

## Impact case study (REF3)

<b>Institution:</b> Queen's University Belfast		
<b>Unit of Assessment:</b> UoA33		
<b>Title of case study:</b> Reassembled, Slightly Askew		
<b>Period when the underpinning research was undertaken:</b> 2007-2015		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b> Paul Stapleton	<b>Role(s) (e.g. job title):</b> Professor of Music	<b>Period(s) employed by submitting HEI:</b> Aug 2007 - current
<b>Period when the claimed impact occurred:</b> 2015 - 2019		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<p><b>1. Summary of the impact</b>  <i>Reassembled, Slightly Askew</i> (RSA) is an immersive audio-theatre piece developed during a 5-year period of collaborative artistic research, which has reached audiences in Canada, England, Hong Kong, Northern Ireland, Republic of Ireland and the USA through public performances, medical training sessions and high-profile media coverage. RSA has significantly enhanced public awareness of the challenges of living with acquired brain injury (ABI) in all 6 countries. The work has also impacted the professional practices of artists and healthcare workers by harnessing the wider potential of immersive audio storytelling to provide empathetic and embodied understandings of invisible disabilities, and by offering medical professionals a deeper understanding of the patient experience in situations where this is difficult or dangerous to access directly (i.e. coma, hemiparesis).</p>		
<p><b>2. Underpinning research</b>            RSA (<b>r1</b>) is based on an autobiographical account of Shannon Yee's experience of falling critically ill with a rare brain infection and her journey of rehabilitation with an acquired brain injury (ABI). The project was initiated by Yee in 2010, and initially brought together a team of five lead artists: Yee (writer, producer, actor), Paul Stapleton (sound designer, music composer), Anna Newell (theatre director), Hanna Slättne (dramaturg), and Stevie Prickett (choreographer), who were later joined by sound artist Matilde Meireles (project support). Rather than develop a conventional play to be performed onstage to an audience at a distance, the aim was to create a more visceral encounter with Yee's experience informed by Yee's hypersensitivity to sound resulting from her ABI, as well as her movement constraints from temporary paralysis down the left side of her body.</p> <p>The inclusion of Stapleton on the artistic team provided underpinning research expertise in the development of novel sonic materials (<b>r2</b>) and the creative use of immersive sound technologies (<b>r3</b>), as well as access to the state-of-the-art facilities of the Sonic Arts Research Centre (SARC) at Queen's University Belfast where much of the research and development phases of RSA took place (2010-2015). The type of embodied listening employed in RSA, where sound playback is externalised in all directions rather than perceived as a simple left/right stereo image, was in part afforded by the use of binaural microphones and other sound technologies (e.g. SARC's Sonic Lab loudspeaker array). The project's creative use and adaptation of spatial audio technologies was directly informed by Stapleton's past artistic research in this area (<b>r3</b>).</p> <p>A significant part of the early stages of the research for RSA (2010-2012) was focused on developing an interdisciplinary language that would allow the artistic team to move beyond the conventional forms of audio-based dramatic narratives (e.g. radio drama), as well as musical forms that are typically more concerned with sound spatialisation than storytelling (e.g. electroacoustic composition). Stapleton's underpinning research in the areas of improvisation (<b>r2</b>) and interdisciplinary practice-as-research (<b>r4</b>) aided this stage of the process by providing methods for questioning disciplinary norms and extending existing sound recording techniques. In addition to conventional scripts, the artistic team made extensive use of graphic scoring</p>		

techniques to aid in the structuring of the dramatic narrative. The resulting immersive audio-theatre work consisted of processed dialogue performed by actors, reconstructed and newly imagined acoustic environments, spatial music compositions, and the sonic simulation of physical interactions, all of which were directly informed by Stapleton's previous body of research.

In 2013, following a successful Wellcome Trust 'small arts' public engagement fund bid (£30k awarded to Yee), the project team expanded to include medical practitioner advisors who were involved in Yee's life-saving surgeries and rehabilitation, including Roy McConnell (consultant neurosurgeon), Wendy Spence (consultant neuropsychologist) and Colin Williamson (head injury liaison nurse) at Royal Victoria Hospital in Belfast. This phase of the research included multiple focus groups led by Yee with medical and health professionals, artists, and the general public to provide feedback on iterative drafts of the work. Significant time was spent by Stapleton reworking the sound design and compositional elements based on the project team's collective analysis of these focus group sessions.

