

Artcasting and ARTIST ROOMS on Tour: Using mobilities-informed methods to support new approaches to arts evaluation

End of project report, August 2016

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The Bowes Museum, Artcasting dialectogram (Miller 2016)

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Executive summary

Artcasting was an AHRC-funded interdisciplinary project which took place over 14 months, from May 2015-June 2016. It brought together expertise in digital education and learning, arts evaluation, and design informatics, and was conducted in partnership with ARTIST ROOMS, National Galleries of Scotland and Tate. The project involved the design, development, piloting and analysis of an Artcasting methodology and a digital output in the form of a mobile app. The mobile app invited visitors to select an artwork and create an 'artcast' by choosing and describing a new location and time for the artwork; visitors could then encounter or re-encounter artcasts in those locations at a later date. The Artcasting approach generated and measured links and relationships between objects, places and people – simultaneously creating connections and evaluating the intensity of engagement with artworks and exhibitions.

Project aims and summary of outcomes

1. **design, develop and pilot the Artcasting platform.** The development of the Artcasting concept and mobile app was iterative, collaborative, and brought theoretical and conceptual questions and ideas together with technical experimentation, creative design tactics, and analysis of data generated through project activities including interviews, workshops and in-gallery activities. We were able to complete and make publicly available a working beta version of the app on both iOS and Android platforms, which over the course of the pilot period received 172 downloads and generated 97 artcasts for analysis.
2. **understand how mobilities approaches can enrich arts evaluation.** The process of developing and piloting the Artcasting app took place in the context of detailed exploration of the current climate of evaluation practice in the cultural heritage sector, including interviews with operational, delivery and strategic-level colleagues associated with ARTIST ROOMS. This work revealed an appetite for inventiveness in evaluation in the cultural sector, along with scepticism about the extent to which change to the status quo is possible. Building on established critiques of evaluation in the cultural sector, we proposed and pursued a conceptual connection between evaluation and mobilities, most directly expressed in the underpinning design considerations for the Artcasting app, but also expressed in the creation of a data dashboard for analysing user-generated artcasts and our collaboration with the artist Mitch Miller to create a 'dialectogram' map of Artcasting. We found that a mobilities-informed evaluation can generatively place individual responses to artworks in the context of larger scale movements of ideas and affects, between and amongst the human beings and materialities of the exhibition context.
3. **influence ARTIST ROOMS evaluation practice.** Engagement with ARTIST ROOMS happened at all stages and levels of the project, including working closely with the National Galleries of Scotland, Tate and the Bowes Museum, interviews with ARTIST ROOMS colleagues, involvement of key colleagues in the project steering group, dissemination workshops with associate galleries, briefings, and a one day seminar. The project took place at a time of significant change for ARTIST ROOMS, and some planned strategic-level input proved not to be achievable during the project period, but we will continue to trace the impact of the project and will aim to contribute further as the programme moves into its next phase of delivery.
4. **generate a new approach to evaluation that can be built upon in the future.** Artcasting as a methodology which triggers spatial and temporal reflection and imagination can generate a wide range of responses which can help galleries understand the ways their visitors engage with art and cultural heritage. We have found the Artcasting concept to be amenable to investigating other kinds of questions (for example, about the nature of the 'monument' as part of a new partnership with the Edinburgh Art Festival) than the ones about evaluation that were the focus of this project. We are planning to explore potential additional uses of Artcasting in follow-on projects.

Main project achievements

- Data was gathered through nine interviews, two workshops with young people, and a five-month piloting period in two ARTIST ROOMS exhibitions, at the National Galleries of Scotland and the Bowes Museum, including six Artcasting workshops and drop in sessions.
- The Artcasting mobile application was developed for Android and iOS platforms.
- A data dashboard, created in partnership with Plymouth University and building on their Qualia platform, was scoped and tested as means of exhibition analysis.
- The project team presented and participated in 17 conferences, workshops, seminars and interactive online discussions, including a high-level presentation on the use of Artcasting to the Director of Creative Industries, Creative Scotland.
- In partnership with the research team, artist Mitch Miller produced an Artcasting 'dialectogram' based on engagement with the Robert Mapplethorpe exhibition at the Bowes Museum.
- Five papers have been written (two published, one in press, two in preparation for submission); and a further three are planned.
- To test the potential future impact of Artcasting, the team established a partnership with the Edinburgh Art Festival, to trial Artcasting in the Festival in August 2016.

Key findings

Two research questions informed the project:

- How does offering visitors a way to align their impressions of the ROOM with specific places help them articulate their engagement with the work?
- How can a mobilities approach which asks visitors to make connections between art and place constitute meaningful evaluation practice?

In responding to these questions, the project team found that:

- Artcasting demonstrates the complexity of holding different understandings of value together, but also the richness of potential outcomes when evaluation and engagement are approached in theoretically imaginative ways – in this case through the lens of mobilities theory. There is a continuing need for new theoretical and applied approaches in this area, and for theoretically informed critiques of evaluation to be part of conversations in academia and in interdisciplinary work in cultural heritage settings.
- Developing a conceptual connection between evaluation and mobilities is generative. The measurement of value in the context of exhibitions tends to focus on individual experience, development, or well-being, grounded in understandings of the human subject interacting with external objects and places. Mobilities theory provides an alternative theoretical framework that shifts the site of analysis away from the psychology of exhibition visitors, or the development of audiences, and towards a richer understanding of the complex relations between the humans, technologies and spaces involved. Artcasting generated an innovative approach through which galleries might engage the public in the capture of both qualitative and quantitative metrics.
- Artcasting invites a rethinking of the ideal of co-production in cultural heritage settings. It is a form of public interpretation of the artwork, and visitors are creating new and varied encounters with art in new places and times – the gallery guest becoming the host of a new exhibition. Ultimately, these types of digital and mobile interventions challenge the stability of relationships of co-production.
- The development and piloting of the Artcasting app and the discussions and debates around it formed a methodological approach consistent with the concept of 'speculative method' (Lury & Wakeford 2012) and 'cultural probe' (Gaver et al. 1999), generative approaches which engage as well as investigate, and which help envision and create futures – in the case

of Artcasting, around arts evaluation. Significant insights and understandings of forms of value will continue to be unlocked as the app operates in the public domain and with new users and partnerships.

- Engagement with mobilities theory can have significant consequences for design practice. Engagement with mobilities theory steered the Artcasting app towards a design that emphasised the movement and trajectory of artworks, time as well as space, and the importance of the 're-encounter' beyond the gallery; and challenged more traditional understandings of what is possible and desirable in evaluation.

Some key implications for practice from the project concern:

- the value of asking new questions and taking inventive approaches to research collaborations between academic and cultural heritage organisations;
- the complexity of app development for in-gallery use in terms of access, flexible implementation, and partnerships;
- the need for cultural heritage organisations to reflect on their evaluation agenda; and to consider how evaluation practice can take better account of the value of dialogue;
- how Artcasting offers a new approach to arts based evaluation derived from visitors' imaginative encounters with art, and demonstrates that visitors can engage creatively with exhibitions in ways that provide rich insights for reflection and practice.



Background

Project History

The Artcasting project emerged from the Learning and Engagement strand of the ARTIST ROOMS Research Partnership (2008-15), a collaboration between Tate, National Galleries of Scotland, Engage, and the Universities of Edinburgh, Glasgow, Newcastle and Strathclyde. The partnership's goal was to collaborate to conduct research around the ARTIST ROOMS collection and touring programme.

ARTIST ROOMS is a collection of more than 1600 works of international contemporary art, jointly owned and managed by Tate & National Galleries of Scotland. ARTIST ROOMS On Tour shares the collection throughout the UK in a programme of exhibitions organised in collaboration with local associate galleries of all sizes. It puts internationally important contemporary artworks in many locations that do not routinely have access to such works and puts the task of making them relevant in the hands of local galleries and users. It particularly aims to ensure the collection engages new, young audiences.

Discussions amongst members of the learning and engagement strand of the Partnership in 2012/13 identified the need to address:

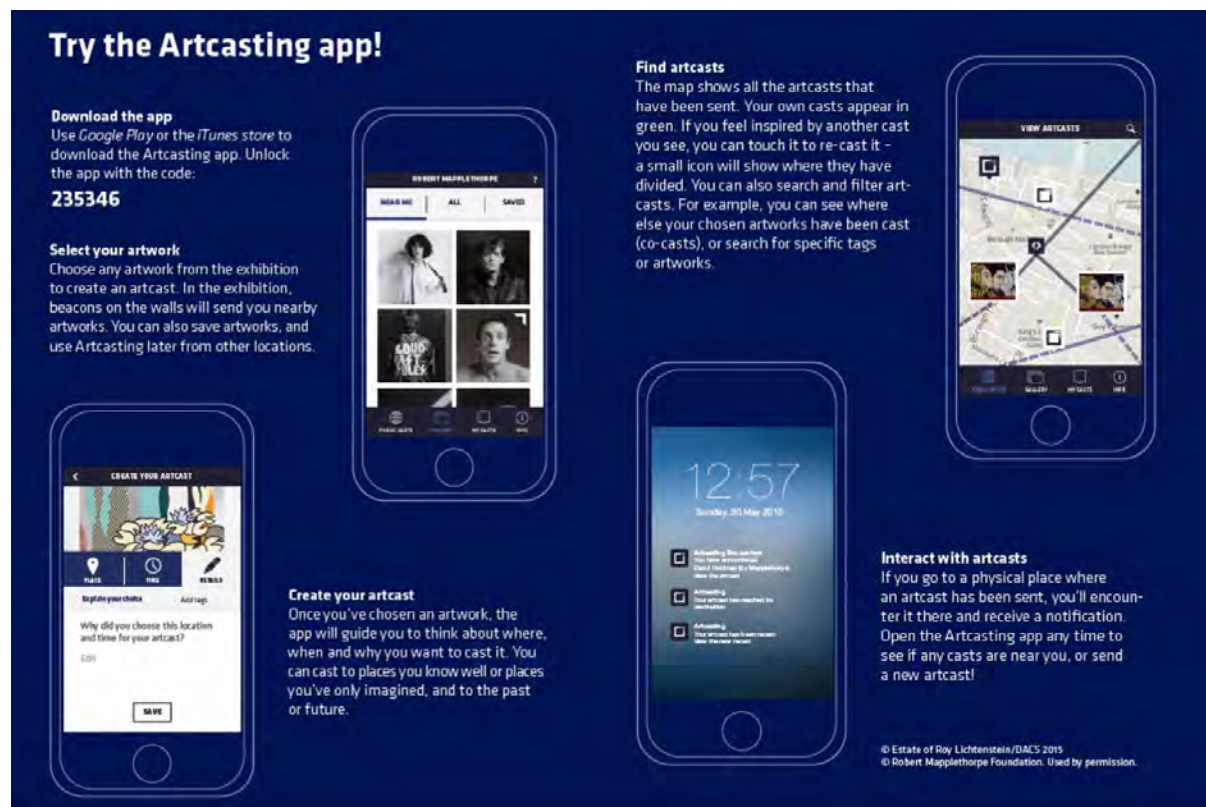
1. the mobilities and spatial turns in educational research, focusing on the ways in which social space, flow, movement and trajectory is constructed in learning contexts. The researchers proposed to investigate what happens when the room (or ROOM) is seen "not as a fixed and bounded space but rather as a shifting and temporary assemblage, and how can we create new doors, windows and portals into, out of, and between rooms" (Bayne et al. 2012).
2. the measurement of the impact of ARTIST ROOMS on Tour. At the time of the development of the Artcasting bid, associate galleries were required to evaluate their projects, and were provided with visitor, participant and associate questionnaires and asked to provide as many completed surveys as possible. Both participant and visitor surveys included a large proportion of questions focused on gathering equalities monitoring information. Other questions asked about prior and new knowledge, motivation, expectations, content of engagement and level of confidence. However, a 2013 evaluation of ARTIST ROOMS found that compliance with evaluation requirements varied considerably between associate galleries (Cairns & Cooper 2013), suggesting that these surveys may not have been particularly highly valued by the associates, or that completion rates by their visitors and participants may have been low. The evaluation review recommended more robust data capture; and inclusion of the unedited voice of young people within the evaluation process (*ibid*).

