Arts & Humanities
Research Council

Digital Transformations:
18 projects

Summaries of the 18 AHRC Digital Transformations
projects running from February to August 2012

Contents

The 18 projects are listed in alphabetical order by title.

A common archive for 1948 Palestine

One of the contemporary challenges for both history and the process of peace, democratisation and reconciliation, is the acknowledgement of crimes committed by power and ruling forces. This is particularly crucial when social traumas, genocides, ethnic cleansing, civil war and forced exile are involved, and constitute the core of on-going conflicts.

On the one hand, it is usually the victim's point of view that permeates the historical accounts of such traumatic events. The underlying assumption in historical researches is that victims provide first-hand narratives of brutalization, violence, rape, torture and so on. However, as Primo Levi (1976) noticed, the survivor and the witness are not one and the same thing. The American historian Raoul Hilberg (1961), author of the magisterial Destruction of the European Jews, highly criticized a history based on victims or survivals narratives. He based his work on the perpetrators and executors' documents and testimonies. Hannah Arendt (1963) followed him by justifying her absolute need to attend the Eichmann trial writing 'I wanted to expose myself not to the actions themselves - which are after all already known - but to the one who did them' (H. Arnedt Letter to the New-Yorker's editor July 1961). The contribution of history to truth and memory remains incomplete without the acknowledgement of the perpetrators' vantage point.

On the other hand, the importance of oral history is largely acknowledged among civil society activists and researchers; visual oral testimonies are more and more used in different fields such as history, sociology, anthropology and many others. But access to this material is highly difficult for a wide audience, including civil society activists.

In the work of the 'new Israeli historians', testimonies have been crucial in historical accounts of social traumas. Their contribution for peace activists from both Israel and Palestine is of great importance. A large number of documentary films, books, oral testimonies, stories, lectures, publications and research projects have been and are still being produced with the aim of telling the story of the expulsion and destruction of Palestinian society in 1948. Most of the work that has already been done is based on the urgent need to collect Palestinians' memories. However, there is still much to be acknowledged. In fact, the 'blind spot' and historiographical and political disputes relates to the absence, up to date, of any systematic archive of personal oral testimonies from Jewish Israeli 1948 war veterans. That kind of archive would record the extent to which Israeli soldiers and officials actively took part in military and civil operations designed to facilitate the Palestinian Exodus, and, moreover, guarantee its irreversibility.

Digital technologies change the way we produce knowledge and the way this knowledge can be implemented in social contexts. It involves new possibilities for social, human, ethical and political commitments in the domain of historical and artistic research. Our research project is an attempt to rethink these relationships in the light of truth and reconciliation processes. To be more specific, the case of what the Palestinian memory remembers as the 'Nakba', the forced exile of Palestinians perpetrated by Israeli soldiers in 1948, is a good point of departure to tackle these issues.

Our research project represents a close collaboration between historians and new media artists and researchers. It intends to provide a framework for both history and civil society of a joint archive of testimonies from victims and perpetrators and a Common archive. The interdisciplinary collaboration will imply a rethinking of documentary cinema and oral history in the age of Internet; it will collect 100 testimonies from 1948 Jewish Israeli war veterans and produce an audio-visual documentary available for free online as a case study and tangible outcome of the research.

Principal investigator: Mr Eyal Sivan, University of East London

Co-Investigator: Professor Ilan Pappe, University of Exeter

Accessing implicit knowledge of textiles and design
– a smart, living archive for a heritage industry

Digital technologies provide opportunities to make available 'lost knowledge' (such as design artefacts, textiles and other objects) which may lie unutilized in disparate locations across the country. This research aims to assess the feasibility and potential impact of a smart, living archive to support knowledge access and sharing within the diverse textile design community. Objectives:

1. to develop a small-scale demonstrator of an innovative digital approach to creating and accessing textile design knowledge, based on a self-organising digital archive

2. to use the demonstrator as a vehicle for understanding and refining the processes required to enable providers and users to contribute to an evolving living digital collection;

3. to probe the potential of such a system to provide more flexible, interactive and collaborative engagement by and between academic and commercial designers, practitioner and academic researchers, as well as the wider community, catering for a range of search approaches, informal as well as structured

4. to identify the potential benefits of such a system to meet a range of research needs in practice (e.g. designers, heritage organisations, trend analysts) and academic disciplines (e.g. art and design, cultural history, etc)

5. to develop understanding of the potential impact and value of the digital resource for designers and manufacturers as holders of untapped knowledge related to textile design and production.

The project addresses issues related to the Translating Knowledge theme within the field of textile design. The research also encompasses universal issues such as co-creation, collaboration, inclusivity, authenticity, heritage, exclusivity, interdisciplinarity as well as the specific material culture of textiles.

