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Sounding Beckett: a practitioner's perspective

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ABSTRACT

This article discusses theatre sound design through the lens of a practitioner-researcher. What follows is a reflection on the process, context and significance of this practice within theatre arts. Initially touching on some of the terminology and theory behind the development of this discipline, the discussion will focus on the application of design methods and strategies to three radio adaptations of Samuel Beckett's works: *All that Fall* (1957), *Embers* (1959) and *Cascando* (1963). The aim of this critique is to broaden the discussion on theatrical sound design by analysing specific works and design strategies from my own experience as a practitioner engaging with these three seminal Beckett works. This article argues that theatre sound design is an intermedial, holistic process that can reinforce or counterpoint a specific mood or atmosphere, reveal performance characteristics and, most importantly, contribute to the advancement of the storytelling, which is at the heart of most theatre productions.

Introduction

The term *theatre sound design*, as defined by theatre scholar Ross Brown, 'is a crafting of the aural experience of the theatre audience' (2010, 11). The term 'soundscape', as applied to theatre, can be used to describe the totality of these crafted aural montages, sound effects, ambiances and music; it is inherently part of the dramaturgical process. The use of sound as a creative medium within theatre has been developing for many years by many diverse practitioners. Petra Maria Meyer claims that the 'instrumental' theatre of Mauricio Kagel, the 'theatricality' of music by John Cage, and the 'conceptual' theatre compositions by Heiner Goebbels are all new models of this creative design process, which lies between music and the dramatic arts (2012, 84). Theatre sound design also has obvious parallels with film and radio production. Essentially, they are all media elements incorporated to support the textual and scripted direction. There are two main differences between these forms of media: the first is that, for film and radio, the dialogue will also be a recorded element within the soundscape; the second is that the entire soundscape will be of a fixed duration and timeline whereas, for a theatre production, the temporal aspect is part of the performance.

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I consider my sound work for theatre as a subset of sound art,¹ where the creation of synthetic soundscapes is employed together with lighting and set design to increase the audience's degree of emotional engagement with the overall performance. As an artist working principally with the medium of sound, I am interested in exploring site-determined aural awareness and audience-embodied experience. I consider sound design to be a marriage between aesthetics and functionality; that is, dominated ultimately by its purposefulness: it must serve and signpost the script and performance. As Adrian Curtin asserts, sound design is part of this new multimodal 'scenographic turn' (Curtin and Roesner 2015). Sound designers working with theatre, film or radio must understand how to generate meaning from sound. They need to have an awareness of the psychological, sociological and physiological properties of sound if it is to be incorporated successfully.

The creation of a theatrical soundscape starts with an analysis of the script, and it is here that the overall theme of the aural world will be established. As Victoria Deiorio notes, 'the aural subculture of the sound design has a unique shared relationship with the script' (2018, 17). The interpretation of the script will contribute to the development of the intellectual and emotional arc of the sound world. Essentially, the sound designer is attempting to figure out the myriad ways in which they can enhance the meaning and emotional dynamics of the characters within the play, and thus bring the auditory world to life. It is crucial that the sound designer is involved in the collaborative dramaturgy as early as possible in the production process, if the aural element is to be an integral part of the show. The soundscape will only be successful if it supports the director's and playwright's intended symbolism and dramaturgy. Crucially, the sound world must contribute to building the audience's experiential framework. The theatrical soundscape should be considered as a phenomenological structure, opening up divergent listening that binds the text and visual *mise-en-scène* together. Pamela Howard (2009) acknowledges that sound design can give the audience 'contextual information' which does not need to be repeated visually. It should be noted that the following works were not presented as radio plays but rather as a form that could be best defined as 'theatre-installation' (Wilkinson 2014; Tubridy 2018). The works discussed were created collaboratively with PanPan Theatre Company,² Dublin, between 2011 and 2022.

Theatre Installation Works

All that Fall (2011/2018)

*All that Fall*³ was initially broadcast on BBC radio in 1957, ultimately leading to the establishment of the BBC radiophonic workshop in the same year (Niebur 2010). The influence of this work on the development of radio-art cannot be underestimated, as it was in this production that techniques from the French school of *music concrète* were utilised for the first time in Great Britain (Niebur 2018). Thematically, *All that Fall* deals with the familiar Beckett tropes of paralysis, sterility, decay and death, presented in his inimitable prose style. This was the first time Beckett had written for the acousmatic medium of radio, which was ideal for this exploration of disembodied voices and sound events. As Everett Frost contends, 'Beckett's script demanded a degree of stylised realism hitherto unheard of in radio drama' (1997, 190). The challenge with this work was to explore



Figure 1. *All that Fall*, Project Arts Centre, Dublin, 2011. Photo: Ros Kavanagh.

the most appropriate and imaginative sonic interpretation of Beckett's text. As this work was originally written for radio, it had to be transposed into a format suitable for an immersive multichannel installation. Working collaboratively with a director and dramaturg, the dialogue was recorded over several days in a recording studio in Dublin. At



Figure 2. *All that Fall*, dialogue recording, Bow Lane Studio, Dublin, 2011. Photo: Ros Kavanagh.

times, this involved recording a single word dozens of times, to ensure it was delivered with perfect pace, inflection and intonation. This part of the process was followed by a similarly long editing session, where the complete dialogue was constructed from each take in a piecemeal fashion. Following this editing session, work began on the sound design. Conceptually, in this production the designed soundscape is intended to be perceived by the listener as originating from the characters' consciousness, rather than as a representation of real-world sounds. Donald McWhinnie, the play's original BBC producer, commented that: '[*All that Fall*] is a mixture of realism and poetry, frustration and farce' (1959, 133).

