

## Theatres of Sounds: the role of context in the presentation of electroacoustic music.

### **Abstract**

Why do we work to create multichannel concerts? Given that we do, might we further consider the holistic experience of coming to a concert and how that impacts upon the audience's engagement with the music? Why do electroacoustic music concerts take place in the locations that they do? Do we consider the relationship between content and form appropriately when planning and organising concert events?

This paper considers the philosophical approaches to multichannel concerts, questioning the underlying motives behind them and how these inform both the technological systems used and the context within which works are presented. Contrasting idealist and realist approaches (Emmerson 2007: 147), this paper seeks to identify the aesthetic goals which have driven current multichannel sound projection systems and questions if looking beyond the technologies of reproduction to consider the holistic experience of an electroacoustic concert might help to inform future practice.

*At the 2013 symposium for Acoustic Ecology in Kent concerts were held inside the covered Number 3 slip at Chatham Historic Dockyard. This enormous wooden 'hanger-like' structure was built in Georgian times to allow naval vessels to be built under shelter. This expansive space provided a dramatic setting for our concert. Barry Truax presented a new composition "Earth and Steel" built from the metallic clangs of ship construction, recorded in the Vancouver shipyards of the 1970's. The remainder of the programme contained a diversity of works, both abstract and more mimetic in nature. But in this particular space where giant ships were built and repaired, can it be said that Truax's piece was even more resonant? Would the work have had the same effect in a sanitised concert hall? Was it somehow more significant in that slipway? How might performance of this same work, during inSonic2015 at the ZKM, compare?*

### **Audience / listening.**

As Pierre Schaeffer asserted, "'Music is made to be heard" [and thus emerges equally] from a pole of fabrication as a pole of reception' (Schaeffer in Chion 2009: 35). This insight is core to Schaeffer's philosophy of *Musique Concrète*, as Michel Chion argues, 'it is the constant aim of the *Traité des objets musicaux* to reconnect these in order to reestablish the thread which has often been broken in the development of contemporary music' (Chion 2009: 35).

Philip Tagg highlights that the majority of contemporary musical study is directed towards the poetic processes, the actions of creation, as opposed to the aesthetic perception of musical works. This focus is perhaps to be expected where the majority of discussion emanates from composers and experts who are actively engaged in the creative process, but Tagg calls for a renewed focus upon the aesthetic, highlighting that, 'actual music-making process (poiesis) is visibly absent from most moments of musical perception (aesthesis)' (Tagg 2011: 2).

Over the last twenty years there have been a number of empirical research projects investigating the interpretation of electroacoustic music (e.g. Delalande 1998, Weale 2005, Landy 2006, Hill 2013) which have helped to highlight the processes of interpretation and drawn attention to key factors involved. However, these projects have generally presented works within controlled testing conditions and therefore, their results do not reflect the role that concert presentation and multichannel loudspeaker systems might play in the interpretation process.

However, these studies have begun to unpack the complexities of the audience interpretation process and provide insights that allow us to reflect upon the ways in which we share electroacoustic music with others.

## **Audience and Interpretation**

Nattiez's tripartition model eloquently demonstrates the distinction between Poietic and Esthetic processes, whereby the situation becomes less one of an audience receiving a transmitted intention, and more that of the audience constructing an interpretation from the 'trace' provided (Nattiez 1990).

### **TRACE IMAGE**

The concept of the 'trace' originally stems from Jacques Derrida and Emanuel Levinas, who define the "trace" as a condition of associations and emergent meanings in the "receiver" (Derrida 1978:119). These associations are created by the sign or symbol within its immediate context, in relation with events that have just past and those that are anticipated, impacting upon and defining the nature of the trace within the frame of the "receivers" experiential knowledge. Thus, the trace itself, as defined by Derrida and Levinas, is not the artifact (sign or symbol) itself, but the meaning that emerges through its interpretation.<sup>1</sup>

This is concordant with Schaeffer's definition of the "sound object", 'A sound object is the meeting point of an acoustic action and a listening intention' (Chion 2009: 27). Here, Schaeffer defines the sound object as a phenomenon (a perceived object) as opposed to physical signal (a scientifically defined attribute of frequency and amplitude),

'[I]t is important to distinguish SOUND as a physical signal and thus measurable by machines, and SOUND as a sound object, which arises from a perceptual, qualitative experience' (Chion 2009: 15)

The distinction between the physical properties of sound as a scientific entity and the perceived interpreted sound object is key. There is no absolute message encoded within the sound object or the trace. Composers and creators working directly with the physical properties of their materials might not realize that their own interpretation of sounds is actually distinct from the properties of the materials themselves.

