TECHNOLOGY, PERFORMANCE, AND PRESENCE

by Karen Power

This paper examines how current creative technological trends are affecting both the concept of 'performers' and, indeed, the performance space, within contemporary music practices.[1] Through the increasing use of technology, alongside the increasing inadequacies of our standard Western art notational language composers and performers are exploring more intuitive ways of creating music and sound together. This paper focuses on how technology has helped composers to widen both the concept of the performer and the performance space. Specifically, how, through the creative use of technology, composers today are becoming more involved in the performance aspects of their work, through both an increase in their physical stage presence and through the widening of the concept of a performance stage. Throughout I have approached this investigation through reflection on my own practice, rather than as a documentation or review of the topic more widely. As such, I hope that it points toward and opens up a fruitful area of research for ethnomusicologists.

To begin, I offer some background to my work as a composer, which will help to provide further context for this paper. I am an Irish composer, who primarily utilizes a combination of acoustic and electroacoustic materials in my work. Since 2004, I have been moving away from purely instrumental music and have been producing work across a broad spectrum of styles, including; sound art, sonic installations, interdisciplinary collaborations with visual artists, dancers and musicians, electroacoustic tape works and instrumental works. My artistic influences range from classical to jazz, to rock, to traditional music, and to everyday sound objects. Alongside this diverse range of sonic influences, I have become increasingly interested in the interchangeable role of the listener, the composer, the performer and the performance space in contemporary music practices. In this essay I address, and in my work I espouse, an approach to

[1] Active links to illustrations in various media to accompany this essay may be accessed through the online version of this journal at www.ictm.ie. An earlier version of the paper was first presented orally at the ICTM Ireland Annual Conference, 'Ensemble: Playing Together', Limerick 26-28, Feb. 2010.

music-making that encompasses the whole experience of music making; an approach that allows for the interchangeability of roles, and that encourages all parties involved in the creation of any work to play and create together.

I would like to clarify my intention to focus on just one particular musical idiom, which if it was to be categorized could loosely appear under any of the following labels: contemporary, experimental, electroacoustic, electronic, or sound art. The infiltration of technology, however, is happening in many varied idioms and therefore many of the points raised are applicable to other areas across the arts. Finally, I write this paper as a composer, as opposed to a musicologist, therefore discussion points can be viewed more as observations and reflections than as critiques.

There are two distinct parts to this essay. The first part begins by looking at some of the background and the historical context for changes in how both composers and performers are working in this area. From here, there follows a discussion about the expansion of the communication between composer and performer through the creative use of technology. Accompanying the changes in the relationship between composer and performer is the re-designation of the actual performance space, which includes a move away from the presentational, two-dimensional, view of the stage space toward a more diffused three-dimensional conceptualization. The second section uses a recent sound and video installation piece of mine as an example to show how some of the earlier topics are being implemented. *some things just are* (2008) is a work that utilizes technology to both enable the composer to be part of the performance process and to invite its audience to become part of the spaces that the piece occupies.

In the last 10 years, there have been dramatic changes in the way many younger composers are communicating with musicians and indeed in the level of involvement and participation in the performances of their music. For example, young composers working with graphic, open, text-based or improvised music automatically leads to more direct communication between composer and performer.

> Edgard Varèse once drew attention to the disadvantages of the mechanics of traditional notation: with music 'played by a human being you have to impose a musical thought through notation, then, usually much later, the player has to prepare himself in various ways to produce what will - one hopes - emerge as that sound.' (Nyman 1974, p. 4)

There are a number of historical and practical reasons for this developing interest in a more holistic approach to composition, which I outline below.

Perhaps the most fundamental reason lies in an increasing lack of standardized notation in an art form that has, in the past, relied on notation as its primary method of communication. Every composer continually struggles with both their own compositional language and in finding the best way to communicate in this language to both performers and listeners. Standard musical notation has served the majority of Western art composers very well over the last number of centuries and for the most-part has evolved with the creative process in finding new ways of expressing ideas. Throughout this last century however, with the increasing number of composers and performers constantly expanding the possibilities of sound the notion of there being only one standard notation for all musical output seems less relevant. I would like to take as one example the expansion of extended instrumental techniques. Even within this specific area of notational practice there are problems. Not alone are we missing a standard way of notating a huge number of these extended techniques, but we also have to acknowledge that there is no standard approach to these techniques themselves, as many are specific to an individual player's capability. One example is notating multiphonics for wind instruments. There are sources that list suitable multiphonics for each member of the woodwind family, however there are differences in the notation of this multiphonics and in the resulting sound.[2] Part of the problem is that the successful creation of this technique differs for every player. Therefore, each performer will often adapt their own notation to create the sound that is required, depending on different makes of instrument, which have different bores, different mouthpieces or reed set-ups. Even then, the number of partials that are produced depends on any individual player. There is an increasing realisation in the contemporary music community that notation only communicates a small part of any musical idea. Possibly the limitations of conventional notation have led composers to seek other ways of communicating with their performers through collaboration and the use of interactive techniques. We now find ourselves in a situation where an increasing number of musical styles are moving away from purely note-based composition and are trying to find ways of translating this to their performers and audience. This suggests that standard notation represents a pitch-based