This project aims to develop a demonstrator of a smart, living textile archive which would:

- collate a varied range of knowledge objects (e.g. designs, artefacts, narratives), selected from the contemporary and historical collections of the partner company, Johnstons of Elgin;

- enable the community to contribute to the archive as users: the proposed demonstrator would utilise data-mining tools to learn tags and organize the designs to enable a living archive which would continuously evolve based on user responses and criteria, making and refining connections between knowledge objects.

- offer a range of search approaches via a portal with smart search and browsing facilities, incorporating innovative approaches to tagging knowledge objects which will improve retrieval, offer suggestions and recommendations, and cater for more structured enquiry.

Although a number of textile archives do currently exist which offer access to a range of collections, they do not offer the level of support for wider knowledge-based processes being proposed here .

By developing a demonstrator of a smart, living textile archive the proposed small-scale study would offer a foundation to address questions related to the use of digital technologies to meet key needs recognized by previous research in the arts and humanities more broadly. The study would also lay a foundation for developing understanding of the wider knowledge-based processes: an under-researched area which has not been considered the UK textile industry and has been focused within a business and organizational context rather than a wider understanding of the processes inherent in the shared development of knowledge across the wider textile community.

Principal investigator: Professor Dorothy Williams, The Robert Gordon University

Co-Investigators: Professor Susan Craw, Dr Nirmalie Wiratunga, and Dr Simon Burnett, The Robert Gordon University

Co-Investigator: Ms Suzanne Martin, Heriot-Watt University

Brief Encounters Network:
Exploring New Forms of Online Collaborative Design

We are living in a global economy where international and inter disciplinary collaboration is increasingly important. This research network will explore the potential for new and emerging technologies to better support collaborative Design processes.

The network will bring together participants from a range of different backgrounds including product design, interaction and service design, graphic design ethnography, marketing, engineering, psychology and computer science in two workshops with both physical and virtual participants. Prior to the workshops, participants will contribute to a mapping exercise highlighting their current use of communication tools and processes. This will be used to inform and compare their current and ideal/future use of tools identified in the workshop.

The participants will be sorted into teams including at least one remote online participant and challenged to address a "brief" to develop a new tool for collaboration. The teams will engage in concept design, sketching and scenario development to outline what the tool might look like. The teams will then critique one another's ideas in order to refine and reiterate the designs. This process may well produce innovative ideas which could be pursued in future research, but perhaps more importantly it will generate insights into what current practices are and how they might be improved.

The workshops will be recorded by a documentary film maker. The film will be a resource for understanding interdisciplinary and international remote collaboration. It will also be edited into a short film for dissemination on video sharing websites such as YouTube and Vimeo.

Principal investigator: Dr Erik Bohemia, Northumbria University

Co-Investigator: Professor Ahmed Kovacevic, City University

Co-Investigators: Professor Mark Blythe and Mr Jamie Steane, Northumbria University

Co-Investigator: Dr Leon Cruickshank, Lancaster University

CHIPS: Computer-Human Interactive Performance Symposium

Popular music (e.g. folk, rock, music theatre) plays a central role in the lives of millions of people. Musicians of all standards from amateur to professional produce music that is heard on radios and televisions, and performed in concert halls and theatres. Teenagers are motivated to learn instruments and play in bands to emulate their professional idols, serious amateurs play and sing together at open-mike nights, charity concerts, and in churches, and professionals perform in clubs, theatres, and multimedia shows like Cirque du Soleil and the Blue Man Group.

To learn, rehearse, and perform popular music often requires a musician to be part of an ensemble yet forming such a group can be challenging, particularly for amateur musicians. Even in established communities such as churches, the demands of everyday life mean that musicians cannot always attend rehearsals or play regularly together. In professional ensembles, illness can cause the absence of key musicians in rehearsal or performance.

Computer music technology offers the potential to substitute for musicians in these situations, yet reliable, robust, and simple systems that can be quickly set up, and that play musically and creatively do not yet exist. To focus broader attention on this significant and potentially high-impact problem, the CHIPS project will form a network of interest around the computer-human performance of popular music.

The aim is to understand and shape the future research agenda by learning from experiences of technological adoption in relevant contexts, understanding the technological state of the art in relation to popular music performance, and imagining future performance practices incorporating computer "musicians". The focus of the project will be a symposium, supported before and after by web-enabled collaborative discussion, and with the longer-term aim of establishing a network of interest to subsequently organise a self-sustaining series of symposia or working sessions at relevant major international conferences in the field.

Website: http://www.cs.ucl.ac.uk/staff/N.Gold/research/chips-project.html

Principal Investigator: Dr Nicolas Gold, Department of Computer Science, UCL

Community-powered transformations

A research network exploring digital transformations in the creative relationships between cultural and media organisations and their users

This network will explore digital transformations in the creative relationships between cultural and media organisations, and their communities of users.

Digital transformations mean that cultural and media organisations now find themselves in a new environment in which communities of participants interact to create, curate, organise and support cultural experiences. This research network draws together participants who believe that creative organisations need to explore the new relationships, new opportunities and new research questions created by digital transformations.