When composing electroacoustic music, in which the material properties of sound are directly manipulated in plastic fashion, it might seem only natural that the composer would lose sight of this distinction. But to do so is dangerous. By conflating physical signal and perceived object composers might be predisposed to mistake their OWN interpretation as being THE interpretation. As explored above, each person will construct their own unique interpretation. The audience will construct their own interpretation from the final physical signal and must use other layers of context in order to interpret and make sense of the work.

### **Fields of Context**

As Susan Langer writes, 'the meanings of all [...] symbolic elements that compose a larger, articulate symbol are understood only through the meaning of the whole, through their relations with the total structure.' (Langer 1957: 97). These structures extend beyond the individual work itself to encompass a wide range of extramusical elements. As Maurice Merleau-Ponty describes, 'the perceptual "something" is always in the middle of something else, it always forms part of a field' (Merleau-Ponty 1962: 4).

Therefore the work is always situated within a field of context. This field of context is constituted by a range of different factors:

- Lived Experience & Individuals Schemata of Association.
- Musical Experience & Training.
- Audience Proximity, Orientation & Spatial Location.
- Subject-position of the discourse.

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<sup>1</sup> Nattiez defines the trace as 'an amorphous **physical reality** until it is entrapped by analysis' (emphasis added; Nattiez 1990: 16). However, this definition of the trace does not distinguish clearly between the perceived object and the physical signal and therefore risks implying that the trace itself carries implicit knowledge.

It is outside the limits of this paper to discuss all of these factors in detail, but those most relevant to this particular discussion are those contained under the heading of Audience Proximity, Orientation & Spatial Location<sup>2</sup>. These factors relate to the situation of the work within both physical and dramaturgic spheres.

### **Audience Proximity, Orientation & Spatial Location.**

Physical factors of proximity, orientation and spatial location, describe the positioning of the audience member relative to the physical signal of the work. The reverberant characteristics of the space, the spatial orientation of the loudspeakers, any obstructions within the space and the audience's spatial orientation in relation to the loudspeakers (most often directed by the seating arrangement) will all influence the qualities of the physical signal received by the audience member. Within the theoretical discourse it is generally assumed that the subject is fortunate enough to be positioned within the "sweet spot", unimpeded by obstacles or obstructions between them and the projected work. However, the realities of concert presentation are often more complex.

These physical characteristics operate in a relatively direct manner filtering the qualities of the physical signal that reach the audience member. As the physical conditions change so will the signal available for interpretation.

The cultural and dramaturgic<sup>3</sup> influences that affect audience interpretations will often operate in far more complex and nuanced ways because they operate to inform the process of interpretation itself<sup>4</sup>. Contextual information about the work, the composer or the loudspeaker orchestra system; the type and choice of space within which the event takes place, the dressing or design of the room itself and the curation of works within the concert programme will all exert contextual influences upon the interpretation of individual works.

<b>Physical</b>	<b>Cultural</b>
Reverberation / Acoustics of the Venue	Contextual Orientation - Contextual Information about the Work / Composer / Venue / Loudspeaker Orchestra
Spatial Orientation of Loudspeakers (in relation to the room acoustics)	Concert Venue
Spatial Orientation of Audience (in relation to the room acoustics and loudspeakers)	Dressing / Design of the Venue
Physical Obstructions	Design / Aesthetics of the Loudspeaker Orchestra
'Background' Sounds	Curation of Works

Each of these elements will contribute to the audience's interpretation of a work within a specific context. The same work in different contexts will have its interpretation modulated by these significant contextual factors of proximity, orientation and spatial location.

### **Contextual Orientation**

Contextual orientation provides audiences with information about the work or concert, allowing them to situate their experience. This is often achieved through means of written notes explaining the

<sup>2</sup> All of the aforementioned factors will affect the field of context within which the work is perceived and interpreted, however the primary goal of this paper is to discuss the factors surrounding the presentation of electroacoustic music in concerts or installations.

<sup>3</sup> 'What is missing is what a dramaturge in the theatre tries to formulate as the foundation of a given interpretation of a work of drama by a director or composer, scene designer and actors. The dramaturge's work ties things together, makes aspects of the performance more coherent' (Landy 1990: 371).

