occurring in 219 case studies (53 per cent of the sample

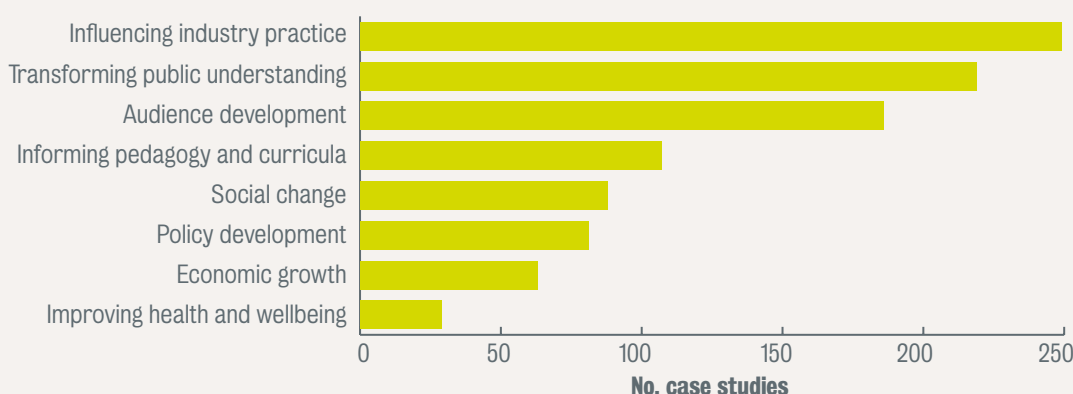
9 King's College London, and Digital Science. *The Nature, Scale and Beneficiaries of Research Impact* (2015): 38–39.

10 This sample included 48 case studies from each of the nine impact topics relevant to the sector. 16 case studies were selected from each topic where it was identified as the most relevant theme in the case study's narrative, 16 where it was the second most relevant, and 16 where it was the third. The sources were otherwise selected at random. During the analysis we also identified and excluded 15 false positives, leaving a final sample of 417 case studies.

11 'Transforming Publics and Participation through Performance', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?id=19055

12 'Applying Computational Reliability Engineering to the Conservation of Maritime Heritage Structures', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?id=3920

Figure 4: Impact types



analysed). These forms of public education did not just include knowledge exchange on issues related to arts and culture, which occurred in just 80 case studies that described a change to public understanding, but included the dissemination of information and generation of discussion about 13 additional themes. As shown in Figure 5, these ranged from the transfer of knowledge about history, science or local heritage to tackling issues of identity, gender and sexuality, human rights and social equality.

The activities that enabled such impacts on public education ranged from public talks and conference papers to the dissemination of findings through broadcasting and partaking in creative projects. Practice-led research had an interesting presence in transforming public understanding,

accounting for a fifth of all case studies in our sample that described an impact in this area. In some instances, the role of the creative and cultural sector was to translate complex ideas into a more digestible format. For example, Rob Kessler, an artist from the University of the Arts London, collaborated with scientists from the Royal Botanic Gardens in Kew to present the 'intricate structure, forms and functions of botanical subjects' through microscopic representations of plant material of fruits, seeds and pollen. The aim of this work was to increase public understanding and support for the conservation work undertaken at the gardens¹³, making accessible knowledge previously available only to a small scientific community. Through being exhibited at Kew, the work reached an estimated

Case Study 1: Transforming publics and participation through performance

The work of Lois Weaver (Queen Mary University of London) combines practice as an artist, curator and activist. Her work has emphasised greater social engagement in live art practice, encouraging diverse and often marginalised communities to make meaningful contributions to discussions of urgent social issues. Central to this body of work is the question 'how can popular theatrical forms, sometimes deeply conventional, be redeployed to discover new gender possibilities, to challenge the traditions of theatrical practice, and, above all, to engage audiences in active conversation about their own lives?'

Weaver has influenced the practice of emerging and established artists as well as curation and programming practices pertaining to live art. Through workshops and mentoring, she has supported a range of artists. She has also opened

up new spaces for the production and presentation of live performance, and actively supported other curators in the expansion of live art programming. As part of East End Collaborations, an organisation that Weaver established from 1999 to 2009, she has experimented with new formats for such platforms through leading a professional development seminar and instigating critical conversations with practitioners.

Weaver's impact as a performance artist is reflected in her influence on 12 artists, who have emulated or built on her work, or sought her guidance as a mentor or director. Her approach has also influenced curatorial strategies in the expansion of live art programming in select institutions, and in the development of new artist-led spaces and initiatives, and artist development programmes.

Case Study 2: Applying computational reliability engineering to the conservation of maritime heritage structures

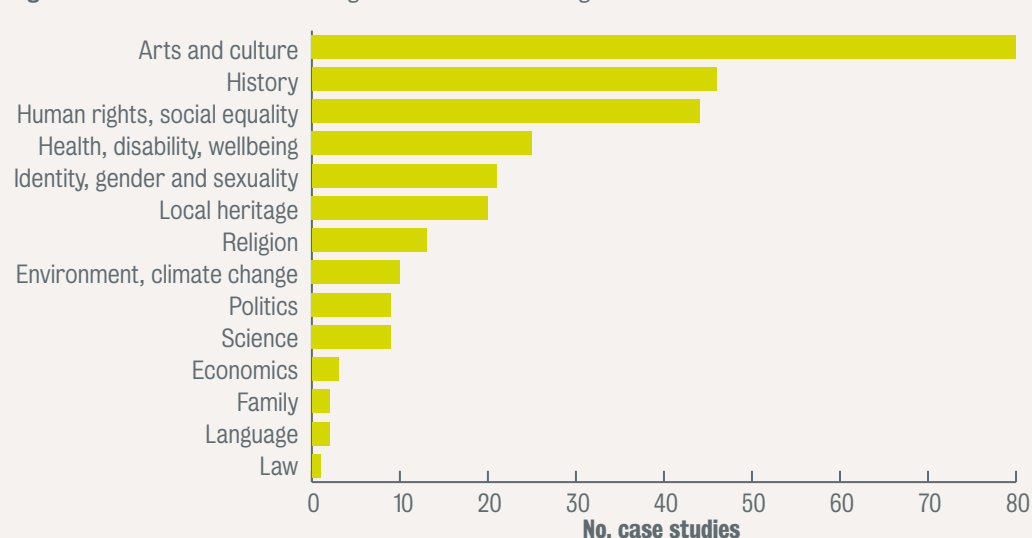
In 2004, the Cutty Sark Trust approached the Centre for Numerical Modelling and Process Analysis (CNMPA) at the University of Greenwich to help restore and conserve its famous maritime heritage site.

Drawing on the CNMPA's background in using computational reliability engineering to assess the performance of complex structures, researchers at the centre produced a digital finite element model of the Cutty Sark that factored in its age, the composite composition of the hull, which is made up of iron and timber elements, and the material loss caused by corrosion. The model predicted structural behaviour during the conservation process, so that when the ship

was dismantled there was a guarantee that the safest way to dismantle each component of its structure had been taken. The modelling was also integral to designing a new support structure in the reassembly, which saw the ship raised above ground level and opened as a museum space.

The research minimised the risk of conserving a major national heritage site, saving an estimated £500,000. The model has since been adapted for use as a maintenance tool to help monitor the corrosion rate of the Cutty Sark, and has been utilised in the restoration of the Medway Queen, ensuring that the rivets and hull plates meet contemporary safety requirements to enable the ship to set sail once again.

¹³ 'Professor Rob Kessler's Collaboration with the Royal Botanic Gardens, Kew', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?id=40349

Figure 5: Themes in Transforming Public Understanding

audience of 105,000, and found a wider audience still online: featured as part of a Kew-produced documentary, Kessler's images have been viewed by c. 9,500 people on YouTube, and an estimated audience of 1.3 million through their reproduction in a TED talk delivered by Jonathan Drori. Collections of these prints were also published in book form as *Pollen*, *Seeds* and *Fruit*, with a distribution of c. 25-30,000 per title, and prominent media coverage in the *Guardian*, *Telegraph* and *Time Magazine*.

Others used creative mediums to encourage reflection on pressing societal issues. *3rd Ring Out*, a postdoctoral project undertaken by Zoe Svendsen from the English Faculty at the University of Cambridge, was an immersive

piece of performance art designed to encourage reflection on the ethical and social challenges of climate change. The piece situated a small audience in a shipping container, faced with a map of the local area and the scenario of an impending climate crisis. Audience feedback suggested that through being able to shape the narrative by voting on key decision points, the experience enriched their confidence in realising and addressing the implications of climate change in their everyday lives.¹⁴ Such transformations of opinion were also reported on an international scale in case studies such as *The Act of Killing*, a documentary that exposed the 1965–66 genocide in Indonesia, leading to global recognition of the human rights violations enacted (see Case Study 3).¹⁵



14 'Rehearsal as Effective Theatrical Method for Performance: Responding to Climate Change', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=14678

15 'The Act of Killing', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=20542

Case Study 3: The Act of Killing

Michael Uwemedimo's research on the role of re-enactment in documentary practice fed into his work as a producer on the critically acclaimed documentary *The Act of Killing* (2012).

The film exposed the Indonesian genocide of 1965–66 through a process of historical re-enactment and genre re-stagings based on primary interviews with those who had perpetrated or survived the crimes. The film 'intervenes in the country's history of genocide by reframing these historical events through the lens of genre and memory', as the primary interview material increasingly becomes fictionalised. This material not only exposed the human rights violations, but powerfully captured on film the changed self-awareness of those who perpetrated the crimes, whose reactions to screenings of the fictionalised re-enactments were included

as points of reflection and departure for further stylised re-enactments.

The release of the film prompted a historical re-examination of the 1965–66 killings at a scale previously inconceivable. The film gained recognition for the gross violation of human rights in Indonesia, and positioned the genocide at the centre of global discussions about historical human rights, initiating discussion about similarly hidden histories of violence, corruption and genocide in countries such as Spain, the Philippines, Turkey and Denmark. Within Indonesia, 500 clandestine screenings and the distribution of over 1000 free copies of the DVD across 29 of the country's 33 provinces meant that citizens within the country were also engaged, circumventing the censorship that would otherwise have prevented the film from screening within the country.

Case Study 4: Stonehenge and its landscape; changing perceptions, informing the next generation and benefiting the local economy



The *Stonehenge Riverside Project* ran from 2003 to 2010, led by Mike Parker Pearson (University of Sheffield, now at UCL) with co-directors from Bournemouth, Bristol, Manchester, Southampton and UCL, investigating the original purpose of the monument and its surrounding landscape. The connection of Stonehenge via the River Avon to nearby timber monuments at Durrington Walls led to the discovery of a settlement there. These were not primitive astronomical observatories but places where people gathered to celebrate at different points of the year. The importance of the Avon linking the settlement at Durrington Walls with Stonehenge itself was reinforced by the discovery of Bluestonehenge, a riverside site at the end of the Stonehenge Avenue.

Local volunteers and around 1,000 students from universities across the UK and Europe were trained in archaeological techniques at the many sites excavated during the course of the project. Many of these students are now employed as professional archaeologists. Local volunteers also developed skills in archaeological work.

After gaining an intimate knowledge of their local heritage, many went on to staff a volunteer outreach team responsible for delivering tours of the site to some 6,600 visitors. The project generated a variety of further impacts, including transforming public perception of the famous monument, increasing tourism to the site and surrounding area, and generating new information that has informed the content of guidebooks and a complete redesign of the visitor centre.

2.2.3 Audience development

Building and diversifying audiences was a further way in which research made an impact within the sector, featuring in 186 case studies (45 per cent of sample). Over two-thirds of these case studies reported on increasing engagement with the general public. This was primarily framed as broadly growing audiences for the creative and cultural sector or, more specifically, encouraging participation in local heritage and regional art forms; however, a handful of anomalies also existed which included increasing engagement with science (nine case studies) and politics (two case studies) through creative or cultural projects.

Audience development did not just mean getting more diverse audiences through the door, but included creative solutions to the problem of how to engage people in a sustainable way. This was common in the heritage sector, with initiatives such as the *Stonehenge Riverside Project* encouraging volunteers from the local community to become involved in their local history through participation in excavations (see Case Study 4).¹⁶

Similar engagement initiatives also surfaced within documentary film. Nick Higgins (University of Edinburgh), a practice-led researcher with a background in using documentary film to reflect the views of marginalised social groups, turned to crowdsourcing audio-visual material to produce an inclusive documentary portrait of the Scottish nation in *Northern Lights* (2012). By offering free workshops and resources on how to self-shoot, the project not only widened participation in documentary making among unlikely areas of the community, it enriched the self-perception of groups that are typically overlooked or marginalised, and altered the perception of the role of those groups in society.¹⁷

Other examples of audience development included increasing public access to artworks and archival documents, with digital scholarship being a key area of focus. A prominent example of this is the *Old Bailey Online*, a digital humanities resource established by Tim Hitchcock (University of Hertfordshire, now University of Sussex) and Robert Shoemaker (University of Sheffield) that offers online access to 197,745 historic trial reports. The site has seen creative use in teaching, is a key resource for members of the public undertaking genealogical research on family trees, and has enriched the content of media productions, notably being the subject of the BBC Radio 4 series *Voices from the Old Bailey*.¹⁸

2.2.4 Informing pedagogy and curricula

Formal approaches to informing education, from primary education to HE level,¹⁹ were described in just over a quarter of the case studies analysed. This included:

- influencing the design of curricula and examination (52 case studies, 12 per cent of case studies analysed)
- improving learning and development (51 case studies, 12 per cent)
- informing pedagogical approaches within the education sector (35 case studies, 9 per cent).