The network will explore and investigate the opportunities, affordances and risks of this model through a network with world-leading partners, based around four themes: Production and creativity; Business models, rights and ownership; Design; and Learning.

These themes correspond with our four events:

- Digital transformations in production and creativity workshop (29 March 2012, at University of Westminster)
- Digital transformations in business models, rights and ownership workshop (20 April 2012, at the British Library)
- Designing for community-powered digital transformations workshop (15 May 2012, at Tate Britain)
- Community-powered digital transformations in learning workshop (21 June, at UCL)

We are running an additional event on the evening of 15 May, when Henry Jenkins, of the University of Southern California, author of *Convergence Culture*, will be speaking about and discussing his new book *Spreadable Media*.

In addition to the events, we have an frequently updated blog where project researchers and event participants post articles relating to our research questions.

The proposal brings together the Communications and Media Research Institute (CAMRI) at the University of Westminster, and the UCL Centre for Digital Humanities, with some of the UK's leading institutions in digital engagement: Tate, The British Library, and MuseumNext. It will engage with a broad array of companies and organisations, large and small, who are dealing with digital transformations in different ways, including Amnesty International, the Open Rights Group, Mixcloud, Festival Productions, the Children's Media Foundation, and others.

The project will exchange knowledge about, and explore the benefits and limitations of, the various projects run by network members to engage with a community of interested users via digital services, and will consider how these digital community activities can be supported and sustained. It will also establish a set of research questions which should be explored in the next phase of the Digital Transformations programme.

Project website: http://www.digitaltransformations.org.uk

Principal Investigator: Professor David Gauntlett, University of Westminster

Co-Investigators: Professor Jeanette Steemers, Dr Paul Dwyer, and Dr Anastasia Kavada, University of Westminster

Co-Investigators: Professor Claire Warwick and Dr Melissa Terras, University College London

Network co-ordinator: Didem Ozkul, University of Westminster

Lead partners: Tate, The British Library, MuseumNext

Creating the 'Mix-d Museum': developing an online archive to share knowledge on the history of 'mixed race' Britain

This proposal seeks to develop a research network to explore the translation of knowledge on minority ethnic history in Britain - specifically that relating to 'mixed race' people, couples and families - using creative and innovative digital methods. Building collaborations between academics (London South Bank University/University of Kent) and the third sector (Mix-d), the project raises general questions about the visibility and accessibility of minority ethnic history in Britain and asks how knowledge in this field can be better viewed and shared. These questions will be addressed specifically and explored practically and creatively through a small research project: 'Creating the 'Mix-d Museum'. This will involve the development of an interactive online archive for young people and schools based on research findings from a British Academy funded project on racial mixing and mixedness in 20th century Britain.

The proposed research collaboration and the activities emerging from it examines communication of academic knowledge in a digital age, the sharing and ownership of cultural memory and identity and the development of new ways of working to enhance access and creativity.

Website: http://www.mix-d.org/museum

Principal Investigator: Dr Chamion Caballero, Weeks Centre for Social and Policy Research, London South Bank University

Co-Investigator: Dr Peter Aspinall, University of Kent

Project Partner: Bradley Lincoln, Mix-d

Creation and Publication of the "Digital Manual": Authority, Authorship and Voice

The key aim of this project will be the development of a multi-disciplinary research network that will, first, interact on the issues surrounding creation and publication of the Digital Manual during the six month period and, second, will be charged with a generative role in determining related research questions and activities thereafter with a view to seeking a longer and larger grant to explore those questions. The development of such a research network will be aided and informed by a scoping study of open source creative communities and a research workshop.

A scoping study will be conducted examining four creative communities that utilise technology to create and publish digital manual(s): FakePress Publishing (Italy/global), FLOSS Manuals (Netherlands/global), UpStage (UK/New Zealand/global), and Sauti ya Wakulima (Spain/Tanzania). These case studies reflect upon the nature of co-creation in networked communities that are international, multi-locational and transcultural. Employing qualitative research methods (semi-structured interviews and focus groups), the research team will investigate the structures of power within these creative communities. The case studies will explore representations and understandings of multi-authored digital texts and changing notions of authorship, control and power.

This project defines the Digital Manual as a model of emergent multi-authored publication employing open source and co-creative practices and each of the above communities employ a slight different type of Digital Manual. Such digital manuals, emerging forms of the book, function as a resource and platform for digital practitioners, including artists, in their use and manipulation of technology for new forms of writing and publishing. More broadly, studying the digital manual relates to concerns with emerging forms of authorship, production and knowledge-making and how these might be intrinsic to processes of social formation.

