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ELECTROACOUSTIC POP DEVELOPING COMPOSITIONAL METHODS BY THE
INTEGRATION OF POPULAR MUSIC CREATION TECHNIQUES INTO THE
ELECTROACOUSTIC MUSIC PRACTICE.

CUBIDES-GUTIERREZ, JOSE MANUEL (2023) ELECTROACOUSTIC POP DEVELOPING COMPOSITIONAL
METHODS BY THE INTEGRATION OF POPULAR MUSIC CREATION TECHNIQUES INTO THE
ELECTROACOUSTIC MUSIC PRACTICE. Doctoral thesis, University of West London.

<https://doi.org/10.36828/xvqy0383>

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ELECTROACOUSTIC POP
DEVELOPING COMPOSITIONAL METHODS BY THE INTEGRATION OF
POPULAR MUSIC CREATION TECHNIQUES INTO THE
ELECTROACOUSTIC MUSIC PRACTICE

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APRIL 2023

ABSTRACT

This research aims to integrate popular music techniques into the electroacoustic music practice, forming a new niche music style named Electroacoustic pop developing a distinctive approach to composing music within the sound-based music field.

These developments were based on a practice-led research in which three hours of music and sound were created exploring different subject within the field such as: collection of sound material, interaction of sound and noise and public and private spaces, mediation and manipulation of sound, amongst others.

The practical experiments consisted of employing popular music creation techniques to organise, manipulate and mediate found sound into various composition, in which the narrative was established by newspaper articles.

Recording methods employed in field recordings were included in the experiments exploring how the collection of sound material could have an impact in the outcome of an electroacoustic music composition. This resulted in the development of terminology such as ‘negative sound’, and active and passive field recording.

Compositional patterns were developed using popular music plugins and platforms such as Logic Pro X and Pro Tools, combined to the inclusion of microphones and speakers as tools for generating musical pieces.

A concrete analytical framework was established by gathering models developed by academics and composers in both the popular and electroacoustic music fields.

The general outcome of these experiments helped establishing and recognising a set of unique and noteworthy compositional patterns and methodologies that can be employed in future composition projects. New music creation and consumption approaches were suggested based on the compositional and analytical result of this project.

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1. INTRODUCTION

This DMus aims to develop compositional methods by integrating popular music musical and creative production techniques into the electroacoustic music practice. As a result, the term Electroacoustic pop is used to address this creative approach in which the sound material typically utilised as a fundamental element in electroacoustic music genres is sonically manipulated employing techniques commonly used in popular music. Also, this project aims to suggest new approaches to bring features of electroacoustic music to a wider audience by integrating popular music sonic elements into electroacoustic music. This is a practice-based project that approaches the aforementioned subjects through a series of experiments and trial and error sessions that were examined using both electroacoustic and popular music analytical frameworks. The final result consists of the creation of various compositions totalling in three hours of recorded audio using only found sound as sound material.

1.1 Research context

The electroacoustic music composition field is an extensive and vast discipline that, apart from exploring musical topics, includes plenty of other subcategories such as philosophical, technical, political, technological and economical ones, amongst many more. This is; therefore, the reason why electronic and electroacoustic music composition is a practice that will always bring endless possibilities that can be investigated in depth from numerous different perspectives. From the musical and technical perspective, electroacoustic music has been studied for more than a century when Futurist movement artists such as Luigi Russolo started employing machines in their music-making process. Similarly, *Musique Concrète* artists such as Pierre Schaeffer and Michel Chion, and other music composers who also implemented electronic music manipulation techniques such as Luc Ferrari, Pierre Henry, Edgar Varèse, Karlheinz Stockhausen, Pierre Boulez, amongst many more, continued the study of the implementation of ‘everyday life’ sound into academic music, developing a wide variety of techniques throughout the exploration of technological tools manufactured at the beginning of the twentieth century.

Musique Concrète composers explored other concepts related to the recontextualization of noise into music and how the ways we listen to noise, sound and music determine our

relationship with sound. In parallel, John Cage explored the same idea of recontextualising noise and every-day life sounds into music compositions and proposed that any sound can be used in music as long as the listener is willing to understand those specific sounds as music, grounding this idea in Modern Art concepts, that stated that anything can be Art as long as the works are in an artistic context.

The study of electroacoustic music and sound-based music was normally linked to academic entities, especially in Germany, France and the UK. In France, *Musique Concrète* composers worked for the *Groupe de Recherche Musicales* (GRM) which was formed by composers employed by the *Radiodiffusion-Télévision Française* (RTF), in Germany, *Elektronische Musik* artists worked for the *Nordwestdeutscher Rundfunk* (NWDR) and in the UK, these methodologies were explored primarily by the BBC Radiophonic Workshop, the department in charge of creating the soundscapes for radio and television programs for the BBC. In parallel, these techniques were adopted by Popular Music producers and musicians, such as George Martin and The Beatles, Frank Zappa, and Pink Floyd, who started including these experimental sounds and concepts into their commercial productions.

In more recent decades, these practices became more popular, and the developments in technology contributed to the expansion of these methods and their investigation. Academics such as Roads, DeMers, Brend, Butler, Clarke, Cox, Eck, Hegarty, Landy, Moore, Smalley, amongst many more, have studied the use and implementation of new techniques and concepts in more modern and current electronic and electroacoustic music.

Another field that has been complementary but independent from electroacoustic music is Field Recording. This practice aims to study the relationship of us humans with our sonic environment. This area has been fundamental for the development of recording audio material for the above-mentioned genres, and the incorporation and manipulation of these recordings has been a broad area for investigation. There are several subjects that are explored within the field recording practice, these being, climate change, documentation of social changes such as the change and evolution of the city soundscape, the evolution and change of the rural soundscape, sound-mapping, and noise pollution, amongst several more.

Field recordings explore numerous compositional methods such as different approaches to recording and the equipment employed in these compositions, these two also being connected to the aesthetic outcome as the different conditions where these take place demand different

technical solutions. As a result, it is worth mentioning that even though field recording is not a traditional music practice, consisting of notes and pitch, fixed tempo patterns, melodic themes and harmonic structures, various field recording artists consider themselves as composers or sound artists.

Currently, this wide range of threads is being blended into new styles and forms and following just one current is very challenging due to the many branches and variations within the electronic and electroacoustic music practice. This is also in part because the tools and methodologies for making electronic and electroacoustic music are extremely varied as technological developments have evolved at a very fast pace in the last four decades.

The development of samplers in different forms has contributed to this vastly, resulting in these techniques to be the foundation of various music styles such as Hip-Hop, and other sample-based genres that employ digital and software samplers. Also Eurorack sampling modules, and other tools gave more options to music composers of all musical backgrounds, allowing both professional and amateur musicians to experiment with sounds. The democratisation of music production led to making the study of these processes a very challenging practice as currently there are no clear style streams and most of these techniques and methodologies are being rapidly developed in home studios by musicians who might not have any sort of academic background or knowledge about how program synthesisers and samplers. (Théberge 1997; DeMers 2010)

1.2 Research objectives

This research aims to explore and develop compositional techniques by incorporating popular music creation methods into electroacoustic music practice. There are various areas of common ground for the integrations of popular music creation techniques that focus on rhythmic, melodic, harmonic, structure, and consumption elements. These elements from both popular and electroacoustic music will be the features that this project blend into a new music style named electroacoustic pop, with the purpose of suggesting new listening practices and accessibility for the creation and analysis of electroacoustic music.

To begin with, this research is based on practical experiments in which all the sound material was recorded in places where sound and noise interact with the public and private soundscape from legal, political, physical and psychoacoustical perspectives. For instance, spaces such as

sidewalks, museums, art galleries, hotel lobbies, train stations, bedrooms, music venues, airports, restaurants, etc, were the locations selected for the recordings to take place due to their sonic characteristics. It is important to mention that the common element between the aforementioned places is that these spaces are constantly under the threat of noise pollution and other sonic disturbances that interfere with people's well-being. This sound will be referred to as 'negative sound' and it addresses any type of sound that has a negative impact on people's physical and mental health.

Based on the aforementioned, the objectives of using sound material recorded in these locations are to:

1. Have a consistent thematic approach to sound material manipulation.
2. Explore the sonic possibilities that this sound material offers to composers in the electroacoustic pop context.
3. Study the limitations and challenges of working with this given sound material in similar projects.
4. Create a consistent connection with the musical narrative.

Having said that, all the compositions' narratives are established by stories from newspaper articles (Appendix B) that discuss subjects related to how people's private and the public lives interact. The result consists of three hours of recorded audio divided into two different categories.

1. Four complete field recordings where the diverse techniques to capture the sound material are explored.
2. Seventeen music tracks in which the methodologies developed and discussed throughout this project are explored and employed in various forms.

These composition are displayed on a website (<http://josemanuelcubides.com/research>) where the listeners are allowed to read the newspaper articles whilst listening to them in order to emphasise the narrative and the conceptual nature of the music compositions.

1.3 Structure

The thesis will be sub-divided into sections based on the structure outlined in this chapter:

Chapter 2: Literature review

Popular and electroacoustic music definitions and characteristics

Popular Music

Popular music is catch-all term that includes an innumerable number of music styles and genres. As a result, finding an established definition has been the centre of debates by academics as popular music can incorporate and appropriate elements that draw on art and folk music and that are not particularly popular. However, there is common ground such as musical characteristics, music consumption habits and music production and distribution approaches that result in the materialisation of a phenomenon known as popular music. This section aims to study the different proposed definitions analysing the elements that give popular music its most representative characteristics.

Mixing as a compositional method in pop music

Current creative process presents various new techniques due to the development in music creation technology. The roles of producers, composers and engineers interact as the music creation stages merge due to the democratisation and commercialisation of music technologies. One of these techniques is the use of the recording studio as a compositional tool.

In particular, this section explores techniques implemented in Dub Music by artists such as King Tubby showing how the use of the mixing console and other audio processing features (either hardware or software) such as delay, reverb and compression, can be incorporated as part of the compositional process in popular music. In this project, these processes are explored utilising both software plugins and hardware console effects, using concepts of the visual representation of space in Popular Music audio mixing as a frame for the compositions' analysis.

Electroacoustic music

Electroacoustic music is a loose musical term that relates to experimental art music that uses electronics to process recorded acoustic sound sources. However, factors such as: sound material, exploration of time and space, finding the balance between mediated and natural sound, the ways we listen to sound, and techniques such as sound destruction, reproduction and construction, are all features within this music genre.

This section discusses the different approaches to electroacoustic music creation and how this music style creative process makes and emphasis in sound manipulation.

Electroacoustic composition in popular culture

This section of the literature review explores how electroacoustic music was introduced into the mainstream and popular cultures depending on the country where the genre was being developed, and how this affected the way we currently consume and listen to these music styles. Additionally, it will explore the techniques employed in electronic music composition by entities such as the *BBC Radiophonic Workshop* in the United Kingdom, the *Groupe de Recherche Musicales (GRM)* in France, and in *Elektronische Musik* in Germany as these groups were some of the first to formally employ these compositional methods.

Additional sound-based genres

Field recordings

This section explores the definition and techniques employed in field recording practices. Field recordings, which are by definition, recordings that take place outside a controlled recording studio (Virostek 2012, 30). Within this category, there are different types of field recordings, and these implement different techniques that are normally suggested by the actual situations and characteristics where and when the recordings take place. For instance, academic and field recording artist Paul Virostek names some of these: Guerrilla, Investigative, Stealth and Controlled field recordings based on the conditions in which these recordings are being done.

The soundscape

This section explores Soundscape compositions and composers that use very similar principles to field recordings with only a few differences, these mainly being differences related to conceptual approaches to the recording result. For instance, Soundscape Compositions often deal with subjects related to environmental issues such as global warming and noise pollution. It is important to highlight that the recording process is a crucial aspect of the final output in the aforementioned compositional styles.

Sound material

Sound material

This segment discusses how the idea of sound material was developed. Modern art and music had similar conceptual developments leading to the creation of musical pieces that experimented with the idea of the sound as material and sound as an object. Artists such as John Cage and his compositional approaches are explored in this section.

Sound, noise, and the private and public soundscape

This section explores how sound is an agent that oscillates between private and the public spaces, and how we understand and embrace this phenomenon as a society. Music listening was predominately a public experience that was brought home by the development of audio recording and reproduction devices such as gramophones and other types of home stereos. (Thompson 2016) Eventually, the development and massive release of portable devices such as the Walkman changed the way we relate to sound in public spaces, introducing a debate about how humans seek comfort and security in sonic privacy, and the privatisation of the music listening experience became a common practice in people's everyday life.

Negative sound

This part of the literature review creates a conversation around the philosophical, scientific, and physical differences between sound and noise, and how these can have a negative impact on humans' physical and mental health. The term 'Negative Sound' is developed in this section to address any type of sound that has any direct or indirect negative impact in communities.

Sound-based music artists and works.

This section describes how sound-based artists have used similar techniques and approaches to the ones employed and explored in this project. Most of these artists have similarities in terms of conceptual, compositional, production and distribution approaches. Using microphones, speakers, noise, field recording techniques are amongst the techniques and approaches explored in this this section.

Analytical frameworks for electroacoustic music compositions

This section presents the various analytical frameworks used for the analysis of this project's compositions, exploring how the different uses of sound material with different purpose can be analysed from a consistent and standardised perspective.

Chapter 3: Methodology

In addition to the methodological philosophy that underpins this project, the section describes the methods employed throughout the whole project as well as the objectives and the analytical frameworks used to examine the experiments. It also includes the technical information about what type of equipment and software was used for the completion of the musical pieces. Information such as the recording devices is also included in this section.

Apart from that, this section discusses the sound material collection and the techniques used for it. In most cases, the collection of sound material was an essential part of the compositional method, and these techniques such as passive and active field recording are described in this part of the paper.

Finally, the last section of the methodology, exposes the methods employed to manipulate the sound material, and how these were organised into the different compositions. When talking about the way sound material was mediated, this section also shows the relationship between these sounds and the environment where they were collected and how important this was for the way they were integrated into the compositions.

Chapter 4: Results

This section shows how each song incorporates elements from both electroacoustic and popular music displaying a comparative table between the two music styles. The objective is to show that even though certain music creation techniques were employed in different contexts, the results were consistent throughout the compositions resulting in the formation of compositional patterns.

Chapter 5: Analysis

The analysis section explains how the project's results fit into the proposed analytical frameworks. Each analytical parameter is subdivided to describe how the compositions accomplished the proposed objectives and how the techniques developed can be studied through the suggested model.

Chapter 6: Conclusion

The thesis finishes with a critical reflection in which the outcomes of this research are evaluated. The synthesis of the term electroacoustic pop is presented in this section, mentioning in which instances it could be employed and why. Also, the methods employed for mediating and organising the sound material are evaluated using the aforementioned frameworks.

Finally, the challenges and limitations of the project are presented and evaluated so they can be addressed in future research projects that investigate similar techniques.

2. LITERATURE REVIEW

2.1 Popular and electroacoustic music definitions and characteristics

2.1.1 Popular Music

The term ‘popular’ music or ‘pop’ music started being used widely by people to address a music genre in the 1930s and 1940s. (Shuker 2011). However, the use of this term is still a subject of debate by different academics and music listeners due to it being too broad as well as addressing different subjects within the area of popular music. Most of the definitions present strong contradictions and weaknesses, therefore “providing a simple, straightforward definition of pop is problematic.” (Warner 2003, 3). Indeed, although I am using the terms ‘popular’ and ‘pop’, the latter is often considered to be a sub-category of the former.

Firstly, some definitions focus on the word ‘popular’ and in regards to music liked and consumed by the masses, often being associated and/or contrasted with the term ‘Folk’ music. (Middleton 1990) This idea can be considered contradictory as there are music genres, such as classical music, that are liked by many listeners but are not often included in the popular music category.

Secondly, the term popular music is often defined based on commercial factors such as whether it can be played in radio aiming to reach large audiences. This definition argues that there is certain music created predominantly aimed to reach large audiences expecting important commercial success and exposure. (Shuker 2011) This also includes the format in which the music is released, promoted, and how it is consumed. According to Warner (2003), the single is the main format for releasing popular music, adding that “accepting the single as the main vehicle of delivery for pop music also suggests that, unlike many other kinds of music, pop music is largely purchased and consumed on a piece-by-piece basis.” (Warner 2003, 5)

Lastly, popular music is also defined by its musical characteristics. For instance, the way it is produced, how its composition often relies on technology, the length and structure of the tracks, chords progressions, scales used, and lyrical content, amongst other characteristics.

Apart from that, the definition of popular music not only relies on the aforementioned characteristics but also involves other aspects such as social, cultural, economic, and political contexts.

Frans Birrer (1985), summarises the main for categories for popular music definitions¹:

1. Normative definitions: Popular music is an inferior type.
2. Negative definitions: Popular music is that is not something else (usually ‘folk’ or ‘art’ music).
3. Sociological definitions: Popular music that is associated with (produced for or by a particular social group)
4. Technologico-economic definitions: Popular music is disseminated by mass media and/or in a mass market.

Richard Middleton (1990), presents a series of contradicting points mentioning that “all these categories are interest-bound [so]; none is satisfactory” (Middleton 1990, 4) adding that:

“The first relies on arbitrary criteria. The second gets into trouble on the boundaries – where near divisions between ‘folk’ and ‘popular’, and ‘popular’ and ‘art’, are impossible to find [...] The third [...] fails because musical types and practices [...] can never be wholly contained by particular social contexts. [...] The fourth category is unsatisfactory, too, [as], the development of methods of mass diffusion [...] has affected *all* forms of music, [and] all forms of what would usually be considered popular music can in principle be disseminated by face-to-face methods.” (Middleton 1990, 4)

Apart from that, the musical characteristics of popular music can suggest new methods to define this type of music. However, aesthetic characteristics in popular music are extremely diverse as there are plenty of music styles that form this vast genre. For instance, even though Rock and Jazz music belong in the popular music area, the instrumentation, chord content and song structure are dissimilar. In fact, within both of these genres, there are plenty of style variations or sub-genres and each of those have special and contrasting characteristics.

According to Von Appen (2007), based on theories by Seel (1996a)(2003) and Adorno (1962), there are three ‘dimensions’ for the analysis of popular music aesthetics.

- The ‘contemplation of the mere appearance’ is the study of popular music from the aesthetical listening experience which does not attempt to look for any semantic meaning in the music, adding that from this perspective, “there is not much to understand about the roaring of a distorted guitar, a booming bass, hissing and clashing

¹ Frans Birrer in *Studying Popular Music* by Richard Middleton (1990)

cymbals” (von Appen 2007, 12) apart from the experience being an aesthetic contemplation.

- The ‘correspondence or atmospheric appearance’ dimension explores the general landscape of popular music. In other words, it refers to whether that piece of music “either suits the moment, and therefore expresses our current mood, or it corresponds to our character or self-image and therefore expresses how we see ourselves or would like to be seen.” (Ibid, 13) This idea incorporates conversations regarding how music plays a big part on the development of people’s identity and how taste plays an important role on the music we listen to, a subject discussed also by Pierre Bourdieu (2010).
- ‘Imagination or artistic appearance’ focuses on the listening action provoking an “effort to understand – whether this will be successfully concluded or not”, (Ibid, 15) suggesting that the listener’s attitude towards the musical piece defines the artistic character of it. For instance, if the listener has an artistic approach to the work, this musical piece can be considered art. On the other hand, if the listener has a trivial approach to the same music work, this loses its artistic value becoming just an entertainment piece. It is essential to consider that in this case, the context in which the piece is being displayed plays a crucial role when it comes to suggesting the manner the listener will listen to it.

Furthermore, the approach to pop music making is also an element to consider as an elemental characteristic of the genre. According to Theodore Gracyk (n.d), pop music “sacrifices autonomy because its design is driven by functional demands for emotional expression and for dance rhythms, [and as] popularity requires accessibility, [...] popular music cannot combine popularity and complexity.” (Gracyk n.d) This hypothesis sets a conversation on whether the real character of pop music lies on the nature and purpose of its creative process instead of musical features such as, chord progression, instrumentation, lyrical content, amongst others.

Pop music has always carried commercial connotations, often relating this association to the idea that pop music diverges from art music, or in some cases, to the idea that pop music is ‘simple’ and superficial. As Timothy Warnes states: “The question of whether pop music is motivated by artistic endeavour or the lure of ‘easy money’ has generated a great deal of debate

over the years” (Warner 2003, 13), also setting a debate about whether its marketable objectives leads to pop music being repetitive, full of ‘cliches’, and artificial.

As a result, the commercial character of the genre suggests that pop music’s compositional approach is also an element to consider when it comes to search for a definition. This is the result of pop music creators using a common set of production techniques and compositional aims.

Firstly, pop music places a big emphasis on repetition, not only in its melodic, rhythmic and harmonic content, but also in the way it is normally consumed. As Warner suggests, “the appreciation of pop music is founded on the ability to listen or view again and again” (Ibid, 9) adding that “the promotion of a pop record on the radio involves multiple playings of that record” (Ibid, 9). In order to achieve this, pop music creators use *Schemas*, a repetition of chord progressions formed by normally 2 to 4 chords (Hughes and Lavengood 2021). These can be categorised in 5 groups:

- Blues based Schemas. (12 bar blues, 16 bar blues, double plagal, extended plagal)
- Four Chord Schemas. (Doo-wop, hopscotch, singer/songwriter)
- Classical Schemas. (Lament, circle of fifths)
- Puff Schemas (Based on I-iii-IV chords progressions)
- Modal Schemas (Chord progressions based on modes such as Aeolian, Eolian, etc)

These structures repeat for “either for a section of a song, or for an entire song” (Moore 2012, 76) In current time, and as a result of technology developments and sequencers, these repetitions can also be called *Loops* (Moore 2012) which also applies to repetitive patterns in rhythmic and melodic sections.

In pop music, these sections are normally organised in ABABCB structures, being these: Verse, chorus, verse, chorus, bridge, chorus, with little variations such as: Intro, outro and pre-chorus. (Hicks 2022) These usually last 8 to 16 bars.

Another characteristic of pop music is the length of the musical pieces. Historically, the single has been the preferred format for pop music releases. This is due to artists having to ‘fit’ their music into a side of a 78 rpm record. (Ibid, 7) However, the trends seem to indicate that the length of pop music songs are shortening regardless of the medium through which they are reproduced. According to Billboard online, “in 2019, the average length for Hot 100 top 10s is a brisk 3:07, a drop of 30 seconds from 2018’s average of 3:37” (Trust 2019) adding that “That

contrasts with recent years, as the average top 10 song length fluctuated by only 11 seconds (from 3:32 to 3:43) over 2015-17” (Ibid)

2.1.2 Mixing as a compositional method in Pop music

Simon Zagorski-Thomas (2017) developed the Sonic Cartoon concept in which, based on Clarke’s ecological approach to perception of musical meaning and Denis Smalley’s Spectromorphology concept, he suggests that there are different ways of producing sound that evoke a representation of certain type of activity. For instance, “if I hit things harder or softer, the changes in sound are associated with changes in energy expenditure and other sensory experiences such as pain, balance and muscle control, etc. These in turn are associated with anger, excitement or types of concentration, as when the high frequency properties of a sound that indicate something being hit harder rather than softer become marked as characteristics of anger or excitement.” (Zagorski-Thomas 2017, 5) adding that in “recorded music this cartoon nature can be created through microphone placement, various isolation techniques, multi-track recording and electronic processing” (Ibid, 8) Rolf Großmann and Maria Hanáček (2016) state that the use of sound as musical material has expanded the idea of popular music production in the way that the “strategies such as sampling, recombination, and remix, and forms like tracks instead of songs, clearly show that working with phonographic sound material has become an established practice of making and composing ‘music’ itself,” (Großmann and Hanáček in Papenburg et al. 2016, 53) adding that currently “for example, filtering or reverb- are essential means used in popular music production and live performance.” (Ibid, 53)

As a result, the role of the mixing engineer and the mixing process have changed dramatically in the last decades in terms of this having a larger creative influence over the musical outcome. It is known that during certain decades, producers, recording and mixing engineers had completely different roles and their tasks were completely divided from each other. The music producer became a composer due to their large influence in the compositional process “introducing radical new concepts such as the Wall of Sound ([Phil] Spector), the confluence of classical, commercial, and experimental techniques ([George] Martin), and the studio as a musical instrument in its own right ([Brian] Eno).” (Moorefield 2005, xiii) Also, “factors such as technological development, the ascendancy of the recorded work over live performance, and audience tastes have [...] contributed to the development of the producer’s role in the studio.” (Ibid, xiii) The recording studio has become a compositional tool and therefore all the processes that take place in it have a significant influence in the creative process instead of just the

technical one. Regarding mixing engineers, it is clear that the creative choices made during this stage of the production have a large impact on the compositional process.

According to David Gibson's visual representation of space in mixing, there are four main sound manipulation methods to use as mixing techniques when placing sounds in the auditory space: Volume, Equalisation, Panning and Effects. (Image 2)

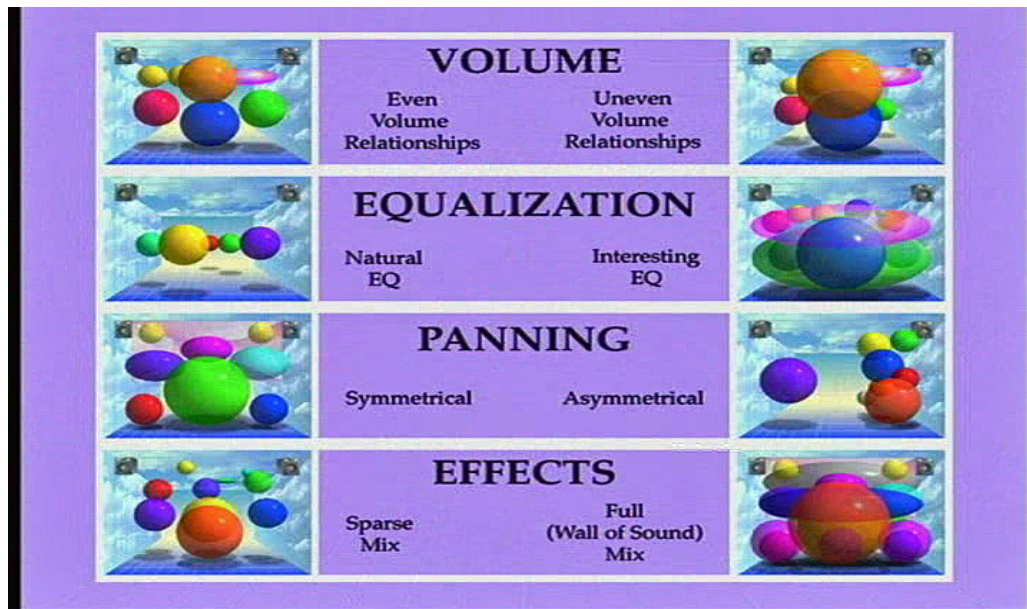


Image 2, Taken from *The Art of Mixing, A Visual Guide to Recording, Engineering and Production* (Gibson 2005)

Gibson also mentions that each of these parameters (volume, Equalization, Panning and Effects) locates and moves sounds around a three-dimensional space consisting of Depth, Height and Width. (Image 3)

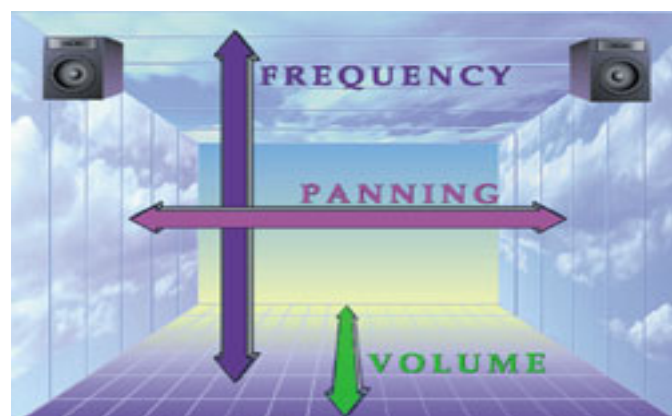


Image 3 Taken from *The Art of Mixing, A Visual Guide to Recording, Engineering and Production* (Gibson 2005)

An example of how these techniques are utilised in music production and the mixing process is King Tubby's method for performing mixes in recording studio productions to take

advantage of the aforementioned parameters. King Tubby is one of the seminal figures in the creation of *Dub*, a music style developed in Jamaica in the late 1960s and early 1970s, in which a backing track consisting of Drums, Bass, Guitars and Keyboards was recorded separately from the vocals, so the backing track could be used by various singers in different recording sessions, allowing artists to compose different versions of the same music track. In this practice, Tubby used to route instruments via auxiliary sends to reverb, delay and high-pass filter and using the volume faders to bring instruments and effects in and out of the mix to create a performed arrangement. As Sean Williams mentions, “the main sound-transforming tools used by King Tubby are the high-pass filter, volume controls, reverberation and delay” (Williams in Frith and Zagorski-Thomas 2012, 239) thus, showing how Tubby used mixing and processing techniques to develop his own compositional style, influencing electronic musicians for the last decades until current times.