For example, the conceptual framework for teaching creative writing developed at Teesside University fed into a national review of A-level specifications, the recommendations of which were subsequently taken up by the examining boards AQA and Edexcel. This resulted in the introduction of creative writing to HE and A-level curricula.²⁰

Not all examples of shaping education, however, related to national frameworks. Others featured education programmes tailored to the arts, or models designed to help facilitate learning among a specific stakeholder group. For example, *Sounds of Intent*, a project led by Adam Ockelford at the University of Roehampton, redefined music provision for students with learning difficulties through a developmentally based curriculum framework and supporting resources specially designed for these students.²¹ As summarised in Case Study 5, the project targeted a subset of schools and third sector organisations in the UK that work specifically with children with learning difficulties. Its effect on pedagogy is already apparent, with adoption ranging from the uptake of the supporting resources to the complete revision of music curricula within certain organisations.

2.2.5 Social change

Enacting social change featured in 88 case studies (21 per cent of case studies analysed). This included impacts on individuals, such as forms of empowerment and self-reflection (33 case studies, 29 per cent), family cohesion (6 case studies, 5 per cent) and lifelong learning (3 case studies, 3 per cent), as well as impacts on wider societal issues, such as breaking down stereotypes and representing marginalised communities (24 case studies, 21 per cent), building cross-cultural empathy (37 case studies, 33 per cent) and social regeneration (5 case studies, 4 per cent).

Creative writing projects played an important role in mobilising social change. *Red Dust Road*, the memoir of Jackie Kay (Newcastle University), and associated engagement activities have raised awareness of the complex identity issues around race, adoption and belonging, empowering others to feel understood as adoptees or racial minorities themselves (see Case Study 6).²²

Forms of social change were also prominent in participatory arts activities. Adam Benjamin, a practitioner-scholar from Plymouth University, introduced integrated dance practice, in which

16 'Stonehenge and its Landscape; Changing Perceptions, Informing the Next Generation and Benefitting the Local Economy', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=12235

17 'A Scottish Self-Portrait: The Northern Lights Documentary Project', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=24011

18 'The Old Bailey Online: Democratising access to social history', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=24011

19 Case studies describing impact on HE were only included if the impact was not on the host institution, as research impacts within an academic's own university were not counted in REF 2014.

20 'Developing the Teaching of Creative Writing', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=30191

21 'Sounds of Intent', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=20469

22 'Red Dust Road: New Forms of Memoir and the Enrichment and Extension of Public Discourse on Family, Identity, Belonging and Adoption', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=21725

able-bodied and disabled dancers perform together, to the Adugna Community Dance Company in Addis Ababa, Ethiopia. After mentoring and working closely on choreography with the company's artistic directors, the resulting performances challenged perceptions of disability in a culture that typically 'shuns disabled people'. In the words of one audience member: 'three thousand people ... will leave the auditorium with a completely different picture about the role of the disabled ... Those messages will be passed on'. Such transformations also touched those who

participated as dancers. As one participant wrote, 'when I move in the space I feel free; I feel very proud ... in the street, when people are watching me I [think it is] because they probably saw me on TV dancing. So, I don't think they are watching me because I'm disabled.'²³

Impacts on social change seemed to be a natural by-product of work in the creative and cultural sector, frequently supplementing other impact types described above. Case studies such as the *Northern Lights Documentary Project*, cited above as an example of audience development,

Case Study 5: Sounds of Intent

Sounds of Intent (2001–11) illuminated the lack of understanding of the musical development of students with learning difficulties, particularly those with severe or profound intellectual impairment, and in turn the inconsistency of the music education that was provided for them. Led by Adam Ockelford at the University of Roehampton, the research addressed the need for a developmentally based music curriculum framework to map student development, attainment and progress in a systematic way. Following the launch of the project's website in 2012, which contains resources for teaching and learning, assessment and tracking progress, the site has seen profound engagement, with over 2.5 million unique visitors and over 370,000 resources downloaded.²⁴

Sounds of Intent was initially targeted at music coordinators in the 500 or so special schools in England for children with learning difficulties, and sought to raise awareness through organising conferences and seminars for schools, music hubs and education providers. Already the project has influenced practice in around a

third of special schools in the UK²⁵, which use the *Sounds of Intent* material to inform their music curricula and assessment. There has also been uptake in organisations offering music provision for children with learning difficulties such as Live Music Now, Jessie's Fund and Drake Music, all of which use the programme to evaluate the impact of their activities, and Ofsted refers to *Sounds of Intent* as an example of good practice in music-educational assessment.



Case Study 6: Red Dust Road

Jackie Kay's 2010 memoir *Red Dust Road* presents an account of her life growing up black in Glasgow as the adopted daughter of white parents, and follows her search for her birth parents. In this and her other works of poetry and fiction, Kay investigates the complexity of identity, introducing storytelling within the genre of memoir to interweave pluralist perspectives from her own life alongside those of others around her. Her books have animated public discourse and policy debate around the issues of adoption and identity, receiving broad coverage in the media as well as with major adoption support networks.

Testimonials from readers of *Red Dust Road* describe identifying with the broader issues that

the book addresses, with one adult adoptee writing that the memoir made her 'feel more understood and seen than almost any other'; another reported that the book had inspired the search for their own birth parents. The issues of race and belonging also resonated with other audiences. This is reflected in the success of the author's outreach among hard-to-reach stakeholder groups. After delivering readings in prisons, Kay has received responses from inmates showing strong self-identification with the themes of the memoir, with comments such as 'She understands, that Jackie, she really knows'. Kay subsequently wrote a set of poems for the Scottish Refugee Council's *Stop Destitution* campaign, inspired by her work with asylum seekers in Scotland.

²³ 'Adugna Community Dance Company: Empowering Disabled Dancers and Changing Attitudes toward Disabled People through Contemporary Dance in Ethiopia', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?id=4681

²⁴ As at June 2017 this had increased to 7,000,000 unique visitors and over 1,000,000 downloads of material.

²⁵ Two-thirds of special schools as at June 2017.

also reported giving voice to marginalised communities. By using everyday technologies to crowdsource footage, the project enabled anyone to submit a video of 'their Scotland'.²⁶ This empowered minority groups to take agency in the ways in which they are represented in society, to 'alter the self-perceptions of minority groups in Scotland, and also the mainstream's perception of these groups'.

2.2.6 Policy development

Impact on policy development appeared in 81 case studies (19 per cent of case studies analysed). This ranged from actively devising policy or determining the allocation of funding to addressing established policy goals, be it within a small organisation or a government department, committee or working group.

Of the case studies that described an impact on policy:

- 43 per cent (40 case studies) discussed work with government officials and international policymakers, including representatives from the European Union and the United Nations
- 27 per cent (25 case studies) impacted on national organisations such as Arts Council England, English Heritage and Creative Scotland, or organisations operating outside of the creative and cultural sector, such as the NHS and Ofsted
- 21 per cent (20 case studies) described a change of policy within an individual organisation or company
- 9 per cent (8 case studies) described policy development within local and regional councils.

Over two-thirds of these impacts related to cultural policy. Within this, heritage was the most dominant area of the sector. For example, shortly after opening in 2006, the University of Glasgow's Centre for Battlefield Archaeology was invited by Historic Scotland to produce an inventory of Scottish battlefield sites. This inventory was used by the Scottish Government in 2009 as the basis for the Scottish Historic Environmental Policy (SHEP) to protect the nation's historic battlefields. 39 of these battlefields are now registered as sites of national importance.²⁷ Other areas of policy impact beyond the sector were in public policy (11 case studies, 13 per cent of impacts on policy), education (7 case studies, 8 per cent), health (6 case studies, 7 per cent) and science (3 case studies, 4 per cent).

Only a third of the case studies that described an impact on policy (31 case studies) reported on the adoption of a recommendation derived from their research. Otherwise:

- 23 per cent described influencing policy through acting as a consultant or advisor (21 case studies)

- 11 per cent described an indirect influence by appealing to citations in policy documents (10 case studies)
- 13 per cent presented endorsements from policymakers, without any link to a specific policy (12 case studies)
- 16 per cent reported on occasions where policymakers had been exposed to the research, be it in a formal presentation or discussion (15 case studies)
- Four per cent described occasions where their research had helped an organisation to deliver on an existing policy goal (4 case studies).

Impact on policy was most pronounced in non-governmental organisations, which accounted for two-thirds of the case studies that spoke to the adoption of research outcomes (12 case studies). At government or international policy level, the majority of case studies simply described exposure to the research (12 case studies) without elaborating on how this evolved into a change in policy or legislation.

2.2.7 Economic growth

Examples of creating economic growth surfaced at a comparable rate to examples of policy development, appearing in 63 case studies (15 per cent of case studies analysed). These ranged from macro statements about boosting the economy, be it through increasing tourism, employment or GDP, to direct commercial benefits for an organisation, such as boosting income, efficiency, supporting business development or assisting in product development.

Just over half of the economic impacts reported related to income generation for an individual company or organisation (54 case studies). 81 per cent of these case studies spoke directly to the generation of income, be it through ticket sales or the revenue generated by the sale of a creative output (37 case studies), or through assisting in securing grant funding for a sector partner (4 case studies). Spin outs, contrary to their prevalence within science and medicine,²⁸ had a minor presence within the sample, featuring in just four per cent of examples of income generation for an individual company (2 case studies).

More indirect examples of commercial impact for a company or organisation included increasing visitor numbers (6 case studies) and improving efficiency (4 case studies). For example, in producing an edition of Heinrich Böll's complete works with the Deutscher Taschenbuch Verlag, Frank Finley (University of Leeds) not only helped to generate publicity, marketing and sales opportunities for the publisher, but as the first complete digital edition of Böll's

26 'A Scottish Self-Portrait: The Northern Lights Documentary Project', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=24011

27 'Commemoration and Protection of Battlefields in Policy and Practice', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=23304

28 King's College London and Digital Science. *The Nature, Scale and Beneficiaries of Research Impact* (2015): pp. 52–54.



works, the edition increased efficiency in the printing and licensing processes for subsequent editions of his texts.

Beyond the individual company level, we identified just one case study that described economic growth on a national level. Broader economic impacts were instead focused on local communities. Six case studies claimed impact through increasing spend in local businesses, and four through creating jobs; however, the most common examples of economic growth related to tourism (21 case studies), just under half of the references to which stemmed from work in the heritage sector. For example, based on a body of prior research into the English artist JMW Turner, David Hill (University of Leeds) was invited to be a development consultant to the *Discover Turner's Yorkshire* project, which launched in 2010. Integrating his research into the topographical aspects of Turner's work with experiments with GPS technology, Hill's contribution identified viewing points and locations depicted in Turner's drawings of the Yorkshire landscape, totalling 70 sites. Since the launch of the trail, Yorkshire's tourism economy has seen a 6 per cent year-on-year increase in visitor numbers, with 1.25 million visitors estimated to have seen the interpretation boards during the year after the trail was launched. This also resulted in an increase in spend in the local area, with visitors to locations on the Turner Trails spending an average £119 per head during 2010–11, compared to £106 the previous year.²⁹

2.2.8 Improving health and wellbeing

Only seven per cent of the sample reported impacts on health and wellbeing through the creative and cultural sector (29 case studies), just over two-thirds of which specifically related to mental health. These initiatives ranged from

work with small groups to the national rollout of recommendations derived from the research. For example, the Military Writing Network founded in 2009 by Siobhan Campbell (formerly of Kingston University, now at The Open University) explored how creative writing practice can help veteran soldiers, sailors and airmen to cope with combat stress. In addition to providing opportunities for veterans to publish their poetry and stories, the network has developed pedagogy and workshop practices that encourage engagement with creative writing to help alleviate common signs of combat stress, such as avoiding unfamiliar situations and rebuilding the loss of self-confidence through fostering creativity.³⁰

Since REF 2014, the understandings of writing practice as enabling cultural resilience that emerged in Campbell's work with Combat Stress UK led to an expansion of the field of investigation:

'Having joined the Open University, I developed expressive writing pedagogy in life-writing for work with victims of sexual violence via the human rights team of INMAA, Kirkuk in a project jointly convened by the Foreign and Commonwealth Office (FCO) and Beyond Borders. Consolidation of the thinking led to The Expressive Life-Writing Handbook, now used by the FCO's Countering Violent Extremism (CVE) programme and in a 'training the trainers' scheme where the Fellows of the Gulf Reconstruction initiative were trained in the uses of writing workshops in enabling cultural story-telling and supporting resilience.

*From Jan-August 2017, I worked with VOS (Veteran's Outreach Support), with a view to exploring how creative writing pedagogies can be effective both in supporting mental wellness for peer mentors and also in providing these mentors with new ways of interacting with their mentees.'*³¹

29 'Discover Turner's Yorkshire: Public-Oriented Research and Commercialisation', REF 2014 Case Study. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=6393

30 'The Military Writing Network: Creative Writing, Life Writing and Trauma', REF 2014 Case Study. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=40629

31 Siobhan Campbell in email correspondence.

Another case study described the implementation of findings from research at Anglia Ruskin University into the provision of music therapy for dementia patients, following a programme of joint research with Methodist Homes for the Aged (MHA), a nationwide care provider for older people. Already the methods are transforming care, as one MHA manager writes: 'We have seen some astonishing changes in our care homes when people with dementia receive music therapy – they become so much more responsive and joyful, and it seems to have a wonderful calming effect on people who experience anxiety, as a lot of people with dementia do'.³²

The connections between the creative and cultural sector and physical health instead tended to be confined to raising public awareness around health risks and medication. For example, in 2008 biomedical research from the University of Sheffield on the transport and molecular basis of human sperm was developed into a film, *The Great Sperm Race*. Through a wide distribution network and considerable coverage in the press, the film built debate and public understanding around issues relating to reproductive medicine.³³ In such examples, the impact was in raising awareness of issues related to health and wellbeing, rather than a direct impact on the provision of health services.

