The Role and Definition of Expectation in Acousmatic Music… Some Starting Points…

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Abstract

My current research is on the role and definition of expectation within acousmatic music. Within this paper I will give an overview of my research so far. My research is based around an investigation of various methods and strands of electroacoustic music- in particular, Stereo and multi-channel composition tape works. I feel that there are several key elements that can heighten a listener's aural experience in a listening situation involving electroacoustic and in particular acousmatic music.
These elements being the effective use of expectation and techniques that contribute to this - such as gesture and texture - and the ability of a composer to write effectively so that the piece can stand up well in different situations and, possibly most importantly- the expectation within a piece of electroacoustic music.This paper then sets out to introduce some of the basic ideas that are fundamental to expectation and its existence within music, and suggest how these may apply to Acousmatic Music in particular.

1. Introduction

Every time we listen to a piece of music regardless of genre, several factors come into play which influence our engagement with that particular work. One aspect of music, which keeps the genre vibrant and exciting is the notion of expectation -the constant twists and turns, surprise and exciting question of what is going to happen next in a well-crafted piece of music. Music is a time-based art, and the inevitable consequence is the merging of this time-based nature and fundamental ideas of sound-as-energy which surround it.

In acousmatic music, several key elements exist to heighten a listener's aural experience. These include the effective use of expectation, potentially guided by compositional techniques. A composer's ability to create a piece that works equally as well in different performance and listening situations. Possibly most importantly- the expectation within a piece of music and, the implications that the products of these expectations have on the listener.

In order to gain an insight into what the role and definition of expectation is within acousmatic music, I carried out a series of interviews with electroacoustic composers in the early part of my research. One composer stated that in electroacoustic music, ' literally anything can happen'[i]. This then presents a problem regarding what direction a piece may be led to evolve in, and the issues which arise when there are moments of rupture that counteract what a listener may have been expected to predict.

This paper then sets out to introduce some of the basic ideas that are fundamental to expectation and its existence within music, and suggest how these may apply to Acousmatic Music in particular.

Little research has been carried out on the specific issues around expectation in electroacoustic music. However, a large body of research has been conducted on expectation within tonal music, therefore providing a formative groundwork for the study of acousmatic music.

One issue surrounding expectation within acousmatic music, is the matter of style. Whilst a style of music can be determined within tonal music through the use of instrumentation, harmony, and rhythmic properties, a fundamental problem arises when trying to apply the same parameters of style to acousmatic music. Tonality and rhythm may not be as obvious, as it is in tonal music, and instead, textures, gestures, sound archetypes, amongst other factors become pertinent to any study within the area.

In order to fully understand the notion of expectation and the resulting implications for musicians and listeners, a short insight into the theory surrounding it will be beneficial.

2. Expectation

Expectation is based on prior knowledge and events. It helps us to predict what will occur next.ii Expectation plays a crucial role within traditional (tonal) music, and when considering its role and definition within acousmatic music, several questions arise:

- Does expectation exist within acousmatic music?
- If so, how similar are its integral prinicipals to those that lie at the heart of tonal music?
- What is the role of structural function within expectation in

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acousmatic music?

- How does the role of the composer, performer and listener differ from that of the same within tonal music?
- What do the composer, performer and listener bring to acousmatic music from traditional listening scenarios and what is new?
- What is the implication of the use of radically different materials used (sound objects vs. traditionally notated music?

2. Schemas

One of the key elements that lend itself to expectation is that of the schema. A schema is defined as:

"A particular set of associations in long-memory. Schemas are sets of expectations about how things usually are. They generally apply to particular kinds of situations in time and space, and enable us to move through these situations without having to pay attention to every detail. Indeed, if details conform to our expectations, we do not notice them at all. Schemas form our expectations about many aspects of a piece of music…" (Snyder, 2001)

Schemas therefore, are relevant to our study of expectation within electroacoustic music, and will vary according to an individuals *experience* in a particular situation. It is *very* difficult, if not impossible to create a schema if one has not been placed in a situation before, making it extremely difficult for someone who has never been exposed to acousmatic music before to have built up schemas and therefore experience an appropriate expectation. A knowledge of style is then a crucial component if one is to have an expectation as to what may or may or may not not oc-