Paul Théberge highlights the role of multitrack recording as a tool for exploring new music production techniques, mentioning that “the tendency for synthesizer players to layer sounds is not simply a matter of searching for a ‘fat’ sound but, rather, has been a fundamental part of a technique and aesthetic of pop music since the 1960s” (Théberge 1997, 216) also emphasising that “Multitrack technology allowed for the sound of individual instruments to be recorded separately from one another in a process known as ‘overdubbing’. Later the various lines of music (the recorded ‘tracks’) could be combined, electronically enhanced, and balanced during the ‘mixdown’ session.” (Ibid 1997, 215)

2.1.3 Electroacoustic Music

The term *electroacoustic music* has been the centre of unnumerable debates between music analysts, academics and practitioners. This has evolved from its initial form, which used to describe “the activities of musique concrete, tape music and electronic music composers” (Landy 2017, 12). One of the main claims is that *electroacoustic music* is an umbrella term that generally covers any type of sound art in which recordings of acoustic sounds have been manipulated by or combined with electronics. (Ibid) This is the result of this genre being a multidisciplinary practice that contains 81 subgenres and categories (Emmerson and Landy 2016). However, even though there are discrepancies regarding how *electroacoustic music* should be named depending on languages and location, there are common grounds when it comes to find a definition for it.

Landy's definition of *electroacoustic music* suggests that:

1. *Electroacoustic music* “refers to any music in which electricity has had some involvement in sound registration and/or production other than that of simple microphone recording or amplification.
2. An adjective describing any process involving the transfer of a signal from acoustic to electrical form, or vice versa. [...]
3. Music in which electronic technology, now primarily computer-based, is used to access, generate, explore and configure sound materials, and in which loudspeakers are the prime medium of transmission. [...]
4. (Electroacoustics) The use of electricity for the conception, ideation creation, storage, production, interpretation, distribution, reproduction, perception, cognition, visualisation, analysis, comprehension and/or conceptualisation.” (Landy 2017, 13)

Electroacoustic music compositional methodologies have normally been based on research of new sounds, textures and techniques to the point that often this experimentation outcome is more valuable than the aesthetic results. As a result, *electroacoustic music* composers and academics tend to focus their studies on their compositional process. In difference to traditional music, Adrian Moore mentions that “we are aiming to make something that could not be called ‘music’ in the traditional sense but which has ‘musical’ sensitivities” (Moore 2016b, xv) adding that in order to achieve this category, electronic and electroacoustic music should contain certain characteristics such as “sense of pace and style; phrasing; dynamic contrasts; pitched materials; percussive sounds; programmatic implications; new spaces; [and] new sounds.” (Ibid, xv) William W Gaver (1993), suggests that the instruments for the creation of *electroacoustic music* can be organised in three categories:

1. Objects that produce vibrating sounds, being these the sounds produced by simple interaction between materials such as impacts, scraping, etc.
2. Aerodynamic sounds, which are sounds produced by discreet, sudden changes of pressure. For instance, explosions, wind, etc.
3. Liquid Sounds, which are sounds “caused by discreet drips, or by more continuous splashing, rippling, or pouring events.” (Gaver 1993, 14)

Simon Zagorski-Thomas (2017) remarks that, “in electronic music abstraction is in the nature of the sound itself and, therefore, inherent in the process of creation” (Zagorski-Thomas 2017, 8), reinforcing the idea that the pursuit of new sounds and textures is the main objective in these music styles. In terms of the communicational values of *electroacoustic music*, Denis Smalley (1997) mentions that due to the fact that these music styles lack gesture, there are certain motion patterns such as unidirectional, reciprocal, cyclic/centric and bi/multidirectional motion and growth processes, that allow composers to create a sense of action. In addition, Lars Nyre (2008) proposes that there are four types of information sound can communicate:

1. Time (duration, chronology, causes and effects),
2. Space (directions, shapes, volumes, distances),
3. Personal Expressiveness (emotion, moods) and
4. Coded Message (news, love songs, etc.)

Nyre adds that there are two types of sound:

1. *Natural Sound* refers to “all the sounds that are non-mediated – that is, they occurred before sound media were invented, or they occur without any form of transmission or recording at the present time.” (Nyre 2008, 3)
2. *Mediated Sound* denotes all the sounds that are repeated and reproduced outside the time and place of the original performance.

However, Smalley suggests that too much awareness of the aforementioned techniques “can influence compositional methods since once the composer becomes conscious of concepts and words to diagnose and describe, then compositional thinking can be influenced.” (Smalley 1997, 107)

Apart from the aforesaid methods, there are several musical and sound design techniques that allow *electroacoustic music* composers to communicate with the audience setting up a common ground between what is composed and what the audience perceive. These characteristics used by *electroacoustic music* composers are based on fundamentals of more traditional music. Leonard G. Ratner (1980) develops a theory called ‘Theory of Topics’ in which he states that “from its contacts with worship, poetry, drama, entertainment, dance, ceremony, the military, the hunt, and the life of lower classes, music in the early 18th century developed a thesaurus of

characteristic figures, which formed a rich legacy for classic composers. Some of these figures were associated with various feelings and affections; other had a picturesque flavour.” (Ratner 1980, 9) In other words, Ratner proposes that there are certain ‘stereotypical’ musical characteristics used by classical music composers to suggest different emotions, for instance, the use of brass instruments was related to a call for hunting. Eric F. Clarke (2012) adds that this is mainly a result of our cultural understanding of situations according to the environments where the events happen, and in its ecological approach to the perceptions of musical meaning the way the music is recorded and/or generated creates affordances that suggest the listeners’ “perceptual responses to a variety of environmental attributes, ranging from the spatial location and physical source of musical sounds, to their structural function and cultural and ideological value.” (Clarke 2012, 46)

Joanna DeMers (2010) suggests that there are three main methodologies for composing *electronic* and *electroacoustic music*:

1. *Construction* is the method in which the sound material is created from ‘pure’ or ‘raw’ signals. This method is normally known as synthesis, and there are different types of possibilities within this practice such as: Granular Synthesis, Subtractive Synthesis, FM Synthesis, Additive Synthesis, amongst a few others. Each of these types of sound construction allow the user to explore certain specific options depending on the technique.
2. *Reproduction* is the technique that involves using pre-recorded material in order to construct new textures and tones. This practice is usually known as sampling within popular music, and it is a very versatile method used in compositions from academic and experimental music to hip-hop and other styles of popular music.
3. *Destruction* is the method in which pre-existing sound material is processed changing its sonic characteristics and distinctive properties. In the case of *Destruction*, many different techniques are applied, using methods such as both analogue and digital processing.

DeMers clarifies that, “there will naturally be some overlap among construction, reproduction and destruction. [As] many synthesizers available today construct their sounds from raw materials consisting of samples, or reproduced material. Similarly, samples often consist of pre-existing sound that was itself synthesised.” (DeMers 2010, 44)

Another important technique is ‘Microsound’, which is very similar to Granular Synthesis, but since the size of the fragment chosen is not considered a grain and the way the sound material is organised in this instance, this technique is usually named *Microsound* or *Micromontage*. These types of fragmenting sound techniques are categorised based on the time, treatment, organisation, and processing of the final sound particles. For instance, in ‘Microsound’ or Granular Synthesis, the recorded ‘grain’ used generally lasts between one thousandth and one tenth of a second. This technique has spawned a whole electronic music genre, with Curtis Roads and Iannis Xenakis as two of the most important composers in the style. *Microsound* as a musical genre, can be divided into other different subgenres, setting up discussions amongst electronic music academics regarding how the genre should be named as some of them might call it *Glitch Music*, *Minimal*, *Minimal Techno*, etc., to the point that some of them mention that *Microsound* is just the academic way of naming all the above-mentioned styles. (Gard 2004 cited in DeMers 2010, 74) In addition, Curtis Roads expands the debate mentioning that in addition to *Microsound* and Granular Synthesis, “in micromontage, the composer extracts short grains from sound files and rearranges them in time.” (Roads 2015, 158) adding that these fragments are never longer than 100 milliseconds, therefore, the difference between subgenres is noticeable.

In contrast, *Maximal* music is the way Joanna DeMers’ classifies the music that, in difference to *Microsound*, utilises sound material of long durations such as “drones, noises, and repetitive rhythmic patterns and often studiously avoid any other types of sounds that might distract from these elements.” (DeMers 2010, 92) Similarly to *Minimal* music, *Maximal* music compositions are static, and each piece tends to have long durations, almost leading the listeners to meditational states of mind based on repetition. DeMers (2010) also divides *Maximal* Music in three sub-genres, *Drone Music*, *Dub Techno* and *Noise Music*. These repetitive rhythmic, harmonic and melody patterns are also a few of the main characteristics of *Minimalist* music, music that also works as a ‘mood’ setter driving the listeners to an almost meditative (or entirely meditative) state, similarly to *Maximal* music. According to David Toop, the idea of creating western ‘minimalist’ music and music that focuses on the mood and the ambience (such as electronic ambient) is largely influenced by Bali’s and Indonesian music. He mentions that “the long rhythmic cycles and leisurely development within performances of Indonesian music allowed listeners to vary their concentration; intense focus, even a literal entrancement, could be alternated with peripheral listening, eating, drinking or, ultimately, sleep.” (Toop 2001, 15)

2.1.4 Electroacoustic composition in popular culture

Radio stations played an essential role in the development of electronic and electroacoustic music practice in countries such as Germany, France and the United Kingdom. In France, Pierre Schaeffer and a group of composers working for the *Radiodiffusion-Télévision Française* (RTF) created the *Groupe de Recherche Musicales* (GRM) in 1951, which was an essential entity for the creation and development of *Musique Concrète*. In Germany, the *Nordwestdeutscher Rundfunk* (NWDR) was the creative base for artists such as Karlheinz Stockhausen, and in these facilities *Elektronische Musik* techniques were developed. In the UK, the BBC Radiophonic Workshop was the entity in charge of the sonic experiments and sound laboratories. These entities all had their own approaches to composition, and they were all pursuing different objectives within the experimental electronic music field. For instance, *Musique Concrète* composers such as Pierre Schaeffer and Michel Chion included manipulated sounds from ‘everyday life’ in their musical composition. In *Cinq Études de Bruits* (1948), Pierre Schaeffer utilises sounds recorded from train stations, toys, percussion instruments, pianos, saucepans, boats, speech, people singing, and harmonicas, amongst others, to create five compositions. In Germany, *Elektronische Musik* experimentation was based on only using sound material generated by synthesisers and machines. In the UK, differently from France and Germany, the BBC Radiophonic Workshop was developed by the Drama and Features Department instead of the music one, therefore, BBC Radiophonic Workshop composers had a more practical and functional approach to electronic music – but also a more narrative one. According to Brend (2012), “the distinction between serious and popular electronic music tends get very blurred with even the most casual examination” (Brend 2012, ix) and the main role of this entity was to create the sound for radio programmes and they did so by developing electronic music techniques. They took electronic music to people’s homes for the first time, breaking into British popular culture and differentiating this new stream of electronic music from Schaeffer and Stockhausen’s ‘serious’ academic one. Radio comedy shows such as *It’s That Man Again* (1939) and *The Goon Show* (1951) utilised recorded sound effects in order to suggest movement and actions, and in these particular cases, to exaggerate certain comical situations in the radio show. As a matter of fact, it was not until *Journey to Space: A Tale of the Future* (1953) that a radio show utilised electronic sound effect for the first time. As Louis Niebur points out: “the two primary electronic sounds effects for the program highlight the potential for confusion that such new noises could engender.” (Niebur 2010, 11) These two sounds consist of altered sine tones with added reverb. In the case of the second sound, “it has

no connection to any traditional sound” (Idib 2010, 11) suggesting the sounds are coming from space, therefore emphasising the radio show’s subject. Apart from that, *Opium: An Essay in Musique Concrète* (1957) was a radio show recorded by Douglas Cleverdon in collaboration with André Almuro, in which they aim to recreate the effects of a journey experienced while on opium based on the journal by Jean Cocteau. The sound for this 30 minutes’ show was previously composed by André Almuro for an RTF production using *Musique Concrète* techniques and it was subsequently re-worked by Cleverdon adding various layers of electronically treated voices. *Opium: An Essay in Musique Concrète* as well as *Private Dreams and Public Nightmares* (1957), in which the story is based on a written poem, were sonic experiments that explored the idea of translating written text into sound, creating a narrative. The BBC Radiophonic Workshop contributed in very large part to the shaping of British popular culture, and soundtracks such as the *Doctor Who* theme are a symbol of British popular culture identity, also influencing popular music progressive and rock bands such as The Beatles, Pink Floyd, Roxy Music or The Rolling Stones.

These techniques were not exclusive to radio shows. After the development of sound in cinema, films implemented various other techniques from *Musique Concrète* especially after the appearance of the magnetic tape, which allowed composers to use methods such as superimposing layers of sounds to create rhythmic patterns as well as sound effects such as Tape Delay. According to Michel Chion, music was added to silent films in order “to fill this lack [of sound] with auditory movement to go along with the visual movement. (Chion 2009, 3) As the technologies for making films and integrating music into these developed, the role of sound and music also evolved gaining a more important function in this area. The inclusion of *Musique Concrète* techniques linked contemporary music compositions with the utilisation of ‘sound design’ for films and visual media. For instance, Disney’s short animation *Skeleton Dance* (1929) shows how noise was incorporated into music. At some points, Carl W. Stalling and Edvard Grieg use ‘non-musical’ sounds such as wind and steps within the musical composition. The implementation of these techniques allowed composers to include ‘acousmatic’ sounds to visual media during the same decades. For instance, war films used to include the sound of bombs and machine gun shots in the background as well as other films included industrial machines or corporate office sounds. Equally important, other concepts taken from John Cage or other conceptual artists were implemented in the creation of music for film. Walter Ruttmann’s *Weekend* (1930) explores the idea of telling stories using sound. Ruttmann’s film was an artistic statement that influenced a large number of soundtracks and sound design in contemporary films. *Weekend* is an imageless film consisting only of a sound

narrative of the actions that are happening throughout. As Michel Chion points out “*Weekend* is nothing other than a radio program, or perhaps a work of concrete music. It becomes a film only with reference to a frame, even if an empty one.” (Chion 1994, 143) which is in fact, as aforementioned, the main philosophy of conceptual art, in which the context defines the character of the artwork.

Another sound effect created using *Musique Concrète* techniques was the ‘X-27 Effect’. This technique, named after the film *Dishonored*’s (1930) Agent X-27, played by Marlene Dietrich, is the one in which the sound qualities such as timbre and volume of an on-going event changes depending on where the audience’s perspective is. In this film for instance, there is a scene where Agent X-27 is playing Beethoven on the piano and the story is taking place between the living room where she is and the room next door. As a result, the sound of the piano changes depending on what room is being shown in the film. A famous case of this effect happening in popular music is Bjork’s *There’s More to Life Than This* (1993) in which she recorded the song at The Milk Bar in London during a night out. At 1’37” she suddenly enters the toilets where she sings the famous words “we can nick a boat and sneak off to this island” whilst the song keeps playing in the background.

Another feature of sound used as a storytelling tool in films, it is how this is utilised to create subliminal narratives. For instance, in certain films the main characters have their own theme, and every time they appear on screen these themes are played. According to Michel Chion, this effect can be used as symbolic punctuation, and it can be seen very clearly in animation films such as Tim Burton’s *The Nightmare Before Christmas* (1993), in which each character has their own *Leitmotif*², also subconsciously suggesting the personality of the protagonists by making that theme dark, cheerful or sinister, amongst others. Sound is also used as an instrument to set attitudes or atmospheres. For instance, in horror films, sound and music tend to be dark, eerie and mysterious, in contrast to Comedies where the sound and music tend to be cheerful, carefree and energising.

Sound, and specially silence, also work as punctuation between and throughout scenes as often in films there is a gap of sound between changing scenes, and not only the screen goes blank, but the sound and music also go completely silent, suggesting a change of mood allowing the viewer to rest after a very intense scene. Another very significant role of sound in storytelling, is emphasising or exaggerating reality, for instance, by making a door squeak sound louder, or a person breathing more intensely and intimately. This can be also seen clearly in martial arts

² Term used to represent a recurrent short musical theme, associated to ideas, situations or characters.

films where the sound of punches, kicks and even the movement of body parts are exaggerated so the fighting scenes are more dynamic making the part more exciting and engaging.

The last role of sound in films to consider in this section is to create ‘something that is not really there’ or imaginary characters by using certain sound patterns that suggest the presence of an element that the viewer cannot see. This is the effect created in *Jaws* (1975) by using two notes that represent the shark roaming around the boat. The music accelerates the tempo suggesting something dangerous is approaching creating tension and anxiety in the audience even though the shark cannot be seen most of the time. All these effects and compositional options were later explored due to the creation of more complex sound systems in theatres and homes. In the late 1970s - early 1980s the idea of sound design was reinforced by the inclusion of Dolby and the development of mixing techniques and technologies as different layers of sound could cohabit the same sonic space. According to Michel Chion, with the invention of Dolby in 1975, sound, “as a physical reality in its own right – the power, proximity, and physical present of sound – no longer refers to a specific musical/rhythm context. In other words by the end of the 1970s the dynamism of sound has elided music.” (Chion 2009, 125) and “the notion of *sound design* came to designate by analogy something close to the idea of visual design.” (Ibid 2009, 125)

For the purposes of my compositional method, it is worth questioning if music and sound are more important for creating a narrative than the actual images projected in the screen. For this reason, it is important to analyse both the role of *Diegetic* and *Non-Diegetic* sound and how, with a very few exceptions, sound and music in film can be divided in these two categories.

- *Diegetic* sound is all the audio that is generated by sources we see on the screen, i.e., doors, conversations, dialogue, explosions, etc.
- *Non-Diegetic* sound is all the sound produced by sources we do not see on screen, i.e., music, ambient sound such as city sounds when they are used just to set a geographical context even though the scene is taking place indoors.

However, sounds can interchange from one to the other category during the same scene. This can be experienced when a music band is performing during a certain scene and the characters move from the main venue to another and the music keeps playing after they left the building. Another relevant example of this is the effect created in telephonic conversations. In these scenes, there is commonly one speaker, and the viewer can hear this person’s voice and see the

person talking, but at the same time, the voice of the speaker on the other side of the line can be heard and the other person cannot be seen. However, there are many cases in which the person on the other side of the line can be seen but not at all times, therefore their voice oscillates from *Diegetic* to *Non-Diegetic* sound throughout the whole scene.

Having said that, these qualities and effects can be used for various compositional purposes such as creating narratives. By using environmental sound, the audience can be located in specific spaces that create narratives and sets up storylines. This happens when a character is changing from one space to another so by just changing the background sound the audience can notice the scene is changing from indoor to outdoor spaces.

2.2 Additional sound-based genres

2.2.1 Field Recordings

Field Recording is the term utilised to describe recordings that take place outside a recording studio, or as Paul Virostek states, “[Field Recording] is the craft of recording sound effects outside in the wider world.” (Virostek 2012, 27) There are various different compositional objectives within this practice, such as sound documentation, which uses recorded sound to keep a historical audio document of how cities and spaces used to sound like on the past. Field Recordist Ian Rawes, for instance, manages a website named London Sound Survey, in which he collects and shares stories and audio recordings of how different areas of London have different soundscapes. One of Rawes examples include ‘sound mapping’ London’s canals and lesser rivers (*Waterways* 2001 – 2011).

Other Field Recording artists see themselves more as composers, and they feel the placement, equipment, and journey choices are part of the compositional method. Choosing the right technique is crucial for achieving the right results, and at the same time, the creation of these is a result of the practical exploration of the relationship between sound and space. According to Paul Virostek (2012), there are four main Field Recording techniques:

1. *Controlled Field Recording* is the one that happens when the recording takes place in a protected environment resulting in having a lot more control of the performance and the quality of the sound. This is due to the fact that it usually occurs indoors, sometimes in special recording studios, preventing any undesired sound from being captured by the microphones. This technique also allows the artist to repeat takes and to try different types of microphones and different placements, so the final result is exactly the one that

was aimed for. This method is also known as ‘Foley’, a recording technique commonly used for film and TV sound design.

2. *Investigative Field Recording* is the one that comprises researching the sound source in advance so then it can be recorded using the right equipment and technique. This method aims to record a single type of sound and it requires various factors to be achieved for it to be a successful recording such as research and execution. An example of ‘Investigative’ Field Recording is *Meltwater* (2013) by Cheryl E. Leonard, in which she recorded the sound of the glaciers melting in Antarctica. For this purpose, she had to investigate the best types of microphones and techniques for capturing the sound in an extremely challenging weather condition. As she often works on projects involving these types of environments, she mentions that “condenser, underwater, and contact microphones enable [her] to explore micro-aural worlds hidden within a pinecone, iceberg, granite slab, or pool of water” (Cited in Bianchi and Manzo 2016, 50). This instance shows how she has based her choices on earlier technical and environmental research.
3. *Stealth Field Recording* is a technique that involves a certain amount of difficulty as it is risky and unconventional. The idea of this technique is to preserve the authenticity of the moment by ensuring that the sound source never recognises that a recording is taking place as sometimes “people change their behaviour when they notice it.” (Virostek 2012, 37). This method involves using very light and easy to carry equipment as the idea is that these usually happen in risky environments such as police stations, prisons, and other places where being granted recording permission is difficult. However, other places such as museums, train stations and restaurants are part of the spaces where ‘Stealth’ Field Recording can be performed as sometimes the authorities in charge of these facilities consider this activity as privacy invasion, even though people are free to walk and stay in these buildings for a determined period of time. An example of ‘Stealth’ Field Recording can be seen in the work of sound artist Christopher DeLaurenti, who records environments in which any sort of political activism is happening, a method he defines as ‘Activist Sound’. In DeLaurenti’s piece *N30 Live at the WTO Protest November 30, 1999* (1999) he recorded a protest that took place during the World Trade Organisation meeting in Seattle, WA in November 1999. The idea of these ‘Activist Sound’ recordings is, as DeLaurenti’s describes, not to capture a place, building or a documentary archive but to capture “‘Who is heard?’

‘Who has?’ ‘Who is here’ and ‘Why are we listening to this right now?’” (Cited in Bianchi and Manzo 2016, 169)

4. *Guerrilla Field Recording* is the technique in which the person recording needs to adapt to very risky and demanding environments, as they have to move from one location to another. It is similar to ‘Stealth’ Field Recoding with the difference that this technique is more dynamic and the “recordists using this technique must be flexible. They need to respond quickly to unpredictable situations and environments.” (Ibid, 38)

In Field recordings, the audio capturing process can be seen as a journey in which the recordist explores the space where these are taking place, implying that in many cases, the resulting recording is an improvised or planned performance. This is the approach Field Recording artist Andrea Polli has on walking as a compositional technique, stating that “you can imagine a landscape where there are a lot of things going on- such as different points on a map, for example- so when you are recording you are, in a sense, travelling through the map with these different locations and the composing then becomes the microphone’s movement through space” (Cited in Lane and Carlyle 2013, 19) As a result, the recordist can intentionally or unintentionally create dynamics and somehow control the result of the recording by walking around a space. Similarly, *Sonic City* (2002-2004) is a project developed by different designers and engineers in Gothenburg, Sweden between 2002 and 2004, in which a listener is supposed to walk around the city wearing a headphone system connected to a sensor that sends different signals to the system depending on the actions performed by the listener. These activities translate into the system playing different rhythmic patterns, sounds and textures, becoming more intense or quiet, based on the activity happening around the wearer. Karen O’ Rourke (2013), describes how different Field recording artists have explored the idea of geographical exploration through recording, documenting the soundscapes of cities, towns and rural areas. For instance, Sound Artist Janet Cardiff suggests mental images through her Field Recording compositions, using binaural microphones for her sound maps in cities such as New York and London amongst others. In similarity to an audio guide, the listeners use headphones or earphones connected to a portable audio device whilst walking through the same areas the recordings were made, following a set of instructions narrated by the recordist, not knowing where the instruction would lead them to in the end of the journey. In a more complex manner, Christina Kubisch (*Electrical Walks* 2004-2017) uses a special type of microphones with build-in coils that capture the electromagnetic fields of the environment around the recordists, including “light Systems, wireless communication systems, radar systems, anti-theft security

devices, surveillance cameras, cell phones, computers, streetcar cables, antennae, navigation systems, automated teller machines, wireless internet, neon advertising, public transportation networks, etc.”³, so the participants would compose their own soundtrack of the city based on the sound of the interference created by the electromagnetic fields. Regarding this project, she mentions:

“I like to move microphones and detectors and choreograph the sound, composing while recording, and I have developed some techniques which might look strange, but are very efficient. For example, you can create rhythmic patterns while recording two or more anti-theft systems near each other. You can stand between two of them and move your head to the right and left which gives interesting minimal changes, because the recording is not in stereo but double mono. I also have so-called ‘Sufi’ recordings where basically I just spin around myself in front of a magnetic sound source- this creates really amazing sounds, and people wonder how I have mixed it, but it’s just my body movements! I don’t like to treat sounds much in post-production if it is not really necessary.” (Cited in Lane and Carlyle 2013, 69)

2.2.2 The Soundscape

From the musical viewpoint, the term Soundscape is widely explored by various artists and academics such as Pauline Oliveros, Francisco López, Barry Truax and Hildegard Westerkamp incorporating sounds recorded from the environment into their compositions, defining the term ‘Soundscape Composition’. This term initially only represented the real characteristics of the environment in which the recording took place and, as Joel Chadabe mentions: “to qualify as a soundscape it had to embody the identity of the place that it represented” (Cited in Bianchi and Manzo 2016, vii) regardless of the processing or editing applied to it. Soundscape recordings have been a tool for artists such as Andrea Polli, China Blue, Cheryl Leonard and others to explore environmental issues such as global warming and noise pollution by including these subjects into their compositions. According to R. Murray Schafer, this was a universal language to “increase public awareness of the importance of the soundscape, particularly through individual listening sensitivity” (Truax 2008, 103). The *WSP* (1969-1977) (World

³ Taken from http://www.christinakubisch.de/en/works/electrical_walks last retrieved 14/11/2018 13:05 (‘Christina Kubisch’ n.d.)

Soundscape Project) created by Schafer was a project in which the soundscapes of five different villages around the world were recorded as a method for documenting and analysing their unique features. In 1973, *The Vancouver Soundscape* was released by the *WSP* as their first audio and booklet publication. This piece explored the soundscape of that city in Canada, proposing that this project was not only “the first systematic study of the soundscape of a city, but the 20-year span with the follow-up project gave a unique aural portrait of the rapid evolution of the city and its soundscape” (Ibid, 104).

However, many ‘Soundscape Composition’ artists have experimented more with their recordings by applying electroacoustic music processes to the raw captured sound. According to Truax (2008), the main aesthetic characteristic these need to preserve is that the sound’s source is still recognisable, and if the original audio is transformed into ‘new’ sounds, these compositions should be considered *Musique Concrète*. Some of the artists that work using this method are David Rothenberg, Matthew Burtner, Joseph Bertolozzi, and Aki Pasoulas. Some of them, such as Rothenberg and Burtner, come from a traditional or popular music background, including more tonal music approaches in terms of structure, harmony and melody to their compositions. For this reason, it is worth mentioning Truax’s (2008) concept regarding the four main characteristics ‘Soundscape Compositions’ should include:

1. Lister recognisability of the source material is maintained, even if it subsequently undergoes transformation.
2. The listener’s knowledge of the environmental and psychological context of the soundscape material is evoked and encouraged to complete the network of meanings ascribed to the music.
3. The composer’s knowledge of the environmental and psychological context of the soundscape material is allowed to influence the shape of the composition at every level, and ultimately the composition is inseparable from some or all of those aspects of reality.
4. The work enhances our understanding of the world and its influence carries over into everyday perceptual habits.

2.3 Sound Material

2.3.1 Sound material

Italian composer and head of the 'Futurists' movement Luigi Russolo wrote the *Art of Noise* (1913) manifesto, in which he claim that the development of machinery would change the way music is made from that moment onwards. Russolo suggested that "because musical sound was self-referential and thereby had no link with the world and its sounds, music had stood still and become self-occupied, while everything that happened in life all around it had energetically advanced into the modern world" (Kelly 2010, 30). Based on that, in later years, artists such as John Cage proposed that if "any sound can be used in music; there need not be even any intention to make music for there to be music, only the willingness to attune to aural phenomena", (Ibid, 30) adding that "sounds no longer required any authorial or intentional organization, nor anyone to organize them – just someone to listen" (Ibid, 30). The idea that 'any sound can be used in music' can be consider an extension of Joseph Beuys' claim and principal modern art 'commandment' that states that 'anything can be art'. This is the same philosophy that Ready-Made (Found Object) artists like Marcel Duchamp and Damien Hirst promote with their work. In terms of music, in his famous piece 4'33", John Cage "wanted to teach his audience to listen to the sounds of life – barking dogs, crying babies, thunder and lightning, the wind in the trees, motor vehicle backfires and putt-putt noises" (Danto 2014, 21). An important link between modern art and Cage's music can be seen in *Theater Piece No. 1* (1952), a collaboration with Robert Rauschenberg and Merce Cunningham in which:

"Rauschenberg painted an all white canvas, which Cage describes as a 'landing field' with lights and shadows –or houseflies- being part of it. In truth, the white painting inspired the concept of a silent piece of music, where the vernacular noises became part of it. The noises became part of the music" (Ibid, 21).

As a consequence, "the use of such items as those that Rauschenberg [and Cage] incorporated into [their] work brought reality into art [and music] in the early fifties." (Ibid, 21) These artists' work reinforces the idea that any sound can be music as long as this is located within a musical 'frame'.