2.3 Research impact in the creative and cultural sector: key findings

Researcher engagement with the creative and cultural sector produced an assortment of varied impacts that were complex and difficult to distil into a neat taxonomy. We found that impact types may overlap, act independently of one another or be interdependent; and that impact can be fortuitous, surfacing after a body of research has already been published, just as it can be intimately worked into the conception of a project.

Yet despite this heterogeneity, we can, however, draw the following conclusions:

- ♦ Research impact in the creative and cultural sector did not solely stem from research in the arts and humanities, but drew from almost all fields of academic research.
- ♦ There were eight main areas in which researcher engagement involving the creative and cultural sector had an impact:
 - influencing industry practice
 - transforming public understanding
 - audience development
 - informing pedagogy and curricula
 - social change
 - policy development
 - economic growth
 - improving health and wellbeing.
- ♦ The highest-ranking impacts of research in the creative and cultural sector were

on influencing industry practice and transforming public understanding, which differs significantly from research impacts in other sectors, particularly medicine and science, where impacts on health and policy development rank more highly.

- ♦ The creative and cultural sector played an important role in translating research into impacts on opinions and behaviour, and brokered wider audiences for academic research through translating findings into more widely accessible formats. The prevalence and quality of this translational role suggests that research collaborations are not only helping to drive innovation within the creative and cultural sector, but are also being utilised to address issues of social and political significance by combining research with creative practice.

Key areas identified for further investigation include:

- ♦ How the strong, yet underutilised links between practice-led research and mental health services are helping to improve provision for mental health illness.
- ♦ How activities in the creative and cultural sector help build a sense of community.

32 'Benefitting the Residents of Methodist Homes for the Aged through Music Therapy', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=43781

33 'The Great Sperm Race – Encouraging Public Understanding of Human Reproduction', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=12225

—3—

Pathways to impact



'Madness & Modernity' © Wellcome Collection

Generating impact from research does not follow a single pathway from the university to the creative and cultural sector. Multiple fields of research inform impact across all sectors, frequently leading to activity in areas that are weakly associated with the originating academic discipline. In this section, we analyse pathways to impact, reveal their diversity and reiterate the importance of maintaining an open approach towards identifying and describing them.

“Any one case study could include several impact mechanisms, forming a profile of interconnected activities.”

Previous research has shown that 3,709 unique pathways were reported across the 6,679 uncensored case studies submitted to REF 2014, meaning that ‘any attempt to define a standard route to research impact could be counterproductive’.³⁴ These ‘pathways’ are made up of the distinct activities, efforts, initiatives and mechanisms that come together to create ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’.³⁵

This was especially true of research impact in the creative and cultural sector, where we found a total of 2,602 pathways in a sample of just 417 case studies. In a single case study, it was common to find impact pathways crossing multiple sector boundaries: collaborations with curators might lead to outreach in schools; workshops with practitioners may prompt invitations to act as a consultant on related projects, or to brief cultural policymakers. There was no set point at which these pathways began, and no one form of collaboration that enabled them. While some were the product of collaborative partnerships, others reported on research being picked up by the sector, sometimes years after a large body of work had already been published. What the following analysis therefore shows is that there is no definitive pathway to impact within the creative and cultural sector. Impact accumulates through a variety of interconnected strands of activity; it can emerge at any point in the research process, and may be the product of both direct and indirect forms of engagement.

Based on a qualitative analysis of the 417 case studies in our sample, in this section we survey the range of impact activities that researchers reported on (‘impact mechanisms’); the types of institutions they engaged with and the nature of these collaborations (‘sector partners’); and we trace the point in the research lifecycle at which impact occurred (‘impact timescales’).

3.1 What were the mechanisms through which research impact was achieved?

The mechanisms or activities that enabled impact in the creative and cultural sector ranged from creative projects in theatre, music or the visual arts to work in cultural policy and arts education.

In total, we identified 68 impact mechanisms (see Table 2). These were rarely described in isolation: two per cent of case studies reported on just one type of mechanism; up to 17 different mechanism types were referenced within a single case study; and an average of six types were mentioned per case study across the sample. Moreover, in just under a quarter of case studies analysed, engagement with the creative and cultural sector appeared alongside activities in other sectors, including health, computing, law, policy and education.

The most frequently cited impact mechanism was public talks (present in 43 per cent of case studies). These tended to be for a general audience, including pre-screening talks, lecture recitals and question and answer events. Exhibitions and installations were the next most common mechanism (38 per cent), followed by radio broadcasts (30 per cent), workshops and masterclasses (26 per cent), and TV programmes (24 per cent). As shown in Figure 6, when grouped into broader sector areas, hot spots for research activity in the sector accordingly fell within ‘Music, performing and visual arts’ (71 per cent of sample), ‘Film, TV, video, radio and photography’ (58 per cent of sample), and ‘Museums, galleries and libraries’ (56 per cent of sample).

These mechanisms featured in impact narratives in a variety of ways. Any one case study could include several impact mechanisms, forming a profile of interconnected activities, typically centred around one or two more dominant mechanisms. Whereas one mechanism may be the central project, it was common for other supplementary activities to be presented alongside it, or to feature as follow-on projects.

For example, an exhibition mounted at the Wellcome Collection entitled *Madness and Modernity: Mental Illness and the Visual Arts in Vienna 1900* drew on the work of an AHRC-funded project connecting psychiatry, visual arts and architecture.³⁶ The underpinning research stemmed from art and design, yet the impact mostly occurred in the museum sector, engaging three further impact mechanisms in addition to the exhibition (see Figure 7). The exhibition’s success in encouraging reflection on how, historically, society has dealt with mental illness then led to invitations to produce further exhibitions, documentaries and a report that

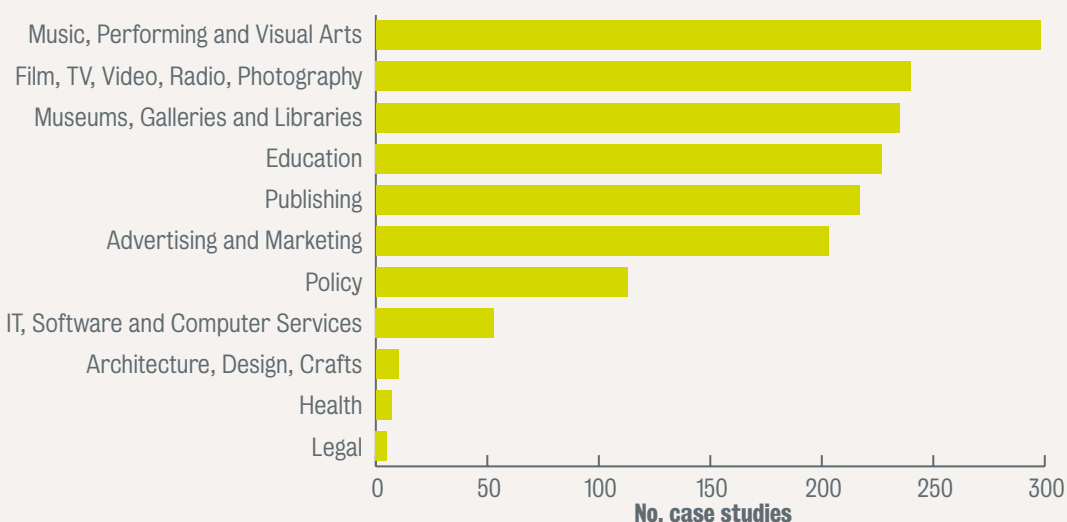
34 King’s College London and Digital Science. *The Nature, Scale and Beneficiaries of Research Impact*: p. 71.

35 HEFCE, *Assessment Framework and Guidance on Submissions* (2011): p. 48.

36 ‘Madness and Modernity: Mental Illness, the Visual Arts and Architecture in Fin de Siècle Vienna – Popular Exhibitions in London and Vienna’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=18058 and ‘Madness and Modernity: Mental Illness, Psychiatry and the Visual Arts in Vienna 1900’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=4678

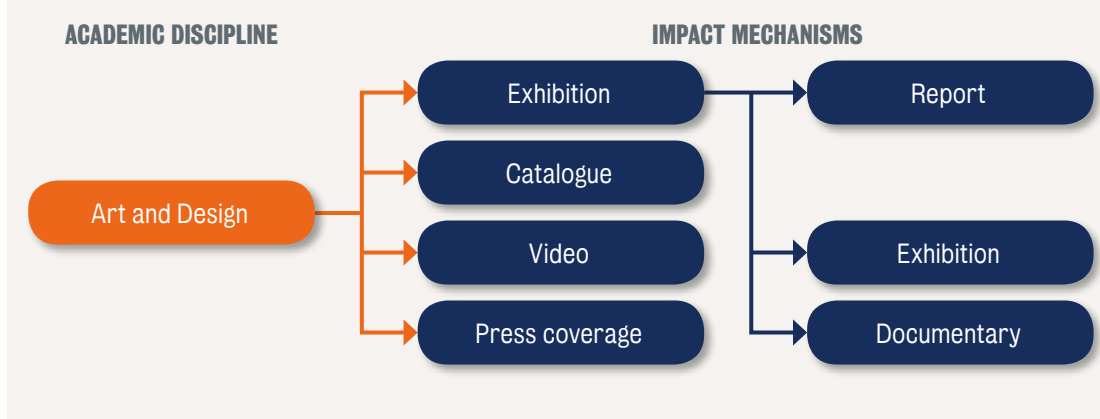
Table 2: Impact mechanisms ordered by frequency cited

Impact mechanism	Case studies	% Sample	Impact mechanism	Case studies	% Sample
Public talk	200	42.5	Oral history project	22	4.7
Exhibition, installation	178	37.8	Fiction	22	4.7
Radio broadcast	139	29.5	Data set, database	20	4.3
Workshop, masterclass	123	26.1	Tour	20	4.3
Tv programme	115	24.4	Internship, mentoring	19	4.0
Conference, lecture series	109	23.1	Policy address	18	3.8
Website	108	22.9	Sound recording	18	3.8
Press coverage	101	21.4	Festival	17	3.6
Report, guidelines	84	17.8	Guidebook	15	3.2
Academic book	81	17.2	Programme or liner notes	13	2.8
Newspaper	74	15.7	Poetry	11	2.3
Lecture, conference paper	67	14.2	Residency	10	2.1
Video	65	13.8	Map	7	1.5
Teaching, learning resource	64	13.6	Game	6	1.3
Schools outreach	63	13.4	Press release, press conference	6	1.3
Film	63	13.4	Clinical or health services work	5	1.1
Catalogue, exhibition text	59	12.5	Programming	5	1.1
Industry magazine	54	11.5	Product design	5	1.1
Academic journal	50	10.6	Photography	5	1.1
Software	48	10.2	Expert witness	4	0.9
Curriculum design	48	10.2	Criticism	4	0.9
Heritage site	48	10.2	Dance (performance)	4	0.9
Physical or digital archive	45	9.6	Conservation tool	3	0.6
Mass-market factual	40	8.5	Choreography	3	0.6
Blog	37	7.9	Commission, inquiry	2	0.4
Podcast	35	7.4	Lobbying	2	0.4
Advisory board, steering group	33	7.0	Architecture	2	0.4
Theatre staging, performance art	32	6.8	Graphic design	2	0.4
Music composition, score	31	6.6	Pharmaceutical product development	1	0.2
Social media	30	6.4	Screening tool development	1	0.2
Concert, sound installation	29	6.1	Research as evidence at trial	1	0.2
Artwork (visual arts)	27	5.7	Crafts	1	0.2
Play, theatrical work	23	4.9	Fashion design	1	0.2
Reading	23	4.9	Mailing list	1	0.2

Figure 6: Distribution of mechanisms by sector group

“What our analysis overwhelmingly revealed was not a series of singular activities but a network of mechanisms that work together: even if multiple mechanisms were mentioned in a case study, the narrative was often centred around one more dominant activity.”

Figure 7: Impact pathways – ‘Madness and modernity’



informed an application to the UNESCO world heritage list. This project therefore did not just constitute one pathway but engaged a variety of interdependent impact mechanisms.

Across the 417 case studies analysed, we identified 2,602 different impact pathways, starting from the originating research, going on to the impact mechanism, and through to the sector in which the impact took place; 1,577 of these pathways were unique. This is illustrated in the alluvial diagram presented in Figure 8.

The combination of coloured and grey blocks on almost all points on the left and right axes reveal that the links between originating discipline and the sectors in which researchers were active did not follow a simple pathway. This is as true for scholars working in disciplines such as physics or architecture as it is for historians and linguists; it is as true for case studies with research impacts in health or education as it is for impacts in heritage, museums or the visual arts. In all of these instances, we see pathways passing through all seven categories listed in the key.

Moreover, if we break down ‘Other’ into its respective sector areas – health, computing, law, policy and education – we found that any one case study may mention mechanisms from up to eight of the 11 broader sector categories, with an average of four per case study. This demonstrates that impact is seldom achieved through a single, focused mechanism: it is the product of various interdependent, yet often disparate activities that span multiple areas of the creative and cultural sector, and frequently encompass those beyond the sector.