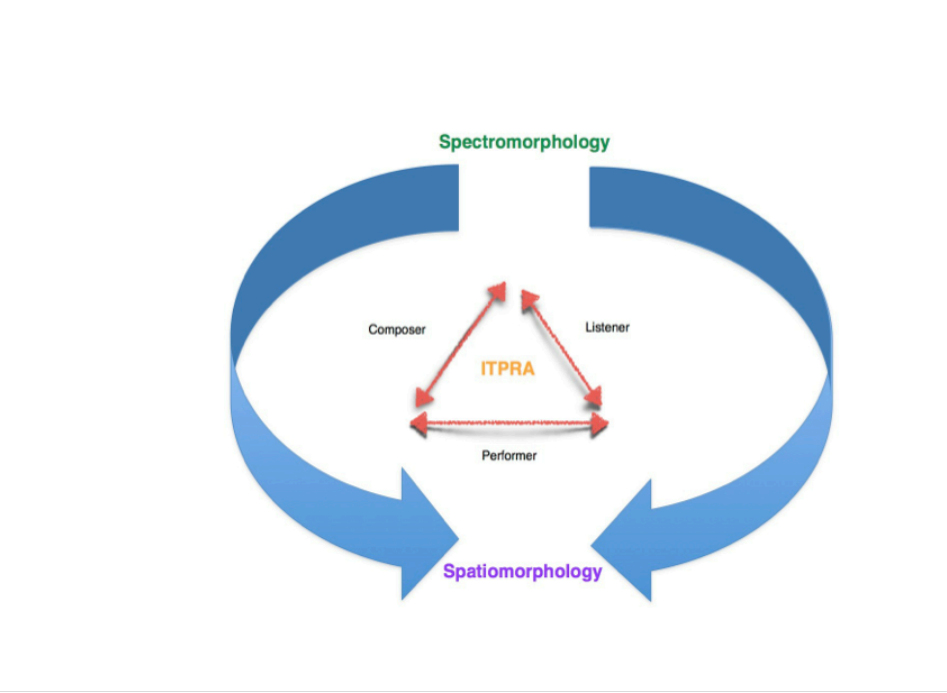

Fig. 1- Diagram showing the three level of engagement with expectation within Acousmatic music.

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cur next in a chain of events within a piece of music.

3. Framework of Expectation- Three Levels of Engagement with Expectation within Acousmatic Music.

A Framework concerning expectation within Acousmatic music is currently in the early stages of being developed and will be briefly described here.
As can be observed from the diagram (fig.1), the framework includes three levels of engagement with expectation. These levels are comprised of 1) the composer, 2) the performer, 3) the listener. The composer, performer and listener engage with each other at all times- as highlighted by the straight arrows in the diagram.

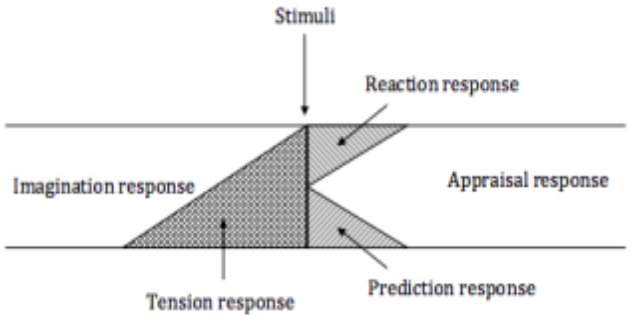

fig. 2- ITPRA

3.1 ITPRA

Central to the three levels of engagement framework is David Huron's ITPRA theory of expectation **(fig. 2)**,surrounding the engagement levels are spectromorphology and spatiomorphology.

ITPRA is shorthand for:

- **Imagination**
- **Tension**
- **Prediction**
- **Reaction**
- **Appraisal.**

- **IMAGINATION-** As an anticipated event approaches, we use our prior experience to imagine what will happen next in a sequence of events. This makes use of pre-formed schemas

- **TENSION-** Tension concerns the what, when and timing of a future event. Preparing for an anticipated event will normally involve arousal and attention. The goal is to match the appropriate arousal and attention levels so that they both climax perfectly in time for the start of the anticipated event. However, as simple as this idea may seem, it is complicated somewhat by *uncertainty.* In everything we do as humans there is an uncertainty about what event will occur and when it will occur. P.9- Huron.

PREDICTION- As the expected event approaches, the listener will start to predict exactly what will happen next, why and when.

- **REACTION-** The reaction occurs immediately after the event has taken place. The reaction response is very fast and exhibits three key features- namely: 1) a fast onset- typically less that 150 milliseconds following the onset of the outcome. 2) An unconscious response. 3) The re-

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sponse will be defensive or protective in function and assumes a worst-case scenario. An example of this is the human reflex.

