Scores in Time: Exploring the use of Sound as a Medium for Notation in Musical Composition

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Copyright Statement

Abstract

This commentary deals with my compositional practice from 2014-18, which was concerned with staging first encounters between performers and scores through different types of scoring practices, particularly aural notation. Through the lens of performance studies, I discuss the rehearsal process and how it relates to the idea of finished works of art. Applying the theory to musical contexts, and drawing on musicological studies, I discuss the connections between works, rehearsals, and the concert tradition as a framework for analysing my own work.

Through a survey of experimental scoring practices over the last fifty years, I then contextualise the aural notation practice which I developed from 2015 onwards. I discuss how this type of work enables renegotiated agency for composers and scores in performance contexts, drawing links with uses of language in verbal notation and characterological theories in performance studies. The final part of the commentary turns towards specifically using headphones to communicate audio scores to performers. Placing this work in the context of similar practices in the fields of theatre, TV, dance and music, and using analytical frameworks from the field of composition, I discuss several of my works written from 2015-18 which use headphones as a medium for communication to performers. The compositional methods of these pieces are explained and analysed, before some aesthetic ramifications are discussed, and avenues for future research elaborated.

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Thesis word count (including citations): 36,451

Documentation, Examples, Scores

This commentary should be accompanied by three folders, labeled 'Documentation', 'Examples' and 'Scores'. They are referenced in the text in the following way:

Docu followed by a number indicates the photo/video/audio file referenced in the Documentation folder. **Example** followed by a number indicates the video/audio file referenced in the Examples folder. The **Scores** folder contains the scores for all works in the portfolio, which use mixtures of aural and visual notation. Numbers in the Documentation and Scores folders correspond to the list of works detailed here.

List of Works

My portfolio, written between 2014 and 2018, consists in ten works for musical performance. Dates refer to time of composition.

1. *neither serious/or, I take the liberty/of not writing to you/regarding my serious/Variations*
    November 2014 - January 2015
    String quartet
    8 minutes
    Visual notation: paper scores

2. *for_____ on_____*
    January - April 2015
    Open instrumentation
    8 minutes
    Aural notation: loudspeakers

3. *Laughter Studies 1*
    October 2015 - February 2016
    Two vocalising performers
    11 minutes
    Aural notation: headphones

4. *Laughter Studies 2*
    December 2015 - January 2016
    Two vocalising performers
    9 minutes
    Aural notation: headphones

5. *fantasy with motorbike*
   February 2016
   Large ensemble
   3 minutes
   Aural notation: headphones

6. *Laughter Studies 3*
   April - November 2016
   Three vocalising performers
   10 minutes
   Aural notation: headphones

7. *Laughter Studies 4*
   April - May 2016
   Solo vocalist, jazz trio, mixed ensemble
   14 minutes
   Aural notation: headphones

8. *Vox Pop*
   May - November 2016
   Four performers
   13 minutes
   Aural notation: headphones

9. *Laughter Studies 6*
   March 2017 - October 2018
   Four performers, mixed ensemble
   15 minutes
   Aural and visual notation: headphones, paper scores

10. *Laughter Studies 7*
    June 2017 - July 2018
    Three vocalising performers, mixed ensemble, stereo sound
    18 minutes
    Aural and visual notation: headphones, paper scores

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Introduction

Overview

From February to May 2013, the National Gallery had an exhibition called *Barocci: Brilliance and Grace* (2013). In the exhibition, many more of the Baroque painter's sketches were displayed than his full, finished works. The way this was done, which seemed like a deliberate curatorial choice, led me to question what the real difference was between a sketch and a final piece. The feeling was made stronger by the fact that, personally, I found many of Barocci's sketches to be at least as interesting as his 'completed' works. Following this line of thinking led me to focus on *exposing processes of becoming* rather than/as well as presenting things in their completed state. Consequently, the next three pieces I wrote—*study of a process* (2013a), *and each clear change/process tipped without breaks/a little of/in it* (2013b), and *My Favourite Piece* (2014)—translated this idea into music by stipulating that the performers not know the score beforehand, but rather encounter it for the first time in performance. In these situations, the usual step of preparation was denied to performers. Both they and the audience would simultaneously enact/witness a *process of becoming familiar* together in performance. In a shifting of the usual concert situation, they would start on an equal footing of familiarity with the score.