The final stage of the project will be a two-day workshop where network members and case study participants will participate in a series of discussions on the findings of the scoping study. During the workshop, the research team will aim to identify possibilities for future collaboration and the establishing of a consortium to investigate themes and issues emerging from the project. This project, through empirical knowledge gathered from primary research and development of a research network of experts on the topic (academics, practitioners and artists), will be a stepping stone for further in-depth study of digital co-creation and publication.

Website: https://sites.ace.ed.ac.uk/digital-manual

Principal Investigator: Dr Penny Travlou, ESALA, Edinburgh College of Art / University of Edinburgh

Co-Investigator: Dr Smita Kheria, School of Law, University of Edinburgh

DATA_OBJECTS: enhancing understanding of digital information through the creation of data-objects

For many people outside of the scientific community statistical information and graphics remain abstract and unintelligible. This research begins to investigate how we might interrogate statistical information from the engineering sector through the creation of material/physical objects, with the intention of bringing better understanding and increased accessibility to scientific data.

This inquiry will be achieved through a strategy of media transformations that move information sources between digital and material environments, for example; by translating digital statistics into 3D computer models, which can then be output into real-world objects using 3D printing techniques. Undertaken by a multidisciplinary team of designers, engineers, technologists and end-user communities the project aims to investigate how these translation strategies can be used to communicate and transfer knowledge between different stakeholders. User-centered activities will be conducted to explore what visual metaphors might be appropriate for different contexts.

The context for this research is centered on data gathered around the 'openability' of consumer packaging, which is becoming a major issue for an aging community. The proposed project builds on information collected by the Engineered Packaging Research Group and Departments of Mechanical Engineering, and Engineering Materials at the University of Sheffield. In research led by Dr Alaster Yoxall, the findings of a simple scientific grip test suggested that the problem of difficult-to-open packaging is especially apparent when looking at elderly people or people with a disability (Yoxall 2006). This research uses these findings to test the concept of the data-object.

Principal Investigator: Dr Ian Gwilt, Professor of Design and Visual Communication, Art and Design Research Centre, Sheffield Hallam University

Co-Investigator: Dr Alaster Yoxall, Principal Research Fellow in Human Centered Engineering, Sheffield Hallam University

Digital CoPs and Robbers: Communities of Practice and the Transformation of Research

This project will examine what transformations in research occur as communities of practice (CoPs) from different spheres interact around digital content created from primary source material in the collection of Shakespeare Birthplace Trust.

Through a series of observed workshops, the project will generate data which will show shifts in research attitudes, approaches, and methods. This data will be analysed by the CoPs concerned to promote self-reflection and to scope future research and projects.

This project proposes to identify areas of transformation in arts and humanities research by examining patterns of interactivity and exchange among different communities of practice as they share experience and negotiate meaning around the use of digital content derived from primary source material. By comparing research perspectives to digital and non-digital material, and observing a series of workshops where the polarities of individual-group, participation-reification, and togetherness-separation are tried and tested, this project stretches the boundaries of digital scholarship by building on the notion that innovation in research is a 'social phenomenon'.

Our approach will be to run a live experiment using historic artefacts from the Shakespeare Birthplace Trust collection selected by MA Shakespeare Studies students from the Shakespeare Institute, University of Birmingham. The inclusion of a digital development SME and representatives of the hacking community provides a unique opportunity to explore how interpretation can be transformed through the re-tasking of digital content, beyond the confines of HEI and non-HEI cultural institutions, for example the potential for re-authorship and issues of intellectual property. We will therefore bring together these different 'thought communities' in a live trial to build on theory by *doing*, in order to make sense of the transformative effect of digital on research.

Website: http://digitalcopsandrobbers.wordpress.com/

Principal investigator: Dr Henry Chapman, University of Birmingham

Co-Investigators: Dr Erin Sullivan, Dr Tara Hamling, Dr Richard Clay, and Professor David Parker, University of Birmingham

Lead Partners: Shakespeare Birthplace Trust, Royal Shakespeare Company, Substrakt Ltd, We Are Caper

Digital Transformations: Reading Games as (Authorless) Literature

This research project explores the ways in which gamer-students and teachers might work with the game L.A. Noire to reconfigure dynamics of expertise, begin a remediation of the English Literature curriculum and respond to the digital transformation of what we think it means to 'read' in order to think differently about the function of books and the nature of textual authority in the digital age.

In phase 1, 40 students (2 groups of 10 undergraduates and 2 groups of 10 A Level students) respond to weekly questions on a blog as they progress through the game. During this phase, they are responding as gamers and students without direction as to which 'hat' to wear. The questions asked relate to the English Literature curriculum, covering narration, point of view, theme, setting, genre and representation.

In phase 2, 1 student from each group is selected to work collaboratively with their teacher as a game mentor, to support the teacher in progressing through the game.

In phase 3, the student / teacher pairs work collaboratively - but this time with the teacher in the mentoring role - through analytical activities designed to focus on L. A Noire as an authorless piece of literature.