The role that these mechanisms played in mobilising research impact varied. Broadcast media was one of the most prevalent areas through which researchers were able to mobilise impact, particularly from disciplines beyond the arts and humanities. For example, research led by Prof. Philippa D. Darbre at the University of Reading discovered links between parabens in personal care

products and the onset of breast cancer. Through pursuing coverage in broadcast and print media, Darbre was able to raise awareness among a wider public, which in turn supported later successes in informing policy recommendations.³⁷

‘When I started all this research, it was definitely not an accepted thing for academics to engage with the public media but in the intervening years times have changed. I have no doubt that the media has played a massive role in generating the impact on the public without which most of the issue of constituents of personal care products would simply have been brushed under the carpet. Furthermore, the media involvement has enabled members of the general public to write to me with their own stories which has alerted me to some very significant avenues in need of research (not least the link between aluminium-based antiperspirant salts and breast cysts).’³⁸

However, our analysis did not reveal a series of singular activities but a *network of mechanisms that work together*: the functionality of these networks of mechanisms is best illustrated on a case study level by Case Study 7, which describes a UNESCO heritage route devised in Turkey.³⁹ The route was the focus of the case study; however, it was presented alongside other impact mechanisms such as delivering talks, producing a guidebook, giving interviews and a consultancy role for an exhibition in London. Yet in building international interest in the route and encouraging engagement with Ottoman history, each activity made a vital contribution to the success and sustainability of the route.

Comparable examples were found throughout the case studies analysed. In Case Study 8, the campaign to engage policymakers and gain press coverage alongside production of the opera *Anyã 17* helped to achieve the work’s goal to expose the enduring problem of slavery and sex trafficking in the UK.⁴⁰ There are also many examples where a successful project became the

37 ‘Parabens in Personal Care Products: Providing Marketing Tools for Industry, Informing European Policy and Raising Public Awareness’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=37245

38 Professor Philippa D. Darbre, citation from email correspondence.

39 ‘The Horse and East-West History: Generating Cultural and Economic Benefits in Turkey through a UNESCO Cultural Route, the Evliya Çelebi Way’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=930

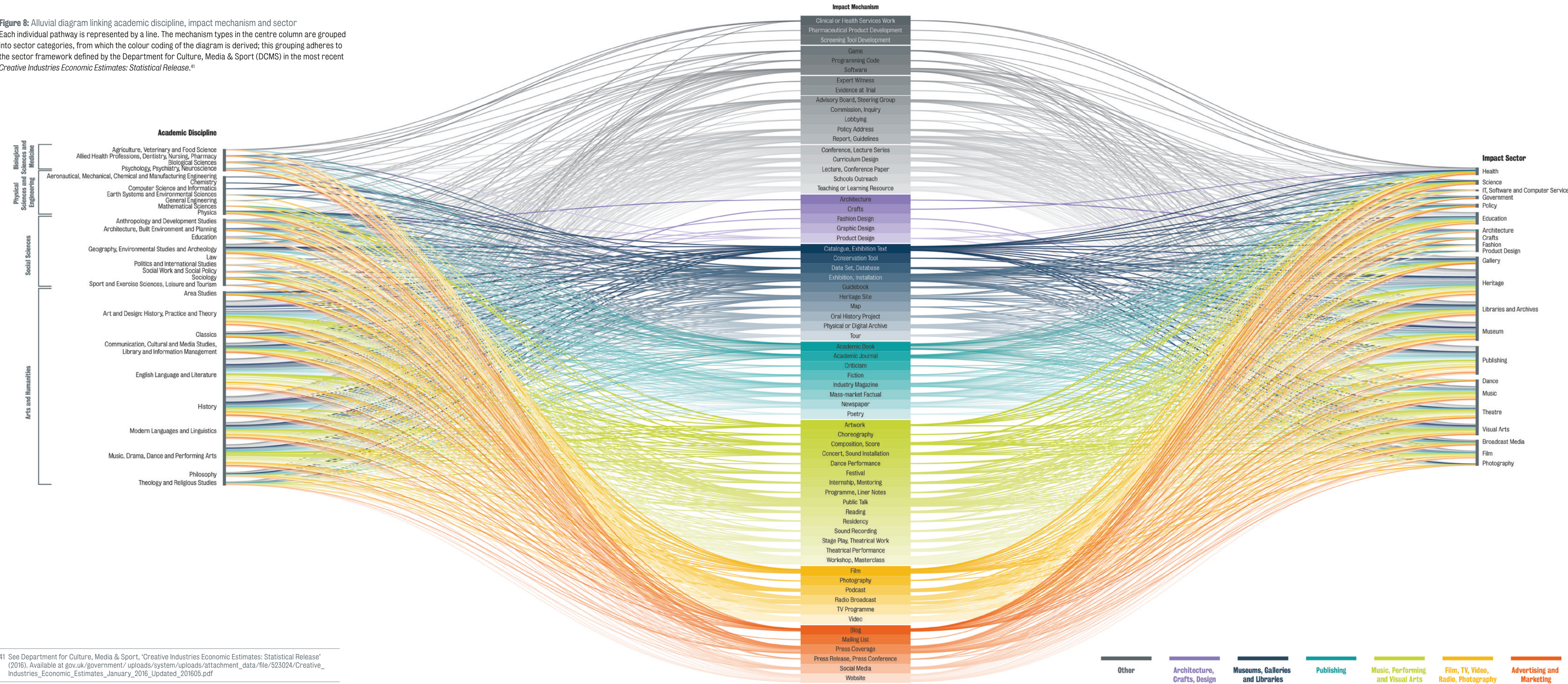
40 ‘Anyã 17’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=20912

'Evliya Çelebi Way' © Mehmet Cam



Figure 8: Alluvial diagram linking academic discipline, impact mechanism and sector

Each individual pathway is represented by a line. The mechanism types in the centre column are grouped into sector categories, from which the colour coding of the diagram is derived; this grouping adheres to the sector framework defined by the Department for Culture, Media & Sport (DCMS) in the most recent *Creative Industries Economic Estimates: Statistical Release*.⁴¹



⁴¹ See Department for Culture, Media & Sport, 'Creative Industries Economic Estimates: Statistical Release' (2016). Available at gov.uk/government/uploads/system/uploads/attachment_data/file/523024/Creative_Industries_Economic_Estimates_January_2016_Updated_201605.pdf

catalyst for further related activities in the sector. Ian Kershaw's research for his 1998 biography of Adolf Hitler led to a series of follow-on projects that transformed discourse on the Third Reich. As summarised in Case Study 9, his work with documentary filmmakers in the late 1990s had a ripple effect that came to inform A-level and university syllabi, and also shaped public opinion through media coverage, high profile lectures and exhibitions.⁴²

The tendency to represent impact as the product of an interconnected and varied network of mechanisms was an aspect of the reporting process in REF 2014 that was well served by the free-text case study format, capturing not only the primary mechanism but the various other activities that supplemented it to boost its reach.

Yet there are limits to what the REF 2014 can tell us about pathways to impact. While researchers generally reported on several complementary mechanisms, these were largely presented as linear and causal.

This linearity has been attributed to the design of the case study template used in REF 2014. In an analysis of the impact case studies in the health sector, Greenhalgh and Faye have noted how the case study template encouraged researchers to represent impact as something with a forward trajectory, originating with a specific piece of research and ending with impact.⁴³ The limitations of this linear approach were also noted in the independent review of the 2014 assessment exercise, which recommended that 'a richer picture of the impact of research could be developed which encompasses the research expertise, facilities and networks of an individual, group or institution that underpin or lead to the eventual impact of research'.⁴⁴ Moreover, the extent to which this activity was circular or generative, with non-academic collaborations leading to new findings or new research questions, was seldom reported.

This linearity highlights one of the limits of using the REF as a source for understanding the

Case Study 7: The Evliya Çelebi way

Donna Landry, a researcher from the School of English at the University of Kent, played a central role in establishing the Evliya Çelebi Way, the first equestrian UNESCO Cultural Route in Turkey. The route was a cross-institutional collaboration,⁴⁵ tracing the first part of the journey to Mecca made by Evliya Çelebi in 1671, and was co-produced with the local community following sponsorship by local businesses and the endorsement of the mayors of Bursa and Kütahya, important towns along the route. Landry's research role was supported by a Leverhulme Study Abroad Fellowship.

The route had impact for the local economy by boosting tourism and raising interest in Ottoman history nationally and internationally. But this success was not secured through the route alone: it relied on a number of supplementary activities pursued by Landry at the same time as devising the route with colleagues in the UK and Turkey. Since 2010, Landry has accompanied commercial rides

along the route and advised them on Ottoman history and Evliya, as well as meeting with riders at the end of their journey. These rides have all been with Ercihan Dilari, a founding member of the project team, and his horses. Moreover, in addition to giving interviews on Turkish radio stations and the BBC, Landry co-authored a guidebook to the route, gave various public talks, participated in interviews for online interest groups, wrote for popular magazines and assisted in planning a forthcoming Turkish documentary. These activities led to a consultancy role in an exhibition in London dedicated to Evliya Çelebi's travel writing, which later opened in Turkey, Athens and other locations around the globe.

Partly owing to the success of the ride, UNESCO made Evliya Çelebi a 'Man of the Year' in 2011, and the UNESCO-approved route has brought sustainable tourism and commercial benefits to the region.

'Evliya Çelebi Way' © Donna Landry



'Evliya Çelebi Way' © Gerald MacLean



42 'Working towards the Führer: Shaping Public Understanding of Nazi Power', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=12161

43 Greenhalgh, Trisha, and Nick Fahy. 'Research Impact in the Community-Based Health Services: An Analysis of 162 Case Studies from the 2014 UK Research Excellence Framework', *BMC Medicine* 13, no. 232 (2015). doi: 10.1186/s12916-015-0467-4

44 Nicholas Stern, *Building on Success and Learning from Experience: An Independent Review of the Research Excellence Framework* (2016), pp. 22–23. Available at gov.uk/government/uploads/system/uploads/attachment_data/file/541338/ind-16-9-ref-stern-review.pdf

45 See also impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=39781

Case Study 8: Anya 17

Anya 17 was an opera produced by practice-led researchers at the Royal Northern College of Music. The work tackled themes of sex trafficking and slavery in the UK, with the view to increasing the profile of these issues among policymakers and the general public.

The opera began development in 2010 and received its first performance in 2012. The libretto was underpinned by insights from preliminary consultations with anti-trafficking organisations, which was subsequently extended by a campaign to gain endorsements for the opera itself from politicians, policy makers and anti-trafficking organisations such as the UN Global Initiative

to Fight Human Trafficking (UN GIFT), which later became a key partner in the project.

Press coverage amplified the messages underpinning the opera, bringing the discussion of trafficking and slavery beyond the opera-going public. This was supported by the availability of filmed rehearsals and a showreel on YouTube as well as social media presence. The chairman of the Friendship Foundation (UK–Romania) commissioned a follow-on performance at the Third International Symposium on Human Trafficking in Arad, Romania, and the opera received subsequent performances in Germany, America and Wales.

**Case Study 9: Working towards the Führer: shaping public understanding of Nazi power**

From his 1998 biography of Hitler to his 2011 study *The End*, Ian Kershaw's published writings have contributed to a change in how the Nazi regime is understood, replacing interpretative clichés of 'absolute evil' and 'banality' with an informed explanation of the ways in which



Hitler managed to seize and maintain power. Kershaw has collaborated with documentary makers throughout this period, producing films that were celebrated with a BAFTA and an International Documentary Award. Worksheets have subsequently been developed to support the use of his 1997 documentary *The Nazis: A Warning from History* for use in A-level syllabi, and his publications inform teaching and examination at HE and A-level.

The status of this body of work in informing discourse has been recognised by the award of the Leipzig Book Prize for European Understanding in 2012. Kershaw continues to deliver prestigious public lectures, and in 2010 his research also informed the first major public exhibition on Hitler in Germany. Kershaw was a member of the advisory council and delivered the opening lecture.

benefits of collaboration with the sector. Because, for assessment purposes, researchers were asked to demonstrate impact on the sector and not vice versa, voices from the sector are conspicuously absent as agents in the production of knowledge; instead they serve to endorse or validate the research. The insights that the REF yields, then, come from the perspective of what research has done for the sector and not what the sector can do for research. This observation echoes a caveat offered in the REF analysis undertaken by the Museum University Partnerships Initiative, in which the authors caution that ‘REF case studies have limitations when it comes to identifying and articulating the benefits of partnership work to museums ... because they are written from a university point of view’.⁴⁶

Our analysis of impact mechanisms has revealed the varied and cross-disciplinary nature of pathways to impact involving the creative and cultural sector. However, in order to better

understand how these partnerships benefit research, we need to look beyond impact case studies. The REF provides a strong starting point from which to base this enquiry, but more qualitative work needs to be undertaken in collaboration with practitioners to appreciate how HE and the creative and cultural sector work together to generate mutual impacts.

3.2 What type of cultural organisations did researchers collaborate with?

94 per cent of case studies referred to a partner outside of HE. Organisations partnering with universities ranged from local arts centres to national institutions, with the BBC, British Library, British Museum and the V&A being among the most prominent (see Figure 9). While our sample was chosen on the basis of case studies that mentioned the creative

46 National Co-ordinating Centre for Public Engagement, Share Academy, *Museum-University Partnerships in REF Impact Case Studies: A Review* (2016).