<sup>4</sup> This appears especially the case for those of us who are primarily focused on the sonic elements of concerts, on the musical pieces and the loudspeaker setup.

intentions of the composer in the development of their work with accompanying biographic information about the composer. Information on the historical significance of the venue or technical details of the loudspeaker system might also be included. These elements of contextual information have been evaluated as having played a significant role in audience interpretations within the Intention / Reception project run by Weale and Landy (Weale 2005, Landy 2006) aiding participants in formulating their interpretations.<sup>5</sup> Indeed, there is a common cultural assumption, reinforced by the provision of programme notes themselves, that artists are seeking to communicate intentions within high art contexts and therefore audiences often actively seek these out.

### Venue As Context

Beyond their physical characteristics, the venues chosen for electroacoustic concerts also project cultural contexts upon and around electroacoustic music.

Traditional concert hall venues not only provide large spaces for arranging loudspeakers but also a specific context, one imbued with authority and tradition<sup>6</sup>. Perhaps one reason why it has taken time for electroacoustic music to build and develop a wide array of its own custom performance and listening spaces is that it has taken time for it to build enough confidence to step outside of this traditional context and the authenticity / truth claim that traditional concert halls help to provide to electroacoustic music.<sup>7</sup> However, the context provided by these spaces is more heavily linked with traditional western music, with its strong heritage of tonality, scales and the use of instruments and therefore sets up an expectation for this in the mind of the audience. Thus, while such a context has some benefits it can have drawbacks. Audiences attending a traditional concert hall might, not unreasonably, bring with them expectations relevant for traditional music (tonality, performers, ritual), which is not always concordant with electroacoustic music.

New, purpose built, spaces for electroacoustic music also provide a sense of gravitas. Their recently completed facades and stocks of high tech equipment provide a different type of justification for the music presented within. These relate to ideas of modernity, technology and innovation (those same ideals stolen and adopted by the marketing gurus of the technology industry to sell their latest products (Sporton 2015: 95))<sup>8</sup>. As we will explore below, these spaces are often informed by the philosophies of electroacoustic music performance but these are sometimes misdirected by conflating the physical signal and the perceived object.

These venue based contexts influence audience impressions of *Knowledge, Risk & Authenticity*, key factors affecting audience engagement with and interpretation of works (Radbourne et al. 2009)<sup>9</sup>. By mitigating negative factors and providing extra-musical justifications for the importance of works both of these distinct venue types can place audiences in environments where they can more confidently engage with the works.

However, these venue connotations often relate primarily to cultural contexts. It is rare that music works be curated for specific spaces. Similarly, the development of spatial loudspeaker performance systems are most frequently directed by technological concerns, a focus upon reproduction of the

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<sup>5</sup> However, within latter research (Hill 2013) it emerged that while audience members often indicated a significant desire for contextual information, but once the information had been provided these same participants indicated disappointment with the nature of the information that was provided to them.

<sup>6</sup> It is important to note that specific loudspeaker orchestras and institutions project their own history, tradition and authenticity claims upon the works they present e.g. BEAST, Acousmonium.

<sup>7</sup> "It must be music, it is happening in a concert hall!"

<sup>8</sup> "It must be good because of this impressive new building and all that fantastic equipment".

<sup>9</sup> *Knowledge* refers to contextual information and the contexts of presentation (for example, curation of the presented works around a theme). *Risk* refers to the possibility of either loss or gain, further divided into: *Functional risk* – that the product does not reach the consumer's expectation; *Economic risk* – where the cost of an activity makes the decision making process more complicated; *Psychological risk* – product poses a risk to the consumer's desired self image; and *Social risk* – concerned with how the consumer wishes to be perceived. *Authenticity* refers to the perceived quality of the work, sub divided into: *Objective authenticity* – concerned with epistemological experience of the experience of originals; *Constructive authenticity* – referring to authenticity projected onto objects; *Existential authenticity* – denoting a state of being in which one is true to oneself and can be either intra- or inter- personal (Radbourne et al & Wang in Hill 2013: 62).

physical signal of the work, and less often towards the aesthetic or perceptual characteristics of the works.

Reflecting upon the appropriate confluence of space and spatial music, Denis Smalley introduced the notions of *spatial consonance* and *spatial dissonance* in which composed sound spaces are transposed upon the physical space of concert presentation. 'Composed sound-spaces may be either 'consonant' or 'dissonant' with the listening space, changing the nature of the listening experience to an extent often not contemplated by the composer' (Smalley 1991: 121).

This issue of spatial dissonance is one of the driving forces behind live diffusion performance, in which composers / performers of fixed media works are able to control, manipulate and insinuate fixed media works into the specific spatial contexts of many different acoustic spaces and across many diverse loudspeaker systems.