[2] A multiphonic is an extended technique for woodwind instruments, which allows for a monophonic instrument to produce more than one tone simultaneously. It is produced by 'the generation, at one and the same time, of a number of frequency vibrations in the single air column of an instrument. This means that woodwind can not only produce a wide variety of chords but also pass from the emission of a single sound to a group of sounds emitted together and vice versa' Bartolozzi (1982, 42).

music only. So, how do we notate timbre, tone, or sound-based music? Composers have progressively begun to look elsewhere as a means of communicating ideas using graphic scores, descriptive text, interactive triggers, images, and audio recordings. Notation, traditional or otherwise, serves only as a starting point for both the composer and performer. It will never fully represent what is being expressed, although I believe that what it represents is becoming cloudier the further we move away from a purely pitch-based music, and this needs to be acknowledged. Readers of this journal may note a convergence here with a long-standing concern in ethnomusicology (Ellingson1992, pp. 153-164).

A second series of points relates directly to a shift in the attitudes of some performers of contemporary music. Performers are increasingly choosing to specialise in contemporary techniques. As performers are becoming more specialised in certain areas of contemporary music, composers are recognising and targeting these specialisations. For example, increasingly one sees, highlighted on a performer's web page, the type of composers or 'style' of composition of specific interest to them. For example, flautist Carin Levine's website: http://www.carinlevine.de/CL%20Ordner/CL-Repertoire.html. This, in turn, encourages composers to seek out and write specifically for such performers, as opposed to writing the piece and then finding a performer, a shift that encourages aspects of an individual performer's character and capability to be incorporated into the compositional process. Such a process also changes the way music and ideas are communicated between the composer and performer. For example, by forming any kind of personal relationship with the performer the composer can choose whatever means of communication are most suitable to that particular partnership.

Finally, as a direct lead-on from the previous point and as a link to the first point made on notation, musicians involved in contemporary music are becoming more invested in creating new techniques. There is an increasing interest in musicians in contemporary music circles to become part of the music and to have an input in both the suitability of material and the best ways of performing new types of material that they themselves have contributed to. The possibility of capturing these techniques is no longer limited by the live performability of the technique as these can now be recorded and used in an electronic part of the piece. This in turn encourages more of an interactive, collaborative approach from the composer and the separations among composer and performer and sound technician (who is often the composer) become blurred.

This holistic approach to creating music and sound together is rooted in history and has been gradually developing through the practices of minimalism, post-minimalism and experimentalism. However, I believe that it is through the use of technology that most advances in this direction have been made possible. I would now like to briefly outline some examples of such technological tools. Because the question of what constitutes a 'performance' of any work is inherent in this paper's main argument, I will also briefly outline some of the ways in which our creative use of technology has brought this concept into question:

There has been an influx in the development of software and hardware tools: specifically interactive software such as, Max/MSP, Jitter, Supercollider, C-Sound, PD and many more. Perhaps even more importantly, such hardware and software has become cheaper and more mobile. Their combination can respond to sounds and images in a live context, which in turn changes the interaction between the composer and the performer. In many cases the performer is given 'trigger points' where he/she triggers the next event. This trigger starts a chain of events, which the composer can alter and affect live. I will refer to this type of composition again in the context of performance space. An example of this type of composition can be found at http://www.youtube.com/watch?v=LqZNeDGmgVY&feature=related. This is a video of a composition for violin, sensor, live-electronics and live video by Alexander Schubert. In this example a sensor has been fitted onto the violin bow. This movement feeds in to a jitter patch, which triggers the video live. The sound is captured by a designed Max/MSP patch, which the composer is controlling to create the live electronic sounds. In the context of this paper, I wish to focus solely on the change of roles of both the performer and the composer in this example. Firstly consider the composer, who in this instance is also a performer. By altering material coming from the live performer they are effecting what the audience hears and therefore are part of the performance of the work. If the material that the performer is working from is in any way freely notated or directed, then the performer is also affecting the overall shape and direction of the work. I suggest that such decisions constitute more than a creative interpretation of the music and extend to incorporate compositional aspects during their performance. In a piece such as this questions may be raised as to who is the composer and who the performer? Finally, another dimension worth mentioning in any composition that involves heavy use of any programming language is that of the function of the programmer. Increasingly a composer's concept is beyond their own technical programming

ability, therefore they may seek assistance from professional computer programmer. If the programmer has developed the language to create such a piece then how might their role in the resulting work be characterised?