In phase 4, the pairs are interviewed and the teaching / study materials are adapted in response to their experiences. These materials will be disseminated for use by English practitioners and students.

Project website: http://cedare-reports.co.uk/digitaltransformations

Principal Investigator: Dr Julian McDougall, Reader in Education, University of Wolverhampton

Co-Investigator: Dr Richard Berger, Associate Professor in Media Education, Bournemouth University

Haptic Experiments: Kinaesthetic Empathy and Non-Sighted Dance Audiences

This project explores how the innovative combination of existing motion tracking and haptic technologies can support non-sighted audience members to experience viscerally the movements performed by dancers during live dance performances. In this way, such audience members might achieve a deeper emotional engagement with the choreographic works they attend. The project builds on existing recent research on the concept of kinaesthetic empathy. This refers to how sighted audience members respond kinaesthetically, yet in culturally specific manners, to the movements they watch, and how this might trigger associations between the movements they watch and their personal experiences of such movements.

The project combines affordable and reasonably accessible technologies, such as the toy Kinect to track the motion of the dancers, and a specifically built haptic pad supported by miniscule vibrotactile motors. These motors can produce a repertoire of vibrations of different intensities and speeds across different areas of the pad, thus providing a mapping of the changes of the dynamic qualities of the performance event. Non-sighted users will be invited to explore with their fingers this haptic landscape (in a similar way that they do when reading Braille). This approach has been designed as an equivalent to how sighted audiences use their eyes to explore the performance space in order to capture the dance performance as it unfolds through time.

Haptic technology which supports tactile devices is increasingly employed for the visually impaired to assist, negotiate, understand and investigate their immediate surroundings. Tactile devices engage users through their sense of touch, by combining tactile perception with kinaesthetic sensing (i.e., the position, placement, and orientation) through appropriate haptic interfaces. However todate this technology has not been used to assist access of visually impaired persons to movement-related events and spectacles, such as dance performances, or sports events. A small number of dance companies have used verbal descriptions of the movement activities, however this is very limited, due to language restrictions and because it interferes with the musical accompaniment of the performance.

In this scoping study the basic principles of extracting movement parameters from motion tracking data and mapping them on the vibrotactile pad will be examined to unable future research which will involve more sophisticated collection and transmission of movement information. The study will include experimental workshops with non-sighted participants, and the development of a small network of interested parties, both academic and non-academic, involving groups of visually impaired users, organisations for the support of visually impaired, relevant industry and funders. This network will be constituted in the final phase of the project to maximise opportunities for varied feedback and identification of resources for the future development of this scoping study into a fully fledged research project.

This project draws from the potential of current technologies to offer much wider access to the aesthetic experience of dance performances for visually impaired audience members, and simultaneously challenges assumptions about how audiences receive dance performances, which might encourage choreographers to expand their working methods. It also seeks to stimulate new developments in the use of haptic technology for the visually impaired both in relation to their access to dance and other movement-related activities, such as sports activities.

Principal investigator: Dr Sophia Lycouris, University of Edinburgh

Co-Investigators: Ms Wendy Thomas, Dr Mark Wright, and Dr John Ravenscroft, University of Edinburgh

Live Notation: Transforming Matters of Performance

'Live Notation: Transforming Matters of Performance' will open up a new domain of performance related research instigated by the recent emergence of digital live coding. The project as a whole will formalise a research network where the visions and performances of Live Coding and Live Art may be further transformed under the broader theme of Live Notation. Whilst notation in relationship to both performance and technological process has a long history, 'live notation,' a term coined in developing this proposal, is a new phenomenon that opens up technological, aesthetic and theoretical potentials. The events of the project will address, explore and perform these potentials facilitated by a transformational dialogue between live coders and live artists.

Live Coding grew out of a new approach to computer music practice a decade ago and its research community is healthy and growing. Yet there is no book, no formally recognised academic workshop, conference or research group aligned with the theme….

…The aims, then, of 'Live Notation: Transforming Matters of Performance' are 1. To understand and expose Live Coding within an arts context and 2. Enact transformation in performance practices through exploring the potentials opened up by 'Live Notation.'

The objectives are 1. To bring emerging themes in Live Coding into a programme of coherent research, identifying radical 'next steps' in relationship to 'live notation;' 2. Develop new conversations between live coders and live artists and potentially transform one another's practices; 3. Explore and demonstrate how Live Coding can transform ideas about the performativity of notation within art based performance practices; 4. Conclude the above as groundwork for creating a new trans-disciplinary platform for Live Notation.