2.3.2 Sound, noise, and the private and public soundscape

Brandon LaBelle (2011), studies how the contemporary soundscape plays a significant role in today's urban and suburban societies from an auditory, cultural, anthropological and political perspective. LaBelle (2011), explains how the sidewalk is a place for private and public interaction: "a zone for sharing all the small details of what it means to be, to move, and thus, to interact in and against a context" (LaBelle 2011, 124), adding that this happens in a large part because when "leaving the home and coming outside, the dynamics of sound and auditory experience open up toward a realm of greater public interaction conditioned by rhythms and the mobility of being on the go" (Ibid 2011, 87), meaning that this 'private against public' interaction experience happens not only on the physical but also on the auditory level, showing how sound and noise are transmuting agents in these aforementioned spaces.

In contrast, home is the best representation of privacy, in opposition to the sidewalk as a representation of 'publicness' or public spaces. According to LaBelle, home "lingers as the very place for cultivation of privacy, and the related interiority of individual and family caring. It operates as a space of physical safety, an image of comfort, to extend the security and stability found in notions of homeland" (LaBelle 2010, 48), adding that, "the production of the home is intimately linked to the bourgeois conception of privacy, interweaving middle-class affluence with a steady withdrawal from the full complexity and intermixing of everyday experiences" (Ibid, 50). As a result, it is reasonable to think of sound and noise as agents that trespass the physical and auditory limits of people's home privacy.

This phenomenon has led local authorities in various cities to act on this matter. For instance, a "Quiet Homes for London' report from 2004 (commissioned by the Greater London Authority), showed that noise pollution is one of the two principal complaints by Londoners for the last 20 years. Part of this study published in 2003 shows that "Neighbour noise annoyed 29% of the population sampled nationally, particularly in high density housing, in social and private rented housing, in deprived areas, and in more urban areas."⁴ In suburban areas, noise pollution has also been a subject local authority have been concerned about. For instance, in Huber Heights (Ohio), the city council has passed a law stating that any car stereo system cannot be audible from within 25 feet or more setting up physical limits to protect people's

⁴ Janet Higgitt, Alan Whitfield, and Rick Groves, "Quiet Homes for London' report. (2004, 11) Taken from (LaBelle 2010, 53)

sonic privacy. Additionally, in other American suburban areas local councils have passed similar laws defending people's sonic space. The example is the Californian suburb of Valencia, near Los Angeles, in which noise levels cannot exceed 65 decibels during the day and 55 decibels during the night, imposing fines for over \$200 to offenders⁵.

However, due to technological developments and the creation of portable devices, the conceptual idea of what private and public auditory space is has been questioned as these developments have allowed listeners to transfer a private action such as personal music listening to a public realm. Before the invention of the Sony *Walkman* in 1979, the most popular way of listening to self-selected recorded music was through static speakers or, if done on headphones, these had to be connected to an immobile stereo system⁶. Either way, this action had to be performed in 'static' environments, being these dance halls, living rooms, clubs, bars, etc., and except from the cases of listeners using headphones, listening to recorded music was a shared (and shareable) activity. Apart from listening to recorded music on headphones, the most private and mobile way for listening to music was perhaps car stereo systems, but those systems required the listeners to share the experience with other passengers (as did the transistor radio). In terms of home music listening, this activity had to be shared with other family members if done by playing it on speakers, and even though the home is a representation of privacy, there still are different levels of sonic privacy in this environment, meaning that family members set physical and auditory boundaries between them within the limits of their household. In other words, if siblings are listening to loud music in different rooms of a house at the same time, these will trespass each other's private auditory limits. For this reason, and as mentioned above, the invention and mass distribution of the Sony *Walkman* changed the way people listened to recorded music as from that moment onwards people could listen to music within the limits of a public or shared environment without interfering unduly with other people's auditory space. Currently, personal stereo use is often seen as an extension of the 'privateness' of 'home'. As Michael Bull (2004) states, "personal stereo users like to construct familiar soundscapes to accompany them through their urban journey. They often describe this in terms of never leaving 'home'" (Bull 2000, 24), adding: "the use of a personal stereo represents something that is both individual and intimate helping them to maintain a sense of identity within an often impersonal environment" (Ibid, 24).

⁵ Taken from City of Santa Clarita Noise Element Amendment (May 23rd, 2000) (LaBelle 2010, 58)

⁶ The transistor radio allowed mobile listening but the playlist was selected by the producers and DJs.

The development of new technologies that allow listeners to have a more private experience whilst listening to music, and the release of products such as wireless and noise cancelling headphones and earphones seems to be the trend, suggesting that the idea of manufacturing noise-cancelling headphones not only aims to isolate the listener from street noise but also to create a thicker wall between the listener and the outside world, as well as showing an urgency for dividing the private and public world as this feature seems to be the most advertised element in terms of headphone brands competing against each other⁷.

Additionally, the fact that headphone manufacturers are releasing wireless devices also shows how listeners are aiming to ‘live’ the listening experience without any attachments, as if the music was just following them, pretty much like having a soundtrack of their daily life. The advert for the Sony WF1000XM3 headphones contains a song in which the singer repeatedly sings “I just wanna be free” suggesting the relationship between freedom, privacy and movement⁸. In terms of the visual message sent by headphone listeners, it could be suggested that the size of the headphones has a direct relationship with level of boundary creation and projection by the listener, meaning that the bigger the headphones, the stronger the message to the people surrounding the listener saying they do not want anybody to interfere in their private space.

The privatisation of the listening experience is not exclusive for transitional public spaces (street, public transport, airports, etc.) but also for other types of public places such as offices, restaurants, museums, shopping centres, hospitals, etc. Michael Bull (2007) mentions that:

“iPod use confounds the traditional distinction between work and leisure time as users construct a seamless auditory experience from home to work. Users might consecutively aestheticise the street through which they move, manage their various and changing moods through privatised listening, avoid thinking about the tasks of the day ahead of them, or use the iPod to enable them to move though the street more satisfactorily, their feet in step to their music.” (Bull 2007, 110)

This leads to a discussion regarding how office workers create a ‘private’ or ‘homely’ environment by listening to music throughout the working day on their personal devices.

⁷ For instance Bose: <https://www.youtube.com/watch?v=HLdEdFNy8Q8> and Sony <https://www.youtube.com/watch?v=lZ5FUkKBDqs>

⁸ <https://www.youtube.com/watch?v=lZ5FUkKBDqs>

2.3.3 Negative Sound

The difference between noise and sound can be very clearly defined from a scientific perspective. Cohen and Weinstein (1981) outline the technical differences between the two of them. Regarding sound, Cohen and Weinstein explain that sound is the change of air pressure that can be detected by the ear, and their characteristics are determined by frequency, intensity and pressure. On the other hand, “Noise is a psychological concept and is defined as sound that is unwanted by the listener because it is unpleasant, bothersome, interferes with important activities or is believed to be psychologically harmful” (Kryter cited in Cohen 198, 38). This psychological definition is a direct extension of the technical distinction between signal and noise. However, the sociological concept of noise is subjective and it depends entirely on the listener’s interpretation due to the fact that for certain people loud music can be pleasant and for others somebody whispering in a quiet place can be intrusive and irritating. For instance, Brandon LaBelle (2011) describes a situation in which he found himself that explains this point in depth. His story tells how he was once on board of the silent carriage on the Heathrow Express train bound to the airport. During this journey he receives a call from his father and the conversation goes on for a couple of minutes until another person on the same carriage points at the silent carriage sign with their finger, suggesting that he should finish his conversation immediately. As a result, it could be said that this situation represents a case in which somebody is trespassing the auditory privacy of others, even though the conversation was meaningful for the person on the phone, therefore highlighting the fact that noise is a socially constructed concept.

R. Murray Schafer (1994), developed the concept Lo-Fi soundscape based on the idea that with the industrial revolution the introduction of sound congestion produced “unhappy consequences for many of the natural and human sounds which they tended to obscure” (Schafer 1994, 71) and that the ‘Lo-Fi’ soundscape occurs when “the signal-to-noise ratio is one-to-one and it is no longer possible to know what, if anything, is to be listened to” (Ibid, 71). This ‘Lo-Fi’ soundscape can also be called ‘noise pollution’, ‘undesired sound’ or ‘negative sound’. Jeff Tallman (2016) uses ‘negative sound’ to describe any sound that is produced in the sonic context in the same way the term is used in photography, stating that ‘Negative Sound’ can also be called ‘Background Sound’ similar to ‘Room Tone’ or ‘Exterior Ambience’ in films, adding that ‘Negative Sound’ can be seen “as the ambient sound of a particular place, [which] remains vague, unobserved or obscured by louder foreground sounds” (Cited in Bianchi and Manzo 2016, 59).

However, the term ‘Negative Sound’ is given a different meaning throughout this research, as it is specifically used to address any sound that has any negative impact on people's well-being. For instance, a subject that has been largely studied is the negative impact of noise in hospital patients, and how noise affects the quality of their recovery. Based on his research in two different hospitals in the United Kingdom (Edinburgh Royal Infirmary in Scotland, and St Thomas’ Hospital in London) Tom Rice (2015) states that “some medical professionals are rightly concerned that excessive (and largely preventable) noise on wards might negatively affect patient health and recovery times” (Rice cited in Born 2015, 169). He continues:

“in public hospitals in particular patients are often obliged to spend each phase of their daily existence (sleeping, eating, etc.) in the company of relative strangers (both patients and staff) sharing a managed communal space. In both institutions where [they] spent time, patients remarked that upon being admitted to the hospital, ‘the first thing you lose is privacy, the second is your dignity and the third is your sanity’” (Ibid, 170).

In large measure, this loss of privacy is a result of wards being too overpopulated and beds being too close to each other, so it is difficult for patients to avoid hearing other patients coughing, moaning, etc., as well as hearing the constant beep of the hospital equipment.

Another example, and probably the clearest one about how the term ‘Negative Sound’ is used in this project is the sound known as ‘Windsor Hum’, a sound that affects people’s health from unconscious levels. This sound has been detected in the Canadian town of Windsor, located on the border between the United States and Canada. According to the inhabitants of Windsor and its surroundings, they constantly hear a low frequency noise (about 35Hz), sometimes even making houses and other structures vibrate due to its strength affecting people on a daily basis claiming that they suffer from irritability, sleeplessness, depression and headaches⁹. Researchers believe the hum comes from Zug Island in the United States, in which a mysterious steel factory is located. In this case, sound (or noise) is an entity that trespasses people’s private limits in many different levels, having a significant (and subconscious) impact in their quality of life. Similarly, communities settled around airport runways have been affected by noise pollution in a very direct way. Michael Flitner (2014) discusses the political implications of

⁹ Taken from <https://www.nytimes.com/2018/02/19/world/canada/windsor-hum.html> last retrieved 22/10/2018 23:28

Aircraft noise. Flitner describes how, although the respective environmental authorities have set defined flight paths, these vary depending on the runway position and meteorological conditions amongst other, stating that

the neat images of fixed trajectories displayed by airports and air traffic authorities around the world suggest a well-defined situation, with corresponding acoustic effects... this suggestion is misleading in several respects. Not only does the meteorological situation modulate the sound substantially, more importantly, most airplanes do not fly exactly along the foreseen trajectory but deviate from it dozens or hundreds of meters to the left or right, and also in terms of height.” (Cited in Gandy 2014, 189)¹⁰

As a result, the soundscape of people living around these unspecified routes is endangered by airplane noise, also invading their home privacy.

2.4 Sound-based music artists and works.

There are several sound artists that have implemented the aforementioned techniques and concepts in more academic and artistic practices, also combining them with various and diverse subjects they want to approach by including them into their artwork. For instance, the idea of using ‘negative sound’ as sound material has been explored by artists such as Vito Acconci or Romano. In *Talking House* (1996), Acconci explores the idea of privacy in suburban life placing various sets of microphones inside a house reproducing the sound from the rooms through a pair of loudspeakers placed in the front garden, allowing passers-by to hear the conversations and actions that are taking place inside the house. This house is located in the suburbs of Santa Barbara, California, whereby transgressing the sound boundaries that suburban communities try to impose to their members. Acconci’s idea is to make a statement regarding how the private life of suburban communities can be broken by exposing the sounds of what is happening inside a house. In the same mode, Brazilian artist Romano explores the idea of noise pollution in his performance *Falante, Escultura Sonora Itinerante* (2007) he walks around Rio de Janeiro carrying a sound-system in his backpack whilst he plays a pre-recorded announcement saying ‘Não Preste Atenção’ (Do not pay attention) continuously. By playing this recording loudly, he calls the attention of the passers-by and the fact that he does

¹⁰ Machines Over the Garden: Flight Paths and the Suburban Pastoral on *The Acoustic City* edited by Gandy, M and Nilsen, BJ 2014, pp.189

it by saying ‘Do not pay attention’, “plays havoc on the scene of the sidewalk, and the mediation between private and public” (LaBelle 2010, 104) Romano’s performance also explores the relationship between the listener and the performer by using a specific medium, that in this case is a self-made backpack with a loudspeaker.

Apart from Romano, there has been many electroacoustic compositions and sound installations in which the relationship between the speakers and the listener/performer has been explored, but probably the most important ones to look at are *Forty-Part Motet* (2001) by Janet Cardiff, *Pendulum Music* (1968) by Steve Reich and *Bird and Person Dying* (1975) by Alvin Lucier. These are all compositions in which the listening experience is a fundamental part of the performance, and the movement of the amplification system creates dynamic changes. In *Forty-Part Motet* Janet Cardiff recorded the choral masterpiece *Spem in Alium Nunquam Habui* (1570) by Thomas Tallis, sang by forty singers reproducing every single vocal part through a different speaker, locating each of them in a same room. As a result, the viewer/listener is allowed to create their own combination of harmonies and textures depending on the part of the room they are standing. In *Pendulum Music*, Steve Reich explores the relationship between speakers and microphones by locating a row of four speakers in a room facing upwards. Four microphones are also hanging above the speakers. “At the beginning of the performance, each performer takes a microphone in [their] hand, pulls it to the side and releases it to swing directly over the loudspeaker. Next, the volume of the amplifier is turned up, until a soft feedback sound can be heard. The microphones swing forwards and backwards” (Eck 2018, 89) resulting in the appearance and disappearance of feedback.¹¹ Finally, in *Bird and Person Dying* by Alvin Lucier, a performer is located in front of two speakers in which the sound of an electronic bird is being reproduced. The performer is wearing binaural microphones and the recorded sound is also amplified on the speakers, generating various types of feedback depending on the location of the performer in the space.¹² Cathy Van Eck mentions that “although microphones and loudspeakers can acquire characteristics similar to those of musical instruments when there is interaction between performer, and microphone and loudspeaker, they never manage to behave entirely like conventional instruments. (Ibid, 145) As a result, Van Eck classifies the creative approach of speakers and microphones being used in compositions in four categories:

¹¹ <https://youtu.be/fU6qDeJPT-w> last retrieved 28/12/18 16:00

¹² <https://youtu.be/nPmgrXqan0w> last retrieved 28/12/18 16:16

1. Reproducing
2. Supporting
3. Generating
4. Interacting

For instance, the approach in Reich's piece can be classified in both *generating* and *interacting* categories, as the piece consist in the microphones interacting with the speakers in order to generate sound. In *Forty-Part Motet* Cardiff's approach can be classified in both *Interacting* and *Reproducing* as the listener is interacting with the recorded music that is being reproduced through the forty speakers in order to create a personal interactive journey. Finally, in Lucier's piece, the approach is more complex, and it would be worth saying that the creative approach can be classified in all four categories. In *Bird and Person Dying* the performer is interacting with a recorded sound that is being reproduced through the speakers to generate sound also supporting and amplifying the sound that is being recorded through the binaural microphones. Similarly, another artist that has explored utilising speakers to create music compositions is John Cage. In *Imaginary Landscape N°4* (1951), 24 performers manipulate 12 radios in order to create a cacophony of changing volume and frequency setting the duration of every sound in the composition. In this case, the performers are looking for active signals, also using the noise created by the change of station, and thereby creating a jointly improvised sound world during the composition process.

2.5 Analytical frameworks for electroacoustic music compositions

An essential element to consider for the analysis of electroacoustic music is the listening experience. This action plays an important role in the definition of the genre due to the fact that the interconnection between the listener and the sound material and how listeners interpret its function within the compositions is an essential feature of this music style.

In fact, Pierre Schaeffer, and later Michel Chion, developed various terms to describe the different ways of listening that were incorporated into the electroacoustic music analysis.

- 'Causal Listening' is a term developed by Michel Chion that explains what happens when the listener is receiving or looking for information from the sound focusing on its cause or source. For instance, we know how far a car is and how fast it is approaching depending on how loud it sounds and how its sound intensity varies over time, meaning

that we make an interpretation or reading of *what* is happening in a situation depending on the characteristic of a sound.

- ‘Reduced Listening’ is a concept developed by Pierre Schaeffer that describes the action in which the listener is listening specifically to the sound’s sonic characteristics regardless of its context or meaning. For instance, the sound of a bell can be defined based on its sonic properties such as pitch, colour, length, etc. instead of just being the sound of a bell.
- ‘Semantic Listening’ takes place when the listener is looking for meaning in sound regardless of its aesthetic characteristics. For instance, when we listen to languages, as we normally tend to listen to them looking for their communicative aspects instead of their aesthetic properties.
- ‘Ordinary Listening’, is a term developed by Pierre Schaeffer, also recognised as ‘Everyday listening’, which can also be divided into four different sub-categories: Listening (Écouter), Hearing (Entendre), Perceiving (Oùir) and Comprehending (Comprendre). This subdivision process creates quite extensive overlap with the previous categories and can also be considered as a separate categorisation process. Listening (Écouter), aims to identify the source, the event and the cause (Chion n.d., 20). Hearing (Entendre), happens when the listener chooses what to perceive based on their interest “in order to make a ‘description’ of it” (ibid, 20). Perceiving (Oùir), this is “the most elementary level of perception” (ibid, 20) or in other words, passive hearing. Finally, comprehending (Comprendre), aims to find the meaning, values and codes, similarly to ‘Semantic Listening’. (Ibid, 20) These four ways of listening were divided by Shaeffer into two sets of different categories: abstract/concrete, and objective/subjective. (Image 1)

	Abstract	Concrete
Objective	4. <i>Comprendre</i>	1. <i>Écouter</i>
Subjective	3. <i>Entendre</i>	2. <i>Oùir</i>

Image 1.

Additionally, Pierre Schaeffer talks about ‘Acousmatic Listening’ as an action in which the listener is not seeing to the sound source. In other words, Acousmatic Listening happens when the sound source is not visible.

Apart from that, Emmerson and Landy (2016) propose a standardised analysis framework based on various other features *electroacoustic music* contains, these being:

- Representation
- Materials
- Listening behaviour (as aforementioned)
- Behaviour of materials
- Ordering
- Space
- Performative elements
- Intention/reception, social, emotional and meaning-related aspects
- Elements specific to a given genre or piece.

Representation refers to the analysis of any form of visual representation of the musical pieces. For instance, these could be scores, sonograms, sonic visualisers, spectrographs, etc.

Materials indicates what types of materials were utilised in the compositions. In most cases this is also referred to as ‘sound material’.

Listening Behaviour is the analysis of the relationship between the listener and the compositions.

Behaviour of Materials studies the form in which the sound material is introduced and transformed throughout the musical piece. In many cases, the same sound material can be re-introduced to the piece in different forms after being transformed using sound manipulation techniques.

Ordering focuses on the analysis of the organisation of the sound material. This could be in both the horizontal and vertical axes using elements such as structure, space, dynamics, pitch, density, length, and layering or counterpoint.

Space, or *spaciomorphology* as Smalley (1997) names it, explores the spatial changes and properties of a given composition. For instance, how the elements of a composition create depth and width based on features such as intensity and panoramic manipulation.

Performative Elements focuses on the elements created by electroacoustic music composer during performances and improvised executions where there are no scores or fixed plans.

Intention/reception, social, emotional and meaning-related aspects examines the extra-musical and conceptual aspects of a given composition. Also, explores the intention and emotional meaning the composer aims to communicate to the listeners throughout a musical piece. Finally, this point examines the format in which the musical piece is presented in terms of geographical and social settings.

Elements specific to a given genre or piece is the feature that studies the particular questions of a compositions that are unique to that piece and are not part of the general electroacoustic language. These particular questions could be any “audio-visual coordination in installations and visual music or specific question related to interactivity, such as comprehensibility to the audience or the participant.” (Emmerson and Landy 2016, 17)

3. METHODOLOGY

3.1 Objectives and analytical framework

The main objective of this project is to develop compositional methods mixing techniques from both electroacoustic and popular music. The result consisted of 3 hours of music and sound-based compositions (Appendix A) that utilised found sound as sound material. Apart from that, the narrative of the compositions is based on stories from newspapers.

This project is practice-based research and experimentation has been the main methodology for reaching the research objectives. These experiments were documented in videos (Appendix B) where the production, editing and mixing stages can be seen.

In order to assess the compositions as a mixture of both electroacoustic and popular music, the following analytical framework is employed:

- Popular music analytical tools that consider repetition of melodic, rhythmic and harmonic patterns. The harmonic patterns, composition structure and technical aspects are studied by analysing:
 - Blues based schemas (12 bar blues, 16 bar blues, double plagal, extended plagal)
 - Four chords schemas. (Doo-wop, hopscotch, singer/songwriter)
 - Classical schemas (Lament, circle of fifths)
 - Puff schemas (Based on I-iii-IV chords progressions)
 - Modal schemas (Chord progressions based on modes such as Aeolian, Eolian, etc)
 - ABABCB structures (Verse-Chorus(x2)- Bridge- Chorus)
 - Track length (Popular music top 10 average 3:07)
 - Space distribution in popular music mixing (Gibson's visual representation of sound placement)
 - Compositional tools and instruments (Consoles, speakers, microphones)
- Electroacoustic music analytical tools include the following categories presented by Smalley, Demers, Landy, Emmerson, Van Eck, Gaver, Moore, Nyre, Virostek, Chion and Schaeffer:
 - Representation (Landy, Emmerson)

- Session structure (Landy, Emmerson)
- Material (Landy, Emmerson)
 - Objects that produce a vibrating sound (Gaver)
 - Aerodynamic sounds (Gaver)
 - Liquid sounds (Gaver)
 - Natural sound (Nyre)
 - Mediated sound (Nyre)
- Listening behaviour (Landy, Emmerson)
 - Semantic listening (Chion, Schaeffer)
 - Causal listening (Chion, Schaeffer)
 - Ordinary listening (Chion, Schaeffer)
- Behaviour of material (Landy, Emmerson)
 - Reproduction (DeMers)
 - Construction (DeMers)
 - Destruction (DeMers)
- Ordering (Landy, Emmerson)
- Space (Landy, Emmerson)
- Performative elements (Landy, Emmerson)
 - Composition tools such as microphones and speakers (Van Eck)
 - Reproducing (Van Eck)
 - Supporting (Van Eck)
 - Generating (Van Eck)
 - Interacting (Van Eck)
- Intention and reception (Landy, Emmerson)
 - Time (Nyre)
 - Space (Nyre)
 - Coded message (Nyre)
 - Personal expressiveness (Nyre)
 - Narrative (Landy, Emmerson)
- Elements specific to a given genre (Landy, Emmerson)
 - Field recording techniques (Virostek)
 - Controlled (Virostek)
 - Investigative (Virostek)

- Stealth (Virostek)
- Guerrilla (Virostek)

3.2 Technical information

A large part of the sound material for this project was recorded using the in-built stereo microphones of a Zoom H4n audio recorder as it a high-quality recorder, very light, easy to care and small device that can be fitted inside a small bag or even a coat pocket. However, the main microphones were the Roland CS-10EM binaural microphones that also work as earphones so the recordist can monitor and control the recording. These microphones/earphones work when connected to a portable recorder such as the Zoom H4n so in this matter, they work perfectly with the previously utilised equipment.

Choosing to use binaural microphones was based on the fact that by implementing this recording technique the results would be more accurate to the main objectives. Creating a more realistic representation of the environment that is being recorded and using a device that could capture any type of immersive sound was the main intention, and the one that could help achieving the aesthetic and conceptual objectives. However, due to recording in specific situations, the technical demands were different, therefore a very small amount of the audio material was recorded using a mobile phone.

The software chosen to create the musical pieces was mainly Logic Pro X, and most of the mixing and mastering was also done using the same software using various software plug-ins and effects. However, some of the recordings, and most of the editing and mastering was done using Pro Tools 12. In addition, a recording and mixing console, Zoom L12, was utilised as one of the main instruments for the creation of the musical compositions.

3.3 Composition process

3.3.1 Collection of sound material

Various recording techniques were employed throughout the development of this practical research. Recording whilst walking in order to create dynamic and textural changes throughout the recordings was one of the main techniques employed during this process. *Get on Top of Your Game* (2017) (Appendix A14), is a composition based on a newspaper article by the same

name, which is about how the mobile phone video game industry is increasing enormously and reaching an immense value in the technology market. For this study, the recordings were taken from the *Namco Funscape Amusement Centre* in Central London. The method for this recording was to walk around the amusement centre looking for sounds that could be interesting for creating a storyline as well as looking for sounds that could be later processed and manipulated to create the final composition. In fact, a whole Soundscape Composition named *Arcade Funscape* (2017) (Appendix A15) was made out of this recording, using the whole journey without the need to be edited or manipulated. The walking methodology employed in this Soundscape Composition consisted of moving back and forth from noisy machines getting closer and further from these sounds so the sense of tension and release was created by the recordist journey through the space. Similarly, in *For Sale: Water Cannon, Never Used by Met, £43,000 ono (inc CD Player)* (Appendix A1) the recording was performed in order to create dynamics by going in and out of the demonstration crowd, resulting in the Soundscape Composition by the name *Anti-Trump March London* (2017) (Appendix A16) in which the changes in intensity are determined by the position of the recordist in the crowd. This composition's recording journey was defined by the movement of the crowd at the demonstration crowd in contrast to *Arcade Funscape* (Appendix A15) in which the recordist was moving freely through the space, just 'chasing' the sound actively. Another example of this practice is the one employed in the recording of the sound material for *Firehouse Star-Spotters Upset Neighbours* (2017) (Appendix A3) and *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* (2018) (Appendix A2) in which the recordings were taken during a journey walking in East London. In this case, and similarly to the previous example, the sound coming out of the bars and clubs was actively chased also setting up the narrative of the whole Field Recording.

On the other hand, the opposite technique was employed various times in order to record the sound material for the rest of the compositions. For instance, for *Breaking the Ice With the New Neighbours* (2016) (Appendix A6) the recording process was done by just sitting in rooms and waiting for any sounds to happen in the various surrounding rooms and flats where the recordings were taken from. Similarly, in *Make Room for Modern Art* (2016) (Appendix A11), piece based on a newspaper article by the same name, the sound was captured at the Tchoban Foundation, Museum for Architectural Drawings in Berlin, the Tate Gallery and the Barbican Curve in London whilst sitting still on a bench waiting for the visitors to walk in and out of the rooms creating different rhythm patterns and sound textures with the sound of their voices, shoes, and other various actions such as coughs and sneezes, using the big reverberant space

as an amplifier for these sounds. Apart from that, in *Don't Be Afraid of the Dark* (2015) (Appendix A17), the same technique is used in various churches and mosques around London and Istanbul respectively, also taking advantage of the acoustic properties of these spaces. In this case the recording has been done whilst sitting still on benches or on the floor and the dynamics of the recording have been set by the passers-by walking in and out of these venues.

3.3.2 Collection of sound material as a compositional technique

In addition to the previously mentioned methods, various other recording techniques were employed for the creation and production of this project's compositions. In some instances, recording was used as a compositional method in the studio, in contrast to the previously mentioned techniques, in which the recordist position in the open field is the method to achieve the desired objectives. It is worth highlighting that when recording as a compositional method in the studio is mentioned, it means that microphones are used in creative ways to create dynamics and textures as previously done with both walking and sitting recording techniques. In *Global Feast* (2018), a few volunteers were recorded whilst having telephonic conversations in their native languages so their conversations could be superimposed on each other in order to create a big mix of sounds. As a result, the listener would focus on the aesthetic properties of their sound instead of the semantic ones. Each conversation was about one minute long and by asking the speakers to move around the microphones during the recording, the panoramic movement was achieved instead of using any other post-production processing. In some cases, the speakers were asked to locate themselves very close to the microphones and move around these in order create the impression that the listener was also moving. Additionally, the speakers were asked to record the same conversation on the left and the right side of the microphones with the purpose of recreating a type of stereo image that could be used in the final composition as a special effect. In most of the cases the speakers were recorded using the binaural microphones, but in a few cases, the speakers were recorded using the Zoom recorder only due to logistic reasons such as accessibility to the equipment in that specific moment. It is worth clarifying that even though these recordings were not necessarily recorded at a recording studio, the environments in which the recordings took place were mostly controlled spaces, meaning that the speaker and the recordists could choose different settings in order to achieve a desired sound, sometimes making two takes of the person talking on the phone. Two more examples of this are *London's on a Blender* (2014) and *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* (2018), compositions in which the 360 degrees quality of the

binaural microphones was used in order to create the feeling that the sound is spinning around the listener. Initially, panning the sound from left to right in the stereo field was the method utilised to achieve this effect, but the results were not the desired ones as the movement of the sound in the panoramic space was not very realistic in terms of the music spinning. Instead, it created the feeling that the sound was just moving from one side to the other. In detail, the main idea in *London's on a Blender* (2014) was to make the listeners feel they are in a blender; therefore, that was the reason the principal compositional objective was to create the feeling that the music was spinning around them. In order to create that effect, after a sound manipulation process added to the original recordings, the composition was played through a pair of speakers whilst the recordist was spinning around on an office swivel chair so the binaural microphones would capture this spinning movement (Video 9). Similarly, in *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* (2018) the process was almost identical, however, in this composition, the recordist is surrounded by four sound sources (a laptop, computer speaker, studio monitors and a portable speaker) (Image 5). These speakers were placed in four different points each of them on an angle of ninety degrees from the others. Each speaker was reproducing a different section of the composition simultaneously and recorded whilst spinning in the centre of the setup using binaural microphones and a portable recorder so the microphones would capture the different sections of the composition creating a type of sonic collage between the four of them (Video 4). During the recording, the rotation speed varied in order to create dynamic changes as well as creating punctuation throughout the composition as shown in (Video 4, 3:32). In this section, the microphones were moved forward so the recording was taken from a closer position in relation to the speakers also aiming to create dynamic changes.