In 2015, the Artcasting project was funded by the Arts and Humanities Research Council to demonstrate, in the context of ARTIST ROOMS, that digital innovations in arts evaluation are possible and desirable, and to support broader conversations about evidence, value and the arts, drawing on a mobilities-based conceptual framework. The research team from the University of Edinburgh developed, tested and assessed a new digital and mobile form of evaluation of arts-based engagement – 'Artcasting'.

Summary of the Artcasting app

Artcasting is a mobile application that invites visitors to selected exhibitions to choose an artwork and digitally 'cast' it on a trajectory to a new location, adding information about their choice of cast and their associations with the artwork, and potentially re-encountering their own or other artcasts in the future. With an emphasis on movement, trajectory and imagination, Artcasting offered a way

of experiencing a gallery exhibition as mobile, open-ended, and continually exposed to new interpretations and encounters.



Artcasting app leaflet guidance

The process of Artcasting involved selecting an artwork, either while engaging with it in the museum or gallery, or after the visit; creating an artcast by choosing where, when and why the artcast was to be sent; and encountering or re-encountering artcasts at other places and times, including the possibility of 're-casting' to another location. The focus on time, trajectory and movement, rather than simply 'location', foregrounded the particular paths undertaken by cast artworks. The app provided the means to choose the time of arrival for a cast artwork, and also the speed at which an artwork travelled to its destination. The app also granted users the ability to re-encounter artcasts, via their own devices, in any location to which an artwork had previously been cast. This process of re-encountering was informed by the principle of extending engagement with art to times and spaces beyond the gallery.

Key concepts and ideas

Two sets of ideas guided the project: mobilities theory, and arts evaluation.

Mobilities theory

Emerging from a 'mobilities turn' in social science research, increasing attention has been given to the ways that institutions and communities are *produced* through movement and transition. Rather than assuming that an authentic location defines and delimits what is studied, a mobilities perspective encourages a view of the world in which movement influences how people, societies and infrastructures are shaped and maintained:

mobilities research encompasses research on the spatial mobility of humans, nonhumans and objects; the circulation of information, images and capital; as well as the study of the physical means for movement such as infrastructures,

vehicles and software systems that enable travel and communication to take place. (Sheller 2011, pp.1–2)

Established evaluation practices tend to account for audience experience in a binary fashion: either “in” or “out” of the bounded and sedentary space of the gallery. They are traditionally inclined to privilege “place” as the authentic site of the encounter with art, but this project investigated the value of foregrounding the *mobilities* at play: the flows and lingerings of the people, objects, and ideas that coalesce to produce gallery exhibitions.

In particular, we investigated how Artcasting could generate unpredictable visitations that might extend well beyond the gallery space or the timeframe of the exhibition, and looked for ways of capturing the instability of relationships and collaborations of co-production in Artcasting. We explored ‘trajectory’ as a generative concept for mobilities-informed approaches to co-production. This provoked questions such as: How are galleries constituted from movement as much as from sedentarism? Where do artworks come from and belong, how do they move to and through the space of the gallery, and where do they go afterwards?

We brought these questions to the practices of museum and gallery evaluation, which tended to limit data collection to tracking numbers and demographic information of participants, and were often perceived to have a focus on ‘proving not improving’ attendance, engagement and learning.

Arts evaluation

A recent 2015 ARTIST ROOMS evaluation describes the cultural sector’s struggle to measure the quality and depth of visitor experience (Antrobus 2015, p.20), and includes ARTIST ROOMS in this struggle. Artcasting was situated in the context of a number of important national developments in the sphere of evaluation and cultural value, including the ‘Culture Counts’/Manchester Metrics project (Bunting & Knell 2014) and the controversy around this (Selwood 2015; Balshaw et al. 2016); the implementation and evaluation of the AHRC’s Cultural Value programme (Crossick & Kaszynska 2016), and the Arts Council England-funded ‘Quality Principles’ pilot. The Quality Principles pilot explored what quality arts and cultural experience might look like for children and young people (Lord et al. 2012; Sharp & Lee 2015), and developed seven quality principles by which work by, for and with children and young people in the arts and cultural sector could be measured:

- Striving for excellence and innovation
- Being authentic
- Being exciting, inspiring and engaging
- Ensuring a positive and inclusive experience
- Actively involving children and young people
- Enabling personal progression
- Developing belonging and ownership¹.

Findings from the Quality Principles pilot indicated that they were able to “inform both the content of [organisations’] evaluation and the way it was applied (for example, by devising creative and engaging methods to capture meaningful feedback from children and young people). Some went further by supporting children and young people to become evaluators themselves” (Sharp & Lee 2015, p.20). However, the authors warned that the effectiveness of the Quality Principles was due to the perception on the part of cultural organisations that they are ‘the antithesis of a centrally-defined measurement tool’, and that Arts Council England should not reduce the Principles to a ‘tick box exercise’, lest they ‘encourage a compliance mindset and lip service at the expense of collaborative approaches to innovation and quality’ (ibid).

¹ <http://www.artscouncil.org.uk/what-we-do/cyp/resources/quality-principles/#sthash.ZmdF0Jxr.dpuf>

This tension – between engaging and creative methods for evaluation, and the approaches that tend to accompany mandated and controlled evaluation practices – is an expression of wider tensions around instrumentality in evaluation, which were addressed by the Artcasting project. Instrumental evaluation is primarily associated with the establishment of causal relationships between the arts and measurable impact in terms of economic, social, or educational benefit. It foregrounds the use of quantitative measures of impact allowing for the generalisation of findings (Belfiore & Bennett 2010), and it is problematic because a focus on causality ignores or silences alternative perspectives of value, excluding the types of measures of cultural value that Donovan (2013) asserts are needed to achieve a holistic approach to valuing cultural activity.

The Artcasting project grappled with the tensions that emerge between demands for particular forms of evidence about effectiveness, and the other forms of value that need to be accounted for. It responded to Belfiore and Bennett's (2010) call for a humanities-based approach to evaluation, focusing on understanding the complexity of the aesthetic experience, and asking normative questions about the purpose and value of the arts. Artcasting attempted to explore how arts evaluation can “enlighten’ both public opinion and decision-making around the role of the arts in contemporary society” (Belfiore & Bennett 2010, p.139), and it therefore developed its methodological approach in response to the need for new ways of getting insight into engagement with art.

Project objectives and research questions

Artcasting aimed to:

- understand how mobilities approaches can enrich arts evaluation
- design, develop and pilot the Artcasting platform
- generate a new approach to evaluation that can be built upon in the future
- influence ARTIST ROOMS evaluation practice

The research questions were:

1. How does offering visitors a way to align their impressions of the ROOM with specific places help them articulate their engagement with the work?
2. How can a mobilities approach which asks visitors to make connections between art and place constitute meaningful evaluation practice?

Research team and steering group membership

Research team:

- Jen Ross, PI, Digital Education
- Chris Speed, CI, Design Informatics
- Jeremy Knox, CI, Digital Education
- Claire Sowton, RA, Digital Education
- Chris Barker, Software Developer, Design Informatics

The project steering group consisted of the research team plus:

- Sian Bayne (Chair of Digital Education, University of Edinburgh)
- Christopher Ganley (Digital Content & Design Manager, National Galleries of Scotland)
- George Harris (Exhibition Manager, Bowes)
- Ceri Lewis (ARTIST ROOMS, National Galleries of Scotland and Tate)
- Damien McGlynn (ARTIST ROOMS, National Galleries of Scotland and Tate) (to Nov 2015)
- Emily Pringle (Head of Learning Practice & Research, Tate)
- Nick Prior (Head of Sociology, University of Edinburgh)
- Jane Sillis (Director, engage)

Project phases

The project was organised into three overlapping phases: scoping, design and analysis. Findings from each phase fed into the others, and each supported a number of engagement and dissemination activities, which are discussed in the engagement section that follows. Across all phases, a regular series of research 'deep days' helped the team to process insights gained through data collection, analysis, and engagement activities, and translate these into design approaches for Artcasting. From the earliest meetings, the underpinning concepts and questions were brought up against design tactics and methods in an iterative process, which continued into the analysis processes and the development of an Artcasting dashboard.

Phase 1: Scoping (May-August 2015)

The initial scoping phase involved analysis of existing evaluation materials and practices in use by ARTIST ROOMS, semi-structured interviews with nine key stakeholders drawn from associates, NGS and Tate, and funders; and design-based workshops with young people at the National Galleries of Scotland and the Bowes Museum.

Interviews with ARTIST ROOMS, gallery staff and funders

Nine semi-structured interviews were conducted with associate gallery staff, individuals representing funders or ARTIST ROOMS, and one individual recognised for using innovative and digital approaches to evaluation in the arts and cultural sector. Interview questions emphasised respondent experiences of evaluation, identifying challenges and eliciting examples of creative, innovative and digital evaluation practice. Interviewees were also asked to characterise their current evaluation practice through metaphor. Analysis of the interviews indicated:

1. a lack of consensus across the sector (from funders to gallery staff) around what evaluation activity is required versus what is (or might be) desirable.
2. a desire (operationally and strategically) to build evaluation capacity by increasing knowledge and skills within organisations, coupled with a recognition that the process of gaining such knowledge is challenging, time consuming and difficult to align with core remits of individual staff and departments.
3. that evaluation was viewed negatively in a range of ways (inappropriate, burdensome).
4. that evaluation was viewed positively where its utility is apparent or where it is seen as an interpretive activity, for example, giving visitors different ways into an exhibition.
5. significant interest in the principles informing Artcasting: bringing engagement and evaluation closer together; trying something inventive with evaluation; and innovating with digital approaches for evaluation.