Project website: http://livenotation.lurk.org

Principal investigator: Hester Reeve, Department of Fine Art & C3RI, Sheffield Hallam University

Co-investigator: Alex Mclean, Department of Computer Science, University of Sheffield

Project Partners: Nick Collins, University of Sussex

Geoff Cox, Digital Aesthetics Research Centre, Arhus University Denmark

Dave Griffiths, FOAM, Belgium

Andre Stitt, University of Cardiff

Maria X, Hull University

Measuring and Enhancing Expressive Musical Performance with Digital Instruments: Pilot Study and Research Workshop

This collaborative project between members of the Centre for Digital Music (C4DM) at Queen Mary, University of London and the multi-institution AHRC Research Centre for Musical Performance as Creative Practice (CMPCP) addresses the following questions:

- How can digital technology help explain what makes a performance expressive?

- How can an understanding of expressive performance guide the creation of new musical instruments and technologies?

Two emerging trends, if combined, hold the potential for transformative change in musical performance practice. First, the latest digital musical instruments capture the performer's actions with unprecedented detail, allowing continuous, precise control over every aspect of the resulting sound. Second, the study of musical performance as a creative act has taken a central role in musicology, with performers and scholars producing a vibrant interaction between theory and practice.

Music and technology have long been linked, but technology alone is not a driver of musical creativity. By extension, more dimensions of control do not make a digital instrument more expressive, and excessively complex interfaces can even become an impediment to expressive performance. The perspectives of performers and performance scholars are required to shape a new generation of digital instruments that are ideally suited to musicians' creative requirements.

On the other hand, digital technology is indispensable in the measurement and modelling of musical performance. Controlled quantitative studies of performers' actions complement qualitative techniques such as interviews and questionnaires to produce a detailed, balanced picture of performance technique. Digital musical instruments, including traditional acoustic instruments augmented with electronic sensors, provide a valuable data source concerning a performer's physical gestures.

This project promotes collaboration and knowledge exchange between performance scholars and digital music researchers through two main components:

First, a pilot study will be conducted using a sensor-enhanced acoustic piano. The study will focus on the link between expressive intent and physical gesture at the keyboard, and it will serve as a model for future extended cross-disciplinary collaborations. A refereed article will be published on the results, contributing to longstanding debates on the nature of physical keyboard technique (commonly known as "touch").

Second, a research networking event will take place as a special paper session of the Computer Music Modeling and Retrieval (CMMR) conference in June 2012. The event will draw academics, postdocs and students from musicological and technological disciplines with the goal of identifying areas of shared interest. A concert performance will be held afterward with submissions invited from composers, performers and musicologists. Performers and scholars will be encouraged to attend both paper session and performance, promoting a wide range of perspectives at each event. Following the event, the project investigators will draft a document outlining potential areas of collaboration emerging from the session.

The proposed research will be directed by PI Andrew McPherson of C4DM, with assistance from a postdoctoral researcher. Co-investigators Elaine Chew of C4DM and Daniel Leech-Wilkinson of King's College London/CMPCP will assist in the design of the pilot study and the organisation of the special session. All members of C4DM and CMPCP will be invited to contribute ideas on how digital technology can model and enhance expressive performance. Long-term impacts emerging from or influenced by this Research Development project include musical instruments that dynamically adapt to the abilities and tastes of the performer, interfaces for non-experts to express themselves musically, new pedagogical techniques and mathematical models of shape, phrasing and gesture in performance.

Website: http://cmmr2012.eecs.qmul.ac.uk [for CMMR conference workshop]

Principal Investigator: Dr Andrew McPherson, Queen Mary University of London

Co-Investigator: Prof Elaine Chew, Queen Mary University of London

Co-Investigator: Prof Daniel Leech-Wilkinson, King's College London

Playful Shakespeare: games, drama and literature in education

This project is a collaboration between the Institute of Education, Shakespeare's Globe, and Immersive Education. Its main objective is to develop an authoring tool which children and young people can use to make their own 3-D computer games adapted from Shakespeare plays.

The purpose of this is threefold. Firstly, it provides the possibility for young people to encounter Shakespeare in a cultural environment familiar to them. Secondly, it offers new ways to approach the teaching of Shakespeare, building on recent research which identifies similarities between computer games and educational drama. Like theatre (and Shakespeare's Globe in particular, perhaps), games construct an imaginary world, peopled with fictional representations of human agency (avatars), whose movements and actions can be structured both around narrative sequences and around player choices.

The alternative routes available to players will allow the young game designers to consider how choices (social, moral, strategic) are open to Shakespeare's characters: should Prospero visit revenge on Ferdinand, or allow him to love Miranda? Should Hamlet kill Claudius at prayer or defer his revenge? Should Oberon release Titania from her cruel enchantment, or enjoy her misfortune a little longer? The authoring tool will allow young designers to construct something very like a theatrical interpretation of the play, with characters, sets, script and actions; but a play which its audience can interact with.

This project is a short pilot, using The Tempest as the basis for a trial. A pack of assets will be created for the game authoring package Missionmaker (Immersive Education). It will be tested by an Advanced Skills Teachers in English, Drama and Media, with a group of students from a Year 8 class in a secondary school. The results of the trial will be presented by the students and debated by teachers, Shakespeare specialists, researchers, publishers and game designers, at a seminar at Shakespeare's Globe. The outcomes will be published as an academic article and an article for the professional journal of the National Association for the Teaching of English.