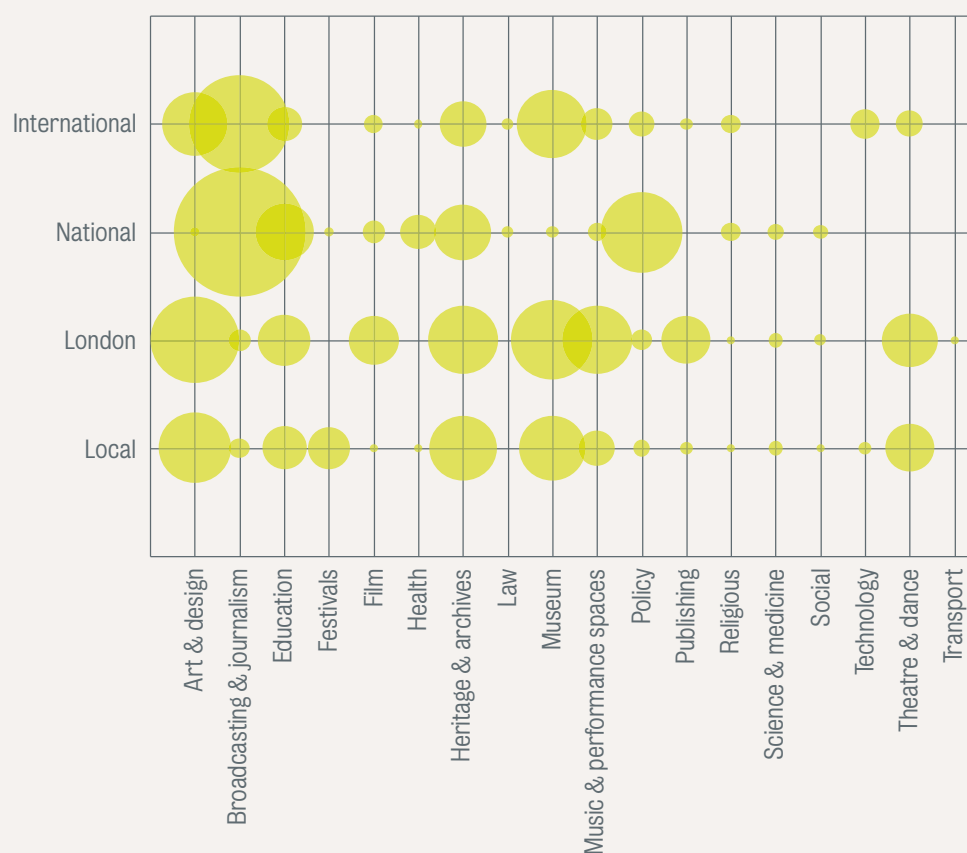
Figure 9: Sector partners (sized by most frequently cited)



“More qualitative work needs to be undertaken in collaboration with practitioners to appreciate how HE and the creative and cultural sector work together to generate mutual impacts.”

“Within the UK, researchers primarily engaged with creative and cultural organisations operating nationally or within London.”

Figure 10: Partner types cited, by location (size of bubble represents the number of references to an organisation)



and cultural sector, within these case studies we also identified partnerships that extended beyond this sector, encompassing organisations and authorities in the education, health, legal, policy, technology and transport sectors. Researchers reported on collaborations with exam boards and education authorities such as the Assessment and Qualifications Alliance (AQA) and Office for Standards in Education (Ofsted), and with policymakers with such diverse remits as the Department for Culture, Media & Sport (DCMS), Historic Scotland, UNESCO, the Home Office and the Ministry of Defence.

660 different organisations from the creative and cultural sector were cited across the sample, in the following areas:

- art and design (22 per cent)
- museums (19 per cent)
- broadcasters and journalists (17 per cent)
- heritage sites and archives (15 per cent)
- music organisations and performance spaces (9 per cent)
- theatre and dance companies (8 per cent)
- film (4 per cent)
- publishing (3 per cent)
- festivals (3 per cent).

In relation to partnerships taking place within the UK, researchers primarily engaged with creative and cultural organisations operating nationally (21 per cent of references to sector partners) or in London (34 per cent of references to sector partners), accounting for over half of all references to sector partners located in the UK. The remaining 45 per cent involved partnerships with regional organisations across the UK. Most of these regional partners were based in England; those in Scotland, Wales and Northern Ireland were represented in just 15 per cent, five per cent and one per cent of cases, respectively.

As shown in Figure 10, keyword searches for each of these 660 organisations revealed that broadcasters were the most common type of partner cited in our sample. Organisations within art and design were prominent (14 per cent), with a clear geographic preference towards the capital compared with other regions of the UK. It was only in relation to partnerships with heritage and archives, and to a lesser extent museums, theatre and dance, that similar levels of engagement with partners in the regions as in London were identified, suggesting an as yet untapped opportunity

for universities to develop partnerships with creative and cultural sector organisations based in the regions.

Just over a third of sector partners were located outside of the UK, spanning six continents. This was concentrated around Europe, with 47 per cent of these organisations situated in one of 19 European countries, most prominently France and Germany. The remaining spread of sector partners was across North America (31 per cent) and Asia (17 per cent), with select partners in Australia, South America and Africa, which altogether comprised the remaining five per cent. These anomalies were made up of organisations in Australia, Cuba, Mexico, Venezuela, Egypt, South Africa and Tanzania. As Figure 10 illustrates, the majority of international partnerships were with broadcasters and journalists, or within museums and heritage organisations.

3.3 To what extent did researchers initiate collaborations with the creative and cultural sector?

All of the partnerships analysed in our sample, be it on a local, national or international scale, reflected one of the following types of engagement with the sector:

- Direct engagement: 89 per cent of case studies described a collaboration that researchers had initiated directly or proactively contributed to.
- Indirect engagement: 67 per cent reported researcher involvement in an advisory capacity or as a featured expert.
- No personal engagement: 18 per cent included examples of sector engagement with research, where no contact between the researcher and the practitioner had taken place.

Each of the above types of engagement frequently overlap in a single case study, with 65 per cent of our sample describing engagement falling into two or three of the above types. There was, however, a tendency not to report impacts where the researcher had no personal involvement with the activities that enabled them. Crucially, of the 18 per cent that described indirect engagement, just six case studies (1 per cent of sample) reported exclusively on an impact with no personal engagement.

These anomalies nevertheless reveal important pathways through which research was utilised by practitioners. Case Study 10 offers an account of how the work of a historian was used as foundational material for a novel; however, the author did not directly consult the researcher when writing the novel, despite explicitly citing the research as a source of inspiration.⁴⁷ A similar

“REF case studies overwhelmingly trace a line leading directly from the research to the sector. Opening a dialogue about engagement with academic research with the creative and cultural sector may fill such gaps in our understanding of research impact, showing engagement to be much more of a two-way exchange.”

Case Study 10: From scholarly historical research to prize-winning popular fiction

Timon Screech, a researcher at SOAS, has published extensively in under-researched areas of Japanese art, history and culture, with a specific focus on the Edo period.

His work caught the attention of the writer David Mitchell, who drew on Screech's publications as the historical basis for his 2010 novel *The Thousand Autumns of Jacob de Zoet*. The novel cites historical details and anecdotes contained only in Screech's publications, drawing extensively on the monographs *The Shogun's Painted Culture* (2000) and *The Lens within the Heart* (2002) to furnish the novel with historical accuracy. The origin of this influence was noted by Mitchell, who described Screech as possessing 'so deep a knowledge of the Tokugawa period – its arts, economics, politics, religion[,] trade, popular culture, its view of itself – and writes about this milieu so accessibly, and with such authority and verve'.

Yet Mitchell and Screech have never met. In the words of Screech, what is noteworthy about this exchange is 'its illustration of how research can inspire and inform a much-lauded work of literary expression, enriching it with historically accurate detail and enabling an

under-studied period to be brought to life'. The novel has sold over 200,000 copies, and was awarded the Commonwealth Prize for Literature in 2011.



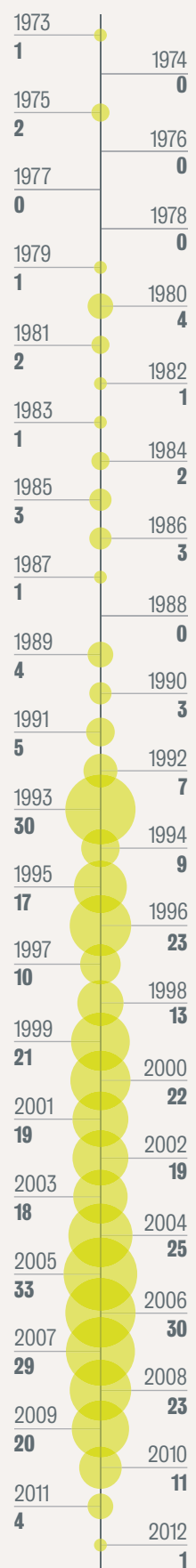
© British Museum

47 'From Scholarly Historical Research to Prize-Winning Popular Fiction – The Thousand Autumns of Jacob de Zoet', REF 2014 Case Study. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=42782

48 'Latin London: Improving the Visibility of Latin Americans in the UK', REF 2014 Case Study. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=17838

49 HEFCE, *Assessment Framework and Guidance on Submissions* (2011), p. 27.

Figure 11: Date of originating research



example appears in relation to the *No Longer Invisible* report (2011), which identified the size and socio-economic status of the Latin American community in London for the first time. The report not only helped in gaining recognition for Latin Americans as an ethnic group among policymakers and third sector organisations; its wider role in empowering this community also inspired a play highlighting the experiences of Latin American migrants in the UK, *Juana in a Million*. The play went on to win a Fringe First award in 2012 at the Edinburgh Festival, yet it was only after the play had been staged that the researcher became involved, featuring in a Q&A at the Southwark Playhouse in 2013.⁴⁸

It seems plausible that there are countless other examples of research being put to work in the cultural sector, without any personal contact between a researcher and a practitioner, and that these were simply not reported in REF 2014. One reason for this may be that researchers were unaware of such indirect impacts, as they are seldom cited by creative and cultural sector practitioners. Yet it is also equally plausible that, given the REF determines allocation of government funding, researchers who did describe engagement did so with a view to demonstrating proactive pursuit of impact in the sector.

Researchers tended mostly to describe being *reactive* to opportunities arising from the sector when it came to media and cultural policy, where emphasis was placed on advisory roles or invitations to appear as an invited speaker. In the case of TV and radio production, these collaborations largely appear to have been fortuitous, based on a researcher's reputation as an expert in the field. Moreover, these invitations were frequently aligned with trending news stories or contributions to programmes that had already been commissioned. Just 13 per cent of all references to engagement with media companies described a project that the researcher devised or took a central role in producing, be it in collaboration with a media company or independently.

While REF 2014 succeeded in capturing a rich and broad legacy of partnerships with the creative and cultural sector, what was reported was skewed towards proving a causal link between a specific piece of research and the activity or mechanism that led to impact. As little data is available on such indirect pathways to impact, our analysis is admittedly distorted by the omission of ways in which research can – and surely often does – inform work in the sector without any direct contact between academics and practitioners.

Our analysis of sector partners also raised many questions that beg further investigation. Are there established ways in which researchers and practitioners form collaborations, or is this

just as multifaceted as the activities that result from these partnerships? Our analysis suggests that, historically, new collaborations ranged from the purely fortuitous to the strategic. It will be interesting to revisit this finding in future iterations of the REF, as impact agendas are increasingly embedded in academic workflows in response to the new reporting requirements. Moreover, given that impact case studies are written from the perspective of the researcher, would research engagement be described differently if written from the perspective of the sector? While the case studies are a fruitful starting point for this enquiry, they overwhelmingly trace a line leading directly from the research to the sector. Opening a dialogue about engagement with academic research with the creative and cultural sector may fill such gaps in our understanding of research impact, showing engagement to be much more of a two-way exchange.

3.4 How long did it take for research to achieve impact?

REF 2014 set a clear timeframe in which impact could be reported. The *Assessment Framework and Guidance on Submissions*⁴⁹ released by HEFCE in 2011 stipulated that the impact was required to have taken place between 2008 and 2013. The research that underpinned this was not permitted to predate 1993, albeit with some disciplinary exceptions where this was extended due to the time lag between research and impact.

We tracked the date of originating research, tagging the earliest date cited in the section of the case study describing the 'Underpinning research' or in the citations listed under 'References to the research'. What we found was a relatively even spread of research undertaken across the timeframe specified by HEFCE, with peaks in 1993 at the start of the underpinning research period, and across the three years immediately preceding the impact assessment period (2008–2013) (see Figure 11). The narrative descriptions of the underpinning research also included a handful of outliers dating back to 1973.

There was no set point in the research cycle at which the journey to impact commenced since the length of time between initiating the research and beginning to engage with the creative and cultural sector varied from one case study to the next: exactly half of the case studies analysed described an impact that took place after a piece of autonomous research had already been completed. On the one hand, these might describe impactful projects in which the researcher had proactively built on previously completed research; on the other, they may describe a fortuitous moment in which the research was independently picked up, or thrust into the public eye as a result of its

'Madness and Modernity' © Wellcome Collection



relevance to current events. 30 per cent of the remaining case studies described impact as being intrinsic to the project from the outset and 20 per cent related to ongoing practice-led research.

Practice-led research was cited relatively evenly across the timeframe displayed in Figure 11, accounting for many of the anomalies that predate the assessment period, whereas impact subsequent to research accounts for the peak at the beginning of the assessment period in 1993. Proportionally, impact that had been built into the underpinning research process reported the quickest return, with the originating research most commonly dating between 2005 and 2008.

These observations about impact timescales should, however, be read with the following caveats in mind:

- Does the 'Underpinning research' relate to a specific project, or is it a small part of a larger research profile?
- To what extent do the time constraints stipulated in the REF exclude or distort earlier

work or influences, therefore limiting insight into how impact evolves over time?

- Given the assessment purpose of REF case studies, did authors choose to include their best publications rather than those that best demonstrate the trajectory of the underpinning research and its impact?⁵⁰

Invariably, the decisions that each researcher made on the above three points will have affected the reported date of originating research. Moreover, the majority of case studies captured only short-term impacts. While the data gathered suggests that the impact of research on or enabled by the creative and cultural sector happened more quickly than research impact in other sectors (the time lag for research impact in the health sector, for example, is typically estimated at 17 years),⁵¹ further investigation with additional parameters is needed since, at present, the REF 2014 case studies do not yield enough information to draw conclusions about the longevity of impact in the creative and cultural sector.