### **Philosophies of Multichannel Performance:**

Simon Emmerson outlines two established traditions of sound diffusion which appear to predominate today, 'idealist' and 'realist':

- Idealist – 'the function of the concert loudspeaker system is to present the listener a soundfield as near as possible to that which the composer heard in the studio during composition'.
- Realist – 'argue that such an ideal sound cannot exist, or if it does it is meaningless. The studio does not resemble the concert hall [...] The best that can be done is to treat the presentation as interpretation.' (Emmerson 2007: 147-148).

The idealist mode seeks to ignore the concert setting and any variation in acoustic context. It pretends that the listener sits in a 'perfect' sweet spot. While the realist admits that every different listening environment presents a different acoustic situation for projection of the work. However, both systems are still both are fixated inwards, onto the work itself.

Emmerson goes on to argue that this was not always the case citing the Gmebaphone developed by Clozier, described as an 'orchestration generator' rather than a pure diffusion system – including filtering on channels (Clozier 1998: 237), and the Acousmonium with "asymmetrical distribution of loudspeakers set out with an architecture of registers of kinds and colours, liberally deployed within a sonic space" (Bayle in Emmerson 2007 :154).

While these innovative systems initially appear unlimited by convention it is clear that they sit within traditional musical strands. Both the GMEBaphone and Acousmonium are orchestration devices, performance systems that tend towards enhancing the textural nature of electroacoustic music. While there are obviously spatialisation possibilities inherent (as there is within traditional orchestration) their foci remains weighted towards the tonal characteristics of the sound and how the systems might complement and elaborate this. Both are clearly situated within the realist tradition.

In contrast Jonty Harisson established the BEAST system with an intention to open up the 'sweet spot' through deployment of "successive stereo pairs of loudspeakers", and which later afforded more complex possibilities evolving into new performance strategies (Emmerson 2007: 154). BEAST is, therefore, a system is directed more towards the spatial characteristics of work.<sup>10</sup> Harisson states his intention with the BEAST system is "to sculpt the sound in the space and to sculpt the space with the sound" (Harrison 1998: 126). Though the original focus (opening the sweet spot) might in some cases be considered to be a more idealist impulse, development of the system has always adopted a more realist perspective.

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<sup>10</sup> Therefore perhaps more predisposed to enhancing the more GESTURAL content of the materials.

Indeed, being a touring system, BEAST was always present in ever changing contexts, always encouraged to adapt and embracing new spaces, architecture and acoustics.<sup>11</sup>

Harrison makes a distinction between *organic* and *architectonic* approaches to music, suggesting that the former is more closely aligned with the Schaefferian tradition of musique concrete, while the latter is a descendant of serial techniques and a more instrumental approach to composition derived from the traditions of computer music and elektronische Muzik (Harrison 1998). Subsequently the architectonic philosophy is often more closely aligned with the 'idealist' approach, as it imagines all musical elements to be "measured – a projection of dimensions, values, measurements, entirely capable of conceptualisation away from the sound (and the studio) itself. [...] Architectonic form has searched, historically, for a fixed, repeatable performance capability via multitrack storage and reproduction" (Harrison 1998: 125). Composers developing such works often conceive of 'transparent' loudspeaker reproduction, for example "phase-aligned fullband systems with enough power to fill larger spaces, which tend to neutralize positional phase-shift and offer a better rendition of the original compositional intent in the studio" (Piche in Harrison 1998: 124). Unfortunately, absolute phase-alignment for multiple simultaneous listening positions is a rather more elusive phenomenon than imagined and especially so for scaled up concert listening environments.

### **Built for Listening**

Specialized built structures for listening are springing up all across the UK and the world, as electroacoustic music matures and consolidates within institutions and organisations. So much so that where previously loudspeaker orchestras had to move and adapt existing concert venues, new systems are becoming permanently installed structures. Sonic Lab at SARC in Belfast, the BEAST DOME in Birmingham, the Klangdome at the ZKM, or even the relatively modest PACE building at De Montfort University in Leicester. Such spaces are, in essence, 'blank canvases' upon which works can be projected. Conceived as 'idealist spaces' for the pure presentation of works the actual physical properties of the space begin to fade into insignificance. Composers begin to think only of the system itself and thus emphasize the physical signal of the work. As Eric Clarke asserts, structural musical listening is "embodied most distinctly by the concert hall" (Clarke 2005: 135-143).