If successful, the team will explore the possibility of further game-authoring kits for young people to make adaptations of other Shakespeare plays, as well as other works of English literature which might benefit from this approach, such as Beowulf, Coleridge's The Rime of the Ancient Mariner, and Tennyson's Lady of Shalott.

Principal investigator: Professor Andrew Nicholas Burn, Institute of Education

Researching Readers Online

Now so many readers are consuming and commenting on literature digitally, we must explore the effects of digitisation on reading practices, reader responses and on the opportunities and methods available to researchers. Changes like digitisation are shaping our whole cultural heritage including the responses of future scholars to literature so we need to understand their impact. Students frequently respond more enthusiastically and critically in a digital environment than in an academic one and this pilot study will explore this and reflect on possible ways of harnessing this enthusiasm in teaching.

Digital technologies have made it much easier for readers to participate in a wide range of activities around their reading, including connecting with other readers, commenting on a range of texts, and even writing stories themselves. Online communities and fan forums present researchers with a wealth of data not only on what readers are reading, but how they are reading and engaging with texts.

This data is potentially invaluable, especially in a context where reading is supposedly in decline, and where new devices such as ereaders are threatening to supplant the printed book. This project will investigate the implications of these changes, and how they may potentially benefit a wide range of stakeholders, including those working in education and in the creative industries, as well as academics interested in readers and audiences.

Project website: www.researchingreadersonline.com

Principal Investigator: Dr Bronwen Thomas, Bournemouth University

Co-Investigator: Dr Julia Round, Bournemouth University

The Book Unbound:
Disruption and Disintermediation in the Digital Age

The human experience of how we produce, disseminate and perceive text is being irrevocably transformed by the advent of digital technologies. The project focuses on how publishing as both a business and a cultural activity is reacting to this constantly changing relationship as we move from print and paper to digital ink and screen. Such seisimic shifts have resulted in a plethora of new business models that challenge the prevailing hierarchies of cultural gatekeeping as well as new modes of authorship, and have also reshaped perceptions of the book as cultural artefact. These alternative business models are growing in popularity. One example is the lean start-up model which, by moving away from author payment by advance to income generated by royalties, has been particularly influential in stimulating entrepreneurial activity in the publishing sector.

The model of the traditional publishing value chain traces the trajectory of intellectual property from the author to the end consumer, where publishing activities such as editorial, marketing and design are all performed by the single entity of the publisher. However, this process has now been disrupted and disintermediated at every stage by the intervention of digital technologies and consequent infrastructural changes. Authors and non-traditional publishers can now publish, market and distribute their work without the aid of a publisher or conventional business practices.

The project uses two different modes of inquiry to demonstrate the ramifications of this disintermediation on the publishing industry. Its specific focus is on how 21st century modes of creation, production, distribution and consumption destabilise received notions of cultural authority, and redistributes cultural, social and economic capital. The first mode of inquiry entails the creation of five case studies (of Faber Factory, Unbound, Canongate TV, Bloomsbury Academic, Bloody Scotland/Blasted Heath) which will each describe an emergent business model that has been created in response to technological change. The second mode will involve creating a digital artefact using recently released desktop publishing software in order to analyse and assess the processes involved in creating a textual object, which also has the capacity to incorporate sound, video and social media. This approach will facilitate an examination of how narrative and genre changes when moving from print to convergent digital form. These outputs will be made available on the project website, which will demonstrate how every aspect of the publishing process is in transition. Users will be able to interact with the website infographic to explore each element further.

The project's potential benefits derive from the publishing industry's state of constant flux brought about by the rapid development of electronic formats and devices. As new standards and devices are released on an almost weekly basis, there is a need to evaluate and test these technologies before investing in them. This requires a significant investment of both time and money, which publishers are reluctant to undertake in a precarious economic climate. The project is informed by the environment of emerging digital toolkits and devices for publishing. The research will identify new learning needs and skillsets required by entrants into the publishing industry, enabling more focussed pedagogy in this area. The project's overview of the changing literary marketplace will be useful to those instrumental in creating cultural policy, as it allows for greater understanding of the needs of individual writers and artists, and SMEs who are involved in publishing and disseminating content and their economic needs.

Project website: http://www.bookunbound.stir.ac.uk [coming soon]

Principal investigator: Professor Claire Squires, University of Stirling

Co-Investigators: Dr Padmini Ray Murray and Dr Paula Jane Kiri Morris, University of Stirling

External Consultant: Scott Russell Publishing Services. Partner: Electric Bookshop

Transforming Artist Books

A research network exploring digital transformations in the creation and reception of, and access to, artist books

With the growth of digital technology, there is a new expectation among potential users of artist books and those that collect and care for them that the activities of making, cataloguing, storing, displaying, handling and looking at artist books can and should be enhanced by the digital. This proposal begins from recognition that important national collections of artist books are, sadly, largely inaccessible to the majority of their potential users and that this situation can be transformed through digital technology. Rather than viewing the computer screen and electronic text and image as a challenge or threat to the physical printed page, the proposed research network will explore the potential of the digital to transform our understanding, appreciation and care of artist books.