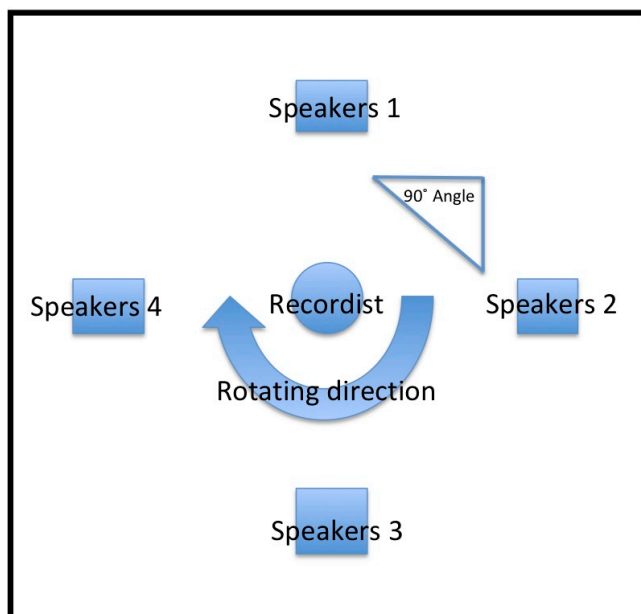


Image 5

Lastly, the use of speakers as instruments is explored in *Death Ray Device to Stop Attack of the Drones* (2016), in which the recordings were taken from radio transmissions in an airplane cockpit. In this case, the airplane captain was asked to look for radio frequencies where any events were taking place during the recording. In fact, modern airplanes are no longer using radio communication systems as all the interaction is being done by a text message system similar to the one in mobile phones in order to avoid any inconveniences in terms of poor pronunciation or bad hearing. However, the option of using this system is still possible as some old or small airplanes continue to use this communication method. For this reason, the captain looked for any active signals, in some way also performing during the recording similarly to the performers in John Cage's composition *Imaginary Landscape No4* (1951). As with *Global Feast* (2018), this piece was not recorded in a studio, However, the environment where the recordings took place was a controlled space.

3.3.3 Sound manipulation techniques

Different digital and 'post-production' processes were employed for creating this project's musical pieces with the main objective of exploring a wide range of compositional possibilities regardless of the complexity of the process.

One of the compositional methods explored was Denis Smalley's cyclic and centric motion. As mentioned before, *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* (2018) aims to make the listeners feel like the sound is spinning around them following the idea that the listener is in the centre of the roundabout and the sound that moves around them is the vehicles rotating around it. As seen in Video 1, the entire raw recordings were divided in eight different sections and placed in eight different tracks. After that, these were paired and treated using different audio effects such as phasing, filtering, panning and granular delay, also automating these effects in order to create dynamics throughout the composition (Video 2). The first effect that was added (Video 1, 3:30) is low pass filtering using manual automation in order to change the bandwidth (Q), and the cut off frequency. The parameters' movement almost resembles a circular shape, and it was done on purpose in order to create the sensation that the music was moving in circles, also changing the speed in certain points to create more dynamic changes throughout the recording. Also, the fact that the automation is done 'manually' instead of written with lines (Video 1, 11:43), creates the feeling that there is a performing action taking place throughout the piece. As shown in (Video 1, 12:07), this process is repeated once again in the second track of the session, but in this case, a hi-pass filter is also used repeating the same method for changing the same parameters. The Field Recordings in the other six tracks are also processed as shown in (Video 2). The first two channels are processed using an audio effect pre-set from the PhaseMistress plug-in by Soundtoys with a slight variation in the modulation amount. Also, in the same two channels a FilterFreak plug-in by Soundtoys is added, trying different pre-set and changing the mix between affected and unaffected signal parameter. Tracks five and six are affected using a Crystallizer Granular Echo Synthesizer plug-ins by Soundtoys; also using pre-existing effects (Video 2, 3:58) adding a Low-Pass filter to control some distorted frequencies. Finally, the recording placed in tracks seven and eight are processed using an automatic rhythm panner (PanMan by Soundtoys) affecting the panoramic position of the sound in the stereo field using pre-established rhythm patterns (Video 2, 5:36). This creative processing choice was based on the objective of using contrasting effects that would give different characteristics to each pair of tracks. Apart from that, the first two tracks in *Hipsters' Magic Roundabout Faces Licence Fight Over Noise's* session were processed using filtering (equalisation) in order to create a sense of vertical movement by altering the frequency content of these sounds. Tracks three and four were processed using Phasing to create movement in the horizontal axis. Tracks five and six had granular echo to give depth to the raw recordings. Lastly, tracks seven and eight were processed so the sound could play random rhythmic patterns in the horizontal axis. However, the most

important technique explored in this track was the way the final composition was created. After exporting the four pairs of tracks (Video 3) each pair was re-amped through various sets of speakers with different sound characteristics and quality so the sound played would have more variety. (Video 4)

In *London's on a Blender* (2014), in which a similar method using speakers was utilised as mentioned before, other sound manipulation techniques were equally important for achieving the main aesthetical objectives. In this piece, the sound that is being reproduced through the two speakers had been heavily manipulated before being played and recorded using binaural microphones. The first compositional approach was to create the sensation that the music was spinning around the listeners by using phasing, panning, filtering and changes of volume. Also, the structural and rhythmical approach to this track was a more traditional one, aiming to create a piece that contained a Popular Music ABC structure, defined rhythmic patterns and harmonic content. Under those circumstances, the first stage of the process was to create percussive elements using the recordings taken from restaurants around London selecting sounds that had a fast attack such as steps (Video 5). After choosing the elements in the field recordings that contained fast attack sounds, these were played using a MIDI keyboard controller releasing the note quickly so the sound would be short and percussive. This process was repeated several times using different octaves so the sound could be used for different purposes such as 'Bass Drum', 'Snare', or even the high ones as 'high hats', simulating an arrangement that can be found in several popular music styles (Video 6). After creating the percussive samples, the harmonic textures were created, firstly chopping a very small fragment of the restaurants recording and creating loops out of them (Video 7). The fragments of sound were affected by using a phaser as this effect created a feeling that the sounds were moving in the stereo field. The sound's pitch was also changed so they would have a more harmonic relationship between all of them (Video 7, 1:05). This process was done on repeated occasions using different samples and different lengths so the sounds and textures could be layered creating drones and new harmonic textures. The next step was to load the previously made percussive sounds into the sampler and construct a four-on-the-floor beat, which is a rhythmic pattern commonly used in different styles of Popular Music (Video 7, 2:37). After all the harmonic and rhythmic layers were organised in an ABC structure, the automations were written. As mentioned above, the compositional aim was to make the listeners feel they are in a blender thus panning, volume and reverberation automation was essential for achieving the objectives. The main piece's reverberation was applied through using an auxiliary channel, controlling the amount of signal

that was going to be affected (Video 8) turning the fader up and down in order to create the feeling that the affected signal is moving back and forth and vice versa. After that, the left side of the stereo channel was automated from centre to left repeating the same procedure on the right side, aiming to suggest the audio is moving around the listener (Video 8, 0:43).

It is worth mentioning that in both *London's on a Blender* and *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* automation plays an essential role in the compositional process, and that while the automation in *London's on a Blender* was written using the 'drawing' lines option in the Digital Audio Workstation (DAW), the one in *Hipsters' Magic Roundabout...* was written by control recording using the Latch/Write option.

The X-27 effect was explored in *TV Psychologist Backs Autistic Boy Left on Locked Ward for Past Six Months* (2016). The main compositional objective for this piece is to create change of spaces by employing two different methods. Firstly, by overlapping recordings taken from different spaces it can be suggested that the music is taking place in two rooms of different sizes as they had different reverberation times. Secondly, by adding different sizes of digital reverberation (ValhallaRoom plug-in) using them throughout the piece in different amounts, the listener would feel that the music is changing environments. In order to achieve that, similar mixing techniques to the ones utilised by dub recordist King Tubby were applied in order to obtain that spatial effect. In this piece, the aim was to create a claustrophobic feeling by making the listeners feel they were locked in the hospital ward as well as switching from a small space to a larger one by using filtering, reverb and delay. Firstly, the beep sound from the vital signs monitor system was thought as the main element, highlighting that the context where the story takes place is a hospital or a space related to these types of machines, using the repeated pulse to emphasise the spatial characteristics. The same sound was later used to create a type of arpeggio played in triplets that also works as a mood creator. This choice was founded on ideas from Minimalist music composers such as Philip Glass and Steve Reich, and Ambient Music composers such as David Toop or Brian Eno, and consisted of creating repeated melodic and rhythmic patterns that suggest a mood or 'state of mind'. As a result, a hypnotic melodic pattern was created.

The other important element in this composition is the sound of people talking in the background. Although the main objective for these sounds was to include the clean samples, they were filtered and equalised in order to make them sound more homogenised within the whole mix. In terms of automation and effects, equalisation and filtering were added to the

main channels in order to construct changes in environments from closed to open spaces. In Video 10 (0:05), it can be seen how equalisation and filtering automation were applied to this composition, as well as how the filter turns from bypassed to active so the subtractive notch filter can move from the high frequencies position to low ones producing a type of phasing effect. In Video 10 (0:32), it can be heard how the main sample (beep) is progressively overlapped by the arpeggios, ending up in the background and yet still noticeable. In video 11, it can be seen how reverberation was used to suggest the listeners that the space was also changing from a closed dry room to a reverberant and large space. In Video 11 (0:00 to 0:23) the purple line represents how the amount of signal affected increases gradually until it reaches the maximum value, which in this DAW is 6dB, and then it falls from the maximum to the minimum instantly (Video 11, 0:29).

Similarly, in *Make Room for Modern Art* (2016), as mentioned before in this section, the main objective was to combine the recordings taken in hotel rooms and lobbies with the recordings taken at art galleries and museums, suggesting the listener is switching from one room to another. The first environment was created by using recordings that took place in galleries and museums so they would be reverberant suggesting the place was large space. The second environment was created by using recordings taken from hotel lobbies and rooms, which were not reverberant at all as these hotel rooms and lobbies were carpeted and had very absorbent materials in their construction, suggesting that the place where the music happens is a small space. The most important feature in this change of environments, and what this piece aims to explore in comparison to *TV Psychologist Backs Autistic Boy Left on Locked Ward for Past Six Months*, is that very little post-production or digital manipulation was performed, resulting in a very natural and subtle transition between one space to the other.

Lastly, *Firehouse Star-Spotters Upset Neighbours* (2017) also implements the ‘X-27 Effect’ as the main objective for this composition, as aforementioned, is to suggest that the listener is placed in the room next door to where the music is being played with the intention of exploring the idea of sound pollution in houses and flat in the London area. In contrast to the previous two compositions, the ‘X-27 Effect’ is created by filtering the high frequencies using a parametric equaliser software (FabFilter Pro Q2) of a recording taken from a bar in East London, also changing the values of the frequencies filters in order to suggest the audience is changing their listening perspective.

Mayor Backs Councils' Legal Action Against Third Runway at Heathrow (2018) is a composition that was created by using a multi-track mixing desk in which the effects were added using the principles of King Tubby's dub techniques, mixing manual automation and live performance. In this composition, the audio material was recorded at a parking lot next to Gatwick Airport's runway using a mobile phone instead of binaural microphones due to technical restrictions. Airplanes produce different sounds during take-off and during landing as the action performed by the aircraft requires different processes, therefore it was relevant to record both stages as shown in Video 12 (Take off) and Video 13 (Landing). After extracting the sound from the videos, the small sections of audio were looped on Logic X for around eight minutes and three tracks were made of each video resulting in 6 different tracks with different loop lengths. Some of them were around half a second long in order to create rhythmic patterns out of the glitch sound from the cuts. These six tracks were recorded independently into a Zoom L12 recording and mixing console, recording two tracks at the time as the computer interface only had two (left and right) outputs. Tracks one and two in Logic X were panned to the left and right respectively routing them to channels one and two on the Zoom L12 (Video 14). Video 15 shows how the same process was applied to tracks three and four, also recording them in the recording and mixing console using overdub techniques. This video shows how the different types of audio edits were recorded to specific channels by muting and un-muting these channels (Video 15, 0:44 – 1:46). This same process was repeated for recording in channels five and six in the Zoom L12 console, resulting in six channels with different airplane sounds. In the final stage, live manipulation of the recorded sounds was included utilising the mixing desk's in-build effects routed via auxiliary channels (Video 16) so then they could all be recorded connecting the left and right console outputs to the computer via a Universal Audio Apollo Twin interface (Video 16, 1:15). From 0:15 to 0:58 (Video 16) it can be seen how dynamic changes were created by changing the value of the faders making emphasis in the relation between sounds that were more like drones and the ones that have a more percussive character. Also, the idea of moving the faders at the beginning was to create a balance between all the different sounds so none of them were going to have more weight in the mix than the others. At 0:58 (Video 16), channel three, in which a more percussive sound was being played, was selected and affected by mixing it with a long echo and large reverberation, also leaving this sound almost as the main element in the mix until 1:44 (Video 16). At 1:28 (Video 16), it can be heard how a new texture was being created by adding the aforementioned effects. At 1:46 (Video 16), the sound in channel five takes over creating a new section based on rhythmic and textural changes. This sound is smoother in comparison to the one on channel three. At

2:06 (Video 16), a new texture was introduced. The sound on channel six was created by looping very short segments of the original recordings, resulting in a 'glitchy' drone that takes over from 2:06 to 3:28 (Video 16) when the rhythmic texture on channel three was re-introduced. Throughout 2:06 until 3:28 (Video 16), the 'glitchy' drone was manipulated and transformed into a completely new texture by using delay; also modifying the delay time creating the impression that the sound was being slowed down as if it was being divided by using granular synthesis and processing. This sound was also modified by adding filtering as seen at 2:42 and 3:11 (Video 16), changing the values on a low pass filter and then a high pass one respectively. At 3:30 (Video 16), the sound from channel three was introduced again mixing it with the 'glitchy' drone creating a new texture between the two of them. The 'glitchy' drone was muted after 3:48 (Video 16) so the new texture was formed by the mixture of the rhythmic sound from channel three and the airplane sound from channel four and five. At 4:39 (Video 16), the sound from channel five was affected using a high-pass filter boosting the high frequencies in order to add another colour to the section. At 5:06 (Video 16), delay and reverberation were added to channel four, making the sound increase its volume until this was muted (Video 16, 5:09) adding a new texture change by using the tail of the delay. At 5:21 (Video 16), the 'glitchy' drone in channel six was introduced again announcing the change of section and this time this sound was left alone for about twenty-five seconds until the sounds from channels one and two were also added to the mix. During these twenty-five seconds the same delay process was applied to the drone in channel six. Finally, from 7:09 to the end of the video (Video 16), the sounds in channel three and channel six were left alone suggesting this section could work as an outro or coda. However, the sounds from the other channels are still coming in and out of the mix during this outro.

Layering sounds to create textures was a technique also utilised in *Give 24-Hour Club and Music Venues a Break, Says Night Czar* (2018), in which the methodology employed was like the one in *Mayor Backs Councils' Legal Action Against Third Runway at Heathrow* but with different sound material and performed in a different platform. Apart from layering sounds and creating textures based on that, this composition's objective was to explore how the 'live' automation and performance could result if it had been done using a mouse to control the faders on the DAW in opposition to using the physical faders in the zoom console. Additionally, with a couple of exemptions, mainly in equalisers, only pre-sets were used in the plug-ins and effects settings added to the audio channels. The choice of plug-ins was based on the fact that most of these pre-sets are designed for mixing rock and pop music, and other types of popular music

instead of noise-based genres. Based on this, plug-ins from Waves, Slate Digital and FabFilter were used as these brands are focused on musicians working on the aforementioned genres. The audio used in this composition was taken from intervals between songs in rock and punk/grunge concerts. As seen in Video 17, the images of the audio waves show clearly where the intervals between songs were, which made the process of finding the sections very convenient and straightforward. In channel one (also called A VOID Live 14-12-16), a large amount of sound material was found in the intro section (Video 17, 0:04-1:04) as in this segment the band were doing a quick sound check setting up the guitar amplifier levels and drum kit sound. From 1:14 to 1:36 (Video 17) it can be seen how in the interval between songs one and two another guitar sound was produced, which also made it a perfect sound material for the final composition. The same element happened repeatedly in all the sections between the other songs as seen in Video 17 from 1:38 to 2:10. These audio sections were later cut so the fragments containing the songs in the files could be deleted leaving only the intervals used in the composition (2:11- 3:38). The same procedure was applied to the audio files in channel two (also called Dronningen 19-01-17), and even though plenty of noise was made in the intro (again setting up bass and guitar amplifiers, and the drum kit), not the same amount of sound material was found throughout this performance as the band (Dronningen) had shorter gaps between songs and they made very little noise during these intervals (Video 17, 3:39 to 9:46). The second step in the process was to make a rhythmic and harmonic foundation for the final piece. In Video 18, it can be seen how the bass sound in the intro section from channel two was taken and edited in order to create a bass line or loop by stretching and 'copy and pasting' the short section taken from the original recording (Video 18, 0:00 to 1:19). After that, the resulting sound was equalised, with the purpose of only using the low frequencies and to filter the other noise out of the audio (Video 18, 1:20 to 2:02). At 2:04, it can be seen how the first pre-set was applied to the track, using Slate Digital's Virtual Mix Rack's Aggressive Fat Bass pre-set. In between this process, a Universal Audio Ampeg SVTVR Classic bass amplifier emulation effect was added so it would boost the live bass character of the selected section of sound (Video 18, 3:04). At 3:29 (Video 18), the bass section was copied and pasted for four bars so the beat could be constructed on top of it. The outcome of the first attempt to make a beat out of a kick drum sample was not very successful (Video 18, 4:24 to 12:14), but it was important to go through that process in order to reach the final result that would meet the desired objectives as well as experimenting with certain effects and plug-ins that would be used later on. This was due to, firstly, the sample being selected from a kick drum hit at the intro of A VOID's channel, and time stretching and editing was applied to the sound so it would have the

right length for being used in a four on the floor beat. In other words, the sound of the kick drum was too short and sounded too aggressive for this composition so using time stretching to making it a bit longer was the choice for solving this issue. And secondly, equalisation, compression (using Waves CLA-76, Kick pre-set and Slate Digital Virtual Mix Rack's Power Kick pre-set), more equalisation and pitch shifting were used to make the kick drum 'punchier' and a bit deeper. As mentioned before, the idea was to construct a four on the floor beat creating a party-like feeling in order to link the composition to the newspaper article. Due to this idea, also using side-chain would give a more 'party' feel to the beat, applying it to the bass channel and triggered by the kick drum (Video 18, 9:47). However, even though the release, attack and ratio parameters in the compressor on the side-chain effect were manipulated, the sound did not trigger the effect in the expected way, and therefore, the sample choice had to be reconsidered. Consequently, the sample was shortened to see if with a shorter sound the side-chain effect would have had more influence on the bass channel, something that did not happen. As a result, the audio sample was changed, and another sound section from Dronningen's channel was chosen as there were clearer and longer kick drum sounds in the last interval of their concert. Lastly, after the new audio sample was added to the kick channel, the previously added effects were kept in, turning them on and off one by one and making various modifications to achieve the desired sound (Video 18, 14:45 to 16:00). Only equalisation, and compression were kept in the end, removing the pitch shifter as making the sample sound deeper was no longer required. The resulting sounds were copied and pasted for the following fourteen bars (sixteen in total adding the previous four where the beat and bass creation occurred).

After having a solid rhythmic and harmonic foundation (bass and beat), various layers of sound were created. For this purpose, the idea was to use a very short segment of audio from the original recording, such as a short feedback sample produced by the guitar or the vocals, or chords played accidentally, so time-stretching processing could be applied to it to make it at least one minute longer, therefore creating sections based on that sound's duration. The sound chosen was an electric guitar chord taken from A VOID's channel (Video 19, 0:28), the one that was later transferred from one channel into a new one, where it was retrospectively processed (Video 19, 0:48). Firstly, the sample was processed using time stretching (Video 19, 1:23) making it thirty-three bars long (one minute and two seconds) establishing the first section of the composition. Secondly, at 2:03 (Video 19), the resulting audio sample was reversed so the impression that the sound was going through a very long fade-in would be the

first harmonic and melodic texture of this musical piece. Thirdly, in the same way the bass and drum sounds were processed using pre-sets, this sample was affected by a Waves CLA 76 compressor using a guitar pre-set (Video 19, 2:35) as well as a Slate Digital Virtual Mix Rack's Electric Guitar 1 one. Fourthly, a very short section of the resulting sample from the end was taken and a two bar break was created in order to create a signifier marking the end of the first section and the beginning of the second one (Video 19, 3:23). After that, a Scuffham guitar amplifier emulation plug-in was applied using an American Clean pre-set to reinforce the idea that the performer was placed in a real space (Video 19, 4:52). Finally, the compressor side-chain processing applied to the bass was copied and pasted in the guitar channel creating the same 'four-on-the-floor' party feeling using this texture for it (Video 19, 5:12). The same process was repeated at 7:15 (Video 19) but this time a whole chord was used. The chord sound selection choice was made based on the premise that the final sample would have a richer tone as the guitar player was still tuning the instrument, therefore a melodic sequence was created out of it. As a result, the sound harmonics were boosted when applying time stretching processing creating a very solid harmonic and melodic texture. The same plug-ins and pre-sets were added to this channel so it would have the same characteristics the previous sound had in terms of compression, equalisation and side-chain compression. However, reverberation (Valhalla Shimmer) was added to this channel also using a pre-set named BlackHole (Video 19, 8:45) through an auxiliary bus. In the channel named 'Guitar 3' a loop of four short sections of sound from the strings being played with distortion was located between sections two and three, indicating the ending and beginning of these parts respectively, hence adding a small example of *micromontage* (Roads 2015, 158) in the middle of the long and monotonous drones (Video 16, 10:45). The same processing was added to this channel too. After this, the whole previous section was copied and pasted (Video 19, 12:14) to create the new and third section, using the same instruments and samples as the previous one with the exception that new textures and layers were added on top. A similar process was repeated to the channel named FeedBack. In this case, a short section of a microphone feedback was chosen as the sound material for the final texture (Video 19, 14:20). Similarly to the creation of the previous textures, this different audio fragment was also processed using time stretching to create another drone of the same length of the composition section (Video 19, 14:50). However, the initial idea was to create a loop out of this sound, but after trying it and not being completely convinced about whether it would fit in the whole context of the piece, the decision of applying the same process as the previous drones was made. Some sections from the Kick and Bass channels were removed at the beginning and at the end of the piece's third section respectively

to create more dynamic changes throughout the composition (Video 19, 15:39). After this, the whole second section of the piece was copied and pasted again to create the fourth and last section of the piece's structure. The texture from the channel named 'FeedBack' was also copied and pasted on top of the previous sounds. However, this time only half of this texture's length was used in this part. At 18:30 (Video 19), it can be seen how a snare and a hi-hat hit were taken into another two channels (Snare and HH) and then processed so the piece's beat could be developed adding new percussive sounds. HH Channel was processed by adding a Virtual Mix Rack using the Warm Hi Hat 1 pre-set as well as a FabFilter Pro-Q2 equaliser and a Eiosis E2 Deesser De-esser using the OH Soften pre-set. The resulting sound was later placed between the kick drums' sounds creating an 'upbeat' pattern based on the relationship between these two percussive sounds. This pattern was copied and pasted throughout the whole fourth section of the composition (Video 19, 20:57). After that, the channel named 'Snare' was processed using a Virtual Mix Rack's Big Snare pre-set, a CLA-76 Compressor's Snare pre-set and a Valhalla Room's Snare-Explosive Gate' gate reverb pre-set sent via an auxiliary track (Video 19, 24:43). Apart from that, some of the 'hits' were taken out during bars one hundred and eleven and one hundred and thirteen to create dynamic changes in this part of the composition's structure (Video 19, 26:10). Similar processes were applied to vocal samples in order to create more textures, with the exception that the pre-sets and effect plugins added to these channels were the ones that would normally be used in popular music vocal treatment such as pitch correction amongst others (Video 20). This was in fact, the challenging element of this particular stage as the selected audio section containing the vocals was a speech given by the singer during the interval between two songs. Usually used for fixing the intonation of vocals, pitch correction plugins approximate the pitch of the original signal to the closest note in the tempered system using a pitch detection algorithm. As a result, it is hard for this software to recognise pitch in speech as often spoken word is significantly more monotone than singing, therefore the plugin can approximate the values to very few notes only. As a result, iZotope's Nectar was added to the vocal channel, affecting the signal in its totality (Video 20, 1:22). After this, in the same way the previously mentioned textures were processed, time stretching was added to the pitch corrected vocals, creating another layer of sound (Video 20, 2:23). Finally, the ValhallaRoom's Stereo Plate pre-set, which is a common effect used in vocals, was added to the channel giving depth to this texture (Video 20, 3:29). As a result, the whole automation process and the final compositional outcome for *Give 24-Hour Club and Music Venues a Break, Says Night Czar* can be seen in Video 21, in which all the dynamic changes and texture

creation was based on changing each track's volume suggesting an interaction between all the sound layers.

Finally, the use of *Maximal* (DeMers 2010, 92) music techniques can be seen in *A Global Feast* (2018), in which these methods are used with similar purposes to the ones described by DeMers (2010). In this musical piece two main types of sound have been used as audio material, mobile phone ringtones and voices. As mentioned before, the compositional objective of this piece was to create a thick Drone out of these recordings. As shown in Video 22, the drone that is used as foundation was created by applying time stretching processing to a mobile phone ringtone. These drones were processed by adding various types of effects such as pitch shifting and pitch correction. As seen at 7:45 (Video 22), the channel named Languages – Ringtone2 is duplicated, labelling it as Ringtone2 Low1 as the idea for this track was to use exactly the same sample but this time pitch shifting the tone one octave lower to have more presence in that area of the frequency range. In traditional terms, this sound would be the equivalent of a bass tone. Additionally, an equaliser was added boosting the low frequencies of this sound so the bass character of the sample would be more prominent. Also, as seen in 9:07 (Video 22), the pitch shifter plugin was duplicated lowering the pitch of the original sample by two octaves, aiming to have an even lower presence in the frequency range. However, this process was repeated once more tripling the pitch shifter effect, therefore lowering the pitch of the sound by three octaves, to build a 'wall of sound' that includes the same sound on at least four different octaves. The same channel was duplicated twice more (Ringtone2 Low2 and Ringtone2 Low3) affecting each of them with the same pitch shifter plugin but removing one of them every time one of these were duplicated (Video 22, 10:08). Apart from that, a bass amplifier emulator is added to Ringtone2 Low3 channel, processing the sound as if this would be covering the role of a bass guitar or bass synth instrument in the mix. In order to fit with DeMers' definition of *Maximal Music* (DeMers 2010, 92), rhythmic patterns were created out of the phone conversations. In Video 23, it can be seen how a short segment of sound from the phone conversation recording was selected and looped using a Native Instruments Kontakt sampler. After trying various sound manipulation methods such as reversing the loop, changing the attack time, changing the sample's triggering time, and playing different notes so the pitch would change, the final rhythm pattern was achieved by only using a very short section of the vocal sample (Video, 23, 3:48). Once the final loop was created, this was played on a MIDI keyboard controller, and four bars were recorded so these sections could be looped throughout the whole composition (Video 23, 4:20). The last element to add to the rhythmic pattern was

pitch correction in order to define the note that these vocals were going to be tuned to, also changing the formant of the tone to make it sound clearer (Video 23, 5:46).

Finally, the volume for this track was automated moving the fader with the ‘mouse’ in real time (Videos 23, 7:45). The resulting automation line can be seen at 14:54 (Video 23). The following stage was to add all the phone conversations, and for that, they were selected one by one and then dragged into the Logic Pro X session, without any type of effects (Video 24), cutting them and changing their length was the only type of sonic manipulation these files had. The sections of these recordings were later copied and pasted throughout the whole composition, repeating this process with all the sixteen recorded languages (Video 24, 10:48). In Video 25, the final composition result can be seen, showing how all the layers of vocals were placed on top of each other creating textures of (almost) intelligible vocals. The whole idea behind this was to make the title be consequent to the compositional techniques. In other words, the aim was to create a clash between all the voices so the listener would create a mental image of people gathered in the same place, which is the perfect scenario for *A Global Feast*.

