

Institution: University of York		
Unit of Assessment: 33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies (A - Music)		
Title of case study: Moving Audiences		
Period when the underpinning research was undertaken: 2008 – 2018		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr Jonathan Eato	Senior Lecturer	July 2005 – present
Period when the claimed impact occurred: August 2013 – December 2020		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Eato's pioneering app-powered approaches to sound design and musical composition in immersive arts-and-heritage promenade productions have enabled audiences to navigate unusual, often previously inaccessible sites. This research has impacted on culture, society and the creative arts in the UK and South Africa (SA). It has:</p> <ul style="list-style-type: none"> influenced co-creative practice, through the development of relationships between sound, music, space, lighting and narrative in collaboration with artists, technologists, producers and programming professionals; enabled arts/heritage organisations to address small audiences on a cost-effective basis; lowered access barriers to individuals engaging with the arts, history and culture; transformed local residents' experiences of both familiar and disregarded spaces and buildings in their immediate environment; enabled groups of individuals to hear their own history and heritage in the landscape around them, including voices of marginalised and transient peoples; and increased audience reach, diversity and engagement in the arts and heritage sectors. <p>Eato's work has created employment and development opportunities for freelance artists, and enabled small arts companies and venues to achieve national recognition for innovation.</p>		
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Eato focused on how to effect the movement of promenade audiences through buildings and/or outside spaces in site-responsive or site-specific productions with minimal disruption to their immersive experience, by:</p> <ol style="list-style-type: none"> creatively integrating sound design, composition, recorded text and technical delivery; creating sound that can guide audiences without drawing attention to itself when combined equally with other artistic practices; and designing sound that responds to changes in the acoustic environment as audiences walk through a site, and which is adaptable to the work's artistic vision. <p>He achieved these aims in an iterative research process (developing, testing, refining) across 19 collaborative creative projects delivered principally under the auspices of innovative theatre collective Hannah Bruce and Company (HB&Co). Eato was responsible for editing, sound design and musical composition on each project, except Our Line, where some pre-composed music was used on licence; <i>Cosi-Cosi</i> (2014) [3.1], where composition was shared; and Edgelands (2016), where he was an adviser to the creative team (Seth Scott and HB&Co).</p> <p>In Here, at Home (2008, Stellenbosch SA) and five early site-responsive pieces made under the umbrella of <i>The Look of the Thing</i> (2011–13) [3.2], the artistic/creative team trialled and evaluated different artistic and technical solutions, resulting in several refinements: Eato designed a new platform for technical delivery, the PlotT app [3.6], and extra techniques offering further possibilities for creative guiding were integrated with compositional design, e.g. mid-side recording in <i>Cosi-Cosi</i> [3.1]; binaural recording in <i>The Claim</i> [3.3], <i>Edgelands</i>, and <i>Baba Yaga</i> [3.4]; and surround-sound down-mixing to binaural in <i>A Collection of Small Choices</i> [3.5].</p> <p>The PlotT app was designed to deliver high-quality audio to audiences on the move. This previously had involved large infrastructure or hire/purchase of specialist equipment; both are prohibitively expensive for companies wishing to create bespoke, intimate performance environments for small audiences, venues wanting to open up unusual spaces for cross-arts work, and for extended runs. A solution was to deploy the audiences' own smartphones, tablets</p>		

and headphones, but even when attendees were confident enough to load mp3 files, co-ordinating the start of a performance accurately among them was impossible. TlotT addresses these issues through functionality that: uses audience-members' own technology (removing the need for equipment hire) [3.1–3.5]; greatly simplifies access to the correct sound files; coordinates start-points automatically across one or more audience groups [3.2–3.4]; keeps devices co-ordinated to within artistically acceptable tolerances [3.2–3.4]; can deliver variants of a soundtrack to different audience segments for artistic reasons [3.2–3.4]; can accept single-use, box-office-defined ticket codes to protect revenue [3.3, 3.4]; and can allow users to start the audio manually for non-performance experiences [3.1]. Under Eato's direction, programmer Peter Worth developed the TlotT app for iOS, and programmer Theo Burt extended it to Android devices. It exemplifies the collaborative user-centred research process of Eato, Bruce, Worth, Burt and a range of artists working on HB&Co projects, with audience feedback an important factor in decisions about creative and technical refinements.