Probing the idea of foregrounding sight-reading and rehearsal-as-performance in turn led me to consider the ideas of professionalism, vulnerability, and failure in concert settings. When musicians fail to perform their socially and culturally entrenched roles on stage, the tenets underlying the performance traditions in which they are embedded can be revealed, challenged, and critiqued. This was the general idea behind *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'* (2014-15). Feeling that this piece had more or less worked conceptually (and therefore seeing little need to expand upon it), I started to seek a more creative way to frame performer-score interaction. I was also, at this stage, becoming tired of writing traditionally notated scores, and sought more inspiring working methods. It is at this point that I turned to sound as a

medium for notation. My first audio score (*for_____ on_____* (2015)) continued the ideas of staging a rehearsal process. After this, my subsequent pieces (*Laughter Studies 1-7* (2015-18), *fantasy with motorbike* (2016), *Vox Pop* (2016)) shifted the explicit focus slightly away from staged rehearsal, while continuing to ask questions about modalities of performer-score interaction.

Research questions

Through this turn towards sound as a medium for notation, the aims and objectives of my research started to coalesce. As such, the questions motivating this thesis are:

(i) Which new modes of rehearsal and interpretation are opened up by audio scores?

- What new types of material are made accessible by using aural notation?
- How do those types of material come to affect performance and interpretation?
- What bearing does the medium itself have on interpretation?

(ii) How can compositional devices frame interactions between performers and scores in a way which explores the idea of spontaneity in performance?

- To what extent does a score's medium determine the level of spontaneity the performers can have when reacting to it?
- Which compositional decisions beyond determining a score's material and medium play a meaningful part?
- Should audio scores be learned, or does their temporal nature make them better simply as prompts for spontaneous reaction?
- What role can verbal notation play in audio scores?

(iii) Which new aesthetic modes can be explored through the use of aural notation?

- What difference does it make if the scores are presented openly to everyone in the room, rather than privately, to performers?
- Which ramifications does the choice of field recordings/sounds from everyday life have for the viewer/listener's perception of the piece?
- How can individual personalities be expressed through voice and language in the context of interpreting everyday sounds?

Methodology

The methods I used to investigate these aims were composition, workshop, rehearsal, programming, concert attendance, and audiovisual documentation.

Composition is a means of making music by which a composer creates scores for interpretation by performers. My primary tools for making audio scores were the Zoom H4N portable stereo microphone, which let me record any sound in the world that I encountered physically, and Logic Pro X, the digital-to-analog workstation, which let me transform, arrange, and sequence these recordings into the configurations I needed.

Workshops constitute a key stage where things can be tried out, ideas tested, and processes attempted, in a safe, private (or semi-public) space, before the work knows what it is doing. I benefited from several workshops during the research period, notably with Joseph Houston and Antonia Barnett-Macintosh in 2015 (*Laughter Studies 1*), Alice Purton, x.y ensemble, and Bastard Assignments in 2016 (*Laughter Studies 2, 4* and *Vox Pop,* respectively), and Nadar Ensemble in 2017 (*Laughter Studies 7*).

The rehearsal process is one which is concerned with building up a piece until it is good enough to be performed. I am grateful to the Manon Quartet for letting me hear them rehearse in preparation for *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'.*

Occasionally, I programmed my own work in concert, to test how it would look and sound, through the event series *WEISSLICH* (2014-18; see for example **Docu 2a**). Witnessing performances of my works and recording them enabled me to reflect on whether my stated aims were being fulfilled in interesting or satisfying ways.

Finally, participating in all these stages as a composer gave me the opportunity to witness performers as they approached my piece, and create a feeling of trust between us in which we could both take more risks. This is an approach I value, and indeed depend on, for a creative practice that is willing to be experimental.

Context

The context in which I present my work can broadly be called experimental music. As Gottschalk says in the opening of her book *Experimental Music Since 1970,*

> Experimental music is challenging to pin down because it is not a school or a trend or even an aesthetic. It is, instead, a position—of openness, of inquiry, of uncertainty, of discovery. Facts or circumstances or materials are exploited for their potential sonic outcomes through activities including composition, performance, improvisation, installation, recording and listening. These explorations are oriented towards that which is unknown, whether it is remote, complex, opaque, or falsely familiar (2016, p. 1).

Gottschalk suggests five key tenets as having a significant role to play in the definition of experimental music—'indeterminacy', 'change', 'non-subjectivity', 'research', 'experience'—but ultimately acknowledges the ambiguity of both the terms 'experimental' and 'music' preclude them from any easy definition (ibid., pp. 1-8).