In 2015, the completed version of RSA had its world premiere at The MAC in Belfast as part of the Cathedral Quarter Arts Festival. Audience members engage with RSA individually, listening via headphones while lying on a hospital bed, experiencing Yee's descent into coma, brain surgeries, early days in the hospital, and re-integration into the world with a hidden disability. This novel form of sonic storytelling placed the listener safely in the first-person perspective with the aim of increasing empathy and understanding of Yee's personal experience and of ABI more generally. This innovative approach to sonic storytelling was the primary contribution of the underpinning research. In recent years, a growing and widespread interest in the concept of immersion has been observable (for example, in immersive theatre and VR). However, prior to the development of RSA (2010-2015), the design and dramaturgy of immersive theatrical experiences had generally prioritised the visual over the aural. The innovative qualities of RSA are evident in comments from critical reviewers at the time, including: 'uncategorisable art at its best' (Time Out London \*\*\*\*, A Nation's Theatre Festival 2015) and 'a completely different theatrical experience' (The Arts Review \*\*\*\*, Dublin Fringe Festival 2016) (s2).

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

(r1) *Reassembled, Slightly Askew* (2015), immersive audio-theatre work, 48'41". Authors: Shannon Yee, Paul Stapleton, Anna Newell, Hanna Slättne, Stevie Prickett. This output is listed in REF2. '[RSA] sits on a fascinating edge between immersive performance, technological research and health-care advocacy.' Review by Karen Ricker in Toronto Star, 6th August 2017.

(r2) *Bonsai Sound Sculpture (BoSS)* (2010-2018), portfolio of custom designed electro-acoustic musical instrument and performances. BoSS was designed in collaboration with Neil Fawcett, and performed with 50+ professional musicians. 'Stimulating and outstanding is "Shift" which is built around the contrast between stentorian saxophone growls and delicate resonations from the BoSS.' Review by Ken Waxman in Jazzword, 23rd March 2013. Selected recordings available at: <http://www.paulstapleton.net/portfolio/bonsai-sound-sculpture-boss>

(r3) *Sound on a String* (2012), interactive spatial audio installation, commissioned by the Dublin City of Science (co-authored with Cavan Fyans, Javier Jaimovich and Adnan Marquez-Borbon). Video documentation available at: <http://www.paulstapleton.net/portfolio/soundonastring>

(r4) Paul Stapleton, 'Performing the Document: Navigating the Terrain of Practice as Research' (2008), in David Cecchetto, et al. (eds.), *Collision: Interarts Practice and Research*, Cambridge Scholars Publishing, pp. 191 - 202. ISBN-13: 978-1443800310.

### 4. Details of the impact

#### Impact on Public Audiences

Between 2015-2019, RSA directly reached 2,546 people in Canada, England, Hong Kong, Northern Ireland and the Republic of Ireland at **25 different arts venues and festivals**, including:

A Nation's Theatre Festival, Battersea Arts Centre, London (2016); Dublin Fringe Festival (2016); High Performance Rodeo, Calgary (2018); "No Limits" Hong Kong Arts Festival (2019), and the Hong Kong Museum of Medical Sciences (2019). Individuals from this group attended the full 48-minute performance version of the piece, experienced blindfolded wearing headphones while lying on a hospital bed in a makeshift ward attended by a nurse actor. Nearly all public performances were sold out. Indeed, several performances were significantly oversubscribed due in part to limited capacity; typically venues were able to accommodate only four to eight hospital beds and, therefore, four to eight audience members for any one performance. This necessitated multiple runs of the show at each location. In addition to first-hand experiences of the complete work, the wider public was given the opportunity to engage with aspects of RSA through online and print materials including **national and international media coverage (s2)**, such as: a four-star review in The Guardian (the UK's second most-read online newspaper with an estimated monthly digital readership of 35.2 million); a feature video as part of the BBC's 'Hull 2017 UK City of Culture' output; and an article in the Toronto Star (a broadsheet newspaper with the highest overall weekly circulation in Canada and an estimated 5.8 million online monthly unique visitors).

While the limited capacity of the show greatly restricted the total number which could experience RSA first-hand, profound cross-cultural impact on many audience members in all 5 countries was evident. As part of all RSA public performances (from 2015-2019), each audience member was asked to remove their shoes and complete a demographic survey prior to being assisted into a hospital bed by a nurse actor. Following the end of each performance, audience members were given the option to complete the survey form by responding to: 'Any other comments or questions?'. Out of the **2,546 respondents, 77% of respondents (1,964) took this opportunity to provide specific comments about their experience**, representing a very high level of engagement with the work (**s1**). 94% (1,847) of those who commented enjoyed the performance and/or gave positive feedback. Such responses were mirrored in several very positive critical reviews, for example: 'Paul Stapleton's echoing 360-degree soundscape invades and inspires the imagination [...] A real-life ordeal, captured by a daring, disorientating artistic collaboration [...] It should be available on prescription' (The Stage \*\*\*\*\*) (**s2**).