3.5 Pathways to impact: key findings

- REF 2014 demonstrated a significant appetite for working with the creative and cultural sector across Higher Education, with pathways to impact including multiple interdependent mechanisms and activities enacted via an array of partnerships and collaboration types.
- Impact is seldom enabled by just one activity or mechanism. Only two per cent of case studies reported on a single impact mechanism; instead, an average of six mechanisms were cited per case study across our research sample.
- The most common impact mechanism was public talks, which occurred in 43 per cent of the case studies analysed.
- 'Music, performing and visual arts', 'Film, TV, video, radio and photography' and 'Museums, galleries and libraries' surfaced as hot spots for sector engagement with research.
- Researchers mostly engaged with organisations in the UK that have a national or London remit. Of the regional partners, most were based in England.
- Just over a third of sector partners were located outside of the UK, spanning six continents. These were concentrated in Europe, with 47 per cent of international partner organisations situated in one of 19 European countries, most prominently France and Germany.
- The partnerships that researchers engaged in, be it on a local, national or international scale, were the product of both direct and indirect engagement.
- Impact may be fortuitous, surfacing after a body of research has already been published, or it can be intimately worked into the conception of a project. The latter, however, appeared to provide the fastest route to impact, typically returning an impact in just 5–8 years.
- The case study format encouraged authors to trace impact from originating research to activity in the sector, leading many to report on a causal, research-centric pathway to impact in the sector. It is likely that this focus on forward trajectories within a prescribed timeframe distorted the complete picture of research impact in the creative and cultural sector.
- More work is needed to link findings to the perspectives of the creative and cultural sector. Does engagement with researchers, for example, play into a larger impact strategy for these creative and cultural sector professionals? How often is academic research drawn on without direct collaboration? Answers to these questions fall beyond the remit of the REF, yet are critical for gaining a more complete picture of the ways in which research informs work in the sector.

50 See King's College London and Digital Science, *The Nature, Scale and Beneficiaries of Research Impact* (2015) for further discussion of this point.

51 Zoë Slote Morris, Steven Wooding, and Jonathan Grant, 'The Answer is 17 Years, What is the Question: Understanding Time Lags in Translational Research', *Journal of the Royal Society of Medicine* 104, no. 12 (2011): pp. 510–520.

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Evaluating and evidencing research impact



'Discover Turner's Yorkshire' © Welcome to Yorkshire

Strategies for evidencing impact were deliberately left open in REF 2014. Authors of case studies were required to provide evidence to support their claim for impact; yet the ways in which evidence of the impact itself was captured and described were at the discretion of the individual, with no single approach or set of metrics prescribed. Based on a close reading of our qualitative research sample, this section captures the different types of evidence used to evaluate research impact resulting from work involving the creative and cultural sector, and identifies their nuances, strengths and weaknesses, and untapped potential.

The guidelines for submissions to REF 2014 contained examples of suitable evidence types, tailored to the idiosyncrasies of each academic panel tasked with scoring impact case studies,⁵² and according to the broad criteria of ‘reach’ and ‘significance’. However, the way in which these two parameters were to be interpreted and benchmarked was decided by the expert panels, and tailored according to the nature of research in each discipline.⁵³ How to evidence impact was, accordingly, one of the biggest unknowns in the exercise – both for case study authors and the members of the expert panels tasked with assessing the submissions.

What follows is an analysis of the evaluation methods Higher Education Institutions (HEIs) and academics intuitively used to assess their impact. Yet it should not be read as a guide on how to score highly in the REF. We do not make value judgements about the strength of the evidence, but read each case study as a claim for impact, critiquing how the evidence was deployed and what it contributed to the impact claim. The extent to which the information itself is accurate or authoritative was not assessed.

4.1 What types of evidence are used to evaluate research impact?

The evidence types identified in our sample ranged from quantitative data illustrating reach or income to qualitative personal narratives that described growth and empowerment. In a single narrative, a researcher may describe broadcasting their findings to millions alongside testimonials that convey profound impact on the life of an individual; they may describe the cultivation of a loyal audience through community outreach, while validating this with endorsements such as industry-leading awards or favourable reviews in national newspapers.

These evidence types naturally fell into the two criteria highlighted for assessment in REF 2014: reach and significance. As shown in Table 3, the definition of reach and significance published by HEFCE differed between each academic panel, albeit broadly focused around the scale and diversity of beneficiaries, and the way in which research made a difference for an individual or community, on policy or practice. It was also emphasised in the *Assessment Framework and*

Table 3: Definition of ‘reach’ and ‘significance’ in REF 2014⁵⁴

	Reach	Significance
<i>Biological Science and Medicine</i>	‘The spread or breadth of influence or effect on the relevant constituencies.’	‘The intensity of the influence or effect.’
<i>Physical Sciences and Engineering</i>	‘Reach is the extent and breadth of the beneficiaries of the impact.’	‘Significance is the degree to which the impact has enabled, enriched, influenced, informed or changed the products, services, performance, practices, policies or understanding of commerce, industry or other organisations, governments, communities or individuals.’
<i>Social Sciences</i>	‘Reach will be understood in terms of the extent and diversity of the communities, environments, individuals, organisations or any other beneficiaries that have benefited or been affected.’	‘Significance will be understood in terms of the degree to which the impact has enriched, influenced, informed or changed policies, opportunities, perspectives or practices of communities, individuals or organisations.’
<i>Arts and Humanities</i>	‘The extent and/or diversity of the organisations, communities and/or individuals who have benefited from the impact.’	‘The degree to which the impact enriched, influenced, informed or changed the policies, practices, understanding or awareness of organisations, communities or individuals.’

⁵² See HEFCE, *Assessment Framework and Guidance on Submissions* (2011).

⁵³ See HEFCE, *Research Excellence Framework Impact Pilot Exercise: Findings of the Expert Panels* (2010). Available at ref.ac.uk/pubs/refimpactpilotexercisefindingsoftheexpertpanels/

⁵⁴ HEFCE, *Panel Criteria and Working Methods* (2012): pp. 34, 54, 74, 93. Available at ref.ac.uk/pubs/2012-01/

*Guidance on Submissions*⁵⁵ that reach did not specifically relate to a geographic scale, and that no preference would be made between local, national or international impacts.

Each type of evidence that we identified within the ‘Details of the impact’⁵⁶ is listed in Table 4. ‘Details of the impact’ is the section in which the evidence for the impact happening is described, using whichever set of indicators, metrics or descriptions the researcher deemed appropriate. We identified 18 evidence types that were specifically used to describe research impact in the creative and cultural sector.

Multiple evidence types were typically used in conjunction to evaluate impact. In our analysis, an average of five evidence types appeared per case study, with 85 per cent of case studies offering evidence of both reach and significance. Of the remainder, 12 per cent presented significance as the sole evidence type and just three per cent exclusively supplied evidence of reach.

As listed in Table 4, evidence of reach took one of four forms: the ‘number of attendees, participants or users’; ‘distribution or network reach’; ‘hits, downloads, shares or likes’; or the number of people implicitly reached through ‘repeated events or reissues’. All four approaches to evaluating reach related to the scale of the dissemination, primarily through quantitative data describing the size of a demographic or audience, be it reached in person, online or via an indirect network.

Evaluation of significance was, however, more nuanced. We identified over three times as many indicators of significance than those that described reach. These ranged from personal testimonials from audience members, practitioners or policy makers to the amount of income generated.

Contrary to reach, which mostly described the scale of the dissemination, the 14 indicators of significance were communicated as numbers, text, quotes or statistics. They also conveyed a broader range of information. We found that each piece of evidence, regardless of type, may constitute:

1. an endorsement
2. a pledge to think or act differently in the future
3. an actual change in opinion, practice or behaviour.

Evidence of impact that pledged or confirmed a change in opinion, practice or behaviour tended to substantiate the impact itself, whereas evidence that acted as an endorsement spoke more to the quality of the activity or project that enabled an impact.

Considered in isolation, these strands of information may not, then, always evidence impact in and of themselves: over half of the case studies included evidence of significance that fell into at least two of the above three categories, with 13 per cent including all three. Forms of endorsement

Table 4: Evidence types for reach and significance (ordered by frequency)

	No. case studies	% case studies in sample
<i>Reach</i>	365	88%
Number of attendees, participants, users	288	69%
Distribution, network reach	191	46%
Hits, downloads, shares, likes	165	40%
Number of events, reissues	106	25%
<i>Significance</i>	403	97%
Individual testimonial	278	67%
Review	133	32%
Subsequent commission or collaboration	120	29%
Press coverage	114	27%
Award	97	24%
Extent of discussion online	83	20%
Feedback form	72	17%
Grant/government funding for sector partner	68	16%
Recommendation or rating	62	15%
Citation	61	15%
Research used in policy, report, syllabus	51	12%
Amount of income generated	43	10%
Employment and economic growth	23	6%
Work procured for exhibitions or collections	15	4%

were most prevalent, appearing in 95 per cent of the case studies supplying evidence of significance. By contrast, pledges to ‘think or act differently in the future’ and demonstrable changes in opinion, practice or behaviour occurred in just 31 per cent and 42 per cent of case studies, respectively.

Quotes from testimonials and reviews were frequently woven into the prose of a case study numerous times to illustrate significance in the words of the beneficiary. Information about the ‘number of attendees, participants or users’ also received a high number of repeat references, and was often included to give a sense of scale to the reach of each impact mechanism referenced within a case study. This indicates that, similar to the ecosystem of impact mechanisms described in Section 3.1, impact generated from creative projects is not evaluated by just one yardstick but through a web of indicators, each adding a new, crucial layer to the claim for impact.

In the following sections, we drill down further to understand how these types of evidence are

“Impact generated from creative projects is not evaluated by just one yardstick but through a web of indicators, each adding a new, crucial layer to the claim for impact.”

⁵⁵ See HEFCE, *Assessment Framework and Guidance on Submissions* (2011): p. 45.

⁵⁶ Unless it required further contextualisation, we analysed this section of the submission form as a standalone statement. The supporting information under ‘Corroborating evidence’ tended to repeat what was already described in more detail under ‘Details of the impact’, and often pointed out to sources such as email exchanges or confidential data collected by partnering organisations, and hence were not in the public domain.

used by researchers to evaluate the impact of their work. We outline how this information is presented, what it conveys about impact, and the areas in which evaluation could be strengthened.

4.2 Evidencing reach

Evidence of reach typically measured the number of people engaged by research. The most common indicator was the ‘number of attendees, participants or users’, occurring in 69 per cent of case studies in the sample. This was most commonly cited in relation to ‘Music, performing and visual arts’ and the ‘Museum, gallery and library’ sectors. Only five per cent of all references to audience and user statistics presented reach in indefinite terms, simply stating that an event had been ‘well attended’ or achieved a ‘capacity audience’. The remaining 95 per cent instead cited statistics such as the exact numbers of tickets sold, or the number of registered users or attendees.

Numerical data also prevailed in descriptions of ‘distribution or network reach’, with 93 per cent of all references to such data measuring the size of the demographic. This encompassed broadcast networks, the print run of a magazine or book, or the number of subscribers connected to research via social media. Evidence of distribution was most common among media and publishing projects, where audience share, sales distribution or the circulation of a magazine all gave a sense of scale to the network engaged.

‘Hits, likes, downloads and shares’ were the third most common indicator of reach, with 40 per cent of case studies in the sample describing the size of the community engaged online. Allusions to the ‘number of events or reissues’ also signalled reach through illustrating a greater number of opportunities for exposure, such as repeat performances of a new work, extended runs of exhibitions or theatre productions, rebroadcasts, or new editions of published works.

Information about reach typically contextualised the impact activity or mechanism, affording a sense of scale to its dissemination. There were a small number of exceptions to this rule, where increases in the number of people engaged were used to identify audience development. For example, a case study describing the discovery of the structure and functions of the world’s earliest known astronomical calculator, now housed in the National Archaeological Museum in Athens, illustrated growth by demonstrating an 86 per cent increase in visitor numbers compared to the same period the previous year, at a time when ‘other museums in Greece ... suffered a general fall in numbers’.⁵⁷ Yet such uses of reach data were in a notable minority. For the most part, ‘reach’ purely

described the scale of the impact mechanism or activity, be it listing the number of people present at an event or the numbers of impressions⁵⁸ made via promotional literature or downloads of an online resource.

The statistics gathered in REF 2014 about the number of people engaging with research were, however, limited. Although evidence of reach provided meaningful context about the impact mechanisms on an individual case study level, it is impossible to draw comparisons across multiple case studies due to the inconsistency of the metrics used. With distribution, for example, how can a case study that cites the ‘estimated UK audience’ be distinguished from another that presents precise hits from a platform such as iPlayer? We have read case studies that alluded to the average weekly audience of a television network as well as those that drill down into the number of people engaged by a single episode; we found case studies that gave this number in isolation, and others that benchmarked it against the typical audience share; and we found numerous examples where these statistics were provided without any reference to the provenance of the data. Given such inconsistent measures, any attempt to benchmark reach on a national level would be inconclusive, if not futile.

A further limitation surfaces in terms of who was reached. Of the case studies that cited information about the ‘number of attendees, participants or users’, just 16 per cent described the demographic. Of this 16 per cent, most offered cursory information such as country names or qualifiers, such as ‘school groups’. More detailed information tended to be provided only if it related to a target stakeholder group, such as a particular age group or ethnicity.