3.4 Exploring sound, noise, and the private and public soundscape.

In order to explore the idea of sound, noise and the private and public soundscape, various recording techniques were employed depending on the different locations that have characteristics that oscillate between the private and the public. Some of the main spaces used for recording this project’s sound material were sidewalks and streets, reinforcing the idea that these are spaces for public and private interaction. For instance, In *For Sale: Water Cannon, Never Used by Met, £43,000 ono (inc CD Player)* (2017), all the audio samples utilised were recorded at an anti-Donald Trump Muslim Ban¹³ Demonstration that took place in Central London on the 4th of February 2017. As seen in the map (Appendix D), the journey goes in and out the crowd from Westminster Bridge to Downing Street and then it finishes at The Mall. In this recording, the main objective was to explore how public manifestations are a sonic way for people to express their political and ideological discomfort. Another example of this is

¹³ The recently elected U.S.A president Donald Trump tried to enforce a law in which people from 6 Muslim majority nations were not allowed to travel to or enter the United States.

Hipsters' Magic Roundabout Faces Licence Fight Over Noise (2018), a composition that uses the recordings taken during a journey walking from Shacklewell to Hoxton in East London. In this recording, the noise and sound coming out of local bars and clubs was recorded and utilised in this composition. Additionally, and accidentally, the sound in the sidewalk and roads around was also recorded due to the fact that the recording took place on a Thursday evening in summertime, in an area that is widely recognised for being noisy and full of nightlife. As seen in the map (Appendix D), most of the journey took place on the main road (A10) apart from a few detours. For this reason, the sound content obtained was extremely rich in terms of diversity of sounds. (Appendix E) This same sound material was used in *Firehouse Star-Spotters Upset Neighbours* (2017). In this case, the idea of using these recordings was mainly connected to the newspaper article's subject as in this story the journalist describes how a pub known for being popular amongst famous entertainment stars in West London is facing a licence review due to its customers being too noisy. It also mentions how other bars and restaurants from the same area, such as the renowned Bok Bar, have had their licence reviewed and instructed to prohibit people from drinking in front of the venue after 9 in the evening due to noise and antisocial behaviour in and in front of their facilities. Another composition that explores noise in bars and music venues is *Give 24-Hour Club and Music Venues a Break, Says Night Czar* (2018). This musical piece was created based on the newspaper article by the same name that talks about how London's night czar is looking for solutions for stopping the property industry taking over music venues in London due to gentrification. In difference to the previous 3 compositions, this one uses the sound of music performances in various venues in East and North London as the only sound material. Grunge and Electro Rock-Punk bands A VOID and Dronningen were recorded at New River Studios and The Black Heart respectively. The full performances were recorded but only the sounds from the intervals were utilised in the composition, as the idea was to use only sounds that were produced accidentally or were out of a musical performance context. The objective of doing this was to explore the idea that when the sounds produced by the band that are not part of the song repertoire, and therefore are out of the musical performance context, these can be considered as noise pollution. Also, the purpose of recording these musical genres was that 'accidental' sound or situations where there is feedback between songs, drummers drop the drums sticks, guitarists need to double check tuning, etc. is more likely to happen, in comparison to other music's style concerts such as in pop or electronic music ones, in which most of the sounds are usually generated by electronic instruments or reproduced by computers that, with some exceptions, do not produce any type of 'accidental' sound.

The concept of ‘privacy at home’ is explored in *Breaking the Ice with the New Neighbours* (2016). This composition employed sounds recorded from different flats and houses around East and North London and its narrative was based on a newspaper article by the same name, in which writer Charles Saatchi talks about the importance of having a harmonious relationship with the neighbours next door. As a result, the sounds from doors being closed abruptly and doorbells were recorded and then utilised in the composition, as the aim was to show how these sounds are part of the soundscape that invades people’s home privacy. *TV Psychologist Backs Autistic Boy Left on Locked Ward for Past Six Months* (2016) is a composition made of sound material recorded at the Charing Cross Hospital wards. The newspaper article on which this musical piece tells the story of a TV presenter that is supporting a family who have been fighting to secure their autistic son’s correct health care after he was left alone and isolated in a ward for six months due to lack of specialist support.

Similarly, there are 3 compositions that explore sound, and noise in airports, airplanes and areas near runways. These compositions are named *Airport/Airplane Series* (2016-18). The first piece of the series, *Death Ray Device to Stop Attack of the Drones* (2016) is a composition made only by using sound material recorded on an airplane cockpit during a flight from London to Bogotá, Colombia. This piece’s narrative is set by a newspaper article by the same name that talks about how the London Metropolitan Police is searching for methods to stop drones from invading London’s restricted airspace, stating that these devices are endangering the life of hundreds of passengers as they can impact commercial flights. This happened on April 17th 2016 when a flying object hit an British Airways “Airbus 320 over Richmond Park at lunchtime” (Blunden 2016, 10). This newspaper article shows how these artefacts are becoming a real threat to people’s privacy invading our aerial space. The second composition of the series *It Came Out of the Blue... There Was a Really Loud Bang and a White Flash* (2016) is a musical piece made out of sound material recorded on-board of a flight from London to Bogotá, Colombia whilst seated on the passenger cabin, the waiting room of Pisa’s airport in Italy, and a tropical thunderstorm from a windowless hotel room in Barichara, Colombia. In this newspaper article, people describe how the airplane in which they were travelling was struck by a lightning. Even though this musical piece is not created only by sounds from airports or airplanes, hotels and hotel rooms are locations in which the limits between the public and the private are also challenged. The last composition of the series *Mayor Backs Councils’ Legal Action Against Third Runway at Heathrow* (2018), uses negative sound as the main element in the composition by, firstly, employing sound material that was obtained from areas

near to the airport's runways, and secondly, the newspaper article talks about how London's Mayor Sadiq Khan is backing nearby communities as they are opposing the construction of a third runway at Heathrow airport in London. The newspaper article mentions that neighbours have claimed that the rise of air and noise pollution would devalue the property and, more importantly, it will decrease their quality of life, stating that "the expansion would mean an extra 200,000 Londoners, including 43,200 schoolchildren, being exposed to an unacceptable level of noise, leading to health problems related to stress and sleep disturbance." (Crerar 2016, 10)

Finally, exploring the idea of mobile phones ringtones and phone conversations in public spaces, two compositions were created out of sound material consisting of recordings of phone conversations in different languages and mobile phone ringtones in public spaces. *My Relief as Son Calls from Quake Camp* (2015), named after the newspaper article by the same name, in which the journalist describes the painful journey of a family waiting for their son to call after an earthquake in Nepal in April 2015, utilises sound recorded only from mobile phone ringtones. The aim in the creation of this piece was to explore the concept that these sounds have become a significant element of our day-to-day life soundscape, not only in public spaces but also in people's homes. The other piece that explores mobile phones and phone conversations as a form of noise in public spaces is *A Global Feast* (2018). As previously discussed, this is a composition based on the newspaper article by the same name that talks about the different food options available for Londoners in Autumn 2018. The idea for this composition was to record as many people as possible having a telephone conversation speaking in different languages, firstly, to analyse the aesthetic properties of languages, and secondly, to explore the invasive character of mobile phone conversations. Finally, this composition is a personal way of demonstrating that we live in a multicultural society where different languages and different types of food (in order to associate the recordings to the newspaper article) are accessible to everyone and mixing all the languages in one composition shows we can all be part of a one whole entity.

4. RESULTS

The following table shows how the composition's musical and production elements were organised in both the pop and electroacoustic music categories. These elements describe the main musical and production characteristics that were analysed using the theoretical frameworks exposed in both the literature review and methodology sections.

Name	Pop music elements	Electroacoustic music elements
For sale: Water cannon, never used by Met, £43,000 ono (inc CD Player)	<ul style="list-style-type: none"> -Repetitive rhythmic pattern -Repetitive melodic pattern -3 chord schema pattern - ABA defined structure 	<ul style="list-style-type: none"> -Sound material. Music from demonstrations. -Background noise with no defined key signature -Destruction -Reproduction
Hipsters' magic roundabout faces licence fight over noise	<ul style="list-style-type: none"> -Cyclical movement using panning - Vertical movement using EQ 	<ul style="list-style-type: none"> -Sound material. Noise coming out of bars. -Sound morphing and cyclical movement -No defined tonality -No defined structure -Using speakers as instruments -Destruction -Reproduction
Firehouse star-spotters upset neighbours	<ul style="list-style-type: none"> -Defined structure. ABCDC -Defined rhythmic pattern -Vertical movement using EQ -Defined keys signature introduced 2:19 	<ul style="list-style-type: none"> -Sound material. Noise from bars and streets -Sound morphing, vertical movement -Background noise (ambulance, voices) with no defined keys signature. -Change of space done by filtering high frequencies -Destruction

		-Reproduction
Give 24-hour club and music venues a break, says night Czar	<ul style="list-style-type: none"> -Defined rhythmic pattern (4 on the floor) - Defined bassline, melodic line -Sidechain between bass and kick -Defined structure of 4 sections ABCD -Plugin processing – Presets -Track length 4:40 	<ul style="list-style-type: none"> -Sound material. Noise from music performances -Sound morphing. Horizontal movement done by panning reverb. -Layers of texture using reverb and delay -Destruction -Reproduction
London's on a blender	<ul style="list-style-type: none"> -Defined rhythmic patterns -Defined keys signature -Arrangement (bass, drums, harmony) -3 chords schemas - Defined structure ABC -Spatial movement done by adding phasers -Track length 4:54 	<ul style="list-style-type: none"> -Sound material. Sound in restaurants -Microsound -Cyclical movement done by rotating in front of speakers -Using speakers as instruments -Destruction -Reproduction
Breaking the ice with the new neighbours	<ul style="list-style-type: none"> -Exploration of space by adding digital reverb -Vertical movement using EQ 	<ul style="list-style-type: none"> -Sound material. Sound from neighbours closing front doors. -Rhythmic patterns no defined -Microsound -Use of space by automating reverb. -Sound morphing by acceleration of elements -Creating dynamic by acceleration of percussive sounds -Destruction -Reproduction

TV Psychologist backs autistic boy left on locked ward for past six months	<ul style="list-style-type: none"> -Defined rhythmic patterns -Defined melodies (arpeggios) -3 chord schemas introduced by bass 1:10 -Defined structure AB -Track length 4:42 	<ul style="list-style-type: none"> Sound material. Sound from hospital -Background noise with no defined key signature -Sound morphing using filtering -Destruction -Reproduction
Death ray device to stop attack of the drones	<ul style="list-style-type: none"> -Defined harmonic progression -3 chord schemas -Defined melodic patterns -Arpeggios creating melodic repetition Defined rhythmic pattern 4-on-the-floor (Introduced 0:29) Defined structure ABCDC. 	<ul style="list-style-type: none"> -Sound material – Sound from airplane communication -Microsound -Sound morphing by using filters and automation -Space exploration using reverb -Maximal sound -Destruction -Reproduction
It came out of the blue...there was a really loud bang and a white flash	<ul style="list-style-type: none"> -Defined rhythmic patterns -2 chord schemas -Arpeggios and defined melodic patterns -Vertical movement using EQ 	<ul style="list-style-type: none"> -Sound material. Airplane sounds -Microsound -Maximal sound -Cyclical movement done by panning and filtering -Space exploration by using filtering -Destruction -Reproduction
Mayor backs councils' legal action against third runway at Heathrow	<ul style="list-style-type: none"> - Using popular music plugins -King Tubby mixing techniques 	<ul style="list-style-type: none"> -Sound material. Airplanes - Microsound -Maximal sound -Sound morphing by adding filtering -Undefined key signature

		<ul style="list-style-type: none"> -Spatial exploration by using reverb and EQ -Cyclical movement created by repetition -Destruction -Reproduction
Make room for modern art	<ul style="list-style-type: none"> -Defined key signature - Defined structure ABA -Defined rhythmic patterns -Dynamic changes by using automation -Dynamic changes by using EQ 	<ul style="list-style-type: none"> -Sound material. Sound from hotels and museums -Microsound -Maximal sound -Cyclical movement -Background sounds from non-musical contexts (doors closing, steps, etc) -Destruction -Reproduction
My relief as son call from quake camp	<ul style="list-style-type: none"> -Defined rhythmic patterns -Arpeggios -Defined melodic patterns -Defined key signature - 4 chord schemas (introduced with bass 1:16) -2 chord schemas (1:40) -Defined structure ABAB 	<ul style="list-style-type: none"> -Sound material. Phone interference and ringtones -Microsound -Maximal sound -Cyclical movement -Destruction -Reproduction
A global feast	<ul style="list-style-type: none"> -Defined key signature -Vertical movement created by EQ -Depth created by reverb and delay -Defined rhythmic pattern from 4:45 	<ul style="list-style-type: none"> -Sound material. Phone conversations in different languages -Microsound -Building textures out of drones -Undefined rhythmic structure until 4:45 -Morphing sound by using time-stretching

		<ul style="list-style-type: none"> -Destruction -Reproduction
Get on top of your game	<ul style="list-style-type: none"> -Defined harmonic progression -2 chord schemas -Defined melodic patterns -Arpeggios creating melodic repetition Defined rhythmic pattern 4-on-the-floor. Defined structure ABCBDE 	<ul style="list-style-type: none"> -Sound material – Sound from arcade park -Microsound -Sound morphing by using filters and automation -Space exploration using reverb -Maximal sound -Background sounds from non-musical contexts (machine noise, bowling noise, etc) -Destruction -Reproduction
Don't be afraid of the dark	<ul style="list-style-type: none"> -Defined key signature - Defined structure ABC -Defined rhythmic patterns (4-on-the-floor) -Dynamic changes by using automation -Dynamic changes by using EQ 	<ul style="list-style-type: none"> -Sound material. Sound from religious spaces -Microsound -Maximal sound -Cyclical movement -Background sounds from non-musical contexts (doors closing, steps, etc) -Exploration of space by using reverb -Destruction -Reproduction
Warning bells ring out over St. Paul's repair	<ul style="list-style-type: none"> -Exploration of space by adding digital reverb -Vertical movement using EQ 	<ul style="list-style-type: none"> -Sound material. Sound from church bells, coins, building sites. -Rhythmic patterns no defined -Microsound -Use of space by automating reverb.

		<ul style="list-style-type: none"> -Sound morphing by acceleration of elements -Creating dynamic by using filters -Destruction Reproduction
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5. ANALYSIS

5.1 Representation:

The element to visually analyse this project work is the session images (Appendix G). The analysis of these images plays one of the roles of a graphic score in some 20th century and contemporary music. While they don't function as a set of instruction for performing or reproducing the piece, their use is helpful in another role that graphic scores play: in the analysis of electroacoustic music to "reflect or identify structure in sound-based works" (Landy 2017, 205). Although this type of analysis is relatively common practice in studies of popular music production, the DAW (Logic Pro X) used as visual representation is predominately a software for creating popular music.

The visual representations of the compositions show two different patterns:

1. The green regions show the samples triggered using any type of MIDI information. These sections show that these regions were normally organised in 'loops' showing the pieces' defined structure.
2. The blue regions represent pieces of audio that were edited or simply reproduced. These normally are added as whole regions and in rare cases are organised in 'loops'.

As a result, it can be interpreted that when the sound material is triggered and organised using MIDI, the track structures are more modular than when the audio regions are edited or simply reproduced when there is a more 'through composed' aesthetic. Additionally, it can be highlighted that in most cases, the pieces have a defined structure, and in several instances schemas of 2, 3 and 4 chords were used to create their structure.

5.2 Material:

The sound material employed in these compositions is the common element in all of the tracks. This sound material was exclusively collected based on the conceptual frameworks of this project to explore sound, noise and their relationship with public and private spaces.

In order to explore the aforementioned concept, the recording process was fundamental for achieving sonic consistency, even though different techniques were employed.

Four different techniques were used in various combinations: Guerrilla, stealth, controlled and investigative field recordings, resulting in two different combinations:

1. Active recording, which is an active approach to finding and chasing the sound source, sometimes even drawing the music narrative through it.

2. Passive recording, which is waiting for the source to produce any sounds, in many cases would represent remaining still for long periods of time in one same space.

The sound captured consisted of three different categories (Gaver 1993, p14):

- Vibrating sounds: These sounds functioned mainly as percussive instruments. Their fast attack characteristics allowed the manipulation process to be more natural, in some cases these did not require any manipulation at all to fulfil this function.
- Aerodynamic: These were normally employed in situations where the objective was to add textural layers. Most harmonic content and chord progressions were created using these as their long sustain and slow release quality allowed them to be manipulated in that manner.
- Liquid Sounds: These sounds were very rare throughout the project. However, they worked in most cases as material for creating arpeggios and melodic repetitive patterns due to their percussive and yet subtle character.

As a result, the recording process added sonic consistency throughout all of the compositions. However, the element that had a major impact in the compositional outcome was the way the sound material was treated. Finding a balance between mediated and natural sound was a key element for reaching the compositional objectives and understanding that there are different degrees of mediating sound. This permitted the sounds to adapt better to the compositional environment.

5.3 Listening behaviour:

The project aims to encourage different ways of listening to electroacoustic music by suggesting a more accessible and leisurely approach to its consumption. The first step towards achieving this objective is to encourage ordinary listening while accessing the pieces. This means that the listener should not focus on the origin or cause of the sound source or the semantic meaning of the sound, but rather focus on mediating the sound and how it affects them. By doing so, the meaning of the sound would change, and the listener would be able to appreciate it differently.

The expected result of this approach is to suggest a change in listening practices when it comes to electroacoustic music consumption. The project aims to show that this genre of music can be approached from a leisure listening perspective rather than a focus and critical listening

perspective. In other words, the project's outcomes suggest that electroacoustic music can be made more approachable to a wider audience.

The project proposes that by changing the composition structure, harmonic content, melodic patterns, and the relationship between space and objects, a leisurely listening experience can be facilitated. This means that electroacoustic music can be made more enjoyable and accessible to listeners who may not have a background or interest in the technical aspects of the genre.

5.4 Behaviour of material:

Most sound material in this project was somehow edited or mediated. Demers (2010) mentions there are three main techniques, however due to nature of the sound material and compositional objectives, only reproduction and destruction were employed in this project (i.e. no creation). The most representative features to consider were whether these sounds were reproduced or destroyed. In fact, all musical pieces employed both techniques.

As a result, two clear patterns can be identified:

1. Sounds used to create loops and triggered by any type of MIDI information employed reproduction techniques, mainly sampling.
2. Sounds used to create long textures and edited as audio sections employed destruction techniques, mainly time-stretching.

Additionally, morphing or sound transformation was primarily done by automation of filters. However, the most effective technique to achieve this was time-stretching as this process develops and expands small and subtle characteristics that result in the alteration of sounds throughout the a given time.

5.5 Ordering:

The framework for the analysis of sound object ordering was Gibson's visual representation of sound objects in popular music mixes. Based on that, there were three main process that facilitated that practice: filtering, panoramic placement, and sound intensity. Filtering was the process to place sounds in the vertical axis, panoramic placement in the horizontal axis, and sound intensity to move the sound elements to add depth or 'shallowness'. It is essential to highlight that these techniques, and Gibson's approach are practices commonly used in popular music mixing. However, employing these to electroacoustic music shows that these methods

can be equally successful. For instance, the X-27 effect, which is a sound-art sound signature was created by using filtering in three different forms.

5.6 Space:

Landy and Emmerson's (2016) idea of spatial analysis mentions the use of panoramic placement and sound intensity as features to explore this compositional characteristic. However, this project explored this feature from several different angles:

- Use of speakers and microphones: Panoramic placement was the first option to create horizontal movement in the compositions. However, the most effective one was rotation of microphones around and in front of speakers whilst reproducing the sound material. This method recognised as re-amping in combination with using binaural microphones allowed the compositions to have more prominent movement in the horizontal axis.
- Use of digital effects: In London's on a Blender piece, this feature was explored by employing 'panning, phasing, and automation'. The results showed that these effects added sonic distinctive sonic characteristics but the exploration of space through them was not satisfactory.

However, using reverb and delay was a suitable practice to explore space in the compositions as it does not only add depth and width to the musical pieces, but it also creates another layer of sound in the background of the compositions.

- Binaural microphones: Space was explored from the recording stage in most compositions due to the technical nature of binaural microphones. These devices, capturing an accurate representation of human hearing helped achieving this compositional objective as with them the space where the recordings were taking place could be imprinted in the compositions. However, the layering of various binaural recording layers led to these losing their spatial character in some cases.

5.7 Performative elements:

As mentioned in the previous section, this project used microphones and speakers as a technique for achieving the compositional objectives. In this case, these were used from a performative perspective.

- Reproducing: sound material was reproduced in two instances, and this was re-recorded using binaural microphones (re-amping). In this cases, the use of speakers in that

manner added special sonic characteristics to the compositions. Firstly, the quality of the speaker was not consistent adding special features to the sound such as filtering and distortion. Secondly, the behaviour of the reproduced sound in the room had an impact both by creating a natural overlap of sounds and adding the acoustic characteristics of the space to the final recording.

- Supporting: the aforementioned compositions also employed speakers to support or amplify sound so the microphones could reach the expected input levels. However, the main reason for using speakers for this purpose was to create a bigger interaction between the reproduced sound and the space where this was being played.
- Generating: both microphones and speakers were used to generate sound material. In *My Relief as Son Call from Quake Camp*, speakers and microphones produced interference that was later included in the piece. Additionally, a phone speaker generated a ringtone, which is the main sound material in this composition.
- Interacting: Microphones and speakers interacted in different manners to create dynamics and narratives in the compositions during the recording stage. This is the result of approaching the recording stage as an essential part of the creation process. Firstly, the recordings show pro-activity when walking and chasing the desired sound sources. Secondly, there was a passive interaction between the microphone and sound source when remaining still waiting for 'sound to happen'. In this instance, the interaction comes from the recordist waiting to receive and capture the desired sounds, meaning that there was a passive interaction even though it was an inactive approach. Finally, it is important to mention *Mayor Backs Councils' Legal Action Against Third Runway at Heathrow* where there is interaction between the performer and the sound material mediated by a mixing console.

5.8 Intention and reception:

Nyre (2008) suggests that sound can communicate four main elements: time, space, personal expressiveness, and coded message, to which narrative can be added. The use of sound manipulation techniques, such as microsound, time-stretching, maximal sound, and repetition, can convey a sense of changes in time to the listener. While the recordings themselves already convey changes in time, these techniques can either cancel or enhance that information. Techniques employed in this project, such as automation of panoramic positioning and phasing, microphone rotation, and active and passive field recording, suggest variation and integration

of space within the compositions. The use of binaural microphones enhances the accuracy of the representation of the recording space.

Although personal expressiveness is challenging to identify due to heavy sound manipulation, the pieces that involve performance through interaction with music equipment or dynamic changes during the recording stage demonstrate this element. The search for defined compositional objectives at both stages led to a personal decision-making element in the creative process.

The absence of lyrics in the compositions makes it difficult to identify a coded message, but a conceptual theme is present in each piece. When combined with narrative analysis, the listener interprets the stories from the newspapers and links them to the narrative of the compositions. The compositional elements and the organization of the sound material suggest a strong link between the narrative and the musical elements, as demonstrated in the methodology section.

5.9 Elements specific to a given genre:

This project incorporated a range of non-musical features that don't easily fit within the frameworks of either electroacoustic or popular music genres. These included field recordings, sound-art techniques, and the use of walking and mapping as compositional methods. Despite their external nature, these elements played a significant role in the development of the compositional techniques showcased in the project. Furthermore, the integration of newspaper articles with the musical narrative gave the project a unique character. As a result, the compositions produced in this project exhibit a distinctive style that suggests there is room for exploring new elements within both electroacoustic and popular music practices.

6. CONCLUSION

Based on the presented material, it is worth mentioning that various compositional methodologies were developed by combining music creation techniques from both electroacoustic and popular music. It is important to highlight that the main compositional objective was to integrate popular music elements and creative techniques into electroacoustic music practice. As a result, the term electroacoustic pop can be utilised to describe this type of creative practice due to:

1. The compositional methods explored led to a balance between mediated and natural sound without compromising the sonic signatures of both electroacoustic and popular music. These results were achieved by always thinking first about these compositions as electroacoustic music compositions that integrate popular music elements rather than popular music compositions that integrate electroacoustic music creative techniques. This one element led to this practical project having a distinctive approach to implementing and exploring the overall methods within the compositions. Apart from that, the use of sound material that is characteristic of electroacoustic music with a popular music approach in terms of structure, harmony, melody and rhythm, contributed to achieving these objectives.
2. The methods utilised for sound organisation suggested different approaches to electronic music listening practices. Using popular music sonic manipulation tools such as universal audio, soundtoys, and fabfilter plugins, open a new range of possibilities to composers that are not entirely familiar with electroacoustic music. Also, by using these tools, the aesthetical outcome might become more familiar to popular music consumers also shifting the way they approach electroacoustic music from a 'serious' and focused listening to a leisure and entertaining one.

Having said that, it is essential to assess the limitations and challenges this project brought. Firstly, finding common ground using pop music creative processes can be challenging as popular music techniques are unnumerable and always changing. This results in having too many options also falling behind the new trends and techniques that are being developed daily. Secondly, finding links between the narrative, the sound material, and the experimental techniques limited the way the sound could be manipulated, stopping the composer from freely explore any compositional techniques. This is the result of exclusively using found sound as the main sound material. Integrating this sound material into a more flexible context allows the

composer to explore techniques more freely in opposition to trying to recreate popular music arrangements and patterns with it.

Finally, electroacoustic music is a vast genre, and there is no one definitive theory or theoretical framework for its analysis. From music concrete to sound art, all electroacoustic music sub-genres have very distinctive and diverse characteristics, which makes its analysis very challenging.

To overcome these limitations, the project first explored and applied popular music techniques and elements to the electroacoustic music practice, allowing for an analysis of their application. Secondly, a consistent approach was established by connecting the narrative, sound material, and sonic manipulation techniques based on the concept of sound and noise in public and private spaces. Finally, an analytical framework was established using various theories and models from the history of electroacoustic and popular music to study these specific pieces of electroacoustic pop music. These elements together created a unique approach to creating electroacoustic music, resulting in a distinct style within the broader field of electroacoustic music.

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8. APPENDICES

- Consent forms

University of West London
London College of Music
Student Name: José Manuel Cubides-Gutierrez
Supervisor Name: Simon Zagorski-Thomas, Andrew Bourbon

DIGITAL RECORDING RELEASE FORM

I Taeko Nagata agree to participate in an audio, video, and/or digital recording during the study by **José Manuel Cubides-Gutierrez**.

I understand and consent to the use and release of the recording by **José Manuel Cubides-Gutierrez**. I understand that the information and recording is for research purposes only and that my name and image will not be used for any other purpose. I relinquish any rights to the recording and understand the recording may be duplicated and used by **José Manuel Cubides-Gutierrez** without further permission.

I understand that I can leave at any time.

I agree to immediately raise any concerns or feelings of discomfort with the study administrator.

Your signature 長田 妙子

Date 5 Oct. 2016

Print name Taeko Nagata

Thank you!

I appreciate your participation.

University of West London

London College of Music

Student Name: José Manuel Cubides-Gutierrez

Supervisor Name: Simon Zagorski-Thomas, Andrew Bourbon

DIGITAL RECORDING RELEASE FORM

I Zeynep Eylem Senkal agree to participate in an audio, video, and/or digital recording during the study by **José Manuel Cubides-Gutierrez**.

I understand and consent to the use and release of the recording by **José Manuel Cubides-Gutierrez**. I understand that the information and recording is for research purposes only and that my name and image will not be used for any other purpose. I relinquish any rights to the recording and understand the recording may be duplicated and used by **José Manuel Cubides-Gutierrez** without further permission.

I understand that I can leave at any time.

I agree to immediately raise any concerns or feelings of discomfort with the study administrator.

Your signature



Date 5.10.16

Print name

Zeynep Eylem Senkal

Thank you!

I appreciate your participation.

University of West London

London College of Music

Student Name: José Manuel Cubides-Gutierrez

Supervisor Name: Simon Zagorski-Thomas, Andrew Bourbon

DIGITAL RECORDING RELEASE FORM

I Mariagiulia Giordano agree to participate in an audio, video, and/or digital recording during the study by **José Manuel Cubides-Gutierrez**.

I understand and consent to the use and release of the recording by **José Manuel Cubides-Gutierrez**. I understand that the information and recording is for research purposes only and that my name and image will not be used for any other purpose. I relinquish any rights to the recording and understand the recording may be duplicated and used by **José Manuel Cubides-Gutierrez** without further permission.

I understand that I can leave at any time.

I agree to immediately raise any concerns or feelings of discomfort with the study administrator.

Your signature Mariagiulia Giordano

Date 5/10/16

Print name

MARIAGIULIA GIORDANO

Thank you!

I appreciate your participation.

- T-Shirt worn whilst recording in public spaces.



Appendix B

• Newspaper Articles

3 DECEMBER 2015

London



Breaking the ice with your new neighbours

battles. Two doctors in Forest Gate are at loggerheads over a hedge. After it had grown over 12ft in height along the front fence of a terraced house one of the doctors objected, politely asking her doctor neighbour to trim it back. She felt it was "blocking light coming into her house, and starving her plants of sunshine". Her neighbour refused, on the basis that as a "green" person he did not want to interfere with nature. Eight years on, despite court appearances, council orders and a judicial review, the hedge is still there – and is still growing. It is now a majestic 22ft, a towering presence on the street.