Some composers may develop (or re-compose) pieces specifically for these spaces, but often it is the case that existing works are transposed into them. In such situations it is especially important for the performer to be aware of the flexible 'organic' possibilities of performance, and not be blindly drawn into attempting to adopt a quantified architectonic approach.

Thus, where there is no explicit reference to orchestration, there is perhaps a tendency that one might lean towards the idealistic mode, imagining that the system is transparent. Orchestral approaches (such as the GMEBaphone), on the other hand, admit that the system can never be transparent.

### **Curation – Interpretation of Space and Place**

The notion of curation seems to be implicit within much concert programming and is rarely openly discussed within electroacoustic contexts. However the role of curation can act to establish a range of different contexts for a common work.

The most obvious form of curation is that of the grouping of works within a concert programme. But the choice of venue in concordance with the concert programme can also create a significant contextual framework to allow audiences to engage effectively with works. This provides an alternative to the cultural framings discussed above, allowing the space to meld with and support the programmed works themselves. There are also a far greater number of non-traditional concert venues available, each with its own affordances of either acoustics or relevant cultural association.

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<sup>11</sup> It is unclear if will this continue now that the system has found a new home in the purpose built facilities at the University of Birmingham's new Bramall Building.

As Barrière states, “[t]he public has very few psychosensual and cultural reference points that might guide it in its listening. [...] Should we not rethink the ritual of the concert so as to stimulate curiosity and listening appetite, to overcome resistance and prejudice? We need to find [...] ways and means of creating an atmosphere [conducive] to ‘sympathetic’ listening, the only sort that can set up a complicity with the listener, a complicity he needs to be receptive” (Barrière 1998: 208).

The Hear This Space project aimed to explore the space and context of presentation as a primary element in contextualizing electroacoustic music for new audiences.

“Hear This Space organise site-sensitive events. These events have evolved from simple diffusion concerts, in which the system was designed to complement specific architectural features, into curated events which actively engage artists in the development of pieces inspired by a space or location.” (HTS 2015)

These events utilised loudspeaker orchestra systems curated specifically around the themes or ideas of the context and installed within non-traditional spaces, such as disused factories, galleries & churches. The programme of works were curated and composed specifically for the different contexts of presentation. The goal was to construct Site sensitive events, engaging experiences in which concert and space became entwined. The intention was that the whole context and mode of presentation would provide audiences with a direct and rich contextual link to the programmed works. For example, in Spring 2015 we hosted a concert within the German Expressionist gallery of the New Walk Museum, Leicester. All of the works in the programme had been informed or inspired by the ideas and works of the German expressionists. The array of the diffusion system was designed so as to provide multiple stereo “frames” mirroring the picture frames on the walls of the gallery. And at the concert the audience were sat within the gallery itself, surrounded by the very works which inspired the whole event. The event consistently sought to utilise both physical space, loudspeaker orchestra system and the curation of works to support a coherent concert programme.

The Hear This Space project, obviously, presented a specialist situation but points to future possibilities in which more alternative spaces are adopted for loudspeaker orchestra performances. As more mobile and small scale systems become available it is hoped that more projects will evolve which utilize curation and other elements to construct enveloping theatres of performance.

The reduced mode of listening is only one aspect of electroacoustic music perception, ‘Nothing can stop a listener from varying [their hearing intention] passing from one system to another or from a reduced listening to one that is not. [...] it is this swirl of intentions that creates connections or exchanges of information’ (Schaeffer in Chion 2009: 27). Though exploring alternative venues and contexts for performance we might explore greater possibilities for these connections and exchanges of information which take advantage of all the possibilities that reduced, causal and semantic interpretations of sound can provide.

As Clozier states:

“The concert should not be a mere vehicle for having one’s music heard by an audience: in such a situation the composer behaves as if the audience were himself, as if the concert hall were the studio and above all as if the audience already knew the music. I prefer the situation in which one is playing one’s music back for the audience, opening it up and putting it back together for the listeners, and through the interpretation making them discover the structure, the rules, the organized matter, the spaces and the echos that they already have within themselves.” (Clozier 1998: 260).

In all of this we must remember the distinction between physical signal and perceived object and the ramifications this has for our understanding of how people interpret electroacoustic works. Indeed, the action of understanding music is a cultural practice (Camilleri & Smalley 1998:4) and electroacoustic

music has its own specific culture. Those within the cultural sphere of electroacoustic music are sometimes ignorant that such a culture even exists and thus can occasionally tend towards the insular when concerned with listening practices and engagement, blind to their own assumptions and presumptions.

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