I created this impression of the characters' 'internal sound world' by explicitly abstracting the sound effects elements, so that all sound except the dialogue would lose naturalism. However, even the dialogue has a sense of 'superficial' naturalism, as Beckett's script explores this non-visual medium of the sonic world by creating a type of strange in-betweenness, or uncertainty, regarding the characters' speech and how they interact with one another.

To achieve this effect, but to also remain responsive to the intentions of the original text, a surrealist approach in the design of the soundscape was employed to invoke the inner life of the characters: specifically, that of the main character, Maddy Rooney. She appears to the audience as an amalgamation of the noises she hears, including distant renditions of Schubert's *Death and the Maiden*, rural sounds, laboured footfalls and more. Essentially, the drama takes place entirely within Maddy Rooney's head, and the soundscape described in it suggests not a rural landscape, but Maddy Rooney's aural perspective of experience. The drama relies on the point of view interiorising the scripted sounds not as they really sound, but as she hears them, bringing her mind into existence through her perception of place. This is something the externalities required by stage, screen or television would find very difficult to replicate.

Creating a soundscape for such a dramatic work is a balancing act between realism and overt stylisation. Going too far in any direction will destroy the underlying relationships that exist between the text and the aural cues that the audience will experience. There are a variety of ways to achieve this, ranging from impressionism to overt naturalism. I tailored my sound design to the rhythm and style of Beckett's script. As this particular production was created as an installation rather than for radio, as such, it was possible to spatially position the sound within a 360° sonic environment. This had the effect of opening out the sound stage, enabling the work to unfold and immerse the audience.

The opening scene of the sound world is crucial because it not only sets the general tonal shape of the play, but it also alludes to the distinctiveness of radio as a medium. Beckett employs a type of musical prelude, utilising human vocalisations of animals, all performed by the actors to the same duration and intensity. This section is one of the more striking aspects of the production, and the intention here was to give the sound a denatured and abstract sense, rather than sonic realism. As a sound designer, I do not seek to duplicate *real* sounds, but rather to generate an 'impression' of a real sound event in the mind of the listener. This is achieved through an expectation that is based on cultural conditioning, as well as individual physical and embodied experience. Sound design uses a wide range of evocative metaphors and audio icons, or *earcons*, that support the narrative structure of a work. These usually fall into four categories, as Deena Kaye outlines: *framing cues*, *underscore*, *transitional sound* and *spot effects* (Kaye and

LeBrecht 2009, 23). I regularly use Kaye's definitions when working through a sound design, as I find them incredibly useful for categorisation of the aural elements.

The experience of theatre is polysemic, relying upon several semiotic systems within its ontological structure. Theatre's signs and signifiers may not operate in a constant linear mode, but rather could be comprised of a complex series of nonlinear elements. One example of this nonlinearity is seen in the association between sound and memory; as a sound designer, I can utilise this phenomenon to build an effective soundscape within the listener's mind. This effect was defined by Jean-Francois Augoyard as 'anamnesis' and 'phonomnesis' (2006, 85). Augoyard uses these terms to describe how, through memory, a sound can be recalled or imagined even if it is not actually heard. Similarly, Barry Truax (1984) created the term 'soundmarks' to describe sounds that evoke social, historical and symbolic meaning. These can be incorporated into a soundscape to trigger a specific aural memory within the audience. According to Truax, the weaving of these real-world sounds into the soundscape opens up the possibility of temporal manipulation and extra musical signification. Ambrose Field defines this phenomenon as a 'sonic metaphor': sounds that can have extra musical context, function or process within a theatrical work (2000, 41). Similarly, Jean-Jacques Nattiez argues that we accept and infer the meaning of certain sounds as they are a sonic signifier of our 'shared lived experience' (1990, 8).

One of the most important sonic elements within this work is the sound of 'dragging feet' that merges with the sound of 'laboured breath'. This indexical sound event became the cornerstone of the sonic world of the play, as all of the dialogue was paced against these footsteps; and so, in a sense, they acted as the pulse and metronome of the performance. After some experimentation, I settled on an exact tempo of 70bpm



Figure 3. *All that Fall*, detail of the octophonic array, 2011. Photo: Ros Kavanagh.

(Andante) in a 4/4 time signature as it paced very well with the dialogue. This sound event was constructed from five different footfalls, a percussive hit on a drum, and a scratch and rub sound from sandpaper, which were all subsequently blended together. A breath exhale sample was then added, using the voice of the actor playing the character of Maddy Rooney. This sound was edited to have a rhythmic movement of an old person slowly walking, with laboured breathing. The underlying concept here was one of rhythmic unity. The footsteps conceptually merged the text and the sound world with a type of artificial rhythm not too dissimilar to the sound of a medical life support machine. As such, they are poetically loaded with musical suggestion. As Barry Truax suggests, a sound effect is effective when it refers to the 'ideal notion' of a soundscape or aural experience, rather than an assiduous attempt at 'authenticity' (1984). These footsteps are heard throughout and could be considered as the aural centre of the play, as they are charged with emotional significance.