The long-suffering neighbour claims that all she can now grow in her front garden are weeds, and that she needs her electric lights on during the day, to counteract the gloomy murkiness. But the doctor who proudly owns the hedge is unmoved. He estimates that Newham council has spent in excess of £20,000 of public money in "conducting some kind of vendetta, and not behaving impartially" and won his appeal against cutting it back in the High Court.

On a more down-to-earth level, to many of us it seems neighbours are merely the strangers who live next door.

Two points worth remembering:

1. You will be more tolerant of your neighbour's noisy party if you are attending it – and vice versa.
2. Sometimes, conflict can be avoided by sending a thoughtful note. This is my favourite, placed on the Happyplace.com website:

Dear Neighbour,

Your car's sound system is amazing. It is so loud and the bass is so rock that it actually shakes all of the apartment buildings in the complex. Awesome!

This is exceptionally rad when you pull up at 3:30 in the morning and wake up the entire community. Wicked awesome!

We are all very impressed with your super-cool sound system. Don't ever think about turning it down when you pull up to the building you share with hundreds of other people.

Your Envious Neighbours

■ Charles Saatchi's latest book is *Delusions: A Celebration of Mortality*, published by Booth-Clibborn Editions.

e Double d with Frame

£4.95 p&p




ES SHOW



Death ray device to stop attack of the drones

Mark Blunden Technology Reporter

POLICE chiefs are searching for counter-measures to the threat of drones entering restricted London airspace.

It comes as the Met investigates what was believed to be Britain's first unmanned aerial vehicle (UAV) strike against a plane, landing at Heathrow.

The Government has already carried out trials of counter-measures.

One, the Anti-UAV Defence System, jams a drone's radio signals with a "death ray" and features technology deployed in Afghanistan.

It tracks heat from a UAV's battery and can shut it down by blocking the signal from up to six miles, then trace the owner. A collaboration between three British companies, it costs



"under a million pounds" and took part in trials last year.

Mark Radford, chief executive of one of the firms, Blighter Surveillance Systems, said: "It allows us effectively to take control of that drone to control whether we force a crash-landing or return it to the take-



off site so the police or security forces can intercept the operator."

The National Police Chiefs' Council would not reveal details about counter-measures being tested. But it said it was "working with partners to better understand the threat and to develop an appropriate technical response".

On April 17, "an object believed to be a

drone" hit a BA Airbus A320 over Richmond Park at lunchtime, the Met said. There were 137 people on the flight, which was at 1,700ft. The legal maximum for drones in the UK is 400ft.

The plane landed and was cleared by engineers for its next flight. Transport minister Robert Goodwill played down the incident, telling Parliament it could

have been a plastic bag. However, Scotland Yard told the Standard officers still believed it was a drone. Planes at Heathrow, City, Gatwick and Stansted all had near misses with drones last year.

Heathrow declined to comment on counter-measures. Sussex police, which runs Gatwick's security, has a squadron of its own UAVs which help "support aviation security around the airport confines" but do not knock out other drones that stray into its airspace.

Lambert Dopping Heperstal, of the Institution of Engineering and Technology, said some drone firms install geo-fencing software to stop UAVs entering restricted areas. "Even if the person tried to fly there it wouldn't take off or would bounce back off the imaginary wall," he said.

Other mooted solutions include eagles and net-firing bazookas.



WELCOME TO OUR WORLD

Firehouse star-spotters upset neighbours

Matt Watts

THE pub next to a-list haunt the Chiltern Firehouse faces a review of its licence amid complaints from neighbours about noise from a "mob" of celebrity-spotting drinkers.

The Bok Bar in Marylebone today faced calls for patrons to be barred from drinking outside after 9pm amid allegations about antisocial behaviour.

Residents whose homes overlook the pub have complained noise from the bar has worsened since its neighbour in Chiltern Street – the Chiltern Firehouse – opened in 2013.

Hotelier André Balazs's luxury hotel and restaurant has hosted the likes of David Beckham, One Direction, Nigella Lawson and Cara Delevingne on the same night – and in 2014 was described as "the world's hottest celebrity hangout". Kate Moss has also been spotted there.

But its popularity has been blamed for noise from revellers who have come to Bok Bar as a result. In their submission asking for drinking hours outside to be reduced, residents who have brought the review by Westminster council state: "The premises seem to have become busier since the Chiltern Firehouse put [the street] 'on the map'."

"The principal cause of nuisance is the number of customers who drink outside the premises and the noise."

Gloria May is a complainant whose home is in a mansion block, Wendover

Residents sound alarm over noisy drinkers at pub near A-list club

Court, overlooking the establishments, where a three-bed flat costs over £1 million. She said in her submission: "The noise is... increased by parties held at the Firehouse when photographers and fans... join Bok Bar crowds."

Resident JD Haynes said: "Nuisance from the pub is the norm. The... Firehouse [made it] a chronic problem."

Janet Lee wrote in her complaint: "I find the numbers... intimidating. Standing patrons tend to behave like a mob."

According to council noise inspectors, up to 100 people can congregate outside. There have been at least 22 complaints since April 2013 and 14 visits by environmental health officers. They concluded noise is "audible but [not] deemed a statutory nuisance". In his



submission to the review Bok Bar manager Bolelaw Lewicki said: "There has been no police intervention, no calls, no noise team, or official licensing team visit... for a long time. Our regular customers are civilised people and not a mob of delinquents as alleged in [a

statement]. I find criticism of my locals harsh." He declined to comment further ahead of the licensing meeting.

The Bok Bar is a separate business from the Firehouse but the same company owns the lease for both buildings. Olivia Hunt, director of business development at André Balazs Properties, which owns the Firehouse, has been involved with resident negotiations. She

wrote in a submission to the hearing that "measures have been put in place... in an attempt to resolve the situation", including security staff ensuring people stay within rope confines in the outside seating area.

The review of Bok Bar's licence was due to take place at 10am today at Westminster City Hall. The Chiltern Firehouse declined to comment.

Celebrity haunt: clockwise from main, The Bok Bar, which faces a licence review, and the Chiltern Firehouse, where stars such as Cara Delevingne and Kate Moss gather

London Life

Fitness & Beauty



Don't
be
afraid
of the
dark

ness

st spent your weekend out in the pub? Catch up, says **Phoebe Luckhurst** the w way to party all night is at the gym

earfing a guilty fry-up at 3pm next day. Reclaim the night and fade the hangover: the workout

Gherkin should try 1Rebel (63 St Mary Axe, EC3A 8LE, 1rebel.co.uk). The highly specialised studio offers just

resistance bands, which in the evenings becomes RideLive – a class conducted to live music selected by DJs who work with the studio's music director. Hip Hop Ride is the same format conducted to a playlist that kicks off with Missy Elliott – the BPM will force your limbs into overdrive and chew through calories. The class lasts an hour. Secret Yoga Club

London's best Cycling gloves

As the days become longer, the cycling commute is suddenly enjoyable again. So throw off your winter kit because it's time for lightweight gear and breathable gloves to love.

Pro team mitts

Professional riders advised on the design of these gloves – they are so light you will barely notice they are on. £50, rapha.cc



Free glove

Featuring special cool mesh and a microsuede wipe panel. £35, castelli-cycling.com



Sportful Women's Gruppetto Short Finger Gloves

Gloves with give, made from clever material with plenty of stretch. £27, wiggles.co.uk



Altura Classic Mitt

All the benefits of the traditional crochet design, with a practical modern update. £14.99, evanscycles.com



BBB Cooledown Gloves

Open mesh on the back and palm of these mitt make them a joy to wear on post-workout rides. £9.95, ribbiecycles.co.uk



Promotion in association with **Vodafone**

GET ON TOP OF YOUR GAME

Whether you're passing five minutes with Candy Crush Saga while waiting for your train, or a couple of hours a night gathering resources for Clash of Clans, you're not alone – in the UK, the mobile gaming market was worth a staggering £548m last year. And it's showing no signs of slowing down in 2016.

With hundreds of new titles appearing weekly on Apple's App Store and Google's Play Store, smartphone gaming is very much a growth business and developer and publisher Gameloft has been there since the beginning.

'The iPhone created a huge shift in the market as it allowed a much greater level of complexity in mobile game development, and that completely blew everything else out of the water. So we shifted towards smartphones and touchscreen interfaces as soon as we could.'

'Mobile game development completely blew everything else'

new titles every year, from original IPs, like Dragon Mania Legends, to movie tie-ins, such as Spider-Man Unlimited.

The process of making mobile games is not without its trials – for starters, there's such a wide variety of hardware and software on the market that new games need to work well on everything to prove successful. 'Fragmentation is a challenge,' says Nicolas. 'Today we develop our games for more than 7,000 smartphones and tablets.'

And then there's the question of pricing. The current trend of 'free-to-play' games – titles that cost nothing to download,

Nicolas argues that it is. The 'free-to-play' business model is still growing in the video game industry as a whole and we think it's well-received by the players. Our game Despicable Me: Minion Rush, for example, has been played by more than half a billion people since its launch and we think that its 'free-to-play' model has definitely helped it reach such a huge audience.'

But Gameloft is well aware that hitting the right note between pushing the paid-for features and keeping the base game enjoyable is key. 'Free to play' is a complex thing,' Nicolas says. 'It requires that we constantly

EVENING STANDARD THURSDAY 28 APRIL 2016

News

Sophia Sleigh and Mark Chandler

AIR passengers today spoke of their shock as their planes were hit by lightning on descent into London.

Travellers on at least three flights reported the moment bolts of lightning struck their aircraft during yesterday's thunderstorm.

Liz Dobson and her husband Alexander Smith were on Icelandair Flight 454 – from Keflavik, Iceland, to Heathrow – when the passenger jet was hit at about 8pm.

'It came out of the blue,' said Mrs Dobson, 35, head of programme funding at charity Farm Africa. 'There was a really loud bang and white flash – not really what you want on a plane.'

'It really did sound like something hit the plane. We could see the flash but it was on the opposite side of the plane to me. The lightning hit the wing.'

'Everyone was just wowed. There was a sharp intake of breath.'

'When we landed the pilot said, 'I'm sure you noticed we got hit by lightning but don't worry, planes are made to withstand that kind of thing.'

She and her husband, from Greenwich, were returning from a week's holiday. Mr Smith, 40, said: 'There was a huge 'crack' followed by a flash of light and some sparks on the right-hand side of the plane.'

'It was a bit of a shock to a lot of the passengers, but we landed safely so it's all good.'

Catherine Mayer, author of last year's biography of the Prince of Wales, Charles: The Heart Of A King and co-founder of the Women's Equality Party, was on the same flight. She said: 'When we flew into the storm, my first thought

'It came out of the blue... there was a really loud bang and a white flash'

Passengers' shock as lightning strikes planes over the capital

'My first thought was: I can't die – I have to vote'

shocked to react but when we landed everybody was talking about it.'

British Airways said Flight BA57, from Prague, was also hit as it descended into Heathrow.

Student Philippa Burns, 21, who was on board, said: 'We were going through low clouds and I was just looking out

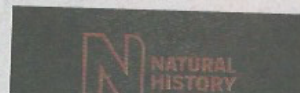
undergo inspection before it returns to service. The safety of our customers and crew is always our top priority.'

'Lightning strikes are fairly common, and aircraft are designed to cope with them.'

Another passenger flying into City Airport from Edinburgh said on social



Bolt from the blue: lightning strikes one of the planes, circled. Passenger Liz Dobson, with her husband Alexander Smith, says 'everyone just wowed'





Bright ideas: left, Daniel Buren's coloured glass pergola at Le Bristol in Paris. From top, Das Stue in Berlin; La Colombe d'Or in Saint-Paul de Vence; Sir Peter Blake's *Dancing Girls Over Rotten Row*. Inset top, London's 45 Park Lane.



Make room for modern art

HOTEL Le Bristol on the rue du Faubourg Saint-Honoré in Paris is a place of luxurious hush. The type of place where the carpet is so thick you feel you may sink to your knees in it and the staff glide about as if on casters, dispensing "sirs" and "madams" as liberally as confetti.

Here you pay your money and your whim is treated with the reverence of biblical writ. To arouse irritation in guests is a failing on a par with, say, spilling sauce charcutière down a guest's shirt front. And yet, in the well-manicured courtyard garden of this 188-room, 91-year-old hotel there is an art installation that can't fail to provoke a reaction.

Daniel Buren, the French artist who recently exhibited at Fondation Louis Vuitton to wide acclaim, has erected a large pergola in modish coloured glass. It leaps out from its Neoclassical surroundings like Derek Drouin on the high jump. Inside, in the bar, Moroccan-born artist Hicham Berrada has projected his ethereal creations on to mirrored screens.

Both projects run against that unwritten rule that art in hotels ought to be as unchallenging and inoffensive

High-end hotels are queuing up to acquire daring artworks that add a certain *je ne sais quoi*, says **Samuel Muston**

inkjet pieces by Bruce McLean and has Sir Peter Blake's *Dancing Girls Over Rotten Row* (a pop art-ish take on the historic flaneurs' spot in Hyde Park) above the fireplace in The Penthouse Suite.

Meanwhile, the permanent collections of Das Stue in Berlin and the Byblos Art Hotel Villa Amistà, Verona, would rival many international galleries, and Le Sirenuse in Positano has just unveiled a Martin Creed. None of the art these properties are displaying could be described as "easy".

Traditionally, hotels bought their art by the yard, as Robert Diamant, director of Carl Freedman Gallery in Shoreditch, points out: "The reason they used to go down that route - and also why many hotels continue to do so - is very much due to budget constraints and practical reasons such as insurance. To create a successful installation in a public space needs time, planning and very careful consideration."

But there was also something else,

on it: hotels would choose the route of least resistance (read: least eyebrow-raising) - which meant abstraction. Who, after all, could splutter into their champagne at the sight a black squiggle?

Some hotels have, of course, acquired significant art collections down the years, but these have tended to be the exception rather than the rule. The greatest of these is La Colombe d'Or, the hotel at Saint-Paul de Vence in the South of France. Art is everywhere here: the dining room, the halls, the bedrooms - it seems to pululate when you turn your head, here a Picasso, there a Braque, beyond that a gold-hued Miró. What makes this unusual is that the artists actually bestowed the work on the hotel's owners, sometimes in exchange for lodgings. The artists came for the Provençal light and left behind them a gallery's worth of art.

Today the process is a little more difficult. "We frequently turn down requests from hotels for artworks

and not just as 'wallpaper' or for pure decorative purposes," says Diamant. Certainly at the Belvedere Restaurant at the Peninsula Beverly Hills, which has 11 works by Yayoi Kusama, Sir Scully and Robert Indiana, the process was not all plain sailing.

"When we first approached Fabien Verdier to do a commissioned artwork she immediately declined. She thought we intended to display a work at the hotel as decorative art," says Robert Zarneghin, the hotel's partner. "Obviously, she's a very talented and substantive emerging contemporary artist. It took me seven months to convince her of how I felt about her work and reassure her that it would be displayed alongside works by giants."

When art is successfully curated sensitively and cleverly, it does simply mean guests get the chance to interact with it in an informal manner without labels and expectations - in a way that can make the space it fills.

"Great art not only transforms a room you're in but can also transport you to somewhere new and open your mind," says Diamant. "It's not obvious to say but the really special thing about art is that it is unique -"

London's on a blender

Are you dreaming of a supercharged food mixer that can chop, heat and power you to healthy living in seconds? Us too – so in the spirit of sharing, four Standard writers gave the capital's most wanted kitchen gadgets a spin

The NutriBullet

ACCORDING to its manufacturers, Homeland Housewares of Los Angeles (of course), the NutriBullet is no mere blender. It's the world's first Nutrition Extractor! Exclamation mark and all!

"We are thrilled you have chosen the path to health and vitality!" proclaims the manual, which rails against the Western diet and doubles as instructions for you too. After all, you need to know what to do with the lease

of life your NutriBullet is about to give you. The NutriBullet offers the orthorexic consumer what you might call the three cons: consumption, convenience and control. Consumption, in that you need to eat

sometimes and the NutriBullet makes that much easier. You can use it for ordinary blending purposes (soup, baby food, margaritas), but its USP is that it can turn hitherto solid substances into liquid (kale, carrots, almonds).

Convenience, in that it is surprisingly easy to use. For the trademark NutriBlast, which forms the cornerstone of the six-week transformation plan prescribed by the manual, you fill the cup with the recommended 50 per cent leafy greens, 50 per cent fruit, a sprinkle of nuts or seeds and a dash of water. Then you screw on the detachable sextuple blade, turn it downside up and slot it into the base. WHIRRR! Feel the power! After a few seconds you have a liquid lunch – convenience food more convenient even than McDonald's.

Control, in that, if you believe the claims of the manual, only with this piece of equipment will you be able to reverse the ageing process, unlock the "gold mine" of zinc inside watermelon seeds and reach the "cancer-blocking compounds" inside broccoli that you would miss by chewing alone. Stupid chewing. A handful of flax seeds blended in the NutriBullet, the manual



PHOTO: ILLUSTRATION

The Boss

Whatever the result, my blender – The Boss – definitely wins on name. This thing wants to rewrite the rules of your kitchen, to implement its new regime in your house. The name suggests it will make the oven flame with rage at its new redundancy and get your poor inadequate Kenwood hand-blender in a spin over its



My relief at son's call from quake camp

Father of British trekker tells of agonising 48-hour wait for news

Ben Morgan and Justin Davenport

THE father of a British graduate missing for 48 hours after the Nepal earthquake today told of his "enormous relief" after he called on a borrowed phone from a refugee camp in the foothills of the Himalayas.

Dr Paul Gerhardt, 66, director of education at the British Film Institute, only learned that his 24-year-old son Laurie was safe when he made contact yesterday afternoon from Dhunche, where 400 were waiting to be rescued.

Laurie had been trekking near the Langtang National Park with friend Joe Butchers, 23, when the 7.8 magnitude earthquake struck at lunchtime on Saturday. Dr Gerhardt, a former head of commissioning and controller of adult learning at the BBC, told the Standard: "It's an enormous relief. It's the worst thing any parent can experience. It's been a rollercoaster weekend. I was chasing things on social media but he obviously didn't have access to the internet at all."

"Then I got the phone call. He is in a camp with about 400 people waiting to be rescued, but the priority is the injured. Laurie said there were hundreds in Dhunche."



Survivors: Laurie Gerhardt, right, is at a refugee camp in the Himalayas. Above, climber Alex Staniforth spoke today of his ordeal. Below, newlyweds Sam and Alex Chappatte



Aftershocks add to chaos in country gripped by fear that worse will come

Dan Rivers
LETTER FROM...



NEPAL

IF I had to sum up the atmosphere in Nepal in one word, it would be fear.

Many people here are traumatised by Saturday's earthquake and the powerful aftershocks – we felt one measuring 6.8 on the Richter scale minutes after arriving at the chaos of Kathmandu's international airport. The car park rolled and flexed under my feet as I watched the windows of the terminal building buckle and rattle. I was scared the terminal would collapse. Almost every Nepali I've spoken to here has said they are terrified there will be an even larger quake. It's why thousands prefer to sleep in squares or parks rather than risk staying in their fragile homes.

The damage in Kathmandu is largely confined to the old city, where historic temples and palaces in the Durbar squares have been flattened. These losses are being seen as a dark omen of worse to come. Modern buildings seem to have survived, with the odd exception where rescuers hunt for

survivors. So far though most of the rubble is yielding only bodies.

Hundreds of British tourists are stranded and unable to call home. The mobile network is overwhelmed and finding reception is difficult.

The power is off across large parts of the city and most shops and cafés are closed. I found Abigail Harris, 21, wandering through the rubble, consumed with a feeling she should be doing something to help, but unsure what. She'd come to Nepal to volunteer in a school, but her plans, like this country, are in disarray.

We're trying to reach the epicentre of the quake via the main road but landslides have caused chaos; it took five hours to travel three miles. There seems to be little damage in the valleys and locals tell us hilltop villages have been hardest hit. We met an English lecturer, Chamel Amgin, who is trying to get back to her home village deep in Gorkha district. Trembling with exhaustion and emotion, she said 95 per cent of the houses had been damaged.

Last night we found a candlelit vigil on the road to Gorkha. The flickering flames spelled out a simple message: pray for Nepal.

Dan Rivers is a correspondent for ITV News

TV psychologist backs autistic boy left on locked ward for past six months

Sophie Goodchild

TV PRESENTER Tanya Byron is among thousands of people supporting a family's fight to secure the right care for their autistic teenage son.

The psychologist, below, said the case of 15-year-old Matthew Garnett was a "breach of human rights".

Matthew has spent six months on a locked psychiatric ward because of a lack of specialist support elsewhere. More than 20,000 people have signed a petition launched by his parents Robin and Isabelle.

The couple from West Dulwich, who face a 70-mile, four-hour round trip to visit their son, want the NHS to transfer him to a specialist autism unit for assessment and treatment. Their #makeroomfor-

matthew campaign highlights the lack of specialist support for people with autism as well as learning disabilities. Matthew has been detained under the Mental Health Act at the Cynnet Hospital Woking in Surrey since September. The Psychiatric Intensive Care Unit is the equivalent of an A&E but for people with mental illness.

Mr Garnett claimed his son had deteriorated "on all fronts" since being admitted, and thinks he is in prison.

He said: "Matthew's chances of recovery are diminishing every day that the NHS fails to provide him with the appropriate assessment, treatment and care he urgently needs."

"If our son was detained in a random A&E department miles away from his home for six months, refused assessment, treatment and

care then it would be seen as totally unacceptable, an outrage, a scandal. Yet because our son has autism, learning difficulties and severe mental health problems nobody thinks this is outrageous."

Matthew suffers from ADHD, anxiety and other mental health issues. The NHS has promised him a bed at a specialist autism unit but there is no room at present. Five young patients at the unit are ready to leave but have nowhere else to go. Professor Byron, a

consultant in child and adolescent health, wrote on the Garnetts' online petition: "We wouldn't treat children and young people with physical illnesses this way so why those who have mental health difficulties? This must change." The family's MP Helen Hayes also backs their campaign.

A spokesman for Cynnet Healthcare, which runs the hospital, said it would not be appropriate to comment on an individual case because of its duty to respect patient confidentiality. The

spokesman added: "Our primary purpose is to assist individuals with crisis support, stabilising them ahead of admission to a clinical mental health treatment and support service. Where a placement at a specialist service is not immediately available, a clinical decision is taken which may decide the most appropriate alternative is for the individual to remain in our care until a space does become available."

■ change.org/jp/make-room-for-matthew-free-up-his-mental-health-bed



Protest: Matthew Garnett, 15, on the psychiatric ward. In an image online calling for him to be moved to a specialist unit. Inset left, with his mother Isabelle, of West Dulwich



Urgent appeal: bellringer Paul Carless inspects the 12 bells of St Paul's Cathedral, below

Gang violence fears over move to close and sell two courts

Tristan Kirk
Courts Reporter

TWO of London's courts are to close in a bid to save money despite fears the capital's justice system will be overloaded and it will lead to a rise in gang violence.

The Government risked a backlash when it confirmed that Hammersmith and Camberwell Green magistrates' courts will shut by the end of the year. Hammersmith MP Andy Slaughter branded the decision "short-sighted" and accused the Ministry of Justice of ignoring the result of a six-month consultation, while the Law Society said it was "ill-considered".

Announcing the plans, the Ministry of Justice said it was facing a repair bill of £1.8 million for the two courts, and selling the sites would release much-needed funds for investment in the justice system. It acknowledged that defendants and lawyers may have to travel further for hearings, but said "better use of technology" would open up future access to the courts.

Under the plans, cases from Hammersmith will be split between courts at Westminster, Highbury Corner, City of London and Hendon, while Camberwell's work will be divided between Bromley and Croydon.

Mr Slaughter suggested the Government had "ignored its own consultation exercise" as 90 per cent were against the plans. "It is simply a land grab by the Ministry of Justice to make a profit by selling off the site," he claimed. "This is extremely short-sighted as the consequences for access to justice will, in the long term, be

Sophia Sleight

URGENT repairs are needed to stop the bells of St Paul's Cathedral falling silent – or even plummeting from the supports that keep them in place.

Church leaders have launched an appeal to raise £360,000 to restore the 12 bells. They weigh up to three tons each and were the heaviest in the world when installed in 1878.

They are rung three times every Sunday and on national occasions, such as the Queen's 90th birthday. The bells

Warning bells ring out over St Paul's repairs

as a place of celebration and commemoration, and as a world city with international resonance, may be diminished." He recommended that the authority's policy and resources committee approve the donation when it meets next Thursday.

"The request of £30,000 towards the restoration of these bells is considered justified by officers who have cited the positive PR sponsorship may generate and the traditional role of the bells in national occasions," he said. "To decline this request may result in



For sale: water cannon, never used by Met, £43,000 ono (inc CD player)

Pippa Crerar City Hall Editor

LONDON'S ill-fated water cannon have finally been put on the market without being used, with the Metropolitan Police hoping to sell them for up to £43,000 each.

The full cost of the three crowd-control vehicles – which have been in storage at Gravesend for the last two years – is more than £322,000, meaning that taxpayers will lose out even if they go for the maximum price.

This includes storage, maintenance and upgrade work such as £20,000 on repainting, £5,000 on bodywork repairs due to corrosion and almost £1,000 on installing radio/CD players for the drivers.

Mayor Sadiq Khan announced that the water cannon would be sold via the Ministry of Defence to a reputable European policing or civil defence

"Rash purchase": police training with a water cannon last year. Theresa May banned them as they could cause serious injuries

force. Mr Khan plans to redirect the proceeds, and any funds which would have been spent on maintenance, to projects tackling gang crime.

The 25-year-old Wasserverfer 9000 water cannon were bought two years ago from the German federal police by then mayor Boris Johnson in anticipation of unrest like the 2011 London riots. They were banned from use by the Home Secretary, Theresa May, on the grounds they could cause serious injuries, including spinal fractures.

Mr Khan said: "We've been left in this

position by the previous Mayor who rashly purchased them before he even had permission to use them, and now it's my job to claw back as much of London taxpayers' money as I can."

The Met and the German Federal Police estimated that the water cannon would now be worth between £35,000 and £43,000, after substantial upgrade work. However, the vehicles could fetch as little as £2,000 each, just above their scrap value. They were originally bought from the Germans for £28,000 each but the overall package, including

refurbishment was £218,000. This included £32,000 on making the vehicles compliant with the Low Emission Zone, £20,000 on fitting CCTV and £3,000 on 999 sirens, plus another £3,500 on Met signage.

Tory Assembly member Keith Prince said: "Although they cannot currently be routinely used, the Met can apply for a special licence to deploy water cannon were we to have a repeat of events like the 2011 riots – a fact that the Mayor is either ignoring or unaware of."



Online courts will put respect for law at risk, says barrister

Martin Bentham
Home Affairs Editor

SENIOR judges were today accused of putting respect for the law at risk as the leader of Britain's barristers criticised a "revolutionary" plan to use online courts to dispense justice.

Andrew Langdon QC, the new chairman of the Bar Council, said that virtual hearings – backed by the Lord Chief Justice and other top judges – would be cheaper and appeal to the "many who would rather not go to court".

But he warned that they would also undermine the "majesty of the law" and risked diminishing respect for the court by giving defendants and witnesses only "virtual" contact with judicial authority.

Mr Langdon added that the shift to virtual hearings would make it more difficult to make accurate assessments of those appearing in court.

"I am not convinced that moving to a world where the default position is that a hearing will be virtual as opposed to real, is a good idea," he said in a speech in London to mark his appointment as Bar Council chairman.

"We do it best when we are together in one place. Justice has a human face, and it's not a face on a screen."

@martinbentham

Hot off the press: art from Standard printing plate

AN ARTWORK made from a metal plate used to print the Evening Standard is to be sold at a charity auction.

Eloise Hawser, 32, an artist-in-residence at Somerset House Studios, found hundreds of scrap aluminium plates at a recycling park in Brentford.

Plates corresponding to each page of the Evening Standard end up at the west London plant every day before being melted down into a single block.

The artist chose a page from the "muddled piles of images of famous faces, footballers, the royal family and celebrities" lying on the floor. She created her piece by flattening and framing the plate, its ads and print date still visible.

Hawser told the Standard: "This piece is made from the end process of the Evening Standard. For me the artwork is almost like completing the process."

The artwork is part of Her Stories, a show of pieces by female artists in aid of charities that support vulnerable



women. The works will be sold tonight at an event attended by December Vogue cover star Adwoa Aboah.

The Her Stories auction is at Protein Studios in Shoreditch from 7pm. The works are on show until Sunday.

Naomi Ackerman

Hipsters' Magic Roundabout faces licence fight over noise

Will Crisp

A HIPSTER venue that was set up to transform a wasteland in the middle of Old Street roundabout is facing closure after complaints from neighbours in luxury blocks.

The Magic Roundabout is battling to renew its premises licence amid opposition from residents, including some living in the Bezier building that includes penthouse apartments worth £6million. The bar, cafe and nightclub

opened in 2015 and has hosted house DJ Norman Jay, dubstep pioneer D1 Artwork and indie rock band Foals.

It is also a popular daytime meeting place for the tech entrepreneurs of London's "silicon roundabout".

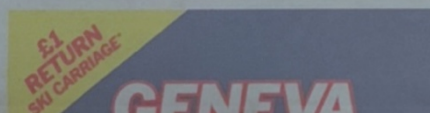
But noise and alleged anti-social behaviour and drug taking from revelers mean it could lose its licence. Some 32 noise complaints have been lodged with Islington council. Residents of the Bezier building have complained of anti-social behaviour, including revel-

lers ripping up plants and urinating into planters.