The next point refers to a change in the concept of an actual instrument. With the aid of technological developments, the idea of a performing tool has been turned on its head. One can now perform using anything from a laptop to a Wii controller. Technology has provided a performance platform for musicians who do not technically 'play an instrument'. It allows, and I speak for myself in this respect, access to a world of interaction that was before out of reach unless you 'played an instrument'.

Finally, and as a continuation of the previous point, technology has allowed for the reconstruction of the performance space. Technology and all its components have opened up the performance space and through this the concept of a performer. This has been done in a number of ways, of which I have time in this paper to briefly mention:

Moving back to the example of a composition for live instruments and electronics. The electronic part will invariably be diffused 'off-stage'. In this instance, I am referring to both compositions that involve live electronics and a set 'tape part'. The 'performance space' has therefore been divided between the performers on stage and the composer/performer 'off-stage', possibly situated at the mixing desk. The questions arise as to whether, in the latter type of piece with a fixed tape part, the act of diffusion can be categorized as a performance. In the author's opinion, the act of sonic diffusion affects what the audience hears, in same way as a performer's, therefore it is a type of performance.

There are a couple of issues to be considered when the composition involves the use of a multi-channelled speaker setup. Firstly, as with surround sound in cinema, speaker placement encapsulates the entire performance space. Therefore, there is no end to the performance space inside the speaker placement. Interestingly elements of more conventional performance remain in that usually an audience will still be seated facing a stage. Obviously in most cases this choice is governed by simple logistics of layout, but it would be interesting to see whether, if left to their own devices, the audience members might choose to face different directions while experiencing a such a piece. The second issue raises the question of whether a purely electronic or 'tape' piece is ever 'performed' by someone? Are the speakers, computer, mixing-desk the performers? Is the person directing the speaker diffusion the performer? Does a performance have to have human presence before it is deemed a performance? I have often been confronted with this issue when presenting a tape piece at a

concert. Do you say that your piece is being performed or that it is being played? What are the differences are implied by these terms?

The third point I wish to make on how technology is affecting performance space relates directly to the second part of this paper. The development of networked performances is becoming increasingly popular. In this situation, musicians, who can be physically thousands of miles apart, perform together, while connected by a live video and/or audio link. There are a number of discussion points around this growing area, but the point that I wish to focus on for the purpose of this paper is the fact that these musicians are still physically in their own studios. They are not on stage, nor can they see the audience (in most cases), yet, they are all part of and connected to a live performance. One example of this type of performance can be seen at http://www.youtube.com/watch?v=3cf3oQyp9as&feature=channel. The performers are Pedro Rebelo, Franziska Schroeder and Steve Davis. This video is part of documentation on the Apart Study, conducted at the Sonic Arts Research Centre in 2007 with a view to addressing issues of synchronicity and ensemble communication in the context of network performance. In this instance 'artificial latencies of up to 125 milliseconds were introduced between three studio locations while asking musicians to perform both metrically determined music and free improvisation' (Schroeder and Rebelo 2007, pp. 133-139).

I will now l move to the second part of this paper, in which I examine my own installation, *some things just are* as one example of how I use technology to alter the concept of both performance space and process. *some things just are* is an example of how composer, performers, technology, audience and space interact to create an artistic experience that is inclusive and yet maintains aspects of traditional performance practice. *some things just* are was conceived and written throughout 2008 as part of my PhD composition portfolio. This piece has a dual existence as an independent sound and video installation, and as the fixed part of an improvisatory live performance. The premiere ran over a three-week period, with the continuous installation running daily and a live performance once a week. The performers are an improvising duo called The Quiet Club who specialise in improvisation using a wide range of homemade sound sources. The three live performances occurred at the beginning, middle and end of the installation's run. This work began with a question about why we listen attentively to certain sounds and why we dismiss others as being uninteresting. My objective was to explore this question by emphasising

'ordinary noises' and merging them with a creatively controlled environment to highlight sonic and visual experiences that we might otherwise dismiss.