An explicit and important sound detail is Franz Schubert's *String Quartet No. 14 – Death and the Maiden*, which could be understood as the overture and coda of the play. This cuts across the established rhythm of the breath and footsteps. I was unable to locate a pre-recorded rendition of the Schubert composition with a lesser degree of romantic expression – that is, with less vibrato. Therefore, as an alternative, I used a high-quality sample library and recorded the string parts as MIDI⁴ information. This was then highly processed, using equalisation and reverberation. There is no 'music' as such in *All that Fall* (apart from the Schubert excerpt, of course). However, the structure of the work could be said to be fundamentally musical in its attention to the rhythmic relationships and contrasts between the voices and the soundscape. Kevin Branigan posits the idea that the whole structure of *All that Fall* is 'quasi-musical' and is structured around the 'sonata' form that Beckett 'borrowed' from Schubert (2008, 21). Professor Harry White made a pertinent observation in suggesting that *All that Fall* is 'like listening to difficult music for the first time' (1998, 171). For me, the emotional and phenomenological impact of the work is predicated on the abstracted soundscape. This should be heard as emanating from the characters' consciousness, as opposed to a representation of reality. These dramaturgical sound events are then experienced and contextualised by the audience collectively, although the listening experience is very personal.

Throughout the text, there are specific production sound cues of *pause* and *silence*, but there is no technical instruction within the script regarding the duration of each of these sound cues. The juxtaposition of sound and silence can be quite arresting. The overall effect of the absence of sound is relative to the dramatic event and sonic experience preceding and following this silence. George Home-Cook illustrates this point and notes that 'silence serves as a vector for a phenomenological consideration of aural attention' (2015, 22). As we are normally, although subconsciously, subjected to constant background noise, the absence of sound can actually increase attention by increasing the ears' sensitivity to sound. If this technique is employed correctly, it can generate a powerful emotional response.

Every architectural environment has a distinct sonic signature or tonal quality that can be identified; each space is a complex synthesis of spatial, architectural and cultural characteristics. Barry Blesser terms this acoustic characteristic 'the emotional and behavioural experience of a space, [which] is essentially aural architecture' (Blesser and Salter 2009, 5). To analyse these characteristics, I regularly record *room tone*,⁵ which is essentially

recording how the room sounds in its most quiet state. I also take acoustic impulse response measurements (IR)⁶ from the site of the production, which allow me to create convolution and time-based effects. Through this acoustic analysis I will understand the room both quantitatively and qualitatively.

John Cage's theories of music composition and particularly the concept of silence have had the greatest impact on the current debate surrounding music. As Cage remarked, 'Silence is all of the sound we don't intend. There is no such thing as absolute silence. Therefore silence may very well include sounds, and more and more in the twentieth century does' (Kostelanetz 1978, 166). Essentially, for silence to function as an artistic act, there must be a coherent structure, a framing as it were. This frame is the filter through which we perceive the work – sound and silence. As Kyle Gann suggests, Cage thought of 'sound and silence as merely aspects of the same continuum' (2010, 163). Conceptually Cage's work abandoned the compositional categories of work-form, material-content, thereby questioning the necessity of an artistic work at all for the origin or creation of aesthetic experience. As Douglas Kahn comments, Cage codified silence into a 'musical' event that could be experienced anywhere and at any time, essentially arguing that all sound could be music (1997). When discussing sound design, Cage's theories represent an aesthetic ideal of listening to the sound source which does not impose an intention or will on the listener. Instead, it promotes an openness towards experiencing events simply as they are. One of Cage's greatest contributions to art was highlighting the experience of listening in the expanded auditive field.

When designing the soundscape, the *silence* cues were extended to over five seconds. Although this can feel like an unbearably long duration with the absence of sound, I believe that the impact was very successful within the installation space, as it felt conspicuous and very potent. The use of this technique is an explicit acknowledgement of Beckett's concept of the decomposition of language. But even with this absence of 'signal', there is still sound: the sound of the audience within the space. When experienced communally, this silence can be a very powerful and emotive force. Beckett not only utilised these silences to indicate a 'lack of communication' and 'alienation between characters', as Rawiya Kouachi (2018) contends, but they were also incorporated as a musical rest, to imply a type of stasis within the play. Beckettian silence could be said to be privileged over sound, and has certain characteristics associated such as density and physicality. When reading any Beckett text, one will notice there is a certain musicality associated with it, as Mary Bryden comments: 'there is an extraordinarily acute attunement to sound; not just to noise, but to intimate ambient sound' (Bryden 1997). Importantly, Beckett is quoted as saying his writing was 'like an unnecessary stain on silence' (Gruen 1969).