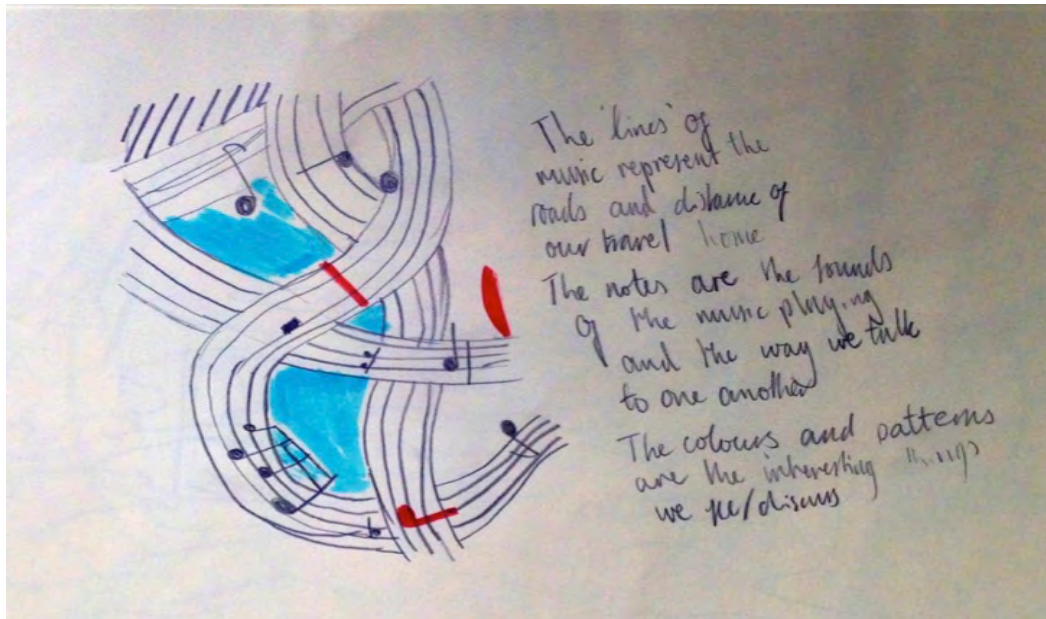
Drawing on these interviews, we identified three key metaphors which frame the evaluation experiences and perspectives of those interviewed: collage, dialogue and the 'holy grail' (Sowton 2016). The metaphor of evaluation as dialogue reveals aspects of practice taking place in museums and galleries where the evaluative material gathered is used beyond the needs of funders, to inform practice. Participants assumed, however, that dialogic and longitudinal aspects of evaluation practice were peripheral to the central 'chore-like' tasks of evaluation, characterised by uncertainty and unrepresentative of staff perceptions of the value of their work. We concluded that greater direction is needed from those defining the requirements galleries and museums must adhere to, to avoid tying evaluation too closely to the transactional needs and accountability agenda of funders. Cultural heritage organisations should engage in more focused critical reflection around their evaluative activity with a view to taking greater responsibility for what they do, why, when and how, with the aim of developing a clearer understanding of the role of evaluation and to help address negative perceptions of the evaluation process, increasing confidence in the practice of evaluation, resisting dominant measures of impact (where necessary), and improving organisational learning overall.

Workshops with young people

We held two workshops in July and August 2015, one at NGS with a group of five members of the 'fresh fruit' group (associated with the Fruitmarket Gallery in Edinburgh) – ages 15-23; and one with a group of four members of 'Young Voices' at Bowes – ages 11-16. Between the two groups we were able to work with almost the full range of ARTIST ROOMS' target age group.

In **workshop 1**, at NGS, the focus was on exploring, through a series of activities, how participants could articulate different aspects of connection between place and art. Participants were asked, for example, to imagine an artwork they had seen that made an impression on them, and illustrate what they could remember about where they saw it, how they travelled to or from that place, and why it stayed with them. We conducted a 'think aloud' exercise where participants recorded their thoughts about the Lichtenstein artworks as they stood with them. We discussed the mobile apps participants particularly liked and talked about what makes them engaging. Our final drawing activity asked participants to connect art and place, with a choice of approaches including extending an artwork beyond its borders, imagining the journey of an artwork, and representing their own journey to or from the gallery, as it relates to the exhibition.

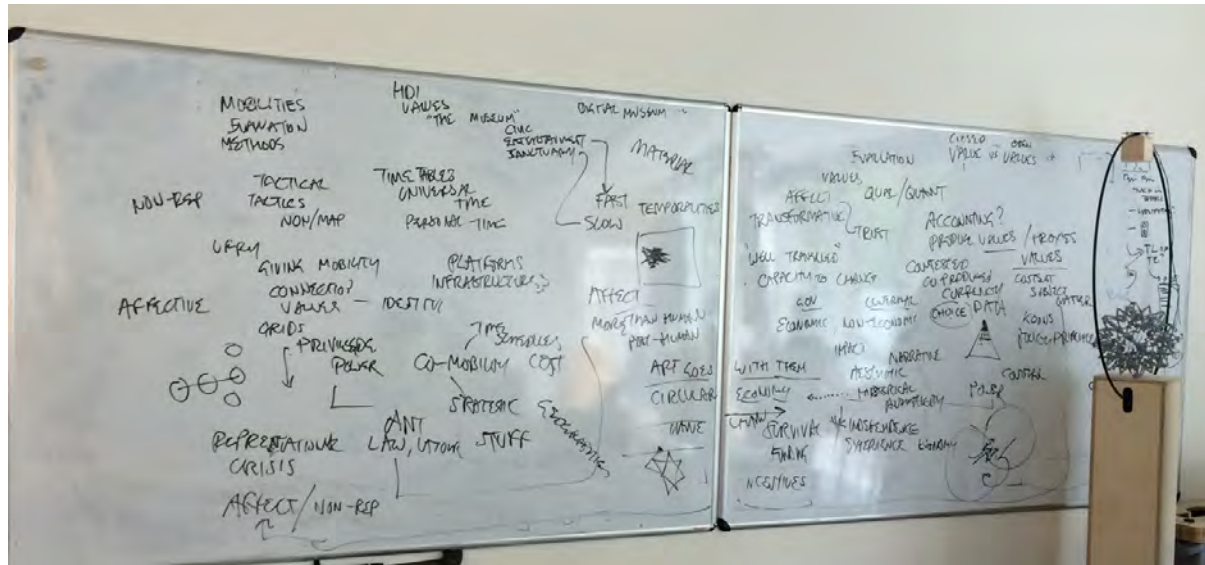
Workshop 2, at Bowes, focused on establishing how readily younger visitors could engage with the question 'where does this artwork take you'? Using the metaphor of the 'portkey' from Harry Potter, we spent time in one of the gallery spaces inviting participants to choose an artwork which took them somewhere. Participants engaged in mindmapping and creative making activities to help visualise this engagement. The success of this approach was encouraging, but also helped us refine our thinking and direct our attention towards how to accomplish more imaginative leaps. 'Where does this take you' inevitably evoked memory, while other questions such as 'where does this artwork belong' were more likely to offer a range of possible responses.



Drawing from an Artcasting workshop participant, age 15. Responding to the task of interpreting one of the Lichtenstein artworks (Composition I) in terms of journeys to or from the gallery, this participant wrote: "The lines of music represent the roads and distance of our travel home. The notes are the sounds of the music playing and the way we talk to one another. The colours and patterns are the interesting things we discuss". This and other responses from workshops strongly indicated that the Artcasting concept would be generative.

Phase 2: Artcasting design and implementation (June 2015-April 2016)

A key element of the project was the design, development and piloting of the Artcasting mobile app.



deep day whiteboard

The iterative process of designing and developing Artcasting was closely connected with evolving research questions and conceptual challenges and findings from the team's reading, experimentation, data analysis, reflections and insights. A series of monthly team 'deep days' brought ideas of mobilities, evaluation and digital engagement together with technical considerations and creative experiments. The inclusion of Chris Barker as a core team member was one of the major strengths of the project, and this advantage was notable during our deep days. We were also fortunate to work closely with a graphic designer, Sigrid Schmeisser, on all aspects of the project's visuals, including the app, and her design iterations both reflected and focused the project's concerns and ideas.

The design process was one of considerable complexity, as we raised and returned to key problems and ideas, checked our technical decisions against the project's theoretical underpinnings, and tested concepts and technological developments in parallel. During this phase the project's interdisciplinarity was especially pronounced, with design, education, and informatics perspectives continually put into dialogue. Ultimately, we came to see Artcasting itself as a methodological intervention – a way of finding things out and testing concepts. Our pilots, workshops, interviews and team meetings were part of developing various technology probes which could problematise issues around evaluation.

Key preoccupations for the team during these deep days included:

Questions of evaluation and value. We discussed at length what values Artcasting should try to evaluate, and what it was trying to ‘prove’ – concluding that its purpose should be to try to prove that something (inspiration, engagement) ‘lives on’ in people’s experience of art. To demonstrate this, the app itself would have to appeal to visitors, and so a number of questions were pursued in relation to how Artcasting might function as a ‘currency’ – what the value propositions for Artcasting might be, what incentives were needed, and ultimately what definition of ‘value’ might apply in relation to a project like this. In order for everyone involved to take something valuable away, the project needed continually to balance on a precarious edge between offering visitors something engaging and imaginative, and considering organisational priorities around evaluation. We grappled with the extent to which arts evaluation can be fuzzy, horizontal, subjective, and complex while still keeping legitimacy and relevance for our gallery partners; and how to put into practice resistance to instrumental approaches to evaluation.

Mobilities in theory and practice. Explorations of mobilities in practice included discussions about the different scales of movement (local to global) we might expect from Artcasting and how to meaningfully combine these; how to allow for imagined places; what should trigger ‘encounters’ and what should happen with artworks which were not being cast; where the map representation should centre itself (how much movement should Artcasting encourage?); and how to be sensitive to the sorts of difficult journeys and migrations visitors and others might be experiencing. Importantly, we needed to decide how we could capture a sense of trajectory of the artwork. At the same time, we addressed many conceptual questions about mobilities during the development process. We wanted to challenge the idea that more movement was necessarily better, that distance was better than nearness. We wanted to critique the privileging of the gallery as the ultimate destination for art, and instead to construct it as a waypoint.