When referring to a more heterogeneous group, such as the ‘general public’, representations of gender, socio-economic status and race were seldom mentioned. The same also surprisingly occurred with new media. Just one per cent of all metrics relating to ‘hits, downloads, shares and likes’ failed to state a tangible number for reach; yet only 11 per cent spoke in detail about who they reached. Given the availability of information about location, age, gender and dwell time through tools such as Google Analytics, this suggests a failure to dig deeper into exactly who the beneficiaries ‘beyond academia’ were.

Notwithstanding the above caveats, the evaluation of reach in our sample reflected the impressive scope of the creative and cultural sector in brokering a wider audience for academic research and also highlighted the scale of the importance of research to the sector. A more nuanced understanding of the demographics behind these numbers is essential if we are to fully grasp the public benefit of research.

57 ‘The Antikythera Mechanism: Seeing Inside a Two-Thousand-Year-Old Computer’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=3465

58 An impression (in the context of online advertising) refers to the number of times an advert is viewed once by a visitor or displayed on a website. Whether the ad is clicked is not taken into account. Each time an ad is displayed, it is counted as one impression.

Moreover, while reach was largely presented as a quantitative measure, a qualitative layer of information about the type of engagement it described also appeared vital. Little distinction can be made between direct and indirect beneficiaries when considering reach in purely statistical terms. For example, whereas distribution networks such as TV or radio networks may yield significant dissemination in quantitative terms, potentially broadcasting research findings to millions, the nature of the audience’s engagement is likely to be indirect. By contrast, forms of direct engagement, which typically yield much lower reach in numerical terms, may have a more enduring impact. Community arts projects, for example, may only touch a small number of people, but through prolonged exposure to the research these stakeholders are more likely either to reflect on, or enact a change based on their experience. It is therefore important not to define reach too narrowly. Interweaving statistics describing the scale of reach with qualitative information about the ways in which people engage with research helps to guard against using metrics that distort the quality of engagement with research beyond academia.

4.3 Evidencing significance

Evidence of significance took many forms. Whereas some evidence types demonstrated approval from the creative and cultural sector, be it expressed publicly in reviews or privately in testimonials from individual practitioners, others reflected public opinion gathered through feedback forms, or voiced indirectly in discussion online after an event.

Overwhelmingly, we found that illustrations of significance, regardless of the evidence type used, were a form of endorsement: the information tended not to corroborate the impact claim directly, but, like reach, imparted descriptive information about the activities or ‘mechanisms’ that enabled impact. 91 per cent of case studies used evidence of significance to endorse the impact activity in this way. Yet 57 per cent of case studies presented additional evidence of significance that went beyond endorsement and testified to a change in opinion, practice or behaviour:

- 30 per cent of case studies analysed included evidence of change that captured an *immediate response* to the research, describing transformed

“Interweaving statistics describing the scale of reach with qualitative information about the ways in which people engage with research helps to guard against using metrics that distort the quality of engagement with research beyond academia.”

Figure 12: References to significance evidence types and their described impact



perspectives, enhanced knowledge, or stating how the beneficiary planned to approach tasks or situations differently.

- 41 per cent included references to evidence that went further to document *actioned, longer-term change*, be it implementing a policy or practice, or making an enduring change to their lifestyle, opinions or wellbeing.

Certain types of evidence seemed more suited to documenting change than others. As the matrix of evidence types in Figure 12 illustrates, individual testimonials, feedback forms and the use of research in reports and syllabi were more likely to evidence change than the conferment of an award, recommendations or ratings, or details of the acquisitions of creative output(s) for collections or exhibitions. As outlined in the following sections, the latter served more to contextualise the claim for impact by offering evidence of its status within the sector, rather than evidencing change via the direct beneficiaries of a project, who witnessed it or helped to make it happen.

In the following section, we discuss how different forms of evidence were used to evaluate significance. We start with those forms that more frequently conveyed an endorsement and end with forms that were more inclined towards documenting change.

4.3.1 Industry status

References to awards (featured in 24 per cent of case studies) were the most overt evidence of an endorsement, the range and prestige of which present a compelling account of how academic research has led to industry-leading work. This includes references to films awarded or shortlisted for Oscars, BAFTAs and Emmy Awards, literature awarded the Man Booker Prize, and plays celebrated with a Fringe First Award.

Endorsement from the sector also manifested in less formal measures. Subsequent commissions or collaborations were alluded to in 29 per cent of case studies to illustrate a growing reputation in the sector. This might include researchers being invited to enter into a new collaboration or to undertake a new commission based on the success of preceding projects; other indicators also included invitations to serve on an advisory board, to act as a consultant or to judge awards. Purchases or acquisitions of creative output(s) (4 per cent) served a similar role, in which work procured for exhibitions or collections was used as an indicator of its industry standing, mostly occurring in practice-led research in areas such as the visual arts. Only a quarter of references to acquisitions originated from research-led projects.

Crucially, all of these measures contextualise impact rather than serving as direct evidence

of it (in contrast to case studies that had an impact within the sciences, which typically do not count awards or fellowships as evidence of impact). This reflects an instinct to show the perceived value of a piece or body of research by the creative and cultural sector rather than evidencing a substantive change as a result of it.

4.3.2 Audience or user response

Responses from audience members, consumers or service users also primarily served as a form of endorsement. Recommendations or ratings, for example, were typically expressed in conjunction with a specific output or activity. These pieces of evidence may endorse an event or exhibition by virtue of being featured as a critics' choice; the significance of a book may be shown by its presence on bestseller lists, or through customer reviews posted on Amazon. All but one reference to recommendations and ratings constituted an endorsement, with just one case study using a rating to describe a change in practice.

The scale and nature of online discussions generated by research were also presented as an indicator of audience or user response. 65 per cent of references to discussion on social media or blogs solely indicated the scale of this activity (for example, 'x many comments', 'y many blog posts'), whereas the rest included a summary of the discussion or provided quotes. Of these, just 13 per cent pledged to think or act differently in the future and two per cent reflected a longer-term change. Overwhelmingly, the evidence either endorsed the research or revealed more about the ripples of discussion immediately following an event, saying as much about the reach of the research as it did about its significance.

It was only in formal data gathered via feedback forms and surveys that responses from users or audience members communicated change. Just 35 per cent of references to data gathered via feedback forms presented an endorsement or described the potential for change, with statements such as 'x per cent of respondents said they wanted to learn more'. Of the remaining 65 per cent, just over half pledged to act differently in the future, and the remaining 32 per cent spoke to a longer-term change.

4.3.3 Informing discourse

83 per cent of references to reviews in newspapers, magazines or broadcast media contained attributed quotes. Many of these quotes expressed strong approval, reflecting how the work of a researcher, especially those engaging in practice-led research, was received on a par with industry professionals. The substance of these quotes predominantly endorsed these activities, with just three case studies (0.7 per cent of sample) describing an enduring impact on practice.



Press coverage was also used as an indicator of research gaining traction beyond academia, though just 12 per cent of references to press coverage described the substance of the coverage. The remaining 88 per cent simply noted the newspaper title or reported 'extensive coverage in the press', providing indicative examples of select titles. Again, such evidence could be interpreted as evidencing reach as much as it does significance.

Some anomalies do, however, exist where press coverage is presented as an indicator of change. For example, a team of researchers at the Brighton and Sussex Medical School, led by Prof. Somnath Mukhopadhyay, presented changes in journalistic discourse to illustrate how they had changed attitudes towards the benefits of personalised asthma treatment for children.⁵⁹ The media coverage that ensued from a press conference in 2009 initially focused, for example, on the inhaler failing children, reflecting a narrow interpretation of the research findings rather than communicating the benefits of personalised healthcare: 'Asthma inhaler may not work for some children, study shows' (*Guardian*); 'Asthma inhaler failing children' (*BBC News*). Further press coverage following a second press release four years later revealed a more holistic interpretation of the research. The writer for the *Guardian*, in particular, described the research as 'a wonderful example of stratified or personalised medicine working its way into practice'.

Other areas of discourse where substantial evidence of change was captured were indicated through formal citations in articles and academic journals, or the use of research in a policy, report or syllabus. An instructive example occurs in a case study from the Institute of Education (IOE), whose scrutiny of music services offered by local authorities prompted increased investment in music education by the national government. The influence of these studies was illustrated through references to new schemes for music education launched by Labour, and in the actions subsequently taken by the government to address issues highlighted by the IOE reports.⁶⁰

4.3.4 Financial indicators

The creative and cultural sector is increasingly recognised as being an important area of the UK economy, with annual economic estimates published by the DCMS⁶¹ consistently reporting revenue and employment above the national average. Yet in REF 2014, evidence of income generation was used surprisingly infrequently to evaluate the impact of research within the sector, appearing in just 28 per cent of the case studies analysed.

The financial indicators used by researchers fell into one of three broad types:

1. grant or government funding for a sector partner
2. amount of income generated
3. evidence of employment and economic growth.

59 'Personalising Asthma Care for Children', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=39753

60 'Music in Schools: Boosting Achievement, Enthusiasm and Participation', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=44311

61 See DCMS, 'The Creative Industries Economic Estimates' (2016).

Almost half of the references to financial indicators related to securing grant funding for a sector partner. This only includes the instances where the funding was an outcome of a project or collaboration, or directly supported activity within the sector: any references to the funding that enabled the originating research, or that supported further autonomous research were not included.

In some cases, references to grant funding evidenced the impact indirectly, with the award of follow-on funding testifying to the long-term significance of work in the sector. For example, a case study describing a successful World Heritage bid to protect an important fossil site in Yunnan Province (China) reported subsequent government funding of 78 million yuan to help protect the site and build a natural history museum.⁶² More common, however, were examples where a researcher made a direct contribution to securing funding that enabled further activities in the sector (either in collaboration with, or as a consultant to a sector partner). Such references to funding occurred in 16 per cent of the sample, including grants from the Heritage Lottery Fund (HLF); the Arts and Humanities Research Council (AHRC); the Esmée Fairbairn Foundation; Arts Council England (ACE); and the Wellcome Trust, among others. These funds predominantly supported activities in the museum and heritage sector.

The amount of income generated was a less common indicator of significance, featuring in just 10 per cent of the sample. Yet in contrast to grant funding, income generation overall was evidenced across all areas of the creative and cultural sector, from theatre, visual arts, heritage, film, libraries and archives, through to museums, music, crafts, dance and broadcast media. Over two-thirds of these references described the income generated in quantitative terms, such as descriptions of turnover or income from the sales of tickets or merchandise; only 31 per cent of case studies appealed to the level of income generated but provided no supporting figures for income generation at all.

Evidence of employment and economic growth was a surprising outlier, featuring in just six per cent of the case studies analysed. The use of this evidence type was also remarkably sector specific, with over half of these references occurring in narratives where the main impact was in the museum or heritage sector. The evidence cited ranged from job creation in a start-up to generating employment across the industry as a whole; and from boosting tourism and spend in local businesses to raising GDP. This data tended to be attributed to a specific event or project, derived from independent reports or economic estimates produced by government or local councils.

This dominance of grant funding as a financial indicator raises important questions about how impact was reported. Writing funding proposals

is an intrinsic part of an academic career, and is a skill that can usefully be brought to the sector. But more importantly, it is an activity that is unambiguously attributable: if a researcher has contributed to a funding bid, a clear, causal link can be made between the effort and the funding acquired. Income generated via commercial activities may also be linked to tangible projects, products or artworks to which a researcher has directly contributed. However, where the causality of wider economic impacts was more ambiguous, researchers appeared reluctant to use financial indicators to link these impacts with their underpinning research. The limited data reported about employment and economic growth thus tended to be in the context of work in a small community, such as developing a heritage site where measurements such as a boost to tourism in the local area have a more demonstrable and lasting link to the project at hand.

This reluctance to measure wider economic impacts was also identified in the *Museum-University Partnerships in REF Impact Case Studies* report, which found 'limited evidence of the partnerships securing economic returns for the museums and the regions in which they are based'.⁶³

4.3.5 Testimonials

The most widespread and direct evidence of impact came in the form of testimonials from an individual, which underpinned 67 per cent of case studies in the sample. Most were supported with an attributed quote, with just five per cent of testimonials simply using phrases such as 'positive feedback' or pointing to statements held on file. Moreover, 42 per cent of these testimonials went beyond an endorsement: one-third captured an immediate response to the research, while the remaining two-thirds described how exposure to the research had led to a change in their practice, opinions or behaviour.

These statements came from a variety of stakeholders, including:

- collaborators (32 per cent of testimonials)
- consumers, service users and audience members (30 per cent)
- peers and practitioners (28 per cent)
- policy makers (9 per cent)
- funders (1 per cent).

In statements from collaborators, peers and practitioners, the substance of a testimonial typically endorsed the work, identifying its successes, promise or significance. Yet some testimonials also offered an account of how practitioners had subsequently embraced new creative practices, workflows or curatorial directions after exposure to academic research.

A similar spectrum is evident for policymakers: whereas some endorsed the research as a model

62 'UNESCO World Natural Heritage Status for the Chengjiang (Cambrian) Fossil Site, Yunnan Province, China', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?id=18052

The regional Chinese Government in Yuxi City, Yunnan, who control and administer this UNESCO site, continue to make infrastructure expenditure in and around the site for scientific, educational and tourism purposes (email correspondence with Derek Siveter).

