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Materialisation of fixed media music

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Introduction

0.1. Preamble

In the first journal concerned with concrete music (1948-1949), Pierre Schaeffer described the experience of the first electroacoustic concert organised by the Group de Recherches Musicales of which he was the founder and director. Caught by contradicting feelings, he asks:

Was I in charge or wasn't I? Should the loudspeaker volume be adjusted once and for all, or, following a vague intuition, should some sort of presence respond to the audience's presence, not leave it alone in front of the turntable, add a level of performance, however minimal, to the automatically produced recording? (Schaeffer 2012, 61)

I have also often found myself entangled in similar concerns and thoughts in connection with the presentation of my fixed media music, questioning my role in the moment of the concert. Towards the end of my Masters studies at the institute of Sonology, having composed multiple multichannel fixed media pieces, I was often confronted with the stark difference between studio and concert hall in the way the music sounded. I will never forget the first performance of my fixed media pieces in a concert hall. After a long time working on the composition in the studio, I was shocked by the realisation that the way that in the concert hall I seemed to be listening to completely different music. Moreover, I realised that when I reduced those pieces to stereo for the purpose of sharing them online or releasing on CDs, they somehow lost their impact, since the spatial dimension of the composition was absent in the stereo version.

The goal of this dissertation is to shed light on the public presentation of fixed media electroacoustic music, and to investigate the performative capacities which are involved in materialising such music and bringing it to sonic reality, in order to deal with the question of why the public presentation of fixed media compositions is often the only way to fully experience this music. In doing so, I will chart the importance of spatial aspects in composing fixed media music, by proposing the concept of *spatial polyphony* where polyphonic textures are created through the organisation of simultaneous musical events in space. The concept of *post-mix* is introduced as a practical and creative strategy for negotiating the various circumstances encountered in fixed media music presentations, offering flexibility and adaptability by composing in a higher number of channels than those to be used in the concert, and mixing them down for each presentation. While an extensive body of literature exists on the *production* of electroacoustic music - such as sound synthesis methods, algorithmic composition and so on - not much attention has been given to its *presentation*, and specifically to the concert situation.

All the endeavours of Pierre Schaeffer's team in Paris to incorporate performative activities for fixed media concerts, as well as Karlheinz Stockhausen's precise design of his music's spatial character, or Iannis Xenakis' site-specific *Polytopes*, reflect different aesthetic approaches to the issue of performing fixed media music. Schaeffer and his colleagues considered spatialisation mainly as a performative aspect of the music, while Stockhausen, Gottfried Michael Koenig and others considered it a compositional or structural aspect. In developing my ideas of spatial polyphonic thinking in the composition of fixed media music, and post-mixing for its performance, I am situating my practice somewhere in between these poles, fusing structural composition with performativity of a sound diffusion practice, an approach which is directed

towards a music-making practice embracing polyphonic complexity while being flexible in allowing the music to take on new shapes from one performance to another.

It is crucial to acknowledge that the production of electroacoustic music was historically limited to a small group of composers with the privilege to access the necessary studio resources, which until recently involved expensive and specialised equipment such as multitrack analogue tape machines and modular synthesisers. Those studios often belonged to institutions such as radio stations (in Europe) and universities (in the USA) whose policies tended to reflect the inequalities and lack of inclusivity of their historical period and the societies in which they were embedded. Upon the advent of personal computers and digital technology, however, the medium gradually became more democratised, and empowered many to make music on their own relatively affordable computers. Multichannel music, nevertheless, is still hardware-dependent, requiring a relatively large number of loudspeakers and a suitable audio interface/mixer for composition and presentation, a setup not readily available to everyone, so that this music remains an exclusive and niche practice. This is something that Azimuth has tried to address by involving a mixed selection of composers from diverse social backgrounds as well as redressing the gender and race inequality which has been historically ingrained in this music.²

0.2. What is fixed media electroacoustic music?

Electroacoustic music – as the term clearly implies – is concerned with transformations between electric signals and acoustic energy. These signals are stored on a fixed medium readable by a computer. The term *fixed media*, originally borrowed from computer science, has gradually replaced the term *tape music*, as a result of the extinction of magnetic tape as the main storage (and editing) medium for electroacoustic music.³ The introduction of digital storage, as well as computer-based editing programs, has enormously accelerated the workflow of composing such music. Fixed media electroacoustic music is composed in a studio and stored digitally on SSD drives, to be heard through loudspeakers.