The venue says that if it is forced to close it will be another victim of complaints from a "minority" about music venues.

"In central London we're seeing a staggering number of music venues being lost," said Sarah Holgate, the venue's creative director.

The decision on whether to renew the licence will be taken by the council's licensing committee on Monday.





Fashionable family: Julia Restoin-Roitfeld, right, and with her mother Carine Roitfeld

Growing up à la mode... with the editor of Vogue

Lizzie Edmunds

THE daughter of former Vogue Paris editor Carine Roitfeld says she had no idea how powerful her mother was when she was growing up – but she did enjoy her glamorous parties.

Julia Restoin-Roitfeld, 36, spoke to Hello! Fashion Monthly about her mother, who worked as a stylist before editing Vogue Paris for a decade. She said: "I was just happy to know she was working with Claudia Schiffer and Helena Christensen. Up until then, I wasn't aware of the power of fashion or her power in the industry. The model, who has just released a collection with Warehouse, added: "There were dinner parties, full of international friends from different cultures. As a kid, of course, it was impressive."



The full interview appears in the December issue of Hello! Fashion Monthly on sale tomorrow

Give 24-hour clubs and music venues a break, says night czar

Pippa Crenar, City Hall Editor

LONDON'S night czar today urged councils and property firms to "give a break" to late-night venues by offering more help with rates and refrain from hiking up rents.

Amy Lamé said the city had reached a "crisis point" as she set out new planning guidance to help protect at risk live music venues, nightclubs and pubs.

London has lost almost half of its nightclubs and a third of its grassroots music venues since 2007, a quarter of its pubs since 2004 and 58 per cent of its LGBT venues since 2006.

In an interview with the Standard to mark her first year in the role, Ms Lamé said: "The guidance is setting the path for local authorities to put this into practice as soon as possible. We're at a real crisis point in losing our venues. It's become really clear to me that some serious things need to change."

"All of these businesses are facing problems around development, the rise in homelessness rates, rent rises, increased business costs. We really need to try to mitigate some of those in order to make the climate better for them to thrive."

The new guidance, ahead of the publication of the London Plan later this month, sets out how to make sure new homes can co-exist with venues by encouraging town hall planning, licensing and noise teams to work together.

Ms Lamé cited Ministry of Sound night-club in Elephant & Castle, which had feared it could lose its 24-hour licence if it

received complaints from new residents in a development near its entrance. In the end, the club reached a deal with the developer, which accepted responsibility for sound-proofing homes.

Ms Lamé also said councils should do more to help businesses struggling with rates by offering more discretionary relief. "If there are particular venues that are really important to London then I'd encourage local authorities to look upon them kindly and give them a bit of a break," she said. "Otherwise we will have to give in to that blandification that I know Londoners resist."

She added that property owners had a responsibility not to hike up rents, particularly in the night-time economy. "This is where we have to see these places as giving something back to the community," she said. She also waded into the row over Uber, which had its licence revoked by Transport for London in September amid safety fears. "If we don't have safe nights out, then it's not worth having nights out," she said.

The 316-licence contractors, who said she had never used Uber, also defended black cabs over higher fares, insisting: "This isn't a race to the bottom."

She and City Hall officials are working on a women's safety charter, aimed primarily at licensed premises, following a summit this summer. She said: "What's been clear from stories that have come out in recent weeks is that sexual harassment takes place around the clock."

"Blandification" battle, night czar Amy Lamé



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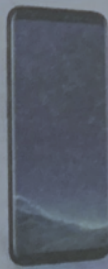
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The Agenda

IN ASSOCIATION WITH **Westfield**



WHAT'S HOT
The stylish buys to refresh every room in your house

From Indian to Italian, British to Mexican, *Johanna Derry* tucks into London's tastiest and most inventive autumnal food...

A GLOBAL FEAST



Delicious fusion: Cricket's modern Indian take on Sunday lunch is hard to resist.

Salad days are over, and the return of the cooler weather is the perfect excuse to treat yourself to big Sunday roasts, indulgent street food, and hearty autumnal feasts. Modern Indian restaurant Cricket is giving a new lease of life to the traditional Sunday dinner at its Brixton test kitchen bar and restaurant. Its Mumbai-spiced

version of the classic meat-and-two-veg combo features Kerala beef rump and tandoori poussin. But if you prefer your Sunday lunch with less heat, The Marksman in Bethnal Green, The Duke of Cambridge in Islington and Blacklock in Soho — and now also in Shoreditch — are all strong contenders.

Taking a more Italianate bent, Angela Hartnett's Murano also has

a new Sunday menu as part of the restaurant's 10th birthday celebrations — four courses, starting with focaccia, arancini and prosciutto, moving on to carnaroli risotto and roasted chicken, and

Continued on Page 56

PULSE POINTS: BEAUTY ADVENT CALENDARS

Swap chocolate for something more opulent in the build-up to Christmas with one of these beauty advent calendars and hampers. **By Lily Pearson**

FOR MAKE-UP AFICIONADOS

The perfect present for the person in your life who has a taste for the finer things and knows their Orla from their Oual, Space NK's impressive beauty calendar is packed with cult brands and luxurious products. **£250, Space NK**



FOR GREAT SAVINGS

If you spend £35 on clothing, home and beauty items in M&S, you can add its renowned advent calendar — including products from Philip Kingsley and Pui — to your shopping basket for £35. A bargain. **£35, Marks & Spencer**



FOR THE GLAMOUR PUSS

Known for ultra-glowing, super-glamorous beauty products, used regularly on A-list stars, Charlotte Tilbury's Christmas hamper will get you party ready this festive season. **£150, Charlotte Tilbury**



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Firehouse star-spotters upset neighbours

Matt Watts

THE pub next to A-list haunt the Chiltern Firehouse faces a review of its licence amid complaints from neighbours about noise from a "mob" of celebrity-spotting drinkers.

The Bok Bar in Marylebone today faced calls for patrons to be barred from drinking outside after 9pm amid allegations about antisocial behaviour.

Residents whose homes overlook the pub have complained noise from the bar has worsened since its neighbour in Chiltern Street – the Chiltern Firehouse – opened in 2013.

Hotelier André Balazs's luxury hotel and restaurant has hosted the likes of David Beckham, One Direction, Nigella Lawson and Cara Delevingne on the same night – and in 2014 was described as "the world's hottest celebrity hangout". Kate Moss has also been spotted there.

But its popularity has been blamed for noise from revellers who have come to Bok Bar as a result. In their submission asking for drinking hours outside to be reduced, residents who have brought the review by Westminster council state: "The premises seem to have become busier since the Chiltern Firehouse put [the street] 'on the map'."

"The principal cause of nuisance is the number of customers who drink outside the premises and the noise."

Gloria May is a complainant whose home is in a mansion block, Wendover

Residents sound alarm over noisy drinkers at pub near A-list club

Court, overlooking the establishments, where a three-bed flat costs over £1 million. She said in her submission: "The noise is... increased by parties held at the Firehouse when photographers and fans... join Bok Bar crowds."

Resident JD Haynes said: "Nuisance from the pub is the norm. The... Firehouse [made it] a chronic problem."

Janet Lee wrote in her complaint: "I find the numbers... intimidating. Standing patrons tend to behave like a mob."

According to council noise inspectors, up to 100 people can congregate outside. There have been at least 22 complaints since April 2013 and 14 visits by environmental health officers.

They concluded noise is "audible but [not] deemed a statutory nuisance". In his



submission to the review Bok Bar manager Bolelaw Lewicki said: "There has been no police intervention, no calls, no noise team, or official licensing team visit... for a long time. Our regular customers are civilised people and not a mob of delinquents as alleged in [a

statement]. I find criticism of my locals harsh." He declined to comment further ahead of the licensing meeting.

The Bok Bar is a separate business from the Firehouse but the same company owns the lease for both buildings. Olivia Hunt, director of business development at André Balazs Properties, which owns the Firehouse, has been involved with resident negotiations. She

wrote in a submission to the hearing that "measures have been put in place... in an attempt to resolve the situation", including security staff ensuring people stay within rope confines in the outside seating area.

The review of Bok Bar's licence was due to take place at 10am today at Westminster City Hall. The Chiltern Firehouse declined to comment.



Celebrity haunt: clockwise from main, The Bok Bar, which faces a licence review, and the Chiltern Firehouse, where stars such as Cara Delevingne and Kate Moss gather

Appendix C • Music

All music tracks can be found here: <https://soundcloud.com/josemanuelcubidesresearch>

1. *For Sale: Water Cannon, Never Used by Met, £43,000 ono (inc CD Player)* (2017)

[https://soundcloud.com/josemanuelcubidesresearch/for-sale-water-cannon-never-](https://soundcloud.com/josemanuelcubidesresearch/for-sale-water-cannon-never-used-by-met-43000-ono-incl-cd-player)

[used-by-met-43000-ono-incl-cd-player](https://soundcloud.com/josemanuelcubidesresearch/for-sale-water-cannon-never-used-by-met-43000-ono-incl-cd-player)

2. *Hipsters' Magic Roundabout Faces Licence Fight Over Noise* (2018)

[https://soundcloud.com/josemanuelcubidesresearch/hipsters-magic-roundabout-](https://soundcloud.com/josemanuelcubidesresearch/hipsters-magic-roundabout-faces-licence-fight-over-noise-2018)

[faces-licence-fight-over-noise-2018](https://soundcloud.com/josemanuelcubidesresearch/hipsters-magic-roundabout-faces-licence-fight-over-noise-2018)

3. *Firehouse Star-Spotters Upset Neighbours* (2017)

[https://soundcloud.com/josemanuelcubidesresearch/firehouse-star-spotters-upset-](https://soundcloud.com/josemanuelcubidesresearch/firehouse-star-spotters-upset-neighbours-2017)

[neighbours-2017](https://soundcloud.com/josemanuelcubidesresearch/firehouse-star-spotters-upset-neighbours-2017)

4. *Give 24-Hour Club and Music Venues a Break, Says Night Czar* (2018)

[https://soundcloud.com/josemanuelcubidesresearch/give-24-hour-club-and- music-venues-a-](https://soundcloud.com/josemanuelcubidesresearch/give-24-hour-club-and-music-venues-a-break-says-night-czar-2018)
[break-says-night-czar-2018](https://soundcloud.com/josemanuelcubidesresearch/give-24-hour-club-and-music-venues-a-break-says-night-czar-2018)

5. *London's on a Blender* (2014)

[https://soundcloud.com/josemanuelcubidesresearch/londons-on-a-blender-](https://soundcloud.com/josemanuelcubidesresearch/londons-on-a-blender-2014)

[2014](https://soundcloud.com/josemanuelcubidesresearch/londons-on-a-blender-2014)

6. *Breaking the Ice With the New Neighbours* (2016)

[https://soundcloud.com/josemanuelcubidesresearch/breaking-the-ice-with-the-new-](https://soundcloud.com/josemanuelcubidesresearch/breaking-the-ice-with-the-new-neighbours-2016)
[neighbours-2016](https://soundcloud.com/josemanuelcubidesresearch/breaking-the-ice-with-the-new-neighbours-2016)

7. *TV Psychologist Backs Autistic Boy Left on Locked Ward for Past Six Months* (2016)

[https://soundcloud.com/josemanuelcubidesresearch/tv-psychologist-backs- autistic-boy-le-](https://soundcloud.com/josemanuelcubidesresearch/tv-psychologist-backs-autistic-boy-left-on-locked-ward-for-past-six-months-2016)
[on-locked-ward-for-past-six-months-2016](https://soundcloud.com/josemanuelcubidesresearch/tv-psychologist-backs-autistic-boy-left-on-locked-ward-for-past-six-months-2016)

8. *Death Ray Device to Stop Attack of the Drones* (2016)

[https://soundcloud.com/josemanuelcubidesresearch/death-ray-device-to-stop-](https://soundcloud.com/josemanuelcubidesresearch/death-ray-device-to-stop-attack-of-the-drones-2016)

[attack-of-the-drones-2016](https://soundcloud.com/josemanuelcubidesresearch/death-ray-device-to-stop-attack-of-the-drones-2016)

9. *It Came Out of the Blue... There Was a Really Loud Bang and a White Flash*

(2016)

[https://soundcloud.com/josemanuelcubidesresearch/it-came-out-of-the- bluethere-was-a-](https://soundcloud.com/josemanuelcubidesresearch/it-came-out-of-the-blue-there-was-a-really-loud-bang-and-a-white-flash-2016)
[really-loud-bang-and-a-white-flash-2016](https://soundcloud.com/josemanuelcubidesresearch/it-came-out-of-the-blue-there-was-a-really-loud-bang-and-a-white-flash-2016)

10. *Mayor Backs Councils' Legal Action Against Third Runway at Heathrow* (2018)
[https://soundcloud.com/josemanuelcubidesresearch/mayor-backs-councils-](https://soundcloud.com/josemanuelcubidesresearch/mayor-backs-councils-legal-action-against-third-runway-at-heathrow-2018)

[legal-action-against-third-runway-at-heathrow-2018](https://soundcloud.com/josemanuelcubidesresearch/mayor-backs-councils-legal-action-against-third-runway-at-heathrow-2018)

11. *Make Room for Modern Art* (2016)
[https://soundcloud.com/josemanuelcubidesresearch/make-room-for-modern-](https://soundcloud.com/josemanuelcubidesresearch/make-room-for-modern-art-2016)
[art-2016](https://soundcloud.com/josemanuelcubidesresearch/make-room-for-modern-art-2016)

12. *My Relief as Son Calls from Quake Camp* (2015)
[https://soundcloud.com/josemanuelcubidesresearch/my-relief-as-son-calls-](https://soundcloud.com/josemanuelcubidesresearch/my-relief-as-son-calls-from-quake)
[from-quake](https://soundcloud.com/josemanuelcubidesresearch/my-relief-as-son-calls-from-quake)

13. *A Global Feast* (2018)
<https://soundcloud.com/josemanuelcubidesresearch/a-global-feast-2018>

14. *Get on Top of Your Game* (2017) [https://soundcloud.com/josemanuelcubidesresearch/get-](https://soundcloud.com/josemanuelcubidesresearch/get-on-top-of-your-game-2017)
[on-top-of-your-game-](https://soundcloud.com/josemanuelcubidesresearch/get-on-top-of-your-game-2017)

[2017](https://soundcloud.com/josemanuelcubidesresearch/get-on-top-of-your-game-2017)

15. *Arcade Funscape* (2017)

<https://soundcloud.com/jmcgfieldrecordings/arcade-funscape> 16. *Anti-Trump March London*
(2017)

<https://soundcloud.com/jmcgfieldrecordings/anti-trump-march-london>

17. *Don't Be Afraid of the Dark* (2015)

[https://soundcloud.com/josemanuelcubidesresearch/dont-be-afraid-of-the- dark-2015](https://soundcloud.com/josemanuelcubidesresearch/dont-be-afraid-of-the-dark-2015)

18. *Warning Bells Ring Out Over St. Paul's Repair*

[https://soundcloud.com/josemanuelcubidesresearch/warning-bells-ring-out- over-st-pauls-](https://soundcloud.com/josemanuelcubidesresearch/warning-bells-ring-out-over-st-pauls-repair-2017?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)
[repair- 2017?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing](https://soundcloud.com/josemanuelcubidesresearch/warning-bells-ring-out-over-st-pauls-repair-2017?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)

19. Session 1

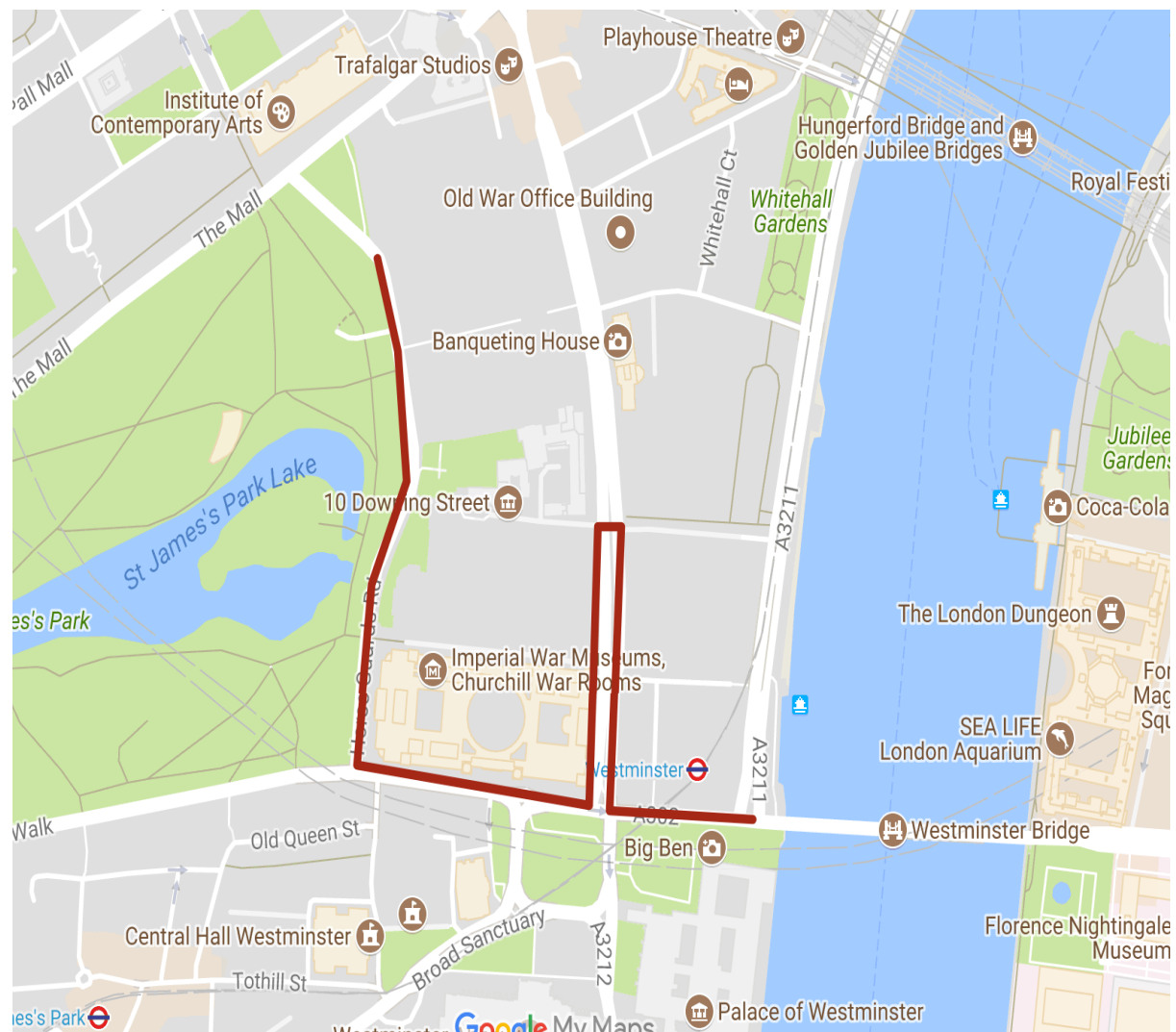
[https://soundcloud.com/josemanuelcubidesresearch/session-](https://soundcloud.com/josemanuelcubidesresearch/session-1?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)
[1?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing](https://soundcloud.com/josemanuelcubidesresearch/session-1?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)

20. Session 2

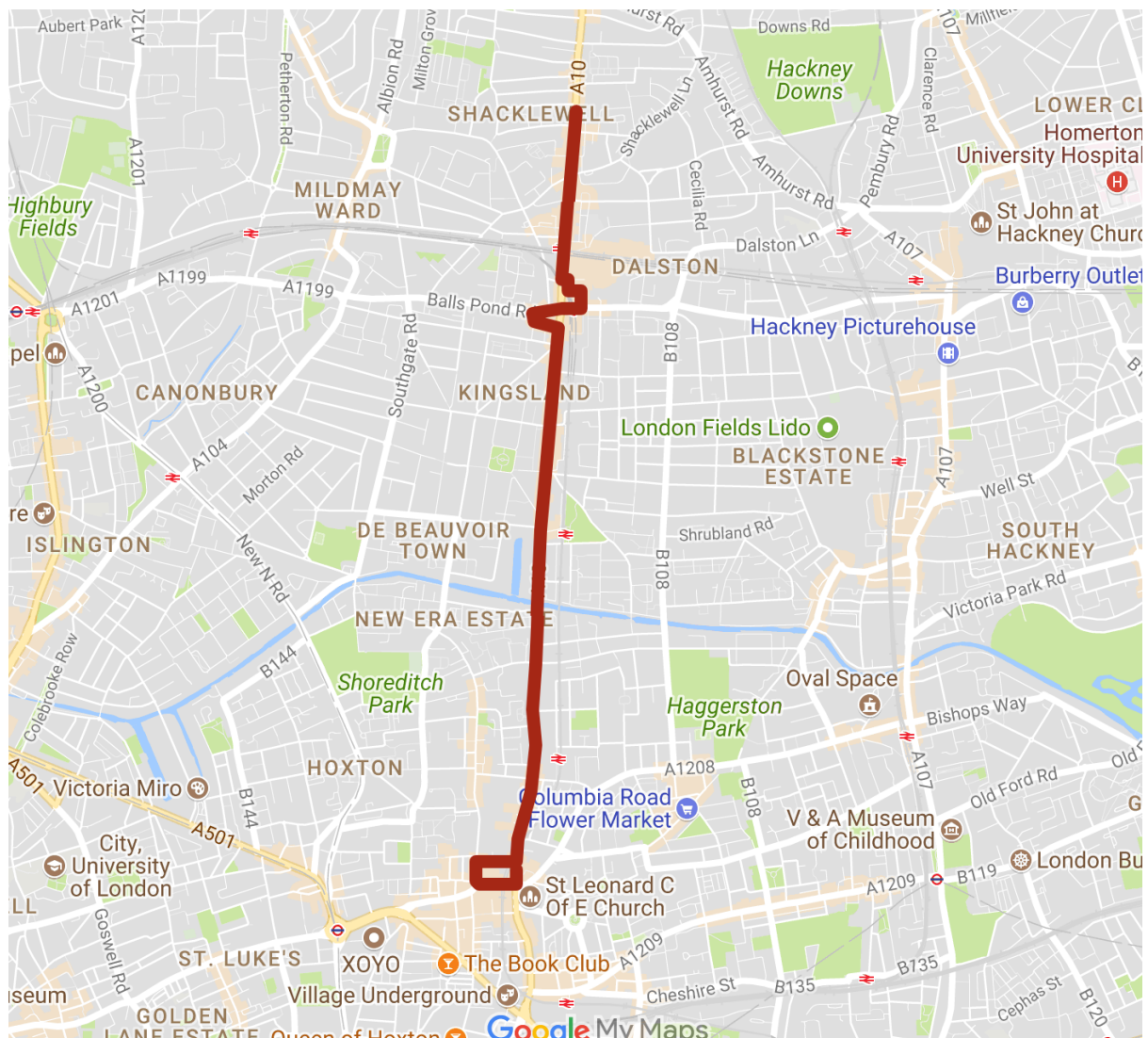
[https://soundcloud.com/josemanuelcubidesresearch/session-](https://soundcloud.com/josemanuelcubidesresearch/session-2?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)
[2?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing](https://soundcloud.com/josemanuelcubidesresearch/session-2?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing)

Appendix D • Maps

1. *For Sale: Water Cannon, Never Used by Met, £43,000 ono (inc CD Player)* (2017)



2. Hipsters' Magic Roundabout Faces Licence Fight Over Noise (2018)



Appendix E

- Original Recordings

1. Dalston to Shoreditch

<https://soundcloud.com/josemanuelcubidesresearch/dalstonshoreditch> 2. Shoreditch

<https://soundcloud.com/josemanuelcubidesresearch/shoreditch>

Appendix F

• Videos

All Videos can be found here:

<https://www.youtube.com/playlist?list=PLapGZt8DDNg3yKpyJ3z2sxM8lsuOcX8k3>

- Video 1 https://youtu.be/T7hX_HYWH1A
- Video 2 <https://youtu.be/PZ7xUkXkQ6w>
- Video 3 <https://youtu.be/R6e9O353SDE>
- Video 4 <https://youtu.be/rBzfF0OJmH8>
- Video 5 <https://youtu.be/SjuXj-KFURQ>
- Video 6 <https://youtu.be/50gAniLjLs0>
- Video 7 <https://youtu.be/9xGO5InnXOA>
- Video 8 <https://youtu.be/EXgeICB4pIg>
- Video 9 <https://youtu.be/TQX8YtPMb7c>
- Video 10 <https://youtu.be/EX-U373NyKo>

- Video 11 <https://youtu.be/o3sdC8IKK9E>
- Video 12 <https://youtu.be/PlIjO247R74>
- Video 13 <https://youtu.be/hkxiQho0xnk>
- Video 14 https://youtu.be/rExmgdMD_CE
- Video 15 https://youtu.be/_mDFLfJLhNg
- Video 16 <https://youtu.be/tCqmbxOiqAk>
- Video 17 <https://youtu.be/kDD5VMfREgM>
- Video 18 <https://youtu.be/ISHuPbGitzk>
- Video 19 <https://youtu.be/ecN21aPHeq0>
- Video 20 <https://youtu.be/ovUA6fymPfU>
- Video 21 <https://youtu.be/Si1F06asofY>
- Video 22 <https://youtu.be/l-UTLeGLFYo>

- Video 23 <https://youtu.be/hdzLcUyMnsc>
- Video 24 <https://youtu.be/P7xFR7lh3Ng>
- Video 25 <https://youtu.be/24NSws41YUM>

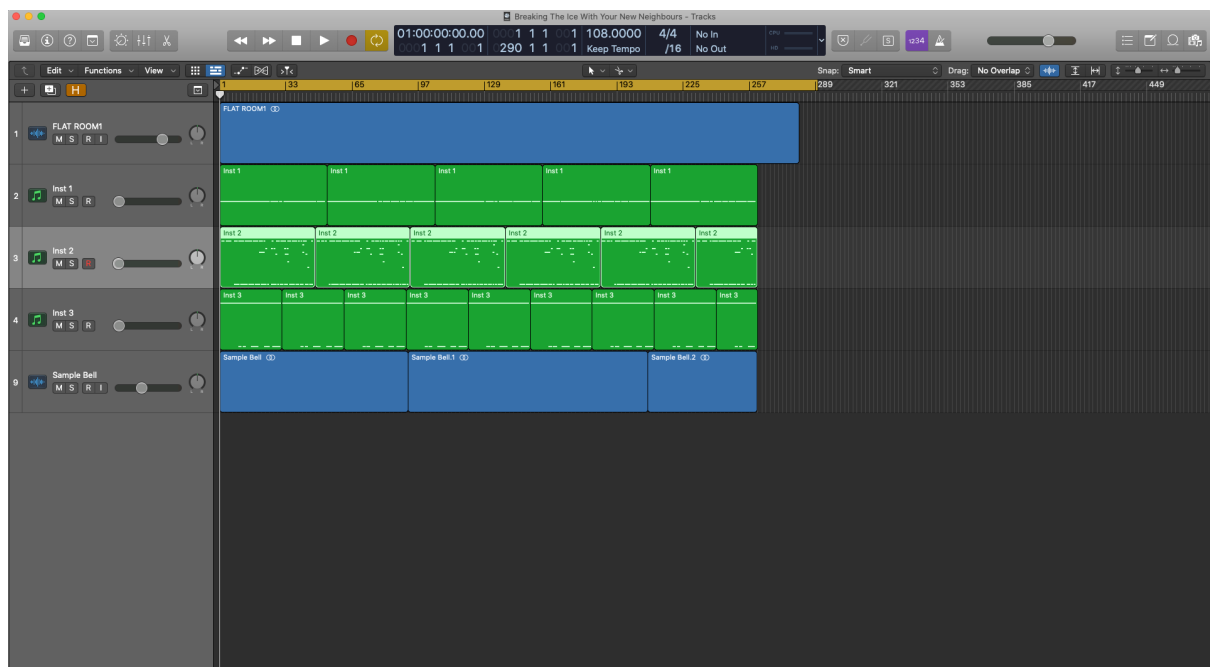
Appendix G

- Session images

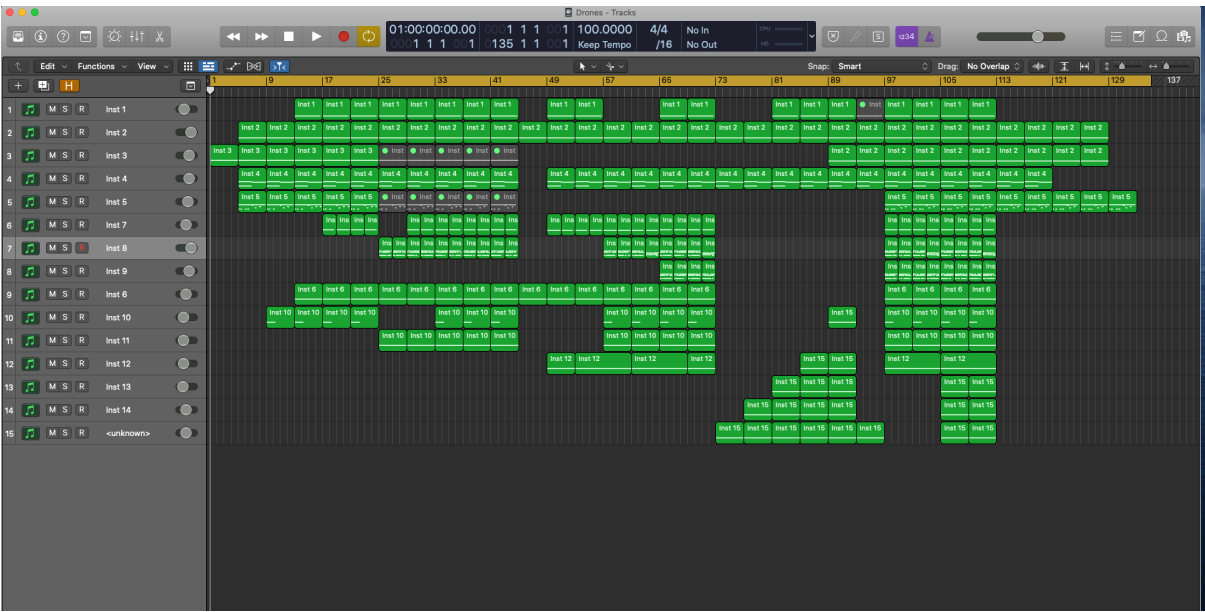
London's on a blender



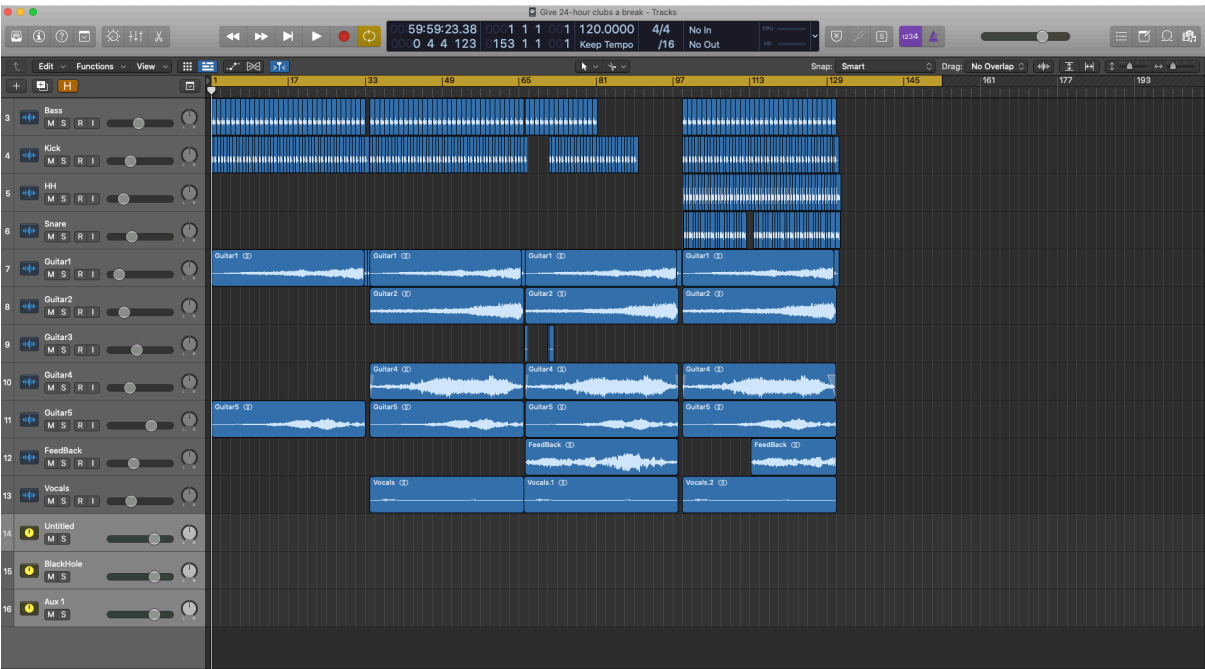
Breaking the ice with the new neighbours