APPRAISAL- After the event has occurred, one appraises the outcome of their expectation. Did they anticipate correctly? How do they feel because of the events that have just occurred?

ITPRA is therefore central to the Three Engagments of Expectation as it deals with the psychological aspects of understanding what expectation is, and, how we interact/ deal(??) with it as humans. The appraiseal of an event will lead to satisfaction or otherwise on behalf of the listener. It can also cause frission, humour or even disappointment. The musical emotions related to expectation, whilst not the focus of this project, are still pertinent none-the-less.

3.2 First Level of Engagement: The Composer

The first level of engagement with expectation is that of the composer. As the creator of music, they must be in full control of every element within, as collectively, these contribute to the expectations of the listener and performer too. Everything from choice of sound material, transformation of sounds, role of sound in space (in all senses of the metaphor) is down to the composer. Often, electroacoustic composers may be concerned with the grammatical elements such as spectromorphology and the onset of tension and release within a piece of acousmatic music- in the same way as instrumental composers may focus on their use of instrumental forces and use of harmony (amongst many other elements).

They have the first engagement with the onsets of events and full control over their effect- be this tension or otherwise. The composer is the only force that can decide from the outset where climaxes will occur in the piece. Critically, the composer should be in full control of expectation created within their music and the resultant implications of these compositional decisions. Normally, a great deal of these decisions will be established from the very start of the compositional process.as to the structure and flow of the piece and the narrative throughout.

3.3 Second Level of Engagement: The Performer/ Interpreter

Within acousmatic music, it is common for compositions to be listened to both in a stereo listening situation, or for a performer to diffuse over a multiple loudspeaker system or, for work to be in a multi-channel format- for example 5.1 or eight channel.

No matter what the format of the piece, there is a performative element to be taken into account. The way that a performer engages with the piece however, depends on whether they are the composer or an interpreter.

A composer's engagement with expectation will be different from an interpreter as it is likely that composer will have composed the piece with the final performance situation in mind. It is possible that they will have written the work with a particular performance space in mind. In the case of stereo works intended for diffusion, the composer may even have determined key moments during a performance- how a particular gesture should be moved throughout a performance space. In short, how the

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stereo image should be expanded over a multiple loudspeaker system.

In any case, the composer (should hopefully) know precisely what to expect and where in their own music. In addition, they will know precisely how they want the piece to be diffused in order to obtain the desired effects.
The Interpreter's engagement with the same piece of music as they are likely to have been influenced by different factors, including their own engagement with the piece of music concerned, which would then influence their own interpretation of that particular work. Other external factors may also have an influence on the performer. If they have heard the composer diffuse their own piece before, or know how the composer generally approaches the performances of their own work, they may be influenced by this, and adapt their practice accordingly. Primarily the performer will be concerned with spatiomorphology and how they transfer information from the stereo domain into multiple loudspeakers..
The performer then, regardless of their position as composer or otherwise must form images on how the piece of work will unfold during performance, and the expectations associated with this, and find a spatial interpretation for this.

3.4 The Third Level of Engagement: The Listener

The third and final level of engagement is that of the listener. The listener's engagement with a work will by influenced by several different factors. Whether they have had an encounter with acousmatic music, or a particular composers music is a key factor because, as previously mentioned in this paper, expectation cannot exist if one has no prior knowledge or experience of a particular event. The listener can be separated into expert and casual listeners. Both expert and casual listeners are likely to be concerned with their own knowledge of style and will also be influenced by cultural elements. If for example, there is environmental sound to be heard within a work, this may trigger memories for a listener- whether this be of a particular place or emotion.
In addition, expert listeners are likely to be concerned with spectromorphology, spatiomorphology and space (as a metaphor) amongst other matters, as they will be likely to have a prior knowledge of what to anticipate in acousmatic music. They will likely be composers themselves and may therefore share some commonalities with the composer of whose piece they are listening to. They will also engage with the piece in a different way as they may recognise processes use, and commonalities between work.
Casual listeners on the other hand, may be familiar with a particular style of music through attending concert performances, but may be lacking the hands on experience of composing.
In the final section of this paper, I will give an example of expectation in practice.