The installation environment I constructed was referred to as 'the listening-chamber' (Baker 2015), because it was exceptionally quiet and acoustically dead. This was achieved through great attention to acoustic details, such as the precise measurements of reverberation times within each venue prior to installation. From these measurements, I could calculate the exact quantity of sound absorption material required to achieve clarity from the installed surround sound system. By using modern audio technology and acoustic treatment of the installation space, I was able to achieve a *Noise Rating* (NR) of 28,⁷ which was ideal for this type of work. I regard the technical aspect of this work as being as creative as the sound design. The complexity of this project means

that the piece must be mixed or designed into each new *space* specifically; it is not just a case of playing back pre-recorded material. The completion of the octophonic mix with the LFE⁸ channel was also very complicated, due to the amount of digital automation that was required for the synchronisation of both audio playback and lighting systems. The audio mix requires eight independent channels, and the sound intensity needs to reach a 120 dB SPL (sound pressure level) for approximately two minutes to have the intended physical impact. The rationale for this was to mirror the script instructions, which called for a huge ‘tempest of wind and rain’ at the very end of the work. By observing the equal-loudness contours, also known as Fletcher-Munson curves for the ear (Moulton 2006), I was able to attain the required sound pressure level (SPL) without potential damage to hearing when applying dynamic equalisation.

The work received very positive critic reviews worldwide,⁹ with praise particularly directed at the sound design and overall originality of the work. Anecdotally, I was very pleased when talking to Samuel Beckett’s nephew Edward Beckett, director of the Beckett estate, after a performance at the Edinburgh Festival in 2012, when he commented that ‘Sam himself would have approved’.

Embers (2013/2015)

The collaborative team for this intermedial production of *Embers*¹⁰ consisted of the same individuals involved in the *All that Fall* project, with the addition of the Irish sculptor and set designer, Andrew Clancy. One major difference with this piece is that it incorporated live actors, which meant that the soundscape had to be dynamically cued from the actors’ performance. These actors were placed within a hand-sculpted five-metre-high wooden skull, which sat on ten tons of beach shingle (see Figure 4). My contribution to the project was as a sound designer, but also in designing a 256-speaker sound sculpture that was both functional and acted as part of the scenography. The speaker drivers were removed from the usual wooden enclosures and fixed onto polycarbonate rods, which were hung in columns floor-to-ceiling and surrounded the sculpture (see Figure 5).

The sound design aspect in *Embers* is considerably different from the previous project *All that Fall*. My main compositional palette was made up of pure sine waves and white noise, signals used to highlight the artificiality of the soundscape. These two minimal elements were augmented by some heavily processed field recordings. These were sounds of a ship’s foghorn, recorded from Dún Laoghaire Pier, Dublin, the supposed site of Beckett’s artistic epiphany (Cronin 1999, 358). There were also location recordings of shingle and sea sound from Killiney beach (the actual site of the fictitious events in the play); this is a very steep sloping beach and has a unique sound, which is referred to many times throughout the text. I also recorded a sample of Samuel Beckett reading from his work *Watt*, which was time-stretched to create a type of underscore drone. As with all my works, these found-sounds are used as a kind of homage to the original work. As mentioned earlier, the involvement of the live actors necessitated all the sound design elements to be dynamic, and were cued manually by a sound operator with the software QLab.¹¹ This was a complex sound design project in terms of the number of sound cues, which ran to over one hundred, most of which were micro-adjustments of the sea sound, which ebbed and flowed alongside the actors’ delivery. The audio signal routing configurations and processing were also dynamic, such as the movement of sound elements

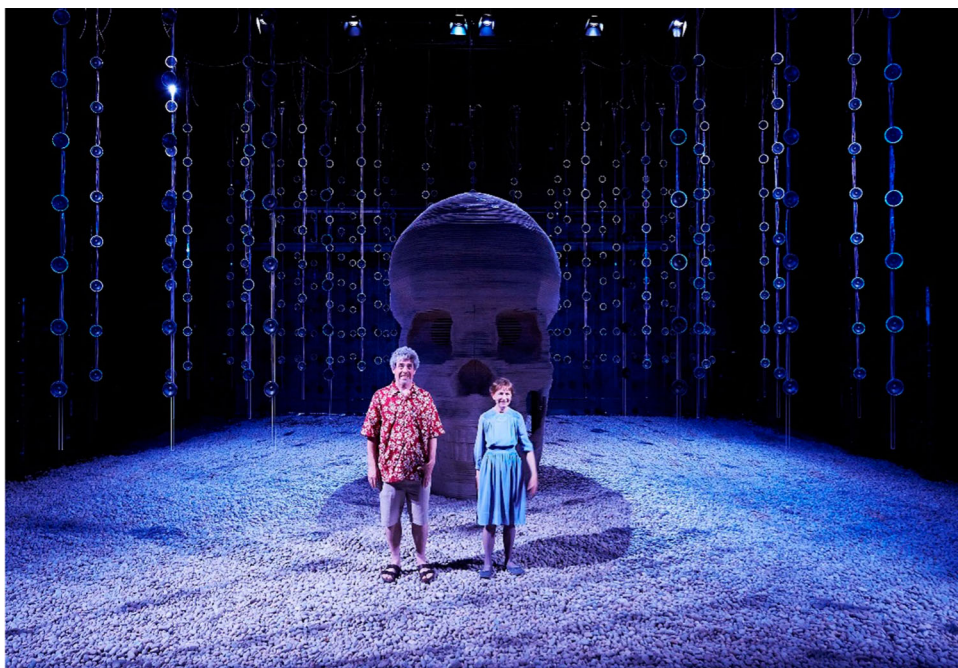


Figure 4. *Embers*, Samuel Beckett Theatre, Trinity College Dublin, Dublin, 2013. Photo: Ros Kavanagh.