Looking critically at Artcasting itself, we saw that it played on the entitlement that digital maps and other wayfinding technologies promote – that the whole world is accessible to digital mobilities, and that visitors can choose from infinite locations to re-place artworks. At the same time, it masked the lack of agency visitors have in relation to physical artworks – the requirement to go to the gallery itself to engage with Artcasting and the existence of webs of technological and copyright restrictions, for example. We explored different types of movement expressed and experienced in relation to Artcasting: artworks in and out of the gallery; the traceroutes of Artcasting data; people (and their demographic categories) as virtual and physical visitors; re-encounters with artcasts; the imaginative movement it took to envisage artworks elsewhere; and the spatial configurations and meaning-making resources of the dashboard.

We came to view Artcasting as primarily about creating *and* measuring links and relationships between objects, places and people, and increasing connections – so that the evaluation of engagement with art might most appropriately be the measurement of the intensity of connections.

Engagement. We had a number of questions about engagement and participation during the development phase – about how some visitors’ limited experiences of mobility might play out in terms of Artcasting – whether artcasts could go somewhere ‘on someone’s behalf’ (and indeed this did seem to happen with some casts). We wondered if some people would feel more entitled to make art mobile than others. We wanted to understand what people’s expectations were about what art should do for them, and where it should take them. More broadly, we explored how individual reflection through Artcasting could provide theoretical insights for the project, the extent to which Artcasting stories were imposed through the structure, the kinds of memories people were expressing, and whether Artcasting places were remembered or imagined.

Organisational issues. In order for Artcasting to be sustainable and usable in a museum and gallery context, we needed to consider what organisational burden it might represent; how it could encourage tailoring and invention in evaluation practice; how institutions might incorporate Artcasting data as part of a wider evaluation and engagement landscape; and whether Artcasting provoked challenges (for example to the authority of curatorial expertise) that could and should be engaged with by partners. We were particularly committed to working with our partners to consider evaluation beyond audience development; to use Artcasting to explore how people engage with art and what that might mean for learning programmes and approaches in the galleries. We wanted to explore how Artcasting could help partners curate *with* data.

Technological innovations: Geofences and iBeacons

The development phase of the Artcasting app generated helpful insights into a range of possible uses of technology in and beyond the gallery, and through our work in this phase we identified a need to move against the essentialism inherent in much technology use in the cultural heritage sector. Far from being a neutral platform for human interpretation, our research discussions focused on the importance of code and algorithms in shaping and defining the Artcasting experience, how digital maps affected and constrained visitor imagination, and the many issues of accessibility and

power involved in making galleries technology-rich spaces. These preoccupations were evidenced in our approach to the more technologically innovative aspects of the project – the creation of geofences to support Artcasting re-encounters, and the use of ibeacons in the gallery.

Geofences. A key element of the Artcasting platform was what happened *after* a cast was sent – the potential for users of the app to re-encounter their own or others' artcasts required detailed consideration of the use of geofencing technology. A geofence is 'a virtual perimeter for a real-world geographic area' (Wikipedia 2016a), in this case generated by users' selection of a location for an artwork to be 'cast' to. Practical decisions (for example, where to generate a fence when a cast was sent to a generic location such as a country) had implications for how casting would be experienced, and these decisions were discussed at length. One of the main challenges of the app development was getting the geofences to be triggered without creating unacceptable drain on device batteries by continually checking for device location; compromises had to be made which meant that re-encounters could be quite random (sometimes a geofence would be triggered, other times not). Accepting that randomness and looking for ways to understand it as part of the functionality of Artcasting was a core element of team discussions, and set the tone for our understanding of Artcasting technology as a method.



early test of geofences in the streets of Edinburgh, June 2015

iBeacons. iBeacons are small pieces of hardware which 'broadcast their identifier to nearby portable electronic devices. The technology enables smartphones, tablets and other devices to perform actions when in close proximity' (Wikipedia 2016b). Cultural heritage organisations and their digital teams have been excited by the potential of this technology, but in practice use of the devices have met with mixed results (Doljenkova & Tung 2015; Bernstein 2015; Chilcott 2015). In discussion with gallery partners, we decided to try iBeacon technology in a light-touch way to explore how in-gallery technology could enhance visitor engagement. Our exploration was deliberately experimental and low-key, and focused around using beacons to offer visitors the ability to see and cast the artworks nearest them in the gallery. We also considered additional uses of the beacons, for example to get artworks to prompt visitors to cast them by sending messages or notifications. However, the 'near me' functionality proved difficult to get working – primarily because adjusting the sensitivity of the beacons so that the nearest artworks were recognised without picking up other beacons was challenging in the different gallery locations of the pilots. As a result, the beacon experiment was deprioritised as development continued.

Artcasting pilots

Artcasting was piloted in two ARTIST ROOMS exhibitions in 2015-16: ARTIST ROOMS: Roy Lichtenstein at the Scottish National Gallery of Modern Art (December 2015-January 2016), and Robert Mapplethorpe: The Magic in the Muse at the Bowes Museum (December 2015-April 2016), and was ultimately available for both IOS and Android devices, though the Android version was not available until February 2016. These pilots were designed to test the research concepts, and explore the research questions. In this sense, the app was a *method* rather than merely an output for the project, but, the app itself has proved to be interesting enough that the research team is now exploring further opportunities for its use (see the 'Artcasting futures' section).

Alpha test: Explorathon public engagement event

Our first test of Artcasting as an app took place in September 2015 at the National Galleries of Scotland ARTIST ROOMS: Roy Lichtenstein exhibition, as part of European Researchers' Night ('Explorathon'), which saw events taking place across Scotland in which members of the public could engage with academic research and science.

The team provided an alpha version of the Artcasting app on a number of mobile devices, allowing participants to perform basic casting functions. Visitors were able to select artworks of their choice from the exhibition and (re)locate them in the context of a world map, name their cast and add a description about their choice of location. Visitors were able to see their casts displayed on a world map on a large screen in the NGS Modern 1 Resource Room. A total of 68 casts were generated by 28 participants during the event.

Three preliminary categories of artcasts were identified from casts from this event: memory, art history, and imaginative casts, and this alpha test of the Artcasting concept encouraged the team to pursue more complex functionality in the app, foregrounding the journey or trajectory of the cast artworks, and giving users more control of characteristics of the movement itself.

Pilots – National Galleries of Scotland and the Bowes Museum

Pilots took place between late November 2015–January 2016 (NGS) and late November 2015–April 2016 (Bowes). Initially use of the app was researcher-led and supported, with drop-in sessions and periods of observation and supported Artcasting taking place between December–April. The app became available for visitors to download on IOS devices in late December, and on Android devices in late February. At NGS, leaflets and an A-frame in the Resource Room (where other Lichtenstein materials were located and a documentary about the artist was playing) invited visitors to try the app; at Bowes an Artcasting pop-up banner and leaflets were available just outside the Mapplethorpe exhibition space. Gallery staff in both locations were briefed about the app.

In total (and not including visitor uses of the app on the team's devices, which was very common in the early stages of the pilots), there were 172 downloads of the Artcasting app during the pilot period (151 on iOS, 22 on Android), and 97 artcasts were sent.



Artcasting leaflets and banner at the Bowes Museum



Artcasting A-frame and leaflets in the resource room at the Scottish National Gallery of Modern Art

The majority of artcasts were sent during researcher-supported drop-in sessions and workshops, rather than by visitors stumbling upon and downloading the app on their own. There are three principal reasons this might have been the case. First, uptake is an issue for in-gallery use of technology in general, particularly where the interactive intervention is not a core element of the exhibition. The 2015 NMC Horizon report for Museums noted that “the momentum behind the participatory movement is causing many museum leaders to consider formulating policies that foster digital interaction via smartphones and social media inside museum walls” (Johnson et al. 2015, p.19). However, the implementation of such policies has come up against “pushback to maintain spaces and time for deep contemplation and reflection, activities that need no digital plug-in” (p.26). There are practical challenges, too – including connectivity in museum and gallery spaces, the understanding and support of gallery staff, and the willingness of visitors to grapple with unfamiliar technology (Proctor 2011). Future work on Artcasting could explore how to make it more seamless for visitors to engage with (for example by making the functionality part of another app, or by placing it on in-gallery devices).

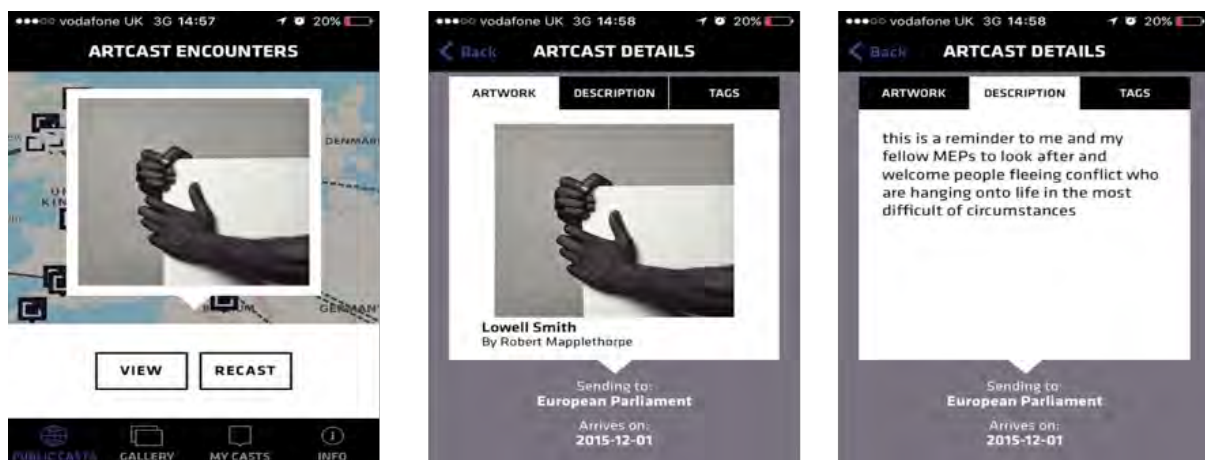


Claire Sowton with a visitor at the January 2016 drop-in session at NGS

Second, the availability and stability of the app was variable. The creation of a brand new digital app, the agile development process we adopted, and the complexity of the ideas the team was working with, meant that the app was in development throughout the pilot period, with refinements being iterated and rolled out continually. At some events the app was unable to cope with multiple simultaneous downloads/uses; the Wi-Fi and 3g signals in the gallery spaces were uneven; and

casting was not always successful – this is reflected in the higher number of app downloads as compared with casts recorded in the database. In events and workshops we were able to help and support people to use the app, but such support was not available to the same extent at other times. This was anticipated to some extent, and planned for in the emphasis on events and workshops, and is probably a natural consequence of attempting to develop and deploy a new concept within such a short time period.