In Western classical music traditions, a composition often consists of written signs and instructions which require realisation by one or more performers in order to become audible. As the French philosopher Roland Barthes explains, to compose music in this traditional way means ‘to give to do’ (in Ferguson 1983, 19). In other words, the composer instructs the performer through a written score to turn the musical ideas into ‘real’ music. In fixed media electroacoustic music, however, the composition and the creation of the sound world occur simultaneously, meaning that the composer fabricates the sounds and structures the material directly on the medium without the need for a performer to produce those sounds later on. According to the American composer Michael Dellaira, ‘the ability to affix sounds into physical forms’ (by using recording technology) has not only affected the way we listen to music, but also transformed the composition practice in dealing with the creation and arrangement of sounds. He continues that ‘[m]usic recordings, then, like music notation, provide more than a way to preserve and recreate performance; they also reflect the way we think about music’ (1995, 193). And, as John Cage

² Azimuth is an organisation for production and performance of electroacoustic music inside the Netherlands, co-founded by the author (see Chapter 3).

³ According to the SAA (Society of American Archivists) ‘fixed media devices are distinguished from those in which the data is stored on a cartridge, disk, or other material that is removable and interchangeable. Hard drives are typically fixed media, with platters sealed inside the drive chassis. Floppy disk and CD-ROM drives are examples of removable media’. <https://dictionary.archivists.org/entry/fixed-media.html>

states, 'magnetic tape was used not simply to record performances of music but to make a new music that was possible only because of it' (1973, 8). Cage adds that its influence goes beyond electroacoustic music: 'Whether one uses tape or writes for conventional instruments, the present musical situation has changed from what it was before tape came into being' (1973, 11).

The role of the performer, and consequently that of interpretation, are problematised by the direct 'fixation' of the music onto the medium. The music historian Paul Sanden explores Glenn Gould's ideas about using recording technology, stating that 'one of the strengths of electronic sound technology [lies] in its ability to present to composers a permanent record of their own interpretations (in the form of acousmatic works or their own performances) so they would not have to rely on other performers to get it right' (2013, 54). In the same way, Linda Ferguson, in her article 'Tape Composition', explains that '[t]ape music's significance lies in the fact that tape composition is a sonic commodity which embeds and particularises itself in physical matter in a manner not possible (and likely, not desirable) in performed music' (1983, 22). She believes, therefore, that due to this fixity '[t]he expressive element of performance - interpretation - is not admitted in tape composition, and the expressive content is already present, concretely determined by the composer' (1983, 20). Karlheinz Stockhausen, in a lecture from 1958, states that in 'electronic music [...] all sonic events are predetermined down to the smallest details and are fixed by technical criteria', so that '[i]n electronic music, the interpreter no longer has any function' (2017, 642). Many other authors have denied the presence of a performative agency in electroacoustic music. The philosopher Stan Godlovitch, in his book *Musical Performance a Philosophical Study*, states that:

Computer use thus "liberates" the composer from the performer and the limits of conventional instruments. If, so to speak, the composer is first-person to the work as the player is its third-party, computers rid the composer of all third-party intervention. The result means the elimination of performance as such and its displacement by "pre-cast" or "presented" music; that is, playback which has been utterly and finally set up in advance. (1998, 101)

Godlovitch denies interpretation in electroacoustic music, stating that:

Notated works which tolerated a single type of instance would not be works-for-performance as we know them, but would instead satisfy certain composers who have turned to electronic instantiation precisely to avoid the variety typical of instantiation by so-called "interpreters". (1998, 85)

The composer and sound artist Robin Minard observes:

[I]n the studio the composer reacts to sounds much in the same way as painters or sculptors normally react to their own physical interaction with materials [...] the results can then be reworked again and again in an intuitive manner until the desired result is obtained [...] There was no more musical interpretation of a work (neither real nor virtual) but rather a work where all phases were finalized by the artist alone. The analogy to the artist's atelier is most appropriate. (2002, 47)

As Minard remarks, fixed media music is often compared to plastic art such as painting, sculpture or cinema. Ferguson even responds to the question 'Is it music?' in a non-affirmative

manner, arguing that tape composition is ontologically different from what had been known traditionally as music (1983, 17). It is true that in creating fixed media music the composer works directly with the 'actual' or concrete sound material instead of abstract signs, similarly to how a sculptor works with wood, stone or metal, or a painter with paint. However, this comparison is not quite accurate. In the case of the plastic arts, the painting or the sculpture constitute the final product in their absolute entirety. Fixed media music, on the other hand, is *not yet* the final product; it is still subject to realisation in order to become audible and hence to become music. The composer Simon Emmerson confirms that acousmatic works 'are studio created yet only "completed in performance" (that is they are not deemed to exist "as art" stored on the shelf or hard disc unheard)' (2007, 31).