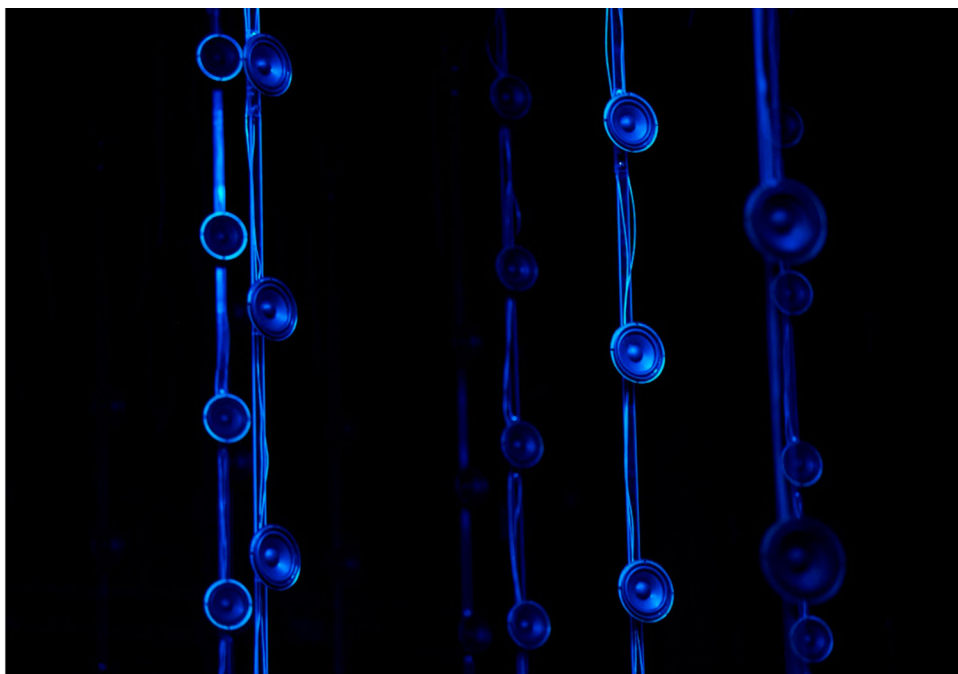


Figure 5. Detail of speakers, *Embers*, Trinity College Dublin, 2013. Photo: Ros Kavanagh.

through the 256-speaker array in real-time.¹² I also used a separate 16-channel surround sound array with LFE channels, to immerse the audience. This system was the primary amplification for the two actors. This was all done with advanced programming of digital consoles and audio software cueing systems. This type of technical work is usually carried out by sound operators or technicians, and was a key creative aspect of this production, as I had to design all of these playback systems during the production period in order to realise my sound design aims.

Embers revolves around Beckett's attempt to highlight what W. E. Kennick (1961) defines as the 'ineffable'; that is, attempting to communicate or express one medium through another. The main protagonist is the character Henry, and it is from his consciousness that the dramatic world unfolds. Initially, I ran the whole of the script through a text-to-voice recognition software in order to generate soundscape material. But the actual sound of the software reading the script was tonally and conceptually very interesting, and I suggested to the director that we use this material as the audience entered the theatre. Interestingly, the effect of doing this caused the audience to sit quietly, listen, and gaze at the five-metre-tall skull sitting upon ten tons of beach shingle; and being surrounded by 256 speakers was an arresting audio-visual experience to begin the work. As this robotic voice reading the script faded, I introduced a recording of Frédéric Chopin's *Waltz in A-Flat, Op. 69, No. 1*. This recording was then processed using reverb and was diffused only through the 256-speaker array, the idea being to draw attention to the scenography. After these introductory audio elements, the work commences with the sound of the sea. The sea sound could be considered as a type of 'leitmotif' or, as Lucy Jeffery considers, an 'allegory' of the 'characters' relentless struggle throughout the work (2018, 175). I utilised layers of white noise to create the seascape rather than using actual sea-sound recordings, which gave it a surreal and hallucinogenic quality.

Michel Chion (Chion, Gorbman, and Murch 1994) states that it is important to design an ever-evolving soundscape that will have a positive influence on aural perceptions of the work and most importantly aid in understanding the narrative. Although Chion was referring to film sound design, this concept can also be applied to theatre, and particularly to the design approach to this work. As theatre director Peter Sellers explains, by using diegetic or non-diegetic sound in theatre, 'we are in a position to evoke simultaneous layers of experience, flashbacks, premonitions, visitations, and inner voices' (Kaye and LeBrecht 2009, 1). Essentially, using these principles allowed me to punctuate the emotional, subtextual or temporal flow of a scene; I achieved this through the use of atmospheric, referential or visceral sounding subsonic audio. Sound design can give form to the temporal structure of a play; the interweaving of these diegetic and non-diegetic audio signifiers within the soundscape helps to propel the narrative forward, as they are perceived as a temporal development. As the script calls for minute edits throughout the work, a large portion of my time was spent enhancing these micro-volume changes. Behind this underscore of the sea sound, the sample of Beckett reading from *Watt* and the ship's foghorn were both heavily processed and placed as a type of stylised dynamic drone. This was *just* about audible but gave depth to the sound design. The script also called for the sound of walking on shingle. An interesting point is that I recorded all these Foley sounds at the supposed site of the fictitious dramatic event – Killiney beach, Dublin.