Thirdly, and importantly, Artcasting functioned as part of a conversation. Visitors at drop-in events and workshops were highly engaged with Artcasting when it was undertaken as part of a conversation with the researchers, with gallery colleagues, and with their friends and family members. This returns us to the issues raised about value propositions and the benefits visitors anticipate from investing time to download and use in-gallery technology. A key finding from this project is that conversation and engagement is in itself strongly compelling: visitors value the opportunity to reflect on and express their engagement with exhibitions, in the context of invitations to join in with experiments and new approaches to evaluation.



an artcast sent to Brussels: "this is a reminder to me and my fellow MEPs to look after and welcome people fleeing conflict who are hanging onto life in the most difficult of circumstances"

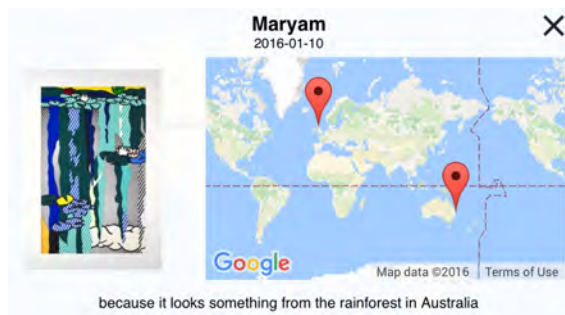
Phase 3: Analysis and evaluation of artcasts (January-June 2016)

Qualitative analysis

Data from the 'name' and 'description' fields of the live Artcasting database and from the exploration pilot were thematically coded and analysed to explore research question one:

how does offering visitors a way to align their impressions of the ROOM with specific places help them articulate their engagement with the work?

Articulation of engagement took multiple forms in the Artcasting data. Perhaps unsurprisingly, casts frequently reference or discuss how the artworks evoke place, with landmarks, cities, cultural locations (such as other galleries), and other specific places appearing in the titles of casts. Place name/title examples include: central park; Mount Fuji; S'Algar Diving Centre, Wembley arena; Holyrood Park; Paisley central way; Hong Kong; Adelaide; Buckhaven; Montreal and Taipei. Cast texts which specifically associate artworks with places were common:



"because it looks something from the rainforest in Australia"



"Jazz hands on Broadway, naturally"

And sometimes these casts were closely associated with specific qualities of the artwork:

All of these three Composition pieces look like huge physical forms - rivers or roads perhaps. Some are more organic but I think that Composition II looks incredibly like a major road system - it reminded me of the roads around Porto, and Genoa, but I decided that the chaos and curcular motion really elonged near the infamous Spaghetti junction - with the musical notes and notation busily congesting te complex networkl of staves. (explorathon cast of *Composition II*)

Visitors' knowledge and understanding of art and its influences and geographical contexts came to the fore in a number of casts:



"it reminded me of Dorothea Lange's work and maybe she'd be really pleased to see that her style of realism is valued" – sent to the year 1936



"pop culture aesthetics and the flat urban landscapes make the fit"

In addition to place, artworks were often evocative of particular events and people:

mum crashed her mini, the brakes failed down a steep Dartmoor hill and she was forced to crash into a high wall / hedge (cast of *Reflections on Crash*, sent to the year 1992)

happy times with my daughter and friends running around the artwork (cast of *Lindsay Key* 1985)

My first introduction to Monet was at the Art Institute of Chicago. My father would take me and my 5 siblings to museums. He gave me an appreciation of art and my mother a break at the same time. (explorathon cast of *Water Lily Pond with Reflections*, titled "Thanks Dad!")

My brother loves Pop Art and has just moved house. I think he'd be delighted to encounter this icon in his home town! (explorathon cast of *In the Car*)

Indeed, some casts were explicitly messages to others:

I wanted to communicate this picture with my colleagues in Greece (cast of *Roommates* 1994)

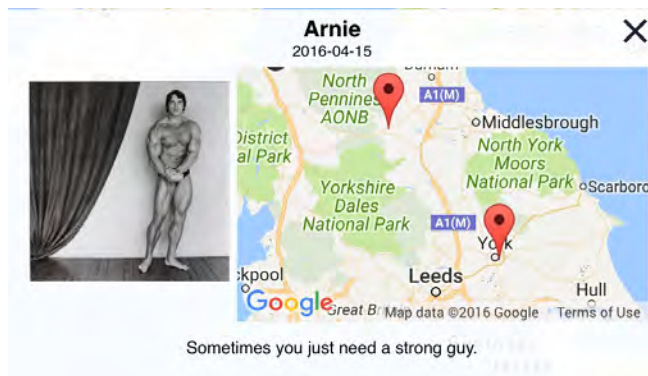
this is a reminder to me and my fellow MEPs to look after and welcome people fleeing conflict who are hanging onto life in the most difficult of circumstances (cast of *Lowell Smith* 1981)

Some jazz for Timothy Peake during blast off. (cast of *Composition I*)

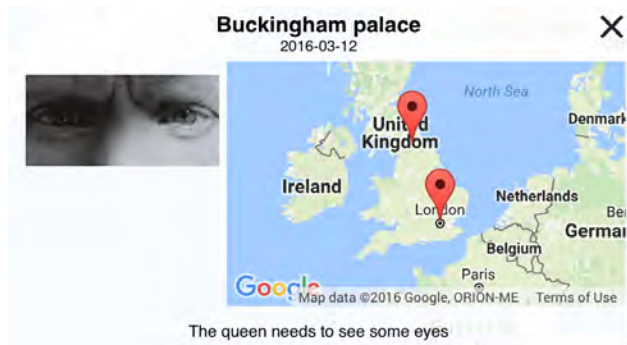
There were a number of casts whose titles or texts referenced emotions or concepts, for example "Washing up fury" and "Place of defiance". Sometimes these more conceptual casts were playful:

Oh what to wear: I'm going to a wedding tomorrow and i don't know what to wear. This painting reflects my confusion. (explorathon cast of *Modern Art I*)

Indeed, playfulness was a quality of a number of the casts across both exhibitions:



"Sometimes you just need a strong guy"



The queen needs to see some eyes

A number of the more detailed and descriptive casts described personal connections with artworks themselves:

I had a copy of this poster, a fake black and white version, hanging in my flat in 1983. It was sent to me by a friend of mine from Leeds. I still have it..... (explorathon cast of *In the Car*)

This work was on the front cover of an in-flight magazine I read on a flight from Edinburgh to London Heathrow early in the summer. I've seen the work in the gallery several times but now it reminds me of this magazine and the flight and that feeling of being in a airplane cabin, all tightly packed, tired people and compressed air. (explorathon cast of *Modern Art I*)

The Pop Art show, Royal Academy was the first time I saw Lichtenstein (and others) work up-close. Huge impression. (cast of *In the Car*, sent to the year 1991)

or with memories of places or times:

This brings back memories of watching water for hours as my brother learned to dive. Admittedly, Lichtenstein's influence was Giverny, and the calm water of a lily pond rather than the Mediterranean Sea. But the foil sections of this work make me think of waves and mermaids' tales flapping beneath the water's surface. (cast of *Water Lily Pond with Reflection*, sent to the year 1995)

for some reason I ended up inside the most extraordinary house in Kibworth that was owned by a Miss Havisham who toured me through the memorabilia of her long lost husband who had fought in the boer war. Out of time but not out of touch, the house was between life and death. (cast of *Alice Neel 1984*, sent to the year 1861)

Reminds me of some much needed jazz playing at my cousin's wedding. We left the church to find a flat tyre. Not easy to change a tyre in 39 degree heat and a kilt. (explorathon cast of *Composition III*)

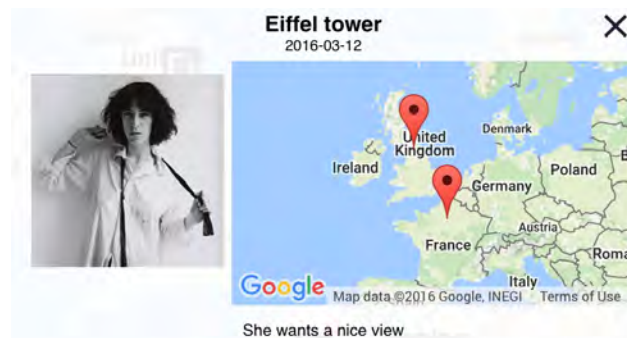
This artwork reminds me of a treehouse my brother and I built one summer, in the woods by our house. Ramshackle and held together with string and rope, we were convinced it was the best house ever built! It crashed to the ground within an hour of completion.
(explorathon cast of *Reflections on Crash*)

Lotus is often seen as an Eastern symbol. It reminds me of my home country. The work might appear in a dream of my home. Hmm I really want to have that dream in the bed of my old house. (explorathon cast of *Water Lilies with Cloud*)

These reminiscing casts (as well as others) were often sent to dates in the past (in the final version, when casting could be through time as well as space – this was not available in the explorathon version). The layering of time, place, artwork and personal reflection could be very powerful:

The text on the jacket reminds me of the effort I would put into scrawling my favourite bands' names all over books and pencil cases. You can see how much music is a visual part of someone's identity, especially at a young age and this was very important to me growing up.
(cast of *Nick Marden 1980*, sent to Dublin in the year 1997)

In contrast to these personal, reflective casts were a number of casts which attributed agency or desire to artworks (or their subjects), or to places.



"she wants a nice view"



"rainy places need dry art"

Returning to the Arts Council England quality principles of inspiration, active involvement, and ownership, it is notable that the sheer variety of approaches to Artcasting, the personal connections with artworks and the associations made indicates that Artcasting can be a significant expression of feelings of ownership towards the artworks. Some casts specifically reference inspiration, but others in their creativity, nostalgia or imaginative associations are examples in themselves of how readily visitors can make productive connections and foster new expressions of inspiration. And, in the richness of personal reflections and connections, messages and playful casts, Artcasting evidently functions as a platform that people can and will use for their own purposes. Future work on the Artcasting concept will be aimed at revealing an even wider variety of purposes – for example,

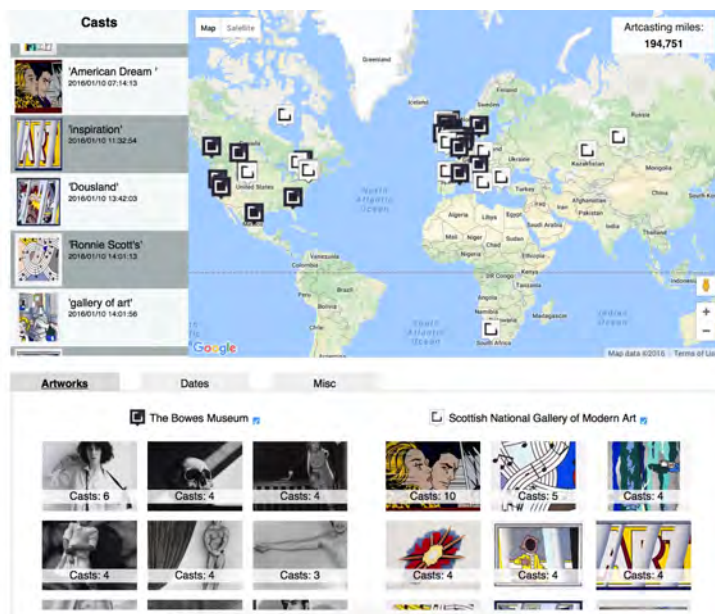
reflections on the idea of the 'monument' in the Edinburgh Art Festival (see Artcasting Futures section).