**Beyond enjoyment, many of the open comments from the audience survey provide rich descriptions of intellectual, emotional and/or physical impact.** Emotional and sensory impacts were among the most common responses (684). For example, one male audience member from Ireland commented: 'I found the whole experience to be incredibly emotive. The inner voice of the protagonist really immersed me in her character even to the point of giving the illusion of different personhood. I was brought to tears (well, almost, on the cusp) on several occasions, really experiencing and sharing the fear, anger, sadness and joy...and also the love between the protagonist and her partner.' A woman from the north west of England explained the extent to which she had experienced the sensation of ABI during the performance: 'It was very powerful. Now, as I write this I am thinking "I can remember how to write!". As I put my shoes on, got out of bed and made steps, took a glass of water – I felt like I too was remembering how to do this. I wasn't taking any of these things / functions for granted. I felt I was you truly.' Similar intense sensorial responses were reflected in the critical media reviews: 'Paul Stapleton's powerful sound design sets sparks through your ears as Shannon's brain fills with abscesses' (Time Out London \*\*\*\*). In Hong Kong, where English was not the first language of most audience members, emotional and/or sensory impact was still evident in many of the responses; 52 of the 257 comments received from respondents in Hong Kong mentioned this type of impact. Examples include: 'an extraordinary experience which I even cried during the show. It felt so real and personal' (female), and, 'it was so "real" [...] Although I am not understanding the whole injury as I am not familiar with English narrator, I can taste a little part of [Yee's] journey' (male).

Another common theme in the data from the open audience survey question was **the strong sense of being immersed**. The word 'immersive' was used 227 times (together with the closely related terms 'submersive', 'transporting', 'involving', 'engrossing', 'experiential' and 'sensory'). Indicative examples include, 'Brilliantly immersive. I was completely lost in the piece, absolutely carried away in it. A lot of food for thought' (male, London), and, 'I am stunned. Actually at a loss for words. Wanting to go through it again. Totally immersive. Never thought sound could be used

this way' (male, Vancouver). While immersive audio technologies and techniques have been around for many decades, the specific application of such resources in the context of theatre is still in its infancy. Audiences commented on **the uniqueness of the immersive experience**: '[RSA] was unlike anything I've ever experienced. Never have I felt so immersed in another consciousness' (female, Calgary); and, 'The binaural recording helped with immersion like I've never heard before' (female, Vancouver). Some survey respondents made positive comparisons between RSA and their experiences of related subject matters in other artistic contexts: 'Much more effective than films I've seen about a similar subject (the butterfly and the diving bell, the sea inside)' (female, Belfast); and, 'I've read novels and seen movies that tackle similar material, but they didn't come close to this experience. I felt fear, pain, love and hope' (female, Hong Kong). It is clear that being immersed in Yee's story was a critical condition for audience members to be able to experience some of the other emotional and intellectual impacts of RSA.

Many responses to the open audience survey question provide clear evidence that **RSA contributed to public understanding of ABI in all 5 countries** (471), with 141 respondents indicating without prompt that they could now better empathise with those experiencing ABI and/or related conditions. The demographic data collected in the survey indicates that this increased understanding extended to audience members with personal experiences of those who had an ABI as well as those with no prior experience. Indicative examples include: 'I have a friend who went through a brain surgery recently and this show gave me some insight into what she must have felt like' (male, Toronto); 'I have a very close similar case, it was around 6 years and it happened to my mum. Now I can understand better how it was for her' (male, London); 'Having experienced a brain injury, thankfully less extreme, but similar. I want to thank you for sharing your story. It was both familiar and enlightening' (female, Surrey); 'As a person who has (thankfully) never been in a hospital bed in my life your story definitely gave me better perspective of what it feels like having a brain-related illness/injury. Definitely something medical personnel should experience through their training as well for empathy training!' (male, Hong Kong). This beneficial impact was also echoed by critical reviewers: 'When a doctor asks her if she knows where she is, I had to suppress the urge to shout: "In hell." That makes the show sound gruelling. It is, but it is also uplifting and empathetic' (The Guardian \*\*\*\*); 'The result is a disorientating experience, meticulously assembled by Yee, director Anna Newell and a team including sound designer Paul Stapleton. Together they have crafted a richly textured three-dimensional soundscape that affords us a profound and moving sense of what it might be like to have a brain injury — and recover from one' (Evening Standard \*\*\*\*); 'This show will be of supreme interest to audiophiles, radio producers, medical sociologists and anthropologists, doctors and nurses – or in fact anyone looking to understand and form an empathetic bond with an acquired brain injury patient' (NOW Toronto) (s2).