While the original idea was, in some respects, rooted in everyday environments, the overall goal of the piece was not to simply capture these environments and import them into an artistic setting. I would like to apply Simon Emmerson's use of the term 'mimesis' which may come closest to identifying this type of work. Emmerson uses this term 'to denote the imitation not only of nature, but also of aspects of human culture not usually associated directly with musical material' (1986, p. 17). I have taken recordings of moments in time with strong associations and transformed their function by placing them in the context of a piece of art.

Source recognition was an important consideration when choosing sound sources for a work of this nature. To quote Leigh Landy, 'Source recognition forms only part of the understanding of a work, and, in fact, may impede understanding. Nevertheless, real-world sound references also form part of the communality of experience, a necessity when looking for some things to hold onto' (Landy 2000, p. 30). This quotation summarises the challenges associated with the use of everyday sound sources. There is a fine line between providing comfort to an audience through audible recognition of a source, and stimulating an audience with more abstract and independent sounds.

The sound sources used for this piece fall into two distinct categories: Industrial or mechanical sound sources with natural percussive qualities, or other environmental and everyday sounds.

All the samples chosen under the first loose heading contain inherent pulsating rhythmic patterns caused by the regular and irregular qualities of their movements. The main source for this type of sound originated from old engines recorded at vintage car rallies, many of which are staged throughout Ireland during the summer months. The particular engines that interest me are small and produce quite a delicate and yet industrial sound. Each machine's motor creates a natural repetitive rhythm when it sounds. This rhythmic pattern is randomly interrupted by a mechanical stutter as the machine struggles, due to age, to continue. These machines were once used to propel small water pumps or to turn a wheel, and the pureness of their action is for me reminiscent of an older time.

The concept behind sourcing other environmental sounds was to capture interesting sonorities found in everyday environments. Many of these samples have been recorded over a number of years without any predetermined artistic

purpose, simply because of my interest in the their inherent sonic qualities. Others were made specifically for this piece by placing recording equipment in areas of activity, such as next to flowers where bees were active. Sifting through the hours of recordings, I selected samples based on three principal factors. Firstly, their ability to connect with and enhance other chosen samples. Secondly, their capacity to evoke an image close to the video imagery used in the piece and thirdly, the closeness of the relationship between the natural state of the sample and the underlying concept of the work.

I refer you now to an extract of the work that is approximately 32 minutes into the piece. (See video extract online marked: field of wheat.) In this example we see the first footage captured, which was of crows landing on one spot in a field of wheat. This process is known as 'lodging'. The crows repeatedly fly in low and hammer down a patch of crop, so that they can land and feed. Watching the crows appear and exit forms a large-scale rhythmic pattern. The flow of movement moves through cycles of activity and stillness. In a sense, it was this motion that inspired the pacing of the entire piece. The sounds are sourced from a series of group cow calls and mechanical sirens. Here, I have deliberately hinted at a particular environment, but by not directly linking sound to image, I have also alluded to the possibility of other spaces, and indeed of appreciating the sound and sights in their own right.

Including improvisers into an otherwise scored piece in itself alters the performance and staging of a work. In this instance it was my first move away from any type of 'scored' piece. There are a number of points that I considered at the time of planning, which I feel are worth mentioning in a broader context of how this combination of improvisers, composer and set installation might 'perform' together.

- What is the role of improvisers in this composition?
- What role, if any, will I, as the composer, have over the improvisations?
- How do I create a piece that can function as both a fixed installation and as the fixed media in a live improvisation?
- How do I anticipate and create space for something, which by its very nature is unpredictable?
- How do I communicate my musical intentions to the improvisers?

The Quiet Club is a duo of artists, Mick O' Shea and Danny McCarthy, who improvise using sound sources ranging from circuit bending[3], home-made instruments, amplified textures, stones, theremins, samplers and various other electronic devices. I chose these musicians for this installation both because of the types of sounds they use and the specific concepts underpinning their work. The union of a piece based on natural sounds and natural pacing with a duo whose performance centres around improvising with sounds from found objects seemed perfect. One reviewer describes a Quiet Club performance: 'A meeting of sound, mind and space for those whose mind is sound enough to wander in the furthest recesses of resonance' (Cork Independent 10 October 2008). Having heard the collective play a number of times, I was intrigued by their underlying sense of structure and timing. One always felt a sense of time passing when listening to their improvisations, with the result that even during the busiest moments there was still a magnificent sense of overall space, which I hoped would permeate my installation.