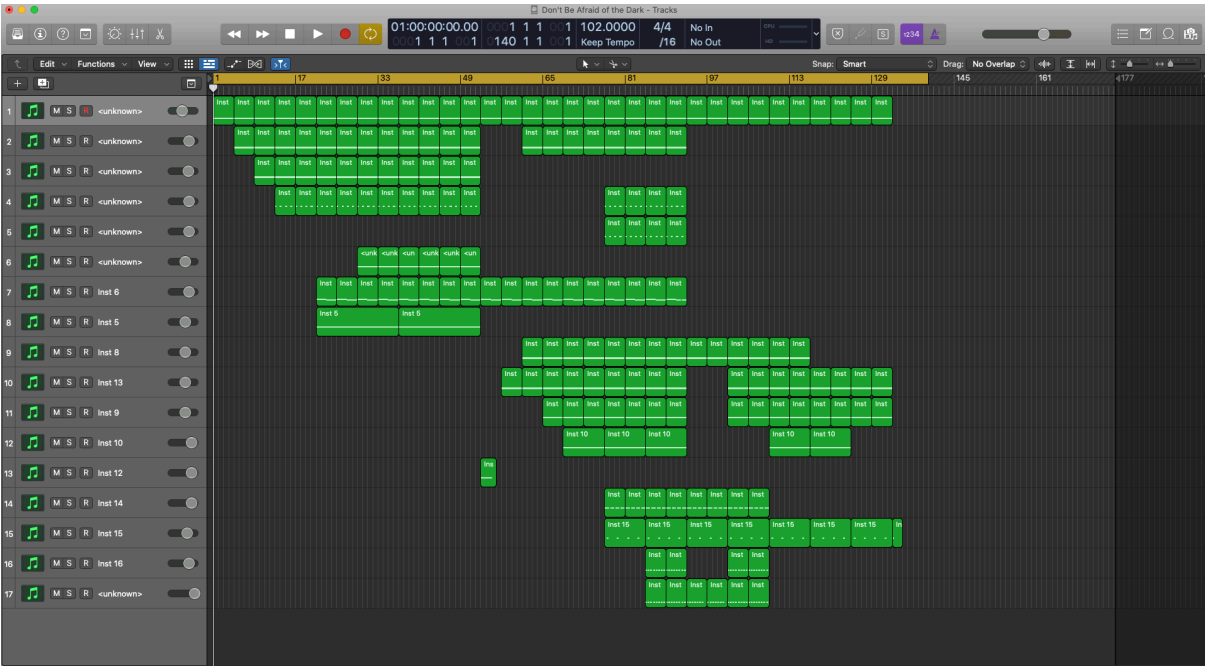
Death ray device to stop attack of the drones



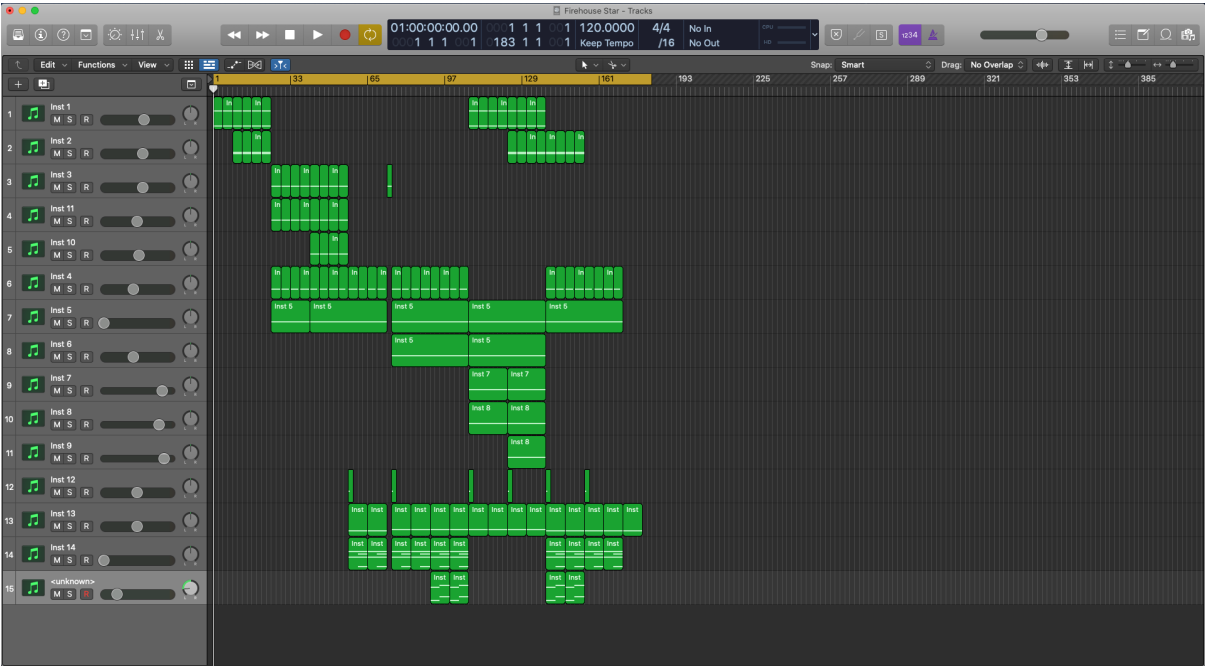
Give 24-hour club and music venues a break, says night Czar



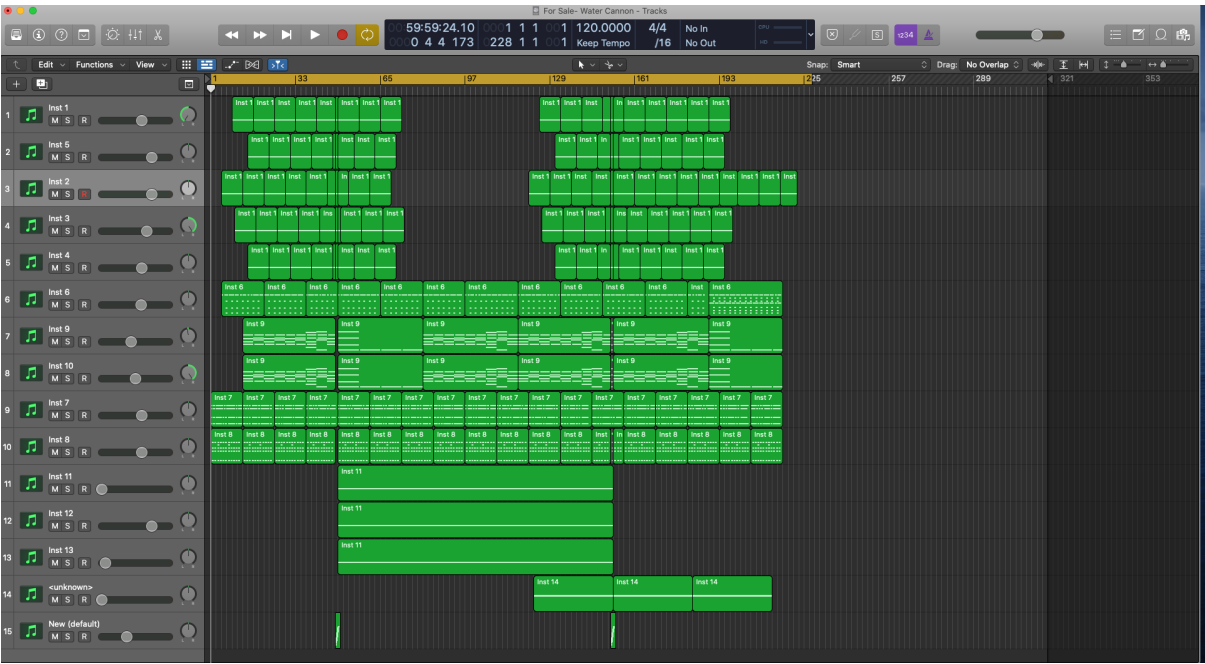
Don't be afraid of the dark



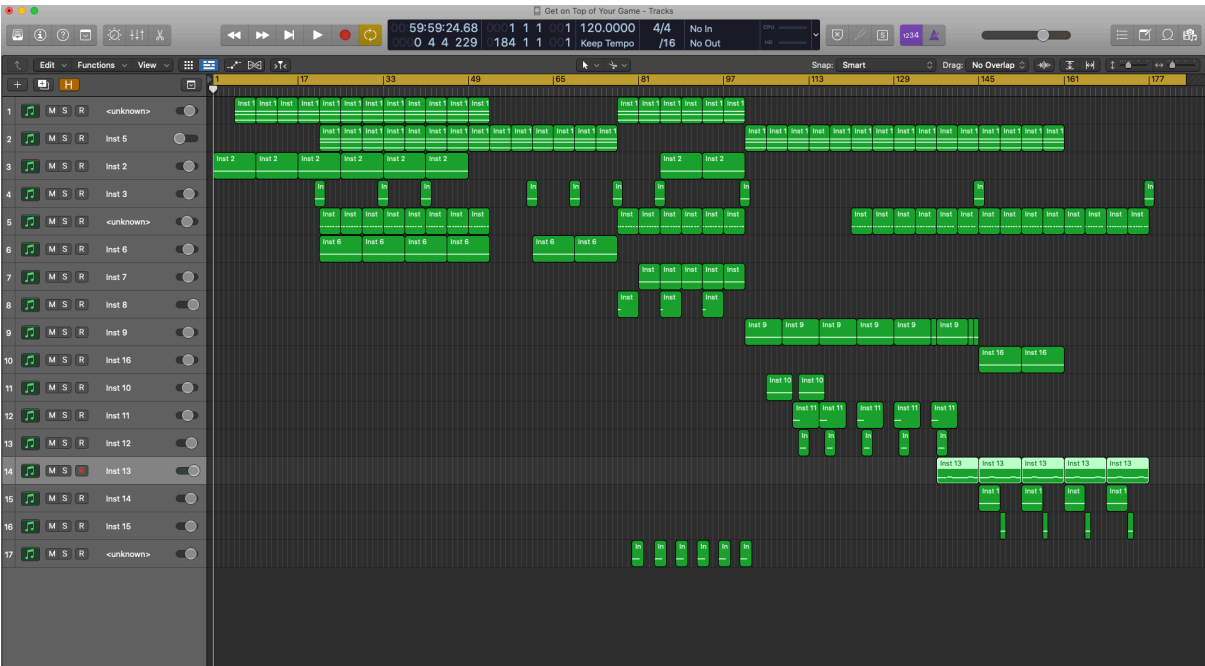
Firehouse star-spotters upset neighbours



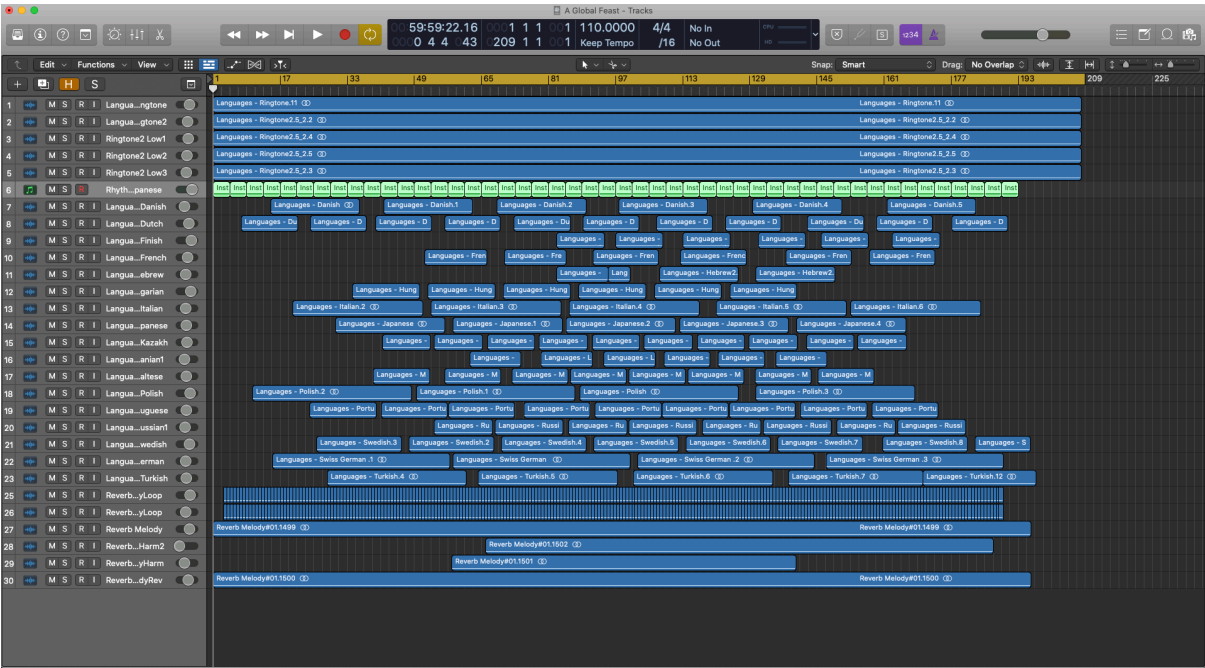
For sale: Water cannon, never used by Met, £43,000 ono (inc CD Player)



Get on top of your game



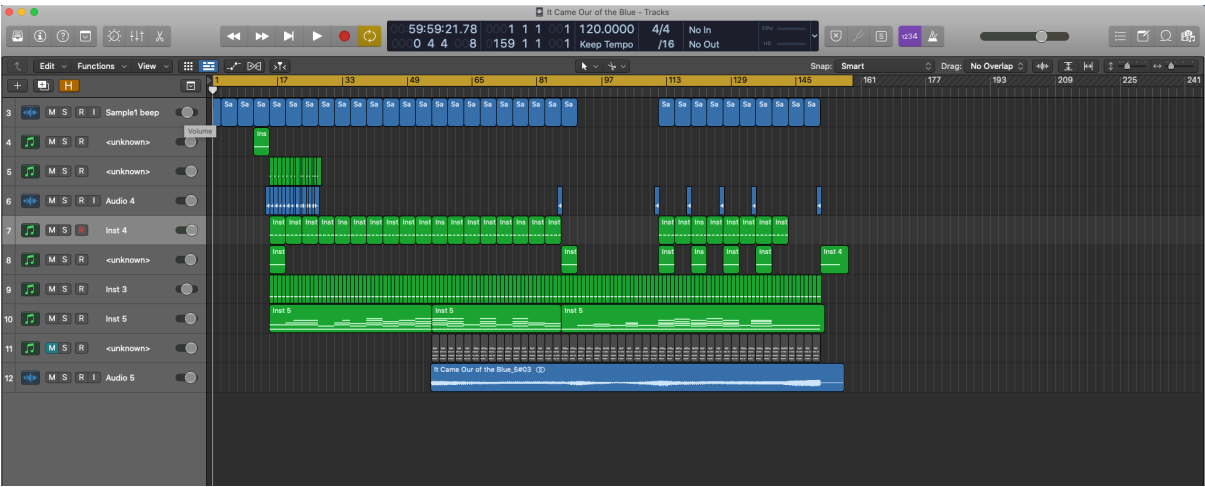
A global feast



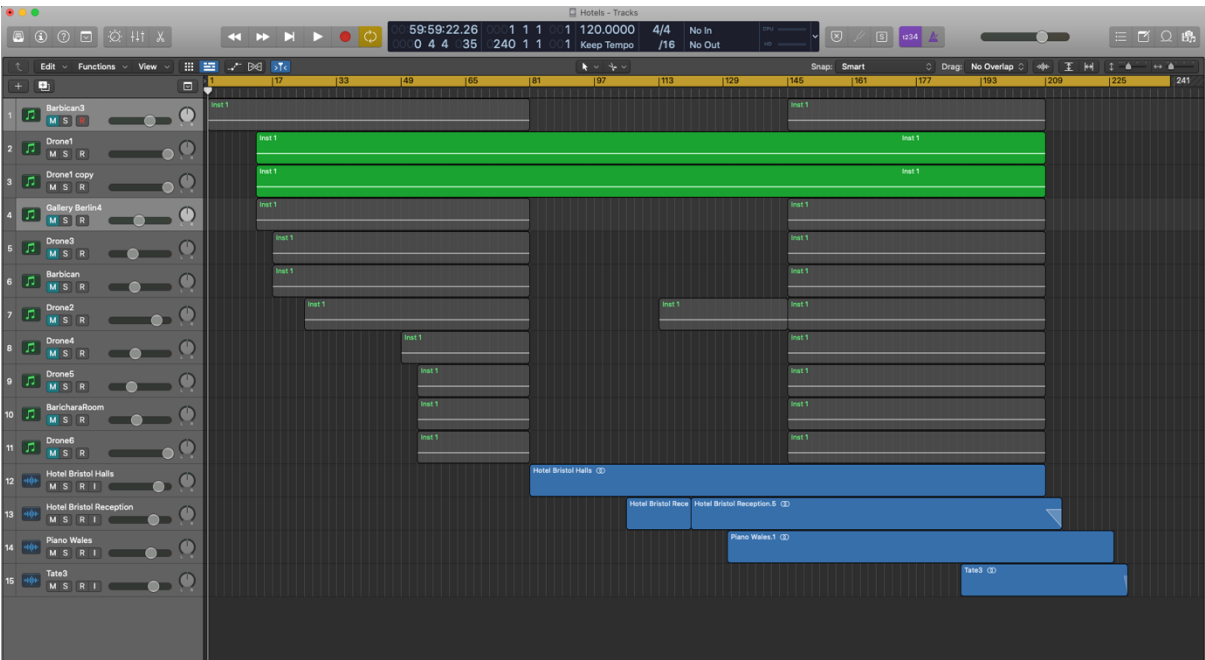
Hipsters' magic roundabout faces licence fight over noise



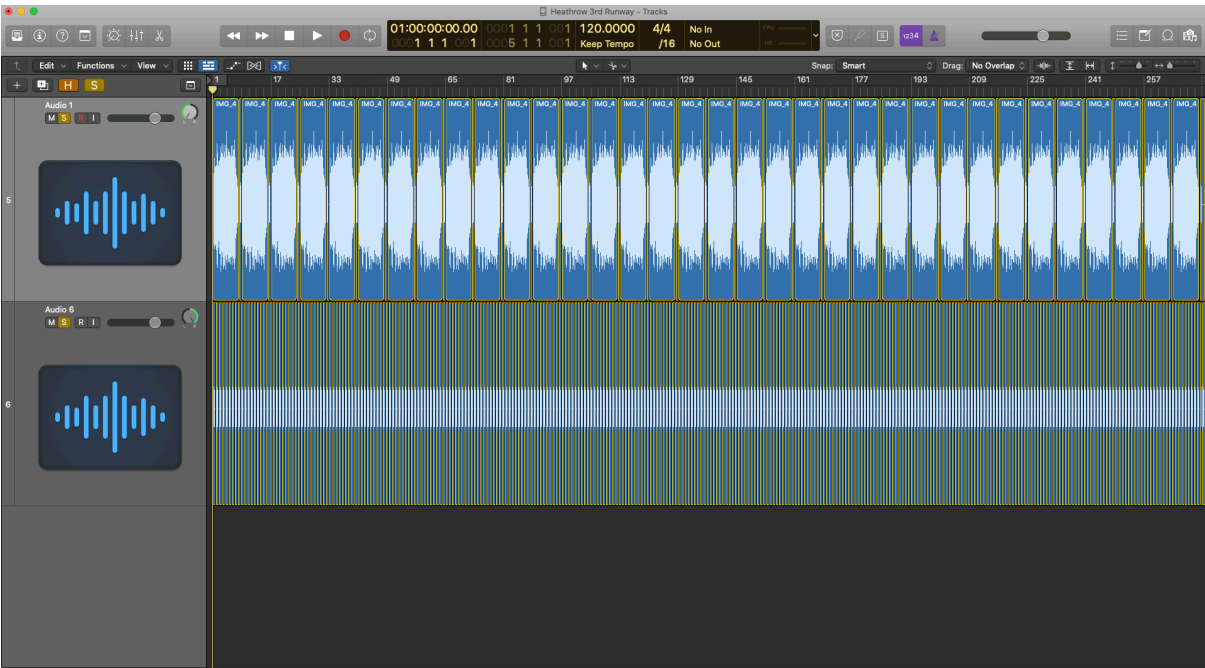
It came out of the blue...there was a really loud bang and a white flash



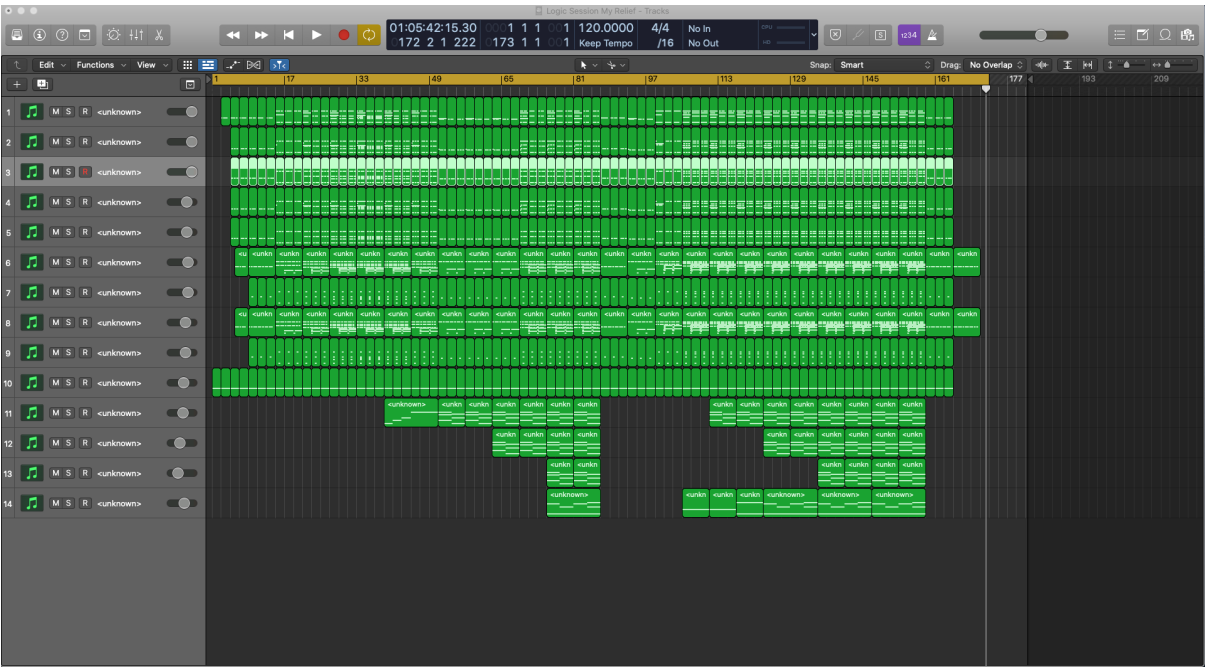
Make room for modern art



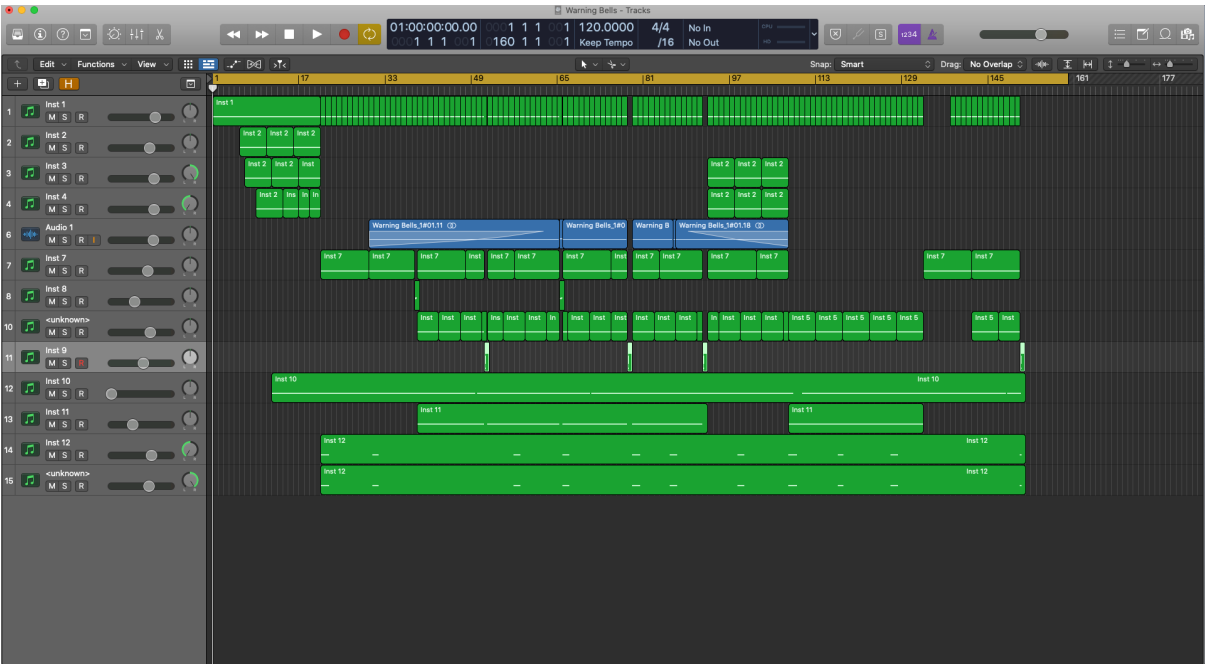
Mayor backs councils’ legal action against third runway at Heathrow



My relief as son call from quake camp



Warning bells ring out over St. Paul’s repair



TV Psychologist backs autistic boy left on locked ward for past six months