### **Impact on Professional Practice**

Impact on public awareness also extended to an **enhanced professional understanding of ABI among those working in a number of relevant professions**. Evidence of this type of impact started to emerge during the making of RSA. Roy McConnell, a Consultant Neurosurgeon at Royal Victoria Hospital who was responsible for the lifesaving treatment of Yee, later became a biomedical advisor on the RSA project. McConnell comments on the impact this artwork had on his practice in a 2015 interview on YouTube: 'Using the arts as an effective tool in healthcare is a concept I hadn't really explored much before *Reassembled*. If I'm being honest, I viewed it as being on the fringe of what we do [...] However, as I got more involved with the project I realised the ability of it to effect how we think about our patients [...] it is really a very powerful education tool for people who have not been in that situation to help them gain empathy with their patients' (s3). The potential for wider impact on healthcare practice identified by McConnell was realised during the international touring of RSA.

Audience survey data from 2015-2019 (s1) indicates that **384 relevant professionals** (i.e. 'medical / healthcare professionals' and 'brain injury support organization staff') from all 5 countries experienced RSA in public performance settings. **82% of these respondents (315) provided specific comments** to the open question at the end of the survey, out of which 96% enjoyed the performance and/or gave positive feedback. Beyond enjoyment, emergent themes in the open

comments from this demographic include one or more of the following: gained understanding and/or insight into the experience of ABI (90); believe they can now better empathise with those experiencing ABI (39); intention to make use of their learning from RSA in their own professional work (40); believes RSA would form the basis of a helpful professional training tool (63). Indicative comments include: 'A truly impactful piece, immersive, empathetic and empowering. As a medical student I very much see the potential for this to serve as a learning tool and an opportunity to refresh my empathy (male, Dublin); 'As a nurse in a neuro ICU I found this extremely insightful. It's very hard to understand let alone have any idea what these patients experience' (female, Toronto).

As a result of growing interest from the healthcare community, RSA has also been presented at The Society of British Neurosurgeons Conference in York (September 2015), in various focus groups and medical training sessions in Northern Ireland (for example, the Royal Victoria Hospital, Belfast Trust), and in **a medical training session for 160 employees in the rehabilitation department at Mount Sinai Hospital in New York**, one of the most highly-acclaimed teaching hospitals in the United States (October 2017). The latter received coverage in **The Wall Street Journal (s2)** in a feature article citing medical professionals at Mount Sinai whose practice was impacted by the experience of RSA, including paediatric critical care doctor Steven Yung: 'We have to keep personalizing the patient [...] And we're taught that and know that but to experience that is completely different'; and, senior occupational therapist Andrea Johnston who helped facilitate the session: 'I now have a visceral memory that I will carry with me [...] I will try to remember every time I pass that threshold into a patient's room. I really, I feel it in me, I feel differently in the unit.'

**RSA has also impacted on artistic practice.** An indicator of this type of impact is found in the use of RSA as a primary reference point for the makers of the BBC Radio 4 documentary 'Dwelling, A House With Two Rooms', broadcast in November 2018. The programme focused on the experiences of a teenage girl with autism spectrum disorder. The BBC's programme details state, 'Inspired by an innovative, immersive theatre experience called Reassembled Slightly Askew, which was based on the artist Shannon Sickels' [aka Yee] experience of a serious brain infection, Marie Louise [Muir - radio broadcaster] and Catherine wonder if they can use immersive sound technologies to give audiences a better understanding of autism' (s4). Interviews and sound demonstrations with Stapleton and Yee are included in the documentary. Impact in this area also extends to the RSA artistic team, including the professional practice of the project's autobiographical author and producer who states, 'It's been a great privilege to work with Paul throughout the inception, creation and continued life of [RSA] [...] Collaborating with Paul affected the way in which I conceived and communicated the script, and has enhanced my writing process ever since' (s5).

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

(s1) Summary Report for RSA Audience Survey, 2015 – 2019.

(s2) Collated impact source document 'Selected media coverage summary'. This document contains full references and links to coverage in the following outlets: [Time Out London](#); [The Arts Review](#); [Toronto Star](#); [The Guardian](#); [BBC](#); [The Stage](#); [Evening Standard](#); [Now Toronto](#); [The Wall Street Journal](#). The document also provides evidence to corroborate circulation and readership figures cited in this case study.

(s3) RSA Video Vignette, 24<sup>th</sup> April, 2015, YouTube: [Roy McConnell, neurosurgeon](#)

(s4) BBC Radio 4 documentary, [Dwelling, A House With Two Rooms](#), broadcast 29<sup>th</sup> November 2018.

(s5) Email, 30<sup>th</sup> August 2019, from RSA writer, producer and performer.