In contrast to *All that Fall*, there is never an absence of sound within this work, and it never goes to silence. The sea persistently breaks up the continuity of dialogue, filling any pauses as it pushes silence out of the aural frame. It was through my manipulation of white noise that I created this continually unsettling sound that was always redefining itself within the context of the dialogue. James Jessen describes the persistence of the seascape sound as a 'mutable presence', seeping into each of the play's many pauses. At certain points through the script, I punctured this white noise sea sound with high-pitched sine waves, modulating between 10 and 15 kilohertz, which is a very high pitch. This added to the hallucinatory and almost anaesthetised sensation that I wanted the audience to experience. The overall aim and intention with this sound design was to enter the mind of the protagonist, Henry. We experience the play through his temporal confusion of consciousness. Essentially, I was exploring the tension between abstract and representational sounds at the intersection of theatre, acousmatic music and sound art. According to Kevin Branigan, the musicality of this work 'may succeed in expressing a reality that language alone cannot convey' (2008, 136). The intention was to create sonic-like structures that integrated the mimetic and abstract in a disconcerting manner. Thematically and sonically, the work is in a liminal space and perpetual flux; it shifts between the thresholds of past and present, and it is not clear whether these events are imagined or real. There is a blurring of the distinction between internal and external reality, and the sound of the sea adds to this haunting inescapable presence. This work was a type of theatre experiment, which brought together the elements of light, sculpture and sound in the form of theatre installation. As mentioned earlier, the main diverging point from this work to *All that Fall* is that of the dynamic soundscape: one that is ultimately controlled by the performance of the actors. Notwithstanding this difference, it was through my audio engineering and design of the *sound sculpture*, coupled with the surround sound system, that gave this work its unique sonic characteristics. The audio content and these engineered structures go hand in hand. I was working on both simultaneously and, as such, I see that one could not exist without the other. One critic defined the work as 'a masterclass in light, sound and set design' (Davidson 2013).

Cascando (2016/2022)

Again, the approach to this Beckett piece¹³ was dramatically different from the previous collaborations. The most pertinent distinction is that in this piece the soundscape is presented through headphones, as opposed to loudspeakers. Also, the audience was not seated, but rather moved in procession through a specifically created theatrical set of a black-mirrored maze while dressed in Moroccan djellabas, a type of long robe¹⁴ (see Figures 7 and 8).

Headphone listening relays sound directly to the ear without any exterior acoustic interference. Due to this intimacy, headphone listening can create a very personal *inner theatre*, which can invoke and reactivate personal memories and associations more effectively than sound reinforcement systems. Carmen Derkson discusses this with reference to interdisciplinary artist Janet Cardiff and her use of headphones, arguing that they privilege the 'aural-sensoria' over the visual, and open 'spaces' for intermedial bodies with a sense of 'intimacy and separation' (2012, 6). In this production of *Cascando* the audience



Figure 6. *Embers*, Edinburgh International Festival, 2013. Photo: Ros Kavanagh.

were now performers within their 'own' Beckett play; they were at the centre of this installation, both literally and figuratively. As a collaborative site-specific performance, this production provided the audience with simultaneous roles of both listener and performer. The work questions conventional theatrical representation through its sensory, choreographic and intermedial elements. The piece examines multisensory site-specific embodiment within a theatrical performance. It is essentially a mediation on meditation for 'place', that seeks to question the experiential relationship of walking, listening and performance.

The portmanteau *Cascando* comes from the musical term 'Calando', which is defined as a gradual decrease in both tempo and volume, coupled with 'Cascade', which is to move forward. I used the definition of the title as a starting point for the sound design process. Thematically, the text is made up of three 'characters', two disembodied voices – *Opener* and *Voice* – and a music element – *Music*. Mary Bryden contends that when we listen to this piece, we are drawn into a stream of consciousness that has been 'structured with an acute attunement to sound' (1997, 279). There is a distinctive form between the three elements, and they proceed with a steady diminishing tone and tempo throughout the work, with each sound succeeding the other in a 'coercive temporal manner', as described by Marjorie Perloff (1998, 249). There is a performed orchestration between these three elements, with *Opener* as the overall conductor establishing the rhythm of the piece. This Beckett work is also based on the familiar trope of the inability of language to express music.

The compositional and sound design process for this work was centred around the concept of the *Shepard tone* (Shepard 1964).¹⁵ This aural phenomenon was discovered