Denying the existence of performance (interpretation) in the context of fixed media music implies an assumption that the sound file itself is equivalent to the music and is, in other words, the final product. This is obviously not the case, especially not when the work is composed with the intention of being presented in a concert hall. For instance, in case of a multichannel composition to be heard through more than two channels - which is a common practice in fixed media music - no simple 'playback' is possible. Some deliberate actions (and the right equipment) are required to bring the piece into sonic existence. Tape music, since its inception, has involved performative approaches in its presentation, as when Pierre Schaeffer and Pierre Henry attempted to present their *Symphonie pour un homme seul* in a concert in the École Normale de Musique, Paris, on 18 March 1950. According to the composer and author Peter Manning:

This event brought the creation and spatial dissemination of electroacoustic music into the concert hall in a highly dramatic fashion, the audience witnessing the synthesis of the work both aurally and visually, the operators being required to run about the stage area starting and stopping the contributing recordings, reproduced via a spatially distributed network of monophonic playback systems, each assigned to a different amplifier and loudspeaker. (2006, 84)

Also remarkable are performative approaches such as using the *potentiomètre d'espace* developed in 1951 by the engineer Jacques Poullin, in order to move monophonic sound sources around in a performance space.⁴ These performative ideas were further developed in forms such as 'loudspeaker orchestras', which enabled performers to shape and control the projection of music in the concert venue by using large arrays of loudspeakers of various types and with diverse characteristics and positioning. The *Acousmonium* developed by the Group de Recherches Musicales (GRM) in Paris from 1974 until the present time, and later the Birmingham Electro-Acoustic Sound Theatre (BEAST) from 1982, are examples of such setups.⁵

⁴ Peter Manning explains that, *potentiomètre d'espace* 'consisted of a small hand-held transmitting coil and four wire receiving loops arranged around the performer in a tetrahedron, representing in miniature the location of the loudspeakers in the auditorium. Moving the coil about within the tetrahedron modulated the induction signals in the receiving loops, this information being applied to the electronic amplitude controls regulating the distribution of the sound source between the loudspeakers' (2006, 88).

⁵ According to the GRM website: 'Considered as a pioneering unit in electroacoustic, acousmatic and concrete music, the GRM (Group de Recherches Musicales) has been, since 1958, a unique laboratory for sonorous experimentation. Integrated with the INA (Institut National de l'Audiovisuel) since 1975, the GRM has retained a strong involvement in the experimental music field and is still expanding its repertoire every year' <https://www.ina.fr/offres-et-services/ina-grm>. According to the BEAST website: 'Over the decades since its launch BEAST (Birmingham ElectroAcoustic Sound Theatre) has become established as one of the leading systems for the presentation of electronic music in the world, and as an ongoing catalyst for creation and innovation in the field. BEAST is particularly recognised for its key role in championing the development of acousmatic music - music composed especially for loudspeakers - and live "diffusion", a practice aimed at creating immersive sonic experiences in concert' <https://beast.cal.bham.ac.uk/about>

According to the musicologist, event director and curator Caleb Stuart, '[t]he performance [in the context of spatial and immersive electroacoustic sound] is not the same from sound system to sound system, venue to venue and audience to audience. Without a good PA-system in a correct setting the work simply cannot exist' (2003, 63). Therefore, the fact that the music is fixed on a digital or analogue medium *does not eliminate the need for an active actualisation of the sounds*. Furthermore, the procedure of bringing the fixed files to sonic reality involves multiple variables and contingencies which all affect the final result. In the absence of a score (or any instruction) an important question is: How should a composition of fixed media music sound? Answering this question is a delicate task which is in fact the responsibility of someone who can be called a performer. This responsibility encompasses not only the audience's experience of the music, but also the artwork and its composer. The performer decides, for instance, on the absolute and relative loudness of the sounds, which might change to a greater or lesser extent as the music unfolds, on the arrangement of the concert situation (the relative positioning of loudspeakers and audience in a particular space), and even on the lighting situation and any other element which affects the experience of the piece; in other words, on everything that constitutes the *atmosphere* within which the piece is experienced (see Chapter 2). Returning to the relationship and contrast between traditional Western art music and fixed media music, we can read in music theoretician Brian Kane's book *Sound Unseen* that:

Abstract music, which Schaeffer contrasted with *musique concrète*, was music that began with the note, organized its musical thinking in terms of the note, and then draped it in the guise of acoustic or electronic sound. Abstract music gave the ideal note a sonorous body through the realization of scores by performers or engineers. It began silently in the head and ended in the vibrating garment of sound. (2014, 17)

A question that might arise here is to what extent the *process of music making* differs between instrumental and fixed media music. Obviously, in fixed media music, we are not dealing with what Kane terms an 'ideal note' in the form of graphical or textual instructions; but the piece does still 'exist' in the form of sound files which have as yet no 'acoustic guise'. These sound files also need to be brought actively into the realm of acoustic sound waves, which propagate into a performance space, reflect from its surfaces and fill it with their materiality. The composer Henri Pousseur, in a text written in 1962, underlines that electroacoustic music is not a separate domain of music, a particular musical aesthetics, but that

it should be rather considered as a set of means (instrumental, in the broadest sense) just added to the existing means (human voices and traditional musical instruments) and, while modifying them gradually in a very profound way, tending to join them in order to make as rich as possible the current musical practice. (1970, 81)

Nevertheless, we can distinguish four characteristics which are exclusive to electroacoustic music:

- The prefabricated nature of the composition, concretised on a medium in the process of composing – in comparison to the signs and instructions of a traditional score. The element of time in the composition is fixed, which of course affects the agency of the performer.
- Another peculiarity of electroacoustic music is the vast variety of the musical materials available to the composer, such as instrumental and vocal sounds, environmental sounds which might have undergone various degrees of manipulation and transformations, as well

as abstract and synthesised sounds, and all possible combinations of these. As the percussionist and composer Chris Cutler puts it, '[f]rom the moment of the first recording, the actual performances of musicians on the one hand, and all possible sound on the other, had become the proper matter of music creation' (1993, 141).

- A third characteristic is the extensive and elaborate spatial possibilities for both composition and performance of fixed media music. Of course, spatial considerations have previously involved in music production, as in well-known examples such as the antiphonal music performed by spatially separated instrumental groups (*cori spezzati*) in St Mark's Basilica in Venice around 1600, and twentieth-century instrumental music such as *Gruppen* (1957) by Stockhausen. Nevertheless, in electroacoustic music the technological affordances of spatial sound projection, especially in recent years when digital technology has superseded analogue tape manipulation, have opened up possibilities which were not feasible or perhaps imaginable before.
- Finally, the separation between the source of a sound and a recording of that sound gives rise to an *acousmatic situation*. François Bayle, a composer of electroacoustic music, explains this as 'a situation of pure listening, without attention being distracted or supported by visible or foreseeable instrumental causes' (1993, 179).

Despite these differences, I argue that, ontologically speaking, fixed media music can be usefully described simply as *music where loudspeakers become the sound sources*, instead of instruments and/or voices, and where the agency of a performer/interpreter takes place in a field of activity somewhere between the process of composing and the discipline of performing. This field is the focus of the present research project, which attempts to answer the question of what performing means in fixed media electroacoustic music, and what possible future forms it could take. This question could indeed be turned on its head to provide another possible way of expressing the subject of this research: what does 'fixed media' mean in the context of performing electroacoustic music?

0.3. Structure and format of the dissertation

This dissertation consists of two components: a written part in three chapters, and an audiovisual part consisting of video and multichannel audio. As for the written part: the first chapter contextualises the issues at hand by charting the ontological status of fixed media music and its performance, as well as considering the relevance of liveness in listening to what might seem to be 'recorded music'. The second chapter deals with the concert situation of fixed media music through the lens of *atmosphere*, a concept developed by philosophers Hermann Schmitz and Gernot Böhme among others. The concept of atmosphere as a new aesthetics provides an understanding of the concert situation based on a holistic approach as to how the various elements of the performance environment come together to generate the audience's experience. In the third chapter I discuss my own approach to composing and performing fixed media music, as well as the works of other practitioners in the field. The audiovisual part is itself a fixed media work, consisting of documentary elements such as interviews with some prominent composers in the field discussing how they present their music, together with excerpts of their music. This part also includes some of my own compositions and a documentation of my previous concerts alongside self-reflective autoethnographic elements, as well as abstract and 'atmospheric' material.