As we continue to analyse and write about the Artcasting data, we will explore these and other issues, including the range of associations with particular artworks, the relationships between artcasts as individual responses and artcasts as assemblages, and the ways in which choices of time and location became creative expressions, distinct from or in combination with textual descriptions.

Dashboard

Our evaluation approach was targeted towards understanding how Artcasting can inform arts evaluation. It was therefore important to propose how a digital interface could allow gallery staff to review and analyse artcasts. To accomplish this, we worked with the Institute of Digital Art and Technology at Plymouth University, to build on their 'Qualia' dashboard (<http://qualia.org.uk>) – originally funded by the AHRC/NESTA Digital R&D Fund for the Arts. By plugging Artcasting into this existing platform, we were able to test the flexibility of the approach and build on work previously done to help visualise visitor engagement data.

The development of the dashboard involved detailed discussions amongst the team about what could and should be the focus of analytics. Starting from the position that data visualisation does not speak for itself, and that the choice of what to visualise affects what can be seen (Kinross 1985; Kennedy et al. 2016), we considered a number of different possibilities. Ultimately, we looked to visualise Artcasting in terms of intensity, type and geographical spread of engagement with artworks, rather than in terms of individual demographics of artcasters.



screenshot of Artcasting dashboard

Gallery colleagues can view the destinations and casts associated with particular artworks, can see the overall distance travelled of exhibitions and artworks (including filtering to see artworks within particular distances of the galleries), and can explore the trajectories of artworks through time.

The breakdown of casts by given age group is also available, and future work on this could see casts displayed on the map using demographic categories. Further work may also include automated sentiment analysis of the cast texts and word frequency analysis.

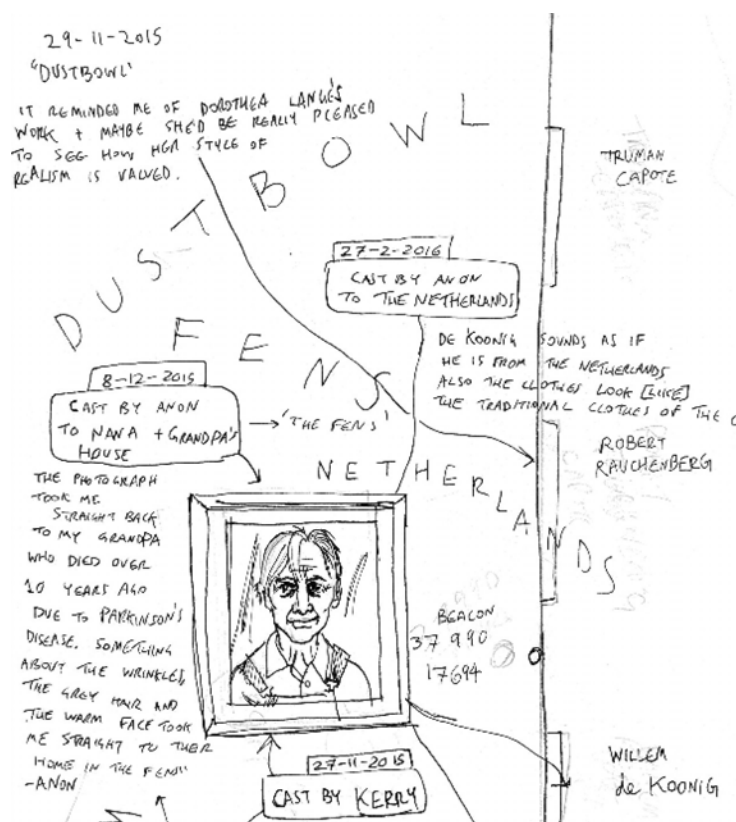
Analysis of the dashboard visualisations, combined with qualitative analysis of the text of casts, is ongoing, and will form part of forthcoming publications from the project and discussions with ARTIST ROOMS and other potential partners. A tension emerged in the project between the analysis of the

artcasts as individual expressions of engagement (see the previous section), and other modes of analysis which would understand Artcasting more broadly as a sociomaterial assemblage of humans, art, place, time and technology. Our focus in the dashboard visualisations on artworks, space and movement rather than on individuals shows how a mobilities perspective can inform evaluation, but also provokes questions about how this can map onto discourses about visitor experience, inspiration and engagement.

We will aim in future development of the dashboard to explore whether the dashboard can provide automated feedback about the feelings associated with particular artworks (for example, 'this piece has a propensity to go to happier places'), to show visitors how their perspectives on the artworks are similar to or different from those of others, or to allow gallery staff to see how particular themes in the exhibitions are being reflected by visitors. The possibilities and limitations of automation in this area need detailed critical examination, and future research will explore this.

Artcasting dialectogram

Structured around the Bowes pilot, the Artcasting team worked with illustrator Mitch Miller to produce a 'dialectogram' of the event and engagement with the Artcasting concept and platform. Mitch developed the dialectogram method, which 'blends the memories and experiences ... with documentary and mytho-geographic techniques to illustrate forgotten and disappearing places' (<http://www.dialectograms.com/biography-and-cv/>), and adapted this approach in order to capture some of the rich contexts through which people travel to, enter and engage with gallery exhibitions. The Bowes Artcasting dialectogram incorporated data from public casts, interviews with Bowes visitors, and visual resources from the gallery and exhibition.



detail from the Bowes Museum dialectogram

The dialectogram process attempted to capture how visitors to the exhibition were using the Artcasting app. Mitch drew the space first, then proceeded to gradually fill it in with texts, diagrams and comic strips evoked by artcasts and his conversations with visitors. Unlike his other dialectograms, "The Bowes Gallery drawing was less concerned with physical space than with

headspace – what exhibition-goers were thinking about, or dreaming of” (Miller 2016). As Mitch reflected:

it was obvious that the place itself affected how people responded to the images, and then casting about them. People were channeling ideas from the exhibition texts – for example, the ‘Renaissance’ feel and religious imagery of many of the photographs was echoed in the comments. Layout also had evident effects on where people clustered, how they worked their way around the room and, perhaps, how they cast... it was sometimes frustrating with the artcasts themselves, where I only had the anonymous entry to go upon. I rather wished I could have followed up on many of these comments and worked more closely with some of those who were willing. Perhaps we could have created more detailed subsidiary drawings of the Yorkshire Sculpture Park, or Grays College in Aberdeen that connected to the main dialectogram – like something of a real world hyperlink. In the end the Artcasting project was fascinating, challenging and at times, perplexing – but the time we had together felt too short. But then again, I ALWAYS feel that way about a dialectogram....

For the researchers, the dialectogram functioned as a critical map, a transformation of the more cartographical visual representations of Artcasting we were used to seeing (a google map filled with Artcasting pins to represent the locations of the casts). As an entirely different mode of placemaking, the dialectogram was able to indicate the intensity of interest around particular artworks, the ways in which spaces can overlap, and importance of the gallery space even as it shifts and changes. Engaging with the dialectogram process was a continual slippage between ‘thereness’ of the map and the illustration. It was a creative exploration of Lefebvre’s spatial triad (1991) of representational space, representations of space, and spatial practice. It has also functioned as an extremely generative discussion piece for the project, engaging people with the concepts of Artcasting and offering an accessible way in to some of the complex ideas associated with the research.

Contributions to knowledge and practice

Analysis and discussion of the Artcasting project, processes and data is ongoing, and we will in the coming months refine and extend our understanding of the contributions it has made to theory, method and practice in the area of mobilities, learning and evaluation, and digital cultural heritage. This section of the report is intended as a summary of our current position in relation to the contributions of the project – future plans and potential research questions can be found in the Artcasting Futures section, below.

Conceptual contributions

Cultural heritage values and evaluation. The Artcasting project built on Belfiore and Bennett’s critiques of evaluation in the cultural sector, and its tendency to “bypass the contested nature of any discussions around cultural values” (2010, p.125). Our interviews and workshops with ARTIST ROOMS associates explored the tensions around how evaluation of engagement is understood, and revealed a lack of consensus across the sector, from funders to gallery staff, around what is required, desirable and meaningful evaluation activity. Artcasting has demonstrated the complexity of holding different understandings of value together, but also the richness of potential outcomes when evaluation and engagement are approached in theoretically imaginative ways – in this case through the lens of mobilities theory. There is a continuing need for new theoretical approaches in this area, and for theoretically informed critiques of evaluation to be part of conversations in academia and in interdisciplinary work in cultural heritage settings.

Mobilities and evaluation. Developing a conceptual connection between evaluation and mobilities is generative. The measurement of value in the context of exhibitions tends to focus on individual experience, development, or well-being, grounded in understandings of the human subject interacting with external objects and places. Mobilities theory provides an alternative theoretical

framework that shifts the site of analysis away from the psychology of exhibition visitors, and towards a richer understanding of the complex relations between the humans, technologies and spaces involved. It offers new readings of evaluation that can examine individual responses to artworks in the context of larger scale movements of ideas and affects, between and amongst the human beings and materialities of the exhibition context. Far from being relativistic, idealistic or apolitical, such perspectives have the potential to highlight inconsistencies and inequalities in the capacity to enact the (im)mobilities associated with valuable exhibition contexts.

Digital co-production. Artcasting invites a rethinking of the ideal of co-production in cultural heritage settings. Artcasting content is requested and is able to be interpreted by gallery professionals for accountability, audience development, and other purposes. However, Artcasting is also a form of public interpretation of the artwork, and visitors are creating new and varied encounters with art in new places and times. The guest becomes the host of a new exhibition. In the context of co-production, Artcasting can be considered as a series of user-generated ‘host-spots’ (Bell 2012), unfolding across multiple times and spaces, and consisting of “more or less stable or fragile places and/or times when hosting-guesting occurs, or when host-like or guest-like potentialities are afforded” (p.30). Ultimately, these types of digital and mobile interventions challenge the stability of relationships of co-production, introducing the ‘unknowable other’ (Doron 2009) and provoking reflections about the nature of the ‘phantom that is the public’ (Weibel & Latour 2008, p.100) and paradoxes of hospitality (Derrida 2000; Ruitenberg 2015).