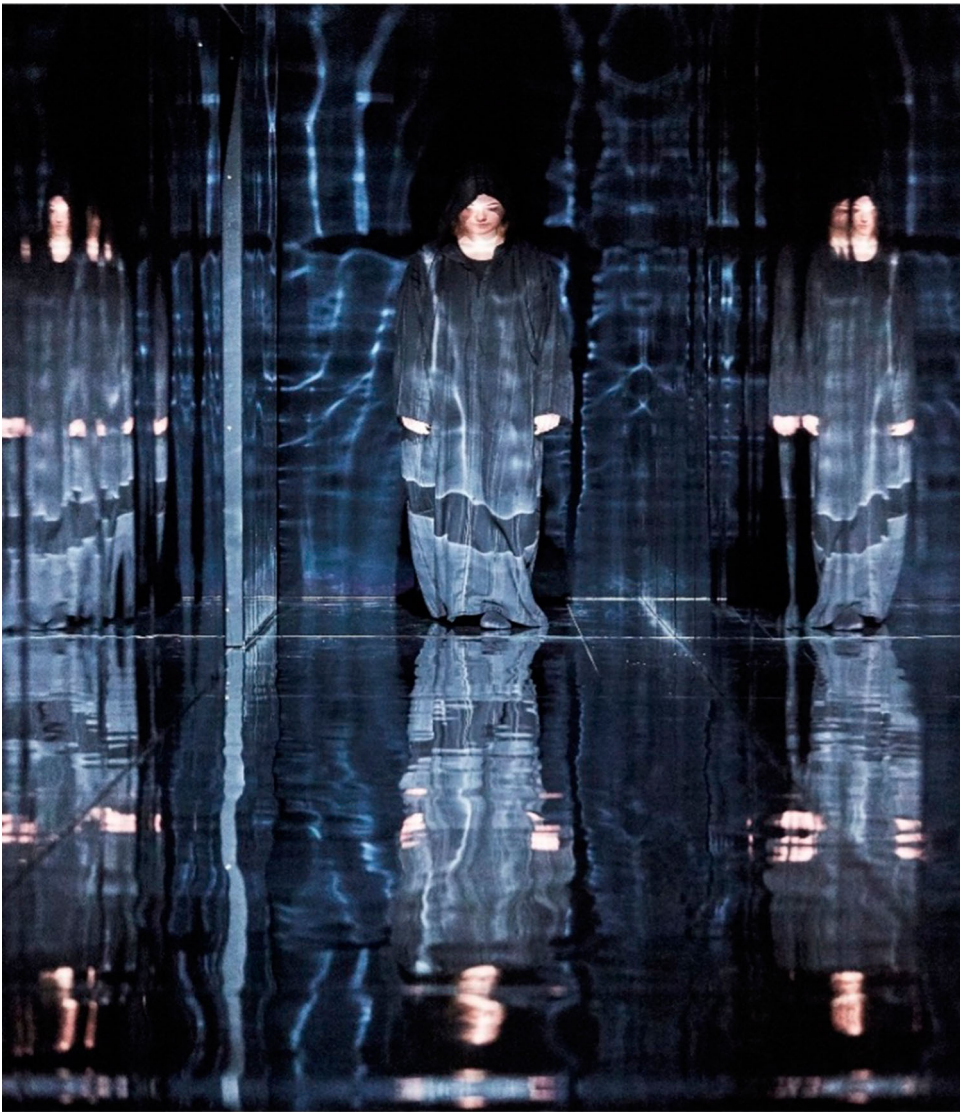


Figure 7. *Cascando*, participant within the maze wearing a Moroccan djellaba, Trinity College Dublin, 2016. Photo: Ros Kavanagh.

by the cognitive scientist Roger Shepard. It is very similar in aural terms to that of the *Penrose stairs* made famous by the artist M. C. Escher. The *Shepard tone* could be simply described as a sonic barber pole (Ernst 1992). I first heard this concept being employed as a compositional tool by Jean Claude Risset in his work *Mutations* (1969). The term has since become known as *Shepard-Risset glissando* (Vernooij et al. 2016). A string quartet was recorded binaurally¹⁶ as the first step in this undertaking. Binaural (3D audio) recording creates an audio form that imitates how our bodies physically receive and differentiate sound. It can provide a realistic listening sensation of sound moving around or even inside your head; essentially it potentialises the audio illusion



Figure 8. *Cascando, the maze*, Trinity College Dublin, 2016. Photo: Ros Kavanagh.

of 'being there'. I instructed the musicians to begin with the lowest note on their instrument, gradually ascend to the highest tone, and then repeat the procedure. The quartet was then instructed to reverse this process, starting at the highest note and moving down the scale. It was important that they did this at their internal tempo and not as a group. Numerous takes from this session were edited into different sections of ascending or descending movement of notes, which were then utilised as sound cues within the text. Also, these takes were edited together in terms of volume and fades to create the *Shepard tone* effect. It should be noted here that the actors were recorded in mono, whereas all music and soundscape were encoded through binaural processing with the *IRCAM HEar*¹⁷ software. Pre-recorded quartet pieces were incorporated at the exact cue moments. In addition to this, a five-second sample of the original *Cascando* score by Marcel Mihalovici was coupled with a sample from my own recorded work, a 1998 album based on electronic feedback entitled *ICE IV*.¹⁸ Both these samples were then processed and added to the soundscape.

This version of *Cascando* opens with the counting of a metronome. This sound cue was not in the script but was utilised as a timing mechanism to let the audience literally enter the work. The audience entered a mirrored maze in procession; this multi-cursal structure was specifically constructed for the project (see [Figure 8](#)). By incorporating the *Shepard tone*, the sonic-scenography mirrored this endless journey through the maze. During the rehearsal period I felt that the soundscape underscore was missing a connection with the dialogue. To help connect both elements, the actors were recorded breathing close to a binaural dummy head microphone;¹⁹ this helped expand the spaciousness of the dialogue, giving the headphone listening experience quite a startling effect. Thirty people at a time were allowed into the installation, and they were dressed in Moroccan

djellabas. These costumes were in a way a humorous 'nod' to another work by Beckett, *Quad*.²⁰ It was an extraordinary scene, similar to watching 30 monks walk slowly in procession through a monastery cloister.