The duo approached each performance as a three-way conversation between themselves and the installation. In keeping with the nature of improvisation, there was no rehearsal in the conventional sense. We met and discussed the concept behind the piece and listened to the installation once to get an idea of the sound-worlds involved. During the performances, the performers faced the audience and had their backs to the screen. We all made this decision to avoid any sense of visual anticipation, preferring that the improvisation be guided by sound rather than by visual reference, to allow for a more abstract interpretation. This was the way that I had approached the link between video and audio, therefore we felt this would be the most natural setting for the improvisations. In my opinion, the more obvious the link or connection to something, the less chance there is of creating or experiencing something unexpected. One aim of this piece was to create space for the audience to listen in their own way. There is a certain amount of directed listening, but there is also much freedom to wander. The Quiet Club share a similar ethos, which is another reason why I feel that this combination works.

I would now like to continue with my earlier reference to the concept of 'mimesis' to highlight my use of technology to create multiple 'performance' spaces within one piece of art. Rajmil Fischman introduced the concept of 'mimetic space' (2008, p. 111). In particular I am referring to his notion of the

[3] Circuit Bending as defined by dictionary.com: 'the conversion of electronics via rewiring or short-circuiting to create sounds or music; also, the conversion of old toys into new devices by rewiring battery-powered electronics'.

duality of space that can be produced through the combination of live performance with fixed media. In this instance the fixed installation refers the audience to a real but altered virtual environmental space. Placed on top of this are the improvising musicians, who perform over the backdrop of both a visual and auditory real yet altered space. The live improvisers alter this perception of space, by refocusing the listener back into the present performance space, which consists of a more standard musical improvisation, albeit using less conventional instruments.

A second video segment from around the same point in the piece provides an example of the installation running with the addition of the live improvisers. This gives you an idea of the dichotomy between the real and virtual performance space. You can see both members of the Quiet Club in the footage. Notice that this is the same section previously referenced, but with the addition of the improvisers. Finally, on top of the live performance, there is one final space created. Each performance by The Quiet Club was recorded. Then, during the next performance, I subtly mixed in elements of the previous improvisation. Therefore, previous improvisations became my improvisatory tool or instrument. Choosing improvisers as the live performers allowed for the possibility of a different performance every time. The idea was to create a piece that was continually evolving for the listener, but that always had an anchor, that of the set installation, to connect performances. The desired result was for the audience to come to all three performances and to feel part of this unfolding organic structure. This extra layer of recorded performances might be perceived as yet another dimensional space, which lies in between the present performance space and the distant virtual/real space. In some things just are, through the reintroduction of previous performances during live improvisations, the listener is presented with multidimensional mimetic spaces, as suggested by Fischman, creating a layered series of both physical and virtual spaces.

I present this work as an example of how I choose to utilise technological tools to create a sonic environment that is capable of bringing its listeners into its compositional space. I have used technology as a means of getting more involved in the performance aspects of my work. This approach to a set composition allowed me to feel part of the performance while creating a multi-layered performance space, which combines real and imaginary: reality is provided by the improvisers, the imaginary by the installation, both real and imaginary and my improvisation, which refers to a previously real space. The audience is given the freedom of a multiplicity of interpretations. They are also

given the opportunity to feel part of the organic nature of the composition as it gradually evolves at every performance. Therefore, are we not all 'performers' in this case? We certainly all play together to create one unified and whole work.

Comments, which I collected from the participants, reveal two results of continually adding elements of previous improvisations to each performance are worth mentioning:

- The Quiet Club found it strange to hear their sounds from earlier performances being replayed to them in subsequent performances. They found it challenging to listen to these sounds and react to them in a new and fresh context.
- Those who experienced the work more than once felt that each of the performances was so different that it helped to have at least one aspect that remained constant, that of the installation, which supplied a certain amount of familiarity amidst the new sounds. Interestingly, they seemed to use the visuals more than the audio as their point of reference.

In conclusion, I suggest that even when the composer is not physically on stage performing with an ensemble, that he or she is still very much part of the performance. Even if we are only talking about the simple diffusion of an electronic part, this still shapes what the audience and performers hear, and therefore is an integral part of the performance process. Composer, performers and listeners become increasingly interchangeable. A musical idiom that traditionally created clear lines between these functions is becoming more intuitively realised through the use of technology. This sense of playing together is very appropriate to this new wave of creativity. In some types of music, this aspect has always been felt and it is something that I have been very influenced by, in particular as found in the concept of a traditional Irish session in which players come and go. Use of creative spaces where boundaries have been dropped and opened to unexpected inputs is a practice that I embrace. Through the increasing use of technology creatively composers are finally finding their way into the performance space, whether virtual or physical.

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