TlotT was developed specifically for situations where time is the main organising factor, whether due to integration of live performers [3.2, 3.3] or other time-critical situations, such as aligning with train timetables or twilight. Where there were good artistic reasons to allow people to progress at their own pace, the team switched to location as the main organising factor by developing a separate app-driven system utilising **iBeacon technology** (Bluetooth Low Energy transmitters), also delivered via audiences' own devices. iBeacons were chosen as they are most accurate for intimate environments and can distinguish between floors in a multi-storey venue. The iBeacons/app system **Small Choices** was developed for the work *A Collection of Small Choices* at Hoxton Hall [3.5], where delivery of audio content to visitors over a number of years was required without deploying performers or venue stewards. Worth, Burt and engineer Dave Malham designed and developed the app, in consultation with Eato, incorporating discoveries from the TlotT app creative research. Eato developed a sound-design and musical-composition framework that could be entirely non-linear, partially non-linear, or fully linear within any piece depending on the degree of audience freedom at specific moments. Having analysed impulse responses taken throughout the venue, he also incorporated the 'sonic signature' of each space. The creative team could thereby selectively deliver recorded sound in tune with the space in which it is heard, or purposefully subvert that for artistic reasons. The Small Choices app [3.5] could also trigger changes in lighting in synch with the audio (hardware by Malham). This work was further developed, without the lighting function, for the Barbican Centre (London), via the *Edgelands* app and interactive composition.

3. References to the research (indicative maximum of six references)

- [3.1] [Cosi-Cosi](#), by H. Bruce, J. Eato, L. Mjijima et al, Infecting the City, Cape Town, 11–14 March 2014. Multiple performances and ongoing legacy download. Powered by the **TlotT app**.
- [3.2] [The Look of the Thing](#), H. Bruce, J. Eato, M. Morrison et al, Clarence Mews, London, 24 February 2012. 16 subsequent performances in various site-responsive iterations, 2012–13: The Courtyard, Parsons Green; Shoreditch Town Hall; Wilton's Music Hall, Shadwell; Northern Stage, Newcastle. Powered by the **TlotT app**.
- [3.3] [The Claim](#), H. Bruce, J. Eato, M. Morrison et al, West Yorkshire Playhouse, 28–30 March 2014. 17 performances. Powered by the **TlotT app**.
- [3.4] [Baba Yaga](#), H. Davies, H. Bruce, J. Eato, York Mediale, 1–6 October 2018. 6 performances. Powered by the **TlotT app**.
- [3.5] [A Collection of Small Choices](#), H. Bruce, J. Eato, M. Morrison, Hoxton Hall, London, 2015–18. Numerous performances. Powered by the **SmallChoices app**.
- [3.6] [TlotT app](#). 2012. App design by J. Eato for HB&Co, development by P. Worth and T. Burt. Available for iOS and Android.

Indicators of Quality: [3.1], [3.3] and [3.5] submitted as composite output for REF2021; **prizes and awards:** [3.2] Oxford Samuel Beckett Theatre Trust Awards 2013, R&D grant; [3.5] shortlisted for Museums+Heritage awards 2017, Innovation category (see [5.6]); **reviews** include *Hackney Gazette*, *Guardian*, *Culture Vulture*, *What'sOnStage*, *Southern Pulse Magazine* (SA).

4. Details of the impact (indicative maximum 750 words)

Eato's work has shaped and made possible 19 productions in 19 UK and SA venues, from the Barbican, London, to the streets of Cape Town, to a Darlington train line, with 1,185

performances and 4 long-term installations (9 months–3 years) [5.1] providing deliberately intimate and fluid experiences for audiences ranging from one individual to small groups.