The workshops will each address a different theme pertinent to the study of artist books and digital transformations.

Workshop One will address two different but related questions. First, it will work with technology specialists to examine the relationship of the physical book with its digital representation and how that might be rendered. Drawing on the expertise of technology specialists at Tate, the British Library and elsewhere, this first session will think through just how those transformations might be achieved. Secondly, it will work with book artists and librarians to interrogate how that transformation might affect users' experience of the book.

Workshop Two will work with artists to better understand recent developments in the creation of artist books in digital form. By extending our understanding of the concepts and formats of artist books from the printed page to iPOD publications, free downloadable e-books, hypertext works and phone-based works, for instance, this workshop will ask how we might nurture those practices and facilitate their growth. By engaging directly with contemporary practice in this way, the network will engage with understanding significant shifts in the nature of the artist book.

Workshop Three will ask how artist books of all forms can be catalogued to make them more accessible and so transform the way in which people can engage with them. Should they be catalogued as both books and art objects? Should they be more fully catalogued to enable thematic searching? How we might collect new formats of artist books? Should an image be provided to allow visual browsing? And how might questions of copyright be addressed in the context of making collections more accessible?

Principal Investigator: Dr Beth Williamson, Research Department, Tate

Co-Investigator: Professor Eileen Hogan, Wimbledon School of Art (CCW Graduate School), University of the Arts London

Translation Arrays: Version Variation Visualization (Phase 2)

Shakespeare is celebrated as "the world's playwright" at the 2012 Cultural Olympiad. His works have been and still are being translated into scores of languages. In many languages, they have been translated over and over again, scores of times. Translations vary in kind, from philologically precise study aids to free 'adaptations' or 'versions'. All are interpretations, displaying variation in language, concepts and values. Together, they are a very rich mine of information about world cultural variation and change, past and present.

Translations, being comparable, lend themselves to computational analysis. Digital media make it possible to bring together very large numbers of translations and explore how and where they differ. Data visualization tools make it possible to survey them and navigate easily through them, even without knowing the languages involved. Statistical analyses of variation among translations can be mapped onto Shakespeare's English play texts, so we can see where his work prompts more and less variation among translations, which passages are likely to be cut, or which translations expand upon which character parts.

We call this innovative concept a 'Translation Array', by analogy with an astronomical 'telescope array'. A translation array is a sophisticated tool for creating as yet unseen images of world culture. The concept applies to any multiply translated 'world cultural text' - in literature, religion, or philosophy. Implementing it requires solving some very interesting problems of multiple text alignment, fine-grained algorithmic analysis of variation, visualisation of the results, and interactive graphical interface design.

Our proposal now is to build a first prototype translation array, using a digital corpus of over 50 German translations and adaptations of Othello, dating from 1766 to 2006, and a selection in other languages. This corpus and some experimental visualizations were created in Phase 1 of our project at Swansea University in 2011. Othello, as a 'multicultural' play, makes a good basis for this experiment.

Our work is only conceivable in digital media, but our concept has no parallel in Digital Humanities as yet. It requires multidisciplinary collaboration. Our team combines expertise in literature, languages and translation, text analysis, computational linguistics, data visualization, software development, interface design, and digital translation project management. Our larger aim is to make exploring highly complex, richly significant, multilingual text data practically feasible, instructive, enjoyable, and sociable. We use open source software to maximise social computational potential. We envisage online array users, in due course, not only exploring and analysing material we assemble, using built-in visualization tools, but sharing new data and interpretations, and developing their own analytic tools.

We foresee many applications of translation arrays, and of the software developed to build them: in research, education, creative industries, language industries, and cultural diplomacy.

However, our 'Phase 2' proposal here just focuses on building a first prototype for a single scene from Othello (1.3), in order to demonstrate the feasibility of the array concept, and in particular its potential value for monolingual (Anglophone) users, with a view to attracting further funding. We hope to launch a fully functioning array for Othello in multiple languages by April 2016, Shakespeare's 400th anniversary.

Website: www.delightedbeauty.org

Principal Investigator: Dr Tom Cheesman, Swansea University

Co-Investigator: Dr Jonathan Hope, University of Strathclyde

Co-Investigator: Dr Robert Laramee, Swansea University

Research assistant: Kevin Flanagan, Swansea University

Design consultant: Stephan Thiel (Berlin)

Collaborating on final event: CRESC, OU, Shakespeare's Globe Theatre