Essentially, we were exploring the concept of complete immersion and interactivity. As the audiences were wearing headphones and walking in procession, they were simultaneously experiencing this work alone, but collectively together. In many ways this perambulatory work was representative of walking inwards, the walk itself becoming interactive art. Both the scenography and sound design reflect the endless walk through the maze. Fundamentally, I was searching for momentum and pace in the sound design, which was achieved by incorporating the *Shepard-Risset glissando* technique. This technique also helped to define this work in terms of experimental sound design. These auditory illusions can create a new temporal sonic experience within the installation environment. Overall, the effect experienced by the audience was cumulative, in that they were walking and listening to Beckett's text, while wearing a Moroccan djellaba and hearing never-ending spirals of sound.

The piece was also presented in an exterior environment during the Samuel Beckett Festival in Enniskillen (IRE) in 2019, Galway (IRE) 2020 and Dusseldorf (DE) 2020, and New York (USA) 2022. Even though the performance was not presented within the original maze, it translated as a singular sonic experience and modern interpretation of one of Samuel Beckett's most abstract radio works.



Figure 9. *Cascando*, Audience in Procession – N.Y.U. Skirball, Manhattan, NYC. 2022, Photo: Gavin Quinn.

Conclusion

This article is an autoethnographic exploration of one artist's practice within the area of theatre sound design. The presented works have been contextualised in detail in terms of my personal artistic concerns in my own practice, but also engage with specific theories and terminology related to sound design more generally. At the heart of my practice is an interdisciplinary approach that questions and explores collaboration within theatre practice. A sound designer aims for both an aesthetic and emotional response to their work, as well as attempting to evoke objective appreciation of the immersive sonic environment they have created. Primarily, the use of sound must enhance the depth and semantic meaning of the play. In theatre, this intention is mainly based on the interrelation of the sound design with the textual narrative. Lynne Kendrick argues that the 'sonic and auditive elements are a counterpoint to the narrative and visual *mise en scène*' (Kendrick and Roesner 2011, 1). The works presented in this article support this view and also offer new insights into a collaborative and interdisciplinary approach to the use of sound within theatre. My explorations through the creation of these works have resulted in a hybrid approach that draws from various theories and methods of practice, all of which contribute to a heightened understanding of the aesthetic of listening. It privileges an understanding of the 'space' in which the works reside and presents an alternative perspective from the way work is experienced in traditional theatre. Working on these Beckett plays gave me, as a sound designer, the opportunity for experimentation and reinterpretation at the cutting edge of theatrical production. The transposition from radio to installation may have broken Beckett's cardinal rule regarding diverging from set production guidelines,²¹ but I do believe that I managed to retain his thematic elements throughout all the works.

Notes

1. Sound art is an artistic activity in which sound is utilised as a primary medium or material. Like many genres of contemporary art, sound art may be interdisciplinary in nature, or be used in hybrid forms.
2. <https://www.panpantheatre.com/>.
3. https://www.youtube.com/watch?v=9fDgOW26qKM&ab_channel=BarbicanCentre.
4. MIDI (Musical Instrument Digital Interface) is a protocol designed for recording and playing back music on digital synthesizers that is supported by many makes of personal computer sound cards.
5. In filmmaking and television production, 'presence', also known as room tone or room sound, is the 'silence' recorded at a location or space when no dialogue is spoken. Presence is similar to ambience but is distinguished by a lack of explicit background noise.
6. In acoustic and audio applications, impulse responses enable the acoustic characteristics of a location, such as a concert hall, to be captured.
7. The Noise Rating – NR – Curve is developed by the International Organization for Standardization (ISO 1973) to determine the acceptable indoor environment for hearing preservation, speech communication and annoyance.
8. The LFE channel delivers bass-only information (<120 Hz) and has no direct effect on the perceived directionality of the audio material.
9. This work was also awarded Best in Sound and Light 2011 at the Irish Times Theatre Awards.
10. https://www.youtube.com/watch?v=RGD-A7krSJM&ab_channel=PanPanTheatre.
11. <https://qlab.app/>.
12. The array consisted of eight separate rows of 32 drivers which enabled automation of sound from upstage to downstage, simulating the movement of a seascape.

13. https://www.youtube.com/watch?v=v_elQrLWDFk&ab_channel=ProjectArtsCentre.
14. All subsequent productions were outdoor and site-specific.
15. https://www.youtube.com/watch?v=BzNzgsAE4F0&ab_channel=J_II.
16. https://en.wikipedia.org/wiki/Binaural_recording.
17. <https://www.flux.audio/project/ircam-hear-v3/>.
18. <https://iceiv.bandcamp.com/releases>.
19. <https://en-de.neumann.com/ku-100>.
20. <https://newmediaandenglish.wordpress.com/2016/03/14/quad-by-beckett-whats-it-all-about/>.
21. Letter from Samuel Beckett to his publisher Barney Rosset in 1957: 'If we can't keep our genres more or less distinct, or extricate them from the confusion that has them where they are, we might as well go home and lie down' (Rosset 2016, 105).

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