Impact on Artists and Companies: Eato's integrated approach to sound design, musical composition, recorded text, and the development of new platforms for technical delivery has allowed artists to present their work in new ways, specifically to small audience numbers for a more intimate experience. **Hannah Bruce** of **HB&Co** confirms the significant effect of Eato's work on her company: HB&Co had produced site-responsive theatre using everyday technology since 2005, but the TlotT app [3.6] transformed these productions into extraordinary experiences. She highlights Eato's key role in 'bridging' the artistic and technological worlds, describing him as the *'creative enabler in this imaginative process [...] As a result of Jonathan's expertise in sound recording, design and composition, HB&Co has been able to develop various areas of new work, which would not have been possible without his specialist knowledge'*. A key impact on HB&Co has been that this work *'has triggered recognition which would not have otherwise come to the company'* [5.1], including being shortlisted for the prestigious Museum + Heritage Awards 2017 alongside major heritage bodies [5.6b].

As HB&Co works across art forms, Eato's research has impacted on the creative practice of five writers, three dancers, three composers, two poets and a number of actors and musicians. This has created opportunities for artists to *'develop/extend their practice in different contexts'*, Bruce notes, as well as providing talent development for recent graduates and employment and experience for freelance artists [5.1]. **Hannah Davies** confirms that working with Eato *'without doubt contributed to my long-term practice as an artist, theatre-maker and performer'; 'I had no equivalent technology and had thus far been using a variety of manual devices'*. Having co-created *Baba Yaga* [3.4] and *Conflux* (2019) with Eato and Bruce, she notes *'[I] am now able to produce audio scripts that actively include sound worlds, sound cues, and sound textures as a way to connote and support narrative meaning. I have developed an understanding of the ways that soundscape can interact with architecture, heritage and location [...] to create atmosphere, movement and emotional effect'*. Her work with Eato has provided her with *'a detailed understanding of digital sound and audio possibilities'*, which she believes helped her *'respond to the changes in the industry due to the pandemic'*. She cites current and future projects with digital theatre company Pilot Theatre and multimedia production company Digital Drama [5.2].

Impact on Venues and Programming: The apps have enabled HB&Co to take work with high-quality audio into **extraordinary and sensitive places** that lack theatrical infrastructure – from outdoor places (city streets, a car park, a cruising ground), to schools and historic buildings, to parts of performance venues that are usually kept 'off limits'. This aspect has attracted attention from the arts sector [5.6a, 5.7a], museums and heritage sector [5.6b], national press [5.7b], local press [5.7c] and tech media [5.7d] and over time has increased HB&Co's profile, leading to commissions from major venues including West Yorkshire Playhouse (WYP) [3.3] and the Barbican Centre, London [5.7e]. During *The Claim*, created for WYP, audiences were guided through substages, boiler rooms, and an underground chamber where a dancer moved among rubble and brick foundations (the theatre was built on a former quarry). This production featured in a *Guardian* preview of WYP's Transform 14 festival (*'Exploring Theatre's Secret Places'* [5.7b]) and Bruce confirms HB&Co *'would not have been able to respond to the commission in this way without the app'* [5.1]. WYP's commissioning Associate Producer testifies: *'Back in 2014, the "rock void" had never been seen by audiences and was generally off limits to staff [...] In spite of the challenges involved, [HB&Co was] committed to utilising this space [...] The "Bramall Rock Void" now stands proudly within the Playhouse, following the cultivation of the raw and rocky space into an intimate studio [...]. I am convinced that Bruce & company's intervention those years ago laid the seeds for this transformation. The impact of "The Claim" [was] clear and tangible in its connection with local artists, audiences and students – and in its bold invitation to Playhouse staff to reconsider their surroundings and to challenge themselves to open up neglected and disused parts of the theatre. The result was a distinctive, reflective and nuanced work – the remnants of which were felt long after the performance'* [5.5]. Eato's work also impacted on the **infrastructure** of the Barbican Centre, which installed iBeacons and HB&Co's app technology in its foyers and stairwells after a delegation experienced *Small Choices*. HB&Co and Scott used the system in *Edgelands*, commissioned as part of the Barbican's Transforming

Public Space strategy. Digital-marketing literature cited *Edgelands* repeatedly as a 'creative use' of iBeacons and for its transformational effect on perceptions of the Barbican as a forbidding building: *Econsultancy* commented, 'The example I keep going back to is the Barbican in London, which has beacons that invite visitors to explore the space and learn about the history of the building in a non-linear way [...] it really makes you appreciate the space you are in on a deeper level [links to *Edgelands*]' [5.7d]. *Edgelands* was repeated in 2018, and the Barbican intends 'to commission further artworks that engage with the new network, as well as using it for wayfinding, marketing and accessibility' [5.7f].