63 National Co-ordinating Centre for Public Engagement, Share Academy, *Museum-University Partnerships in REF Impact Case Studies: A Review* (2016).



of best practice (24 per cent of testimonials from policymakers), others went on record to state how findings had been implemented in policy decisions, how research had informed the allocation of funds, or shaped national reforms (49 per cent testimonials from policymakers). For example, practice-led work on Brazilian arts practices in Britain by Paul Heritage at Queen Mary University of London caught the attention of the then Executive Director of Arts Council England, Moira Sinclair, who stated that 'I and other senior colleagues have been actively engaged in debate, in reading your papers, in exchange with this programme. ... Partly as a result of this engagement, we designed and launched a new 10 year programme, Creative People and Places which seeks to engage communities in the UK in new and radically different approaches to develop inspiring and sustainable arts programmes'.⁶⁴

Testimonials from funders, service users and audience members, by contrast, were more inclined towards endorsements. With funders, this often constituted a positive evaluation of a project within the funding period. Those from service users and audience members also seldom reflected on the enduring resonance of an encounter with research. More common statements relating to change are those that attested to the immediate response to an event. For example, after attending an

exhibition and talk delivered at the Aberystwyth Arts Centre by a survivor of the Kinder transport movement, one respondent stated that it 'made me consider the different types of immigration and that they [*sic*] are a lot of immigrants that don't fit the stereotypes'.⁶⁵

An exception comes with participatory research, which is unique in having 'more opportunities for multiple and unhurried data collection moments'.⁶⁶ In these instances, we found testimonials that spoke of transformed perspectives, empowerment, breaking down of stereotypes, self-reflection and the building of identity. For example, a case study associated with the *Performing Migration* project, led by Lena Simic at Liverpool Hope University, presented a testimonial from a journalist exiled from Gambia, who after seeking asylum in the UK was invited to join Simic's participatory theatre project *How to Become British*. His testimonial expressed how he had made a transition from a place of distress and confusion to a point in which he felt empowered to state his own story proudly through performance, reflecting how 'this invitation not only gave me courage to speak out about my ordeal in an open forum, but it also gave me opportunity to meet other people, may be, in a similar situation and, as a result contributed a lot in making me who am I today'.⁶⁷

And in her work with a prisoner re-entry programme in Ohio, Nicola McCartney,

64 'Cultural Policy and Practice Exchanges between Britain and Brazil', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=19052

65 'The Kindertransport to Britain 1938/39: New Perspectives', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=44022

66 John Knell, et al. 'Home: Quality Metrics Research & Development Report.' November 2015, p. 64.

67 'Performing Migration', *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=41441

“Evaluating research impact in the creative and cultural sector in REF 2014 was as much about validating and contextualising the activities that enabled an impact as it was about supplying evidence that corroborated impact directly.”

“Evaluation is not something that occurs at a set point at the end of a project, but is a reflexive process that is more usefully set in motion at the beginning of a project and extends long beyond its end.”

a practice-led researcher at the University of Edinburgh, similarly translated work in Applied Theatre to encourage formerly incarcerated women re-entering civilian life to develop more constructive responses to situations of conflict, using the principles of dramatic narrative to help people better interpret and address their own life circumstances. One respondent reflected: ‘She’s a life-saver, really, because she can talk to you and get you to say things that I would normally keep inside’.⁶⁸ In such testimonials, a clear sense is given

of how academic research has touched the lives of those living through human rights or mental health issues.

These examples resonate with a shift towards more flexible evaluation strategies among participatory arts researchers, with a recent paper by Kate Wakeling and Jonathan Clark calling for the use of more qualitative evidence that provides ‘a stronger platform for participants’ own reflections and which in turn celebrate the complexity and nuance of such interactions’.⁶⁹

4.4 Evaluating and evidencing research impact: key findings

Evaluating research impact in the creative and cultural sector in REF 2014 was as much about validating and contextualising the activities that enabled an impact as it was about supplying evidence that corroborated impact directly. The open format of the case study approach in REF 2014 accommodated this spectrum of direct and indirect evidence types, combining strands of information about reach and significance to present a more holistic description of impact and its supporting activities:

- 18 evidence types were identified that were specifically used to describe research impact in the creative and cultural sector.
- An average of five types appeared in each case study, with 85 per cent of case studies presenting evidence of both reach and significance.
- Evidence of significance was the most prevalent, underpinning impact narratives in 97 per cent of the case studies in the sample; evidence of reach appeared in 88 per cent of the case studies analysed.
- Evidence of reach was largely communicated as quantitative data that described the scale of the impact mechanism, whereas the information conveyed by evidence of significance was more nuanced, ranging from endorsements and pledges to think or act differently in the future to reflections on longer-term change.
- Forms of endorsement tended not to corroborate the impact claim directly, but instead provided descriptive information about the activities or mechanisms that enabled impact. 91 per cent of the case studies analysed used evidence of significance to endorse impact activity in this way.
- Evidence of significance that communicated a pledge to think or act differently in the future or a longer-term change in opinion, practice or behaviour was less common,

occurring in just 31 per cent and 42 per cent of case studies, respectively.

- Quotes from testimonials and reviews were often woven into the prose of a case study numerous times to illustrate significance in the words of the beneficiary.

There were, however, limitations to the types of evidence used:

- The narrative approach to describing reach precluded an analysis of the data gathered on anything but a case study by case study basis, due to the inconsistency of the quantitative measures used.
- Information about reach offered little indication of the demographics represented by quantitative measures; this is essential if we are to grasp fully the public benefit of research.
- The case studies yield limited evidence of how researcher engagement has contributed to wider economic activity within the sector.
- The evaluation of significance was predominantly anchored in the immediate period after exposure, typically communicating an endorsement or a change in opinion for the short term.
- Overall, little was reported about the longer-term impact of the activities and mechanisms described. This need to support longer-term monitoring of impact was reflected in the recommendations put forward in Lord Stern’s independent review of REF 2014, in which it was observed that ‘realising the full impact of research is a continuing and sometimes long-lived process’.⁷⁰ Such monitoring of impact can, however, only be fostered by a culture in which investment in evaluation takes place across longer time scales. As the most effective examples of change show, evaluation is not something that occurs at a set point at the end of a project, but is a reflexive process that is more usefully set in motion at the beginning of a project and extends long beyond its end.

68 ‘Life as Story: The Applied Theatre Practice of Nicola McCartney’, *REF 2014 Case Study*. Available at impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=24015

69 Kate Wakeling, and Jonathan Clark, ‘Beyond Health and Well-Being: Transformation, Memory and the Virtual in Older People’s Music and Dance’, *International Journal of Ageing and Later Life* (2015): 7–34.

70 Nicholas Stern, *Building on Success and Learning from Experience: An Independent Review of the Research Excellence Framework* (2016), p. 23.

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The creative role of research: final reflections



'Sounds of Intent' © Adam Ockelford

This report has identified the breadth and diversity of ways in which research has flowed into the creative and cultural sector, and highlighted the opportunities to further strengthen these exchanges and more effectively describe their impact.

“Work on creative projects supported knowledge exchange on a wide range of topics, from science and politics to human rights and social responsibility.”

“There is a clear paradox between the simplistic, causal link between research and impact reflected in the REF impact submission form, and the messy, circular and often fortuitous pathways to impact that surfaced in our analysis.”

While our analysis focused on research that had a primary impact on practice within the creative and cultural sector, it was equally apparent that work on creative and cultural projects supported knowledge exchange on a wide range of topics, from science and politics to human rights and social responsibility. These impacts did not just originate from research in the arts and humanities, although strong links in these areas were evident, but stemmed from almost every disciplinary area within HE. This study also found that impact was seldom achieved through a single, focused activity, since each case study included various interdependent – yet often disparate – pathways to impact, creating a network of mechanisms that typically supplemented a central project rather than each being impactful in its own right.

What the impact assessment in the REF could not, however, capture was the extent to which the creative and cultural sector draws on research without any direct contact with the researcher. The reporting instead tended to be focused on proving a proactive and causal link from a piece of research and the impact claimed. Moreover, the extent to which research itself evolved through the process of collaborative working went largely unreported, as did any acknowledgement of the new knowledge generated through these exchanges. These omissions highlight the areas where impact case studies from REF 2014 are limited research subjects, since researchers were not required to report on the reciprocal benefits to their work, and are unlikely to be aware of the full extent to which their work has impacted on the sector indirectly.

The analysis of time lag between embarking on research and achieving impact was also limited by the data available. Though this suggests that research impacts involving the creative and cultural sector do not have such lengthy time lags compared to other sectors such as health, this is based on evidence that tends to capture only the immediate response to an event, offering little or no evidence of the longevity of the impact. This lack of long-term perspective was true across all evidence types, which more commonly endorsed the activity or reflected the potential for impact, rather than documenting actual examples of change.

These limitations already highlight some of the issues that should be acknowledged when considering and communicating research impact. There is a clear paradox between the simplistic,

causal link between research and impact reflected in the REF impact submission form, and the messy, circular and often fortuitous pathways to impact that surfaced in our granular analysis of the narrative reporting; presenting impact as having a forward trajectory within a prescribed timeframe distorts this reality. Yet notwithstanding such caveats, REF 2014 is an unprecedented starting point for understanding the ways in which researchers and creative practitioners have collaborated, and continue to work together.

The introduction of ‘impact’ to the assessment of publicly-funded research in the UK, in spite of its limitations, has positively incentivised academic collaboration with the creative and cultural sector, and opened up many exciting opportunities for practitioners to engage with new knowledge and expertise in an unprecedented way. It has also gained recognition for the quality and social importance of practice-led research, which historically has tended to slip through the cracks of research assessment practices in UK HE.

Gathering impact data on a national scale has also helped to identify sectors and sub-sectors that are not yet fully benefiting from research, and where the provision of training and networking opportunities in untapped areas may be beneficial. This study identified broadcast media and cultural policy as two key areas where researchers have tended not to take a proactive role in initiating and delivering projects, and found that impact projects with local and regional cultural organisations were far outnumbered by projects describing work with a national or international partner.

Finally, though we, the authors of this report, have sought to identify frameworks for understanding research impact in the creative and cultural sector, we are conscious of the risk of impact assessment criteria becoming too prescriptive. The current diversity of research impact pathways is something to be celebrated and supported rather than curtailed by a desire to find accurate metrics. We therefore welcome the recommendation proposed by Lord Stern in his independent review of the REF to further broaden the definition of impact. In this way, we hope that researchers from a wide range of academic disciplines will be further encouraged to foster opportunities to work with the creative and cultural sector, and that sector professionals will in turn be inspired by the vast array of ways in which research can inform and develop their policies and practices.

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Appendices

Appendix 1: Impact in REF 2014

Research assessment in England has occurred on a near-quinquennial basis since 1986. The Research Excellence Framework (REF) is the new system for assessing the quality of research in UK Higher Education Institutions (HEIs). The results inform allocation of research funding to HEIs, providing accountability for public investment in research and contributing to reputational excellence of HEIs.

In REF 2014, HEIs were assessed by:

- the quality of research outputs, ie a list of publications, weighted at 65 per cent of the total assessment
- the vitality of the research environment,

ie a form outlining the research strategy, current staff and research students, levels of income, infrastructure and facilities, and degree of collaboration and contribution to the discipline or research base, weighted at 15 per cent

- the wider impact of research ie in the form of narrative case studies, weighted at 20 per cent.

HEIs made submissions to 36 Units of Assessment (UOAs), which were evaluated by expert panels working under the guidance of four panels: Biological Sciences and Medicine, Physical Sciences and Engineering, Social Sciences, and

Arts and Humanities.

Impact was defined in the REF as ‘any effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’ (REF, 2011).

An impact case study, which formed the basis of the previous work and the analysis conducted in this report, is a short four-page document with five sections:

1. summary of the impact
2. a description of the underpinning research
3. references to the research
4. details of the impact
5. sources to corroborate the impact.

Appendix 2: Coding in NVivo

The qualitative analysis underpinning our findings was based on a sample of 417 case studies. We began with a sample of 432 case studies, which included 48 case studies from each of the nine impact topics identified as relevant to the sector – 16 where the topic was identified as the most relevant to the case study’s narrative, 16 where it was the second most relevant, and 16 where it was the third. All of these case studies were read and analysed in NVivo, software for qualitative data analysis. During the analysis we identified and excluded 15 false positives, leaving a final sample of 417 case studies.

NVivo enables the bespoke generation of nodes to code and analyse passages of text to identify trends and relationships in large datasets. We tagged and collated the following types of information,

capturing only the information presented under the ‘Details of the impact’, with the exception of the date of originating research, for which we captured the earliest date cited in the ‘Description of the underpinning research’ or the ‘References to the research’:

- impact type
- sector partners and funders
- research engagement
- impact mechanism or activity
- beneficiaries
- measurement type
- geographical reach
- point of impact
- sector
- date of originating research.

Coding was an iterative process. To identify the above themes for analysis, we undertook a pilot analysis of 20

case studies. This generated the main pillars of analysis and some top-level categories. Sub-categories underneath these headings were then generated while reading, driven by the content of the case studies. We began capturing this information in a granular way, later consolidating or subcategorising similar nodes as patterns emerged. These groupings and their labels further evolved through consultation among the three authors at four stages throughout the analysis process, with a comprehensive review after the analysis of all 417 case studies was complete.

We did not make value judgements about the strength of the evidence, but sought to capture objectively the information supplied by the researcher without querying whether it was accurate or authoritative.

Appendix 3: Topic model labels and associated words

Arts and culture – *art artist work cultur creativ project public audienc exhibit*

Cultural and heritage preservation – *heritag archaeolog site visitor histor museum project cultur tourism*

Film and theatre – *film theatr perform plai audienc product festiv screen director*

Historical archives – *histori archiv public histor project librari heritag cultur materi*

Literature – *book read poetri write literari writer publish literatur translat*

Media – *public bbc media radio programm interview time broadcast articl*

Museums and exhibitions – *exhibit museum visitor art galleri collect curat displai public*

Music, dance and performance – *music perform danc work sound audienc concert record festiv*

Print media and publishing – *univers book intern translat world publish de public uk*

'Discover Turner's Yorkshire' © Welcome to Yorkshire



Culture

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