Methodological contributions

Inventive methods and cultural probes. By offering and iteratively analysing a range of tactics while simultaneously exploring issues around evaluation, the Artcasting project was methodologically inventive. Speculative or inventive methods involve envisioning and creating futures, to provoke new ways of thinking and to bring particular ideas or issues into focus (Ross 2016) – in the case of Artcasting, issues around arts evaluation. The development and piloting of the Artcasting app and the discussions and debates around it formed a methodological approach consistent with other speculative methods, which are “means by which the social world is not only investigated, but may also be engaged” (Lury & Wakeford 2012, p.6). In design terms Artcasting as a process might also be thought of as a ‘cultural probe’ – “packages of... materials designed to provoke inspirational responses ...we left them behind when we had gone and waited for them to return fragmentary data over time” (Gaver et al. 1999). Also in common with the cultural probe is the way that Artcasting and our analytic approaches valued uncertainty: “we value the mysterious and elusive qualities of the uncommented returns themselves. Far from revealing an “objective” view on the situation, the Probes dramatize the difficulties of communicating with strangers” (Gaver et al. 2004). Artcasting – the relocating and reencountering of artefacts in time and space – is a productively ‘re-usable’ concept, amenable to explorations of other kinds of questions (for example, about the nature of the ‘monument’ as part of our partnership with the Edinburgh Art Festival) than the ones about evaluation that were the focus of this project.

Mobilities in design practice. Ongoing engagement with mobilities theory steered the Artcasting app towards a design that emphasised the movement and trajectory of artworks, time as well as space, and the importance of the ‘re-encounter’ beyond the gallery. Lines on the Artcasting map traced the journeys made by each cast artwork, and were dashed to indicate a journey in progress, foregrounding the particular paths undertaken by cast artworks. Offering visitors an option to choose the time of arrival for a cast provoked a shift from location to movement invited the inclusion of duration of travel of an artcast, and reflected our theoretical interest in the concurrency of space and time. The ability to re-encounter artworks in unexpected places was one of the most compelling elements of Artcasting, and the principle of extending encounters beyond the gallery, via visitors’ own devices, has the potential to begin to generate some of the longitudinal data one interviewee described as ‘the holy grail’ of evaluation (Sowton 2016). While technologically challenging to

accomplish, this element of the project suggests great promise in the analysis of how visitors engage with artcasts beyond the space and time of the gallery.

Implications for practice

The value of asking new questions. A question and a methodology which triggers spatial and temporal reflection and imagination, ‘where does this artwork belong’, can generate a huge range of responses which can help galleries understand the ways their visitors engage with art and cultural heritage. Partnerships between academic and cultural heritage organisations are enriched by an understanding of the value of asking new questions and of moving beyond ‘what works’ towards more inventive approaches to research.

Cultural heritage and mobile technology. Smart phone app development of this kind, and in a museum and gallery context, is complex. Local internet infrastructure has significant influence on the development and implementation of mobile apps. Universal web access cannot be assumed, however much of the promise of gallery technology is premised on this. Development over multiple platforms, and involving external hardware such as beacon technology, requires significant testing, staged release, and the ability to be adaptable and flexible in implementation. This has implications for projects wishing to collect data from the public use of working apps, and it also reemphasises the importance of close working relationships between institutions, researchers and developers. Cultural heritage organisations need to be engaged from the earliest stages in shaping and designing projects in which their spaces and visitors will be involved.

Evaluation futures. There are significant questions and issues that need to be addressed in evaluation practice. There is real appetite for inventiveness in evaluation in the cultural sector, even though there is also justifiable scepticism about the extent to which change to the status quo is possible. To address this, funder-directed requirements should be balanced to ensure their transactional purposes are as simple as possible and can work against an accountability-inspired mentality of ‘gathering everything’ just in case. The information submitted to funders should be demonstrably engaged with so that galleries are able to recognise their work is used (valued) rather than filed in the elusive ‘evaluation drawer’ (Sowton 2016). Most importantly, the Artcasting project findings strongly support the AHRC Cultural Value report’s recommendation that “formative and participatory evaluation, as opposed to summative evaluation at the end, needs more attention if it is to play a role in helping cultural organisations and practitioners learn from their activities and their audiences” (Crossick & Kaszynska 2016, p.9).

Creative interaction. Artcasting offers a new approach to arts based evaluation derived from visitors’ imaginative encounters with art. Exhibition content forms a springboard for interactive user engagements which go beyond experiencing pre-packaged materials in more accessible ways, and the project has demonstrated that visitors are interested in interacting creatively with exhibitions. Conversation and engagement around the processes of Artcasting were compelling for visitors, who valued the opportunity to reflect on and express their engagement with exhibitions, in the context of invitations to join in with experiments and new approaches to evaluation.

Impact, dissemination and public engagement

The research team was active throughout the project in engaging with colleagues in the cultural heritage sector, academics, and the public. This section of the report returns to the Pathways to Impact objectives and outlines the activities undertaken by the project team. In total, the team took part in 23 events and engagement activities throughout the course of the project, including conferences, drop-in sessions, twitter chats, workshops, invited seminar presentations, and demonstrations.

Influencing ARTIST ROOMS evaluation

The key impact objective of this project was to influence ARTIST ROOMS practice, and a number of activities were aimed at progressing this objective. Engagement with ARTIST ROOMS happened at all project activities supported this, including working closely with the National Galleries of Scotland and the Bowes Museum to design, develop and pilot Artcasting, speaking in-depth with associates and ARTIST ROOMS co-ordinators as part of our interviews, the involvement of key colleagues in the project steering group, workshops with the Harris Museum (Preston) and the Ferens Gallery (Hull, the lead associate in the next phase of the ARTIST ROOMS programme), briefings to ARTIST ROOMS and Engage, and the one day seminar we organised in May 2016. The National Galleries of Scotland and Tate have taken an interest in the project, evidenced by the NGS research committee requesting additional briefings as the project has progressed, and Jeremy Knox's inclusion in the Tate's New Materialism Training School in May 2016, bringing insights from Artcasting to this key research event². We contributed in-progress findings to a recent Tate case study about the Bowes Museum.



Artcasting workshop with staff at the Ferens Art Gallery, Hull, May 2016

We were able to undertake a wide range of activities in relation to ARTIST ROOMS evaluation, but the project took place at a time of significant change for ARTIST ROOMS, as they moved from one funded phase of the project to another, and as key roles within the programme changed. So, while a number of conversations took place around the participation of the Artcasting team in an evaluation working group, this strategic-level input proved not to be possible during the project period. However, the strong working relationships we developed with ARTIST ROOMS mean that future collaborations are already under discussion, and we will welcome opportunities to be involved in discussions, and continue to share findings. We will continue to communicate and collaborate with ARTIST ROOMS colleagues in the coming months to trace the impact of the project and will aim to contribute further as the programme moves into its next phase of delivery.

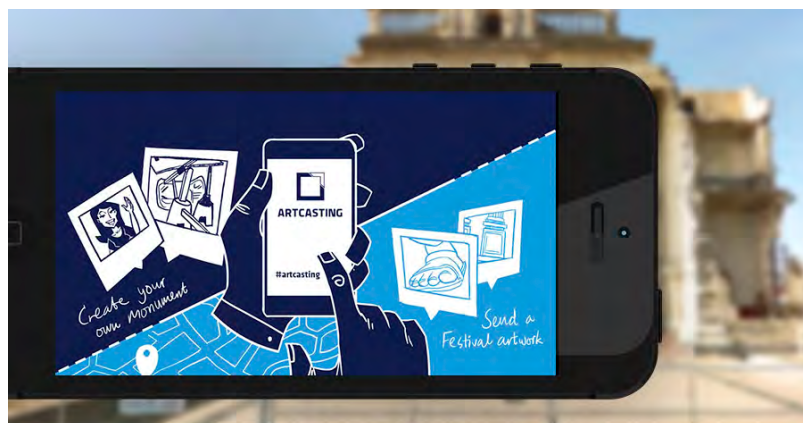
Creating further opportunities for the Artcasting app

The Pathways to Impact noted that a key indicator for project impact would be the extent to which Artcasting is taken forward for further development. A very significant success for the project has been cultural sector interest in the Artcasting platform, interest which has been evident from the earliest stages of the project. We have had conversations with members of a number of

² <http://www.tate.org.uk/about/projects/new-materialism-training-school-research-genealogies-and-material-practices>

organisations, and anticipate taking these forward to a follow-on funding application to the AHRC (see the Artcasting Futures section, below).

An early and significant indication of the potential of the platform is a new partnership with the Edinburgh Art Festival, which has seen Artcasting adapted for use as an engagement activity around the Festival's 2016 commissions theme of 'monuments'. A Knowledge Exchange and Impact Grant from the University of Edinburgh supported further development and adaptation of the app, for use during the Festival in August 2016. A key development involved creating the ability for visitors to upload and cast their own image or artwork, as an alternative to casting one of the seven commissioned works. The flexibility of the Artcasting concept and the potential Festival colleagues saw in it to help their visitors reflect on the idea of the monument is a strong indicator of the future impact the platform might have.



Artcasting at the Edinburgh Art Festival

Beyond the cultural heritage sector, there are possibilities for Artcasting, too. In March 2016, Chris Speed presented Artcasting at the creative circles meetup at Codebase (an Edinburgh-based technology incubator), and spoke to developers and other attendees about alternative models for Artcasting. Through a series of conversations with members of tech start-ups, he highlighted the technical principles of the application, and used its current manifestation as an instance of use within the cultural sector. The conversations led to a series of speculations about how the technology could be applied to other areas:

1. The capacity to capture geographic perspectives from audiences would lend itself to other media forms such as television and radio – how would audiences associate media content to geographic spaces? Could people cast from memories triggered from television shows? Returning to the 'Where does this take you?' question, how might television use an Artcasting approach to capture insights into where an object or media footage 'takes' their audience?
2. Outside of a given context, Artcasting could become a socio-technical habit that was associated to many forms social media. Rather than an ability to like, retweet, repost or share which is common in Twitter, Facebook and Instagram, does Artcasting offer a further dimension to data capture: namely, which place or time is this media associated with?
3. How might the use of mapping become part of a way of commenting? For example, in TripAdvisor whilst comments are often about a place, rarely is there a chance to point to another place on a map. How can maps become part of textual commentary? Does Artcasting indicate a potential vocabulary or technical method for tagging places within a sentence?
4. Pinterest, Tumblr and Instagram are popular streams of images collected from disparate sources but curated under one theme or identity. Does Artcasting suggest that maps and

places could become streams? Would Artcasting be the technology to capture them? For example could people tag (artcast) their music playlists with places that are associated with individual pieces of music, which would then generate a stream of maps that represented the playlist?