Eato's research has also **enhanced programming** for Wilton's Music Hall (London), York Theatre Royal, National Trust (Max Gate, Dorset), Infecting the City (Cape Town), SoH! Youth Dance Company (London), Northern Stage (Newcastle), Being Human Festival (London), National Railway Museum (York), York Mediale, And What? Queer Arts Festival (London) and Omnibus Theatre (London) (details at hannahbruce.org). The Director of Wilton's described HB&Co's *The Look of the Thing* for her venue as 'beautiful and enriching' [5.10a], while visitors to Max Gate commented: 'made me think about the house differently' [5.10b] and 'Just what the National Trust should be doing!' [5.10b]. These performances, designed for small numbers (for *Baba Yaga* [3.4], 151 audience members over 6 days equated to 91% capacity), are viable because low overheads, solo/unescorted access, running self-sufficiency and use of the audience's own technology facilitate extended runs. Reusability of TlotT and the cumulative artistic research also saved venues around GBP100,000 per production, the approximate cost of creating a bespoke app with artists' fees and real-world stress testing [5.1]. Some venues were thus able to run the productions without charging visitors, and where visitors did not have their own mobile devices, equipment was provided (at Hoxton, HB&Co made available 3 iPods with the app installed to ensure people were not digitally excluded). The TlotT app enabled venues that did charge to manage and protect their ticket revenue. Multiple 'shows' per day and groups moving through the event simultaneously but along different routes enhanced income, for example in *Baba Yaga* [3.4]; use of the TlotT app for *Conflux* enabled HB&Co to run the experience daily at dawn, lunchtime and dusk, without staff for one year. Total downloads for the apps (3,768 between April 2015 and 20 Dec 2020) [5.7g] are a useful measure of engagement, bearing in mind the individual and small-group focus of the work, but do not include visitors who borrowed in-house devices with apps already installed. Eato's collaboration with HB&Co has had significant impact on venues: following *Baba Yaga* [3.4], the Creative Director of York Mediale confirmed that 'the events were very close to sell outs [...] Jonathan's contribution to both of the projects we worked with him on has been huge, and fundamental to their success [...] both projects have positively impacted the reputation and future prospects for our organisation [...] in the sector' [5.4].

The apps have also led HB&Co's **collaborating partners in new, non-traditional directions**. *Our Line* (2018), a site-specific audio piece for Northern railways and The Bishop Line, delivered theatrical content via the TlotT app to local residents travelling by train from Darlington to Bishop Auckland. Luxi, the production company that worked with HB&Co on *Our Line*, confirms the piece enabled them to build an ongoing relationship with rail companies: it 'was the start, it was definitely the project that enabled the conversation to turn into a working partnership', showing 'the kind of work we can enable and create to our partners and to their stakeholders, as well as creating something to be enjoyed by local communities' [5.3]. Eato was 'pivotal' in relaunching *Our Line* in 2020 as an online-only version without set times, which, Luxi's CEO states, 'translates in brilliant ways to the covid-world restrictions and new contexts' [5.3], giving access to this immersive cultural experience from the safety of home when train travel is limited.

Impact on Audiences: Eato and HB&Co's app-based solutions have encouraged audiences to **engage with technology** for a **heightened immersive experience**: *Culture Vulture* found the app 'a great piece of technology with perfect functionality' [5.7h]; audience members confirmed 'the iPhone worked flawlessly' [5.10c] and 'I liked the buildup to the event, the countdown on the app, and meeting strangers silently with headphones' [5.10d]; another commented, '[t]he immersive experience is REALLY effective. I've seen *Punch Drunk* in London so shows of this type, but not using technology like this and the potential for this is huge!' [5.10e]; and for another, '[t]he tour was quite remarkable. I am the kind of person that does not like audio guides

[...]. This was of a totally different order. It was part of the whole artistic experience, allowing me to participate mentally. [...] The most spectacular parts for me were when the 3D sound effects were used. Hearing a member of staff walking down the stairs behind me, only to find nobody was there, increased my heartbeat and literally made the hairs on the back of my neck stand up' [5.10f]; in the *Hackney Gazette*, *Small Choices* was given 5*: 'the evocation of space created [...] is amazing – footsteps approach from behind, doors creak confusing visual reality with the world pumped into your ears' [5.7c].