4. Brief Analytical Example: Expectation and Silence/ Space

What would then happen if what we expected, or anticipated did not happen? Let us consider the implications of this with some brief examples and analysis of the opening two minutes of Pete Stollery's *Shortstuff (1993).*
In his programme note, Stollery writes:

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"I wanted to make a piece consisting of material which would immediately draw the attention of the listener in to the sound world which I was creating. It is for this reason that the piece is deliberately uncluttered. There is not much counterpoint, or layering of material and the piece is deliberately "up front" with little middle or background, conceived as the development of a single line. Also, throughout the piece, there are sections where gestures are separated by periods of silence or limited sonic activity, which allow the listener to take stock of what has already happened and to anticipate what might be about to happen."[iii]

The source material used throughout *Shortstuff* is derived from tiny fragments of sound amassed by the composer. There is no recognisable sound source during the entire work- the implication of which, means that it is far more difficult to relate these sounds to those which occur in our daily lives.

The initial gesture at the beginning of *Shortstuff* is in the mid frequency range. It is less than a second in length and is followed by three seconds of silence. The composer states in his programme note that the periods of silence or limited sonic activity are intended to allow the listener to take stock of what has happened and anticipate what might happen next.

In the case of the opening of *Shortstuff*, literally anything can happen as the listener has been given very little sonic information to go on. However, an experienced listener might presume a development of the frequency range in the subsequent phrases, given its establishment in the mid-range frequencies. There are no clues as to *how* this might be developed.

The next gesture in the work is extended slightly. The composer maintains the previous sharply decayed nature of the material whilst adding in new material which incorporates a wide range of frequencies. Due to the shifting around of frequencies in the opening seconds of the work, it is very difficult to determine what might happen next. This is further complicated by the relatively lengthy silences of around 3-5 seconds in length.

At the end of the third phrase, the gestures have moved around the mid to high frequencies, ending on a very high frequency. This is followed by a silence of 5 seconds in length. From the material presented in the piece to this point, there are two possible options for what might happen next- firstly, the high frequency material heard in the third phrase will continue to develop, or, there will be a greater contrast, with the material perhaps dropping down to the mid frequencies that have already been explored, or to a frequency that has not yet been established in the work. From the previous material within the work, the listener might expect the same pattern of sharp, gestures and extension of the phrase.

The first climax of the work is marked by a louder dynamic in the mid frequencies first established in the outset of the work, accompanied by a light debris of material in the same frequency. This is again followed by a silence. As a listener, we know this is a climax due to the contrasting dynamic. However, there has been a pattern established in the opening section of the work and we are perhaps not clear as to what will or can happen next. Again, there are likely two

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choices, more of what has already been heard (highly gestural, staccato, lots of mid frequencies) or something completely different, but this is likely still to be highly gestural as nothing has been suggested otherwise.
Instead, what happens is a single, far louder gesture signalling the true climax of this section implenting the frequences that have already been used in the work. In contrast to previous phrases, new material presents itself at a frequency not yet heard in the work. The sound material at this point is beginning to take on a textural nature (watery popping -1'25") along with the new material presented along with autopan material presenting itself at 1'33" in the mid frequencies, would suggest that the work is going to take on a far more textural nature than initially suggested at the start of the piece.
There are also implications for the performer/ diffuser in this work. Shortstuff is intended primarily for diffusion- rather than for a stereo listening situation. The composer has composed and mastered his work so that it has substance in both performance and stereo listening, but some aspects of his concept for *Shortstuff* can only be realised in the diffusion situation.
For instance, the opening phrases of the work appear in the same stereo space all the time in home listening, but are actually intended to be spread throughout the room in diffusion- coming from all different directions. Likewise, the autopan material at 1'33- whilst this is presented as movement from left to right in the home listening situation, in performance it is intended to move from the front to the back of the concert hall. The implication of this is the need for different listening and performance approaches to the work due to the original intention of the composer not being made clear.

5. Concluding Remarks

This paper introduced the notion of expectation within electroacoustic music, and some of the key concepts which are central to it. It also explored the role that prior listening experience and a knowledge of style have to play.
The paper also proposed three levels of engagement with expectation, through the point of view of the composer, performer and listener.
Finally, an example of expectation and implications of a composers decisions was given in the form of a short analysis of Pete Stollery's '*Shortstuff*'.

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Notes

1. Stollery, P. 2012, pers. comm., 2 December.

2. Huron's seminal work *'Sweet Anticipation'* is an excellent introduction to expectation. Every time we switch on a light in our home, the electricity company has had to predict how much electricity is necessary to be produced at that particular point in time. This prediction arises from prior experience and research- knowing that the demand for electricity will be greater when a key football match is on television for instance. However, there are many other examples of expectation that can be found within our daily lives.

3. Stollery, shortstuff programme note- http://www.petestollery.com (accessed 30 May 2013)

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