5. People were intrigued by how Artcasting appears to capture an entire event, and how the time and space of artcasts have a particular signature. In other words – how does the artcast signature of the Bowes exhibition differ when compared to that of NGS? Does Artcasting offer a unique way of capturing audience data for any event (for example, Glastonbury, the Royal Highland Show)? Because of its focus upon time and space, does the data tell us things about audiences that other methods do not?
6. Shops and chains could use Artcasting to promote products and opportunities to loyal customers. By sending out hotspots with offers to regular customers, shops have a unique (and possibly invasive) way to target customers. If a customer trusted a brand, would a list of offers that was triggered as they entered their local bus stop be the right time and place to receive the marketing opportunities? With the help of the customers, perhaps Artcasting can help brands identify hotspots that customers are aware will trigger adverts – but on their terms (if Mr Smith does not want to know what offers are available at GAP this week he will not walk into the hotspot, however if he does, he know precisely where to walk along his way to work). There was a further conversation regarding whether Artcasting as a marketing technology should occur Storeside or Shopperside. Is Artcasting a way for shoppers to push links out, or for the shop to push links out?

Academic-focused presentations and events

The team has presented insights and findings from the project at eight academic events to date, engaging with themes ranging from communities and technologies (Limerick and Lincoln), co-production (Montreal), new materialism (London), and evaluation (Glasgow). The range of themes and topics to which Artcasting can contribute is an indication of the richness and breadth of its conceptual contributions and the strength of its interdisciplinary and innovative approach. In addition to these, as part of high-profile University-organised events, members of the research team have given invited presentations to the Interim Chief Executive of the AHRC, and to the head of Creative Industries at Creative Scotland.

1. Seminar: Exploring design-led digital education research: developing 'Artcasting' to support new approaches to arts evaluation. Digital Education seminar series, University of Edinburgh, 31 October 2014.
2. Workshop: Artcasting and ARTIST ROOMS on Tour: Using mobilities-informed methods to support new approaches to arts evaluation. Cultural Heritage Communities: Technologies and Challenges Workshop, Communities and Technologies 2015. 28 June 2015, Ireland.
3. Conference presentation: Using mobilities-informed methods to support creative and innovative approaches to arts evaluation. *Interweaving Conference*, School of Education, University of Edinburgh, 2 September 2015.
4. Conference presentation: Artcasting: digital and mobile cultural heritage evaluation. *Connected Communities Heritage Network Symposium 2016*. University of Lincoln.) 14-15 January 2016. A video recording of Claire's presentation is available.
5. Lightning talk: Artcasting. *Digital Cultural Heritage Research Network Workshop 1*, University of Edinburgh. 29 January 2016.
6. Invited talk: Artcasting – reflections on a new approach to understanding engagement with art, *Scottish Network on Digital Cultural Resources Evaluation*, Workshop 3. 31 March 2016.
7. New Materialism Training School, Tate, 27-29 May 2016.

8. Conference presentation: Casting a line: hospitality, trajectory and Artcasting in ARTIST ROOMS co-production. What Does Heritage Change? Association of Critical Heritage Studies, Montreal, 4-7 June 2016.



Harald Fredheim @haraldfred
#artcasting welcomes without
deciding what visitor wants and
setting limits accordingly @jar
#achs2016 #sharedauthority



Harald Fredheim @haraldfred
#achs2016 @jar talks #artcasting
artcastingproject.net I don't quite
understand it but it's all about
capturing engagement. sounds
amazing



tweets from the Artcasting presentation at the Association of Critical Heritage Studies conference, Montreal, June 2016

Cultural heritage sector presentations and events

Our engagement with colleagues in the cultural heritage sector has been varied and has taken place throughout the whole project period, giving us opportunities to seek input and feedback, share findings, and develop ideas in the context of wider concerns and priorities in the sector. Of note were our two open Twitter chats, held in partnership with DLNet (UK-based) and Museumedoz (Australia-based); and our invited presentations to the DLNet's 'On the Move' seminar at the V&A in July 2015 and to the Edinburgh-based digital meetup at the National Portrait Gallery in March 2016. We presented a paper at the very selective Museums and the Web practitioner conference in Los Angeles in April 2016.

In May 2016 we organised and hosted an open seminar, held at the National Galleries of Scotland Hawthornden Lecture Theatre, to which 46 people from 21 cultural organisations and 9 universities signed up, and this, along with our demonstration booth at the Common Ground AHRC Festival in June, offered an excellent platform for sharing findings.

1. Seminar: Artcasting: New approaches to evaluating engagement with art. On the move: mobile learning in museums and galleries, Thursday 30 July, V&A London, Digital Learning Network.
2. Twitter chat: inventive evaluation. Digital Learning Network #DLNetChat series, 4 September 2015.
3. Seminar: Introducing Artcasting, Digital Meetup, National Portrait Gallery, Edinburgh. 2 March 2016.
4. Twitter chat: with the #museumedoz group in Australia. A record of the chat is available on Storify. 1 March 2016.
5. Conference presentation: "where does this work belong?" new digital approaches to evaluating engagement with art. MW2016: Museums and the Web 2016. Los Angeles. 6-9 April 2016.
6. Dissemination workshop with associate gallery: Harris Museum, Preston. 4 May 2016.
7. Dissemination workshop with associate gallery: Ferens Art Gallery, Hull. 23 May 2016.
8. Open seminar: Cultural Heritage, Digital Engagement and Visitor Experience. Co-hosted by ARTIST ROOMS, National Galleries of Scotland, and the Artcasting project, 25 May 2016.
9. Demonstration: Artcasting at Common Ground – the AHRC Commons festival 2016. York, 21 June 2016.



Jeremy Knox demonstrating Artcasting at the Common Ground AHRC Commons event, June 2016

Public engagement workshops and drop-in events

1. Public event: Artcasting @ Explorathon, European Researchers' Night, 25 September 2015, Scottish National Gallery of Modern Art.
2. Public event: Mapplethorpe: The Magic in the Muse exhibition opening, 27 November 2015, Bowes Museum.
3. Public event: Drop in session at National Galleries of Scotland. Artcasting: Make new connections with ARTIST ROOMS: Roy Lichtenstein. 10 January 2016.
4. Public event: Drop-in Artcasting session, Robert Mapplethorpe: The Magic in the Muse. Bowes Museum, Barnard Castle, Co. Durham. 27 February 2016.
5. Artcasting Workshop, Young Voices, Bowes Museum. 11 March 2016.
6. Artcasting workshop with students from the University of York's MA in Cultural Heritage Management. Bowes Museum. 15 April 2016.

In addition to events and workshops, the project blog has been updated regularly to share the progress of the project. <http://www.Artcastingproject.net/blog/>

Publications

- Knox, J. and Ross, J., (2016). "where does this work belong?" new digital approaches to evaluating engagement with art. Proceedings of the Museums and the Web conference, 2016, Los Angeles. <http://mw2016.museumsandtheweb.com/proposal/where-does-this-work-belong-new-digital-approaches-to-evaluating-engagement-with-art/>
- Ross, J (2016). Speculative method in digital education research. Learning, Media and Technology.
- Ross, J., Sowton, C., Knox, J. and Speed, C. (accepted, in press). Artcasting, mobilities, and inventiveness: engaging with new approaches to arts evaluation. Cultural Heritage Communities: Technologies and Challenges (eds L Ciolfi, A Damala, E Hornecker, M Lechner, L Maye). Routledge.
- Ross, J (2016, in preparation for planned special issue from Critical Heritage Studies conference theme). Casting a line: hospitality, trajectory and Artcasting in ARTIST ROOMS co-production.
- Sowton, C (2016, under submission). Cultural sector perspectives of evaluation: Collage, dialogue, and the holy grail.

Three further journal articles are planned, covering the following topics:

- Using mobilities-informed approaches to enrich arts evaluation.
- Analysis of Artcasting data to explore how Artcasting helps people articulate engagement with art.
- Making as method, reviewing the project's methodological contribution.

Artcasting futures

Throughout the project we have looked for ways of extending Artcasting and exploring its potential in other contexts. The range of conversations and activities have included:

- conversations with colleagues at a range of institutions, including National Galleries of Scotland, Tate and the National Museums of Scotland about potential directions for Artcasting beyond the AHRC project. For example, Artcasting might be used to create dialogues between places, exploring the 'movement' and recognition of Scottish heritage and art; or to reflect on the National Galleries of Scotland's forthcoming 2017 theme of 'place';
- launching the Digital Cultural Heritage Research Network at the University of Edinburgh in early 2016, providing an ongoing opportunity to make connections with other academics and organisations and to consider next steps for research in this area;
- proposing and co-supervising a masters dissertation project in Informatics at the University of Edinburgh, exploring recommender systems as a way of generating new forms of encounters with artcasts (Wingard 2016);
- visiting with Codebase in early 2016 to considering how Artcasting might 'pivot' to other domains (see 'creating further opportunities' section, above);
- participation in Tate's New Materialism workshop in May 2016;
- a 3-week research visit to Australia in August-September 2016, to work closely with cultural heritage researchers and practitioners and develop new project ideas;
- partnering with the Edinburgh Art Festival to develop an Artcasting version for use with the programme of commissioned work for 2016, 'more lasting than bronze'.

Future research questions

A number of questions have emerged from the project, and these include:

- How can cultural heritage educators, curators and evaluators work, design and curate with data and analytics? What is the role of co-production between visitors, curators, educators and researchers in moving further into this space?
- To what extent is it possible to provide cultural heritage organisations and visitors with rich automated feedback about engagement with, and movement of, artworks? The dashboard has begun to demonstrate potential, but further possibilities and limitations of automation in this area need detailed critical examination.
- What are the design implications of Artcasting for other media and engagement practices (like marketing): can Artcasting be used to capture insights in other contexts?
- What are the potential uses of the Artcasting approach for adding place and time dimensions to data capture and social media sharing?

We hope to pursue these and other questions in future projects.

Follow-on impact

Our partnership with the Edinburgh Art Festival, in addition to generating an extremely interesting new set of ideas around Artcasting in the context of site-specific artworks, and the theme of 'monuments', is exploring the potential for Artcasting as a platform with uses in other contexts. Our ambition in the next six months is to apply for follow-on funding from the AHRC to develop

Artcasting as a service for other cultural heritage organisations to use – one with a simple interface allowing anyone to ‘plug in’ an exhibition. In addition to the new technological development this would support, the follow-on project would give an opportunity to further develop the connections we have made with a wide range of organisations, sharing the principles of Artcasting and having a direct impact on evaluation practice beyond ARTIST ROOMS. Ultimately we would like to see Artcasting in use across a number of organisations, providing them with valuable data about exhibitions’ impact on visitors, and ways of critically engaging with that data.

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ARTCASTING

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