Eato's app-powered work has created in-situ platforms for **the forgotten or untold (hi)stories** of often **marginalised groups of people**: [The Other Friends of Clapham Common](#), co-created with a specific segment of the queer community, explored gay men's memories of the Common as a cruising ground; *Cosi-Cosi* [3.1] voiced the stories of persecuted people in South Africa, especially those from San communities, in indigenous languages; a *Southern Pulse Magazine* review encouraged readers to 'walk a section of Cape Town in a way you've never done before' [5.7i]; *Our Line* stirred 'pride in the "place"!' [5.10g] for British north-easterners, connecting with past industry ('both father and grandfather were miners') [5.10g] and the land ('[i]t made me look at the landscape more than I'd usually do') [5.10g].

The community focus of HB&Co's work had a positive impact on **engagement and intergenerational participation** among audiences. The CEO of Luxi noted about *Our Line* that '[f]rom our perspective audiences were incredibly moved by the show' [5.3]. For one participant, the family and community narratives presented 'made me think about my own family history and their struggles and triumphs along the way. Now I'd like to do my own research to see what I can discover too' [5.10g]. For another, experiencing Eato's work together restored communication and shared enthusiasm with her withdrawn teenage daughter, encouraging Community Rail to take it to schools, care homes, and other parts of the community to facilitate 'conversations about family and heritage spurred on by the *Our Line* recording' [5.9a]. With regard to participation in the arts, 23 out of 27 audience-evaluation respondents said they felt 'more confident in seeing something new' as a result of experiencing *Our Line*, and 18 out of 27 said they were 'inspired to do something creative' afterwards [5.9b]. With *Small Choices*, HB&Co was commissioned to produce a 'sound version' of the newly renovated Victorian music hall Hoxton Hall, by bringing its archive to life. The resulting work **created an inclusive experience**, reflecting the diversity of the local community in Hackney. Hoxton's Artistic Director and CEO observes that the hall should be seen not as 'something that's exclusively English, but actually that it belongs to a British changing population, one of the things that *Small Choices* does really well is reflect that ever-changing history of the building and people who come through' [5.8]. One of *Small Choices*' characters is a complex British 'outsider' with mixed English, Scottish and Indian heritage, something Eato reflected in his sound design and composition. The impact of representing this diversity is apparent from the response of one visitor, interviewed on camera and visibly moved on completing the tour: 'I could really visualise people on the stage and that surprised me [...] it's really nice to hear about its history and to feel part of its history. Yeah, I think that's it - it's not just seeing it or being here, it's feeling it - and that's quite powerful... the sound effects... absolutely superb... sorry... [in tears]' [5.8].

5. Sources to corroborate the impact (indicative maximum of 10 references)

- [5.1] Testimonial: Hannah Bruce, Director, Hannah Bruce and Company.
- [5.2] Testimonial: Hannah Davies, writer/performer and theatre-maker.
- [5.3] Testimonial: CEO, Luxi/Jabberwocky Market.
- [5.4] Testimonial: Creative Director, York Mediale.
- [5.5] Testimonial: Creative Director, Transform, and WYP Associate Producer.
- [5.6] Award nominations: a. OSBTT awards, 2013; b. Museums and Heritage awards, 2017.
- [5.7] Reviews, media reports & app stats: a. *What's On Stage* 1.4.14; b. *The Guardian* 27.3.14; c. *Hackney Gazette* 26.11.15; d. *Econsultancy* 17.8.16; e. Barbican blog 9.6.16; f. Barbican Centre Board Minutes 25.1.17; g. App download figures; h. *Culture Vulture* 31.3.14; i. *Southern Pulse Magazine* 24.4.14.
- [5.8] Online: '[A Collection of Small Choices \(commentary\)](#)'.
- [5.9] Evaluation of *Our Line*: a. '[In Conversation about Our Line](#)'; b. Evaluation summary.
- [5.10] a-g. Selected audience and industry comments and feedback.