One point worth elaborating on is that of indeterminacy, since it is a technique which, as well as being 'perhaps the most overt and central trait of experimental music' (ibid., p. 2), can accurately be used to define every piece in this portfolio. For John Cage, indeterminacy broadly referred to an 'act the outcome of which is unknown' (1961, p. 13). As Barrett (2011) has posited, one can read Cage's *4'33"* (1952) as the significant point of departure from the idea that a score should *describe* musical sounds *accurately* (the piece is also cited by Gottschalk as an important reference point). In *4'33"*, the opening up of music to any and all potential sounds is caused by its theoretical opposite, an instruction to remain silent. Rather than a description of musical sound, the score provides a prescription to the performer, and what occurs as a result is as much a part of the piece as the pianist's gestures on stage. *4'33"*, which separates so absolutely what is written on the page from the sounding result, 'suggests a shift in focus from the composer of a determinate musical work to the listener who witnesses the unfolding of a process. In this sense, the score is less a blueprint mandating a pre-constructed musical object; it is, moreover, embraced for the contingent consequences of its realization' (Barrett 2011, p. 457). Ian Pepper, also cited in Barrett's account, expresses the

fundamental need to acknowledge this gap between a score and its realisation in performance: 'by defining "music" as writing on the one hand, and as sound on the other, and by erecting an absolute barrier between the two spheres, Cage initiated a crisis in music that has barely been articulated, let alone worked through' (1997, p. 34). Both of these accounts therefore reveal that what is at play in indeterminate scoring practice is a deeper-level examination of the relationship between score and performance, text and act.

Turning away from theoretical definitions, Gottschalk provides another useful illustration by instead foregrounding the social networks themselves involved in the production and reception of experimental music:

> There is rich documentation of work by many composers and sound artists, but they tend to be associated more through networks of people (who knows who) than through the concerns explored in their work. Often the former leads to the latter, but not always, and because of the informal way that information travels in this field, the associations based on networks have been far more prevalent (ibid., p. 6).

Perhaps, then, an equally good explanation of my 'experimental music practice' is to look at the networks of people engaged in it, or even each individual practitioner, one by one. Sketching out a basic picture on this basis (and not wanting to repeat the acknowledgments!) I will here briefly point to the fact that my work is shown regularly at small-scale, DIY series mainly in the UK, Europe, and USA, with some notable exceptions of bigger, better-funded festivals. The networks in this DIY world are, thankfully, tight—a 'bunch of weirdos' in the corner, as Jennifer Walshe always likes to say—enabling, as I said in the methodology, a practice where risks can be taken in the trust that everything is going to be OK, no significant amount of money will be made or lost, and (therefore, hopefully) no one will end up hating each other.

Finally, although my work involves an important element of spontaneity in performance, it is more useful to situate it within (notated) experimental music than improvised music. Any indeterminate notation can be said to involve an element of improvisation, or something like it, since it is open to the players not pre-planning and deciding the order of notes or kind of material they are going to play before playing it. It is in this vein that Derek Bailey includes composers such as Earle

Brown and Karlheinz Stockhausen in his wide survey of improvised music, which discusses styles as varied as Hindustani music and free jazz (Bailey 1992). Although it may be indeterminate, notated experimental music is distinguished from improvised music because of the importance it still places on the composer, the score, and the musical work; these are values it inherits from the broader Western Art Music tradition from which it comes. A good example of this is, again, Cage attributing himself as the author on the published score of *4'33"*. On the other hand, improvised music, whether it is Flamenco, Indian music, or jazz, does not see it important to perform a 'work', especially not one expressed or embodied in some idealised state in a score. It is with this in mind that veteran saxophonist and improviser Evan Parker suggests 'it would be more appropriate to consider score-making as an esoteric branch of the literary arts with its own criteria rather than as anything to do with music' (quoted in Bailey 1992, p. 81). Rather, he finds more value in a score being 'considered a recipe for possible music-making' (ibid.). Although this softer version of what a score is aligns closer with my own ideas and methods, the fact that I still posit myself as a composer, and that I still write scores—works, even—to be performed by others, fundamentally keeps my practice away from the field of improvised music, no matter how much agency performers have in my pieces.[1]

Adhering to notions such as 'the composer' and 'the work' may at first glance seem to be a cumbersome and unnecessary move for someone interested in spontaneity, but positioning myself within this framework offers me the benefit of criticising it from the inside. Whereas improvised music provides an alternative paradigm for music-making, bypassing the conventions of Western Art Music altogether, acting within a notated tradition enables me to challenge its tenets, to stretch the idea of what composers and scores are, and to create friction between

[1] This is not to say that it is completely impossible to marry composition and improvisation. A good example in this respect is John Zorn, who 'has written, over a number of years, a series of compositions which deal with improvisation, or, more accurately, improvisors. His aim is not, as is usually the case, the realisation of a pre-ordained result through improvisation, but the stimulation, or the releasing, of the network of relationships possible between a group of players' (Bailey 1992, p. 75). It is telling, however, that Zorn's work is characterised by Bailey in terms antithetical to the Western Art tradition: '"vernacular" pieces', 'abrupt juxtapositions of different musics, including popular styles' (ibid.); Zorn's relationship to his collaborators is consequently more democratic, eschewing the hierarchies of traditional composer/performer relations.

works and the milieu which defines them. It is this friction, which fits well into methodologies of experimental music, which I find productive.

Structure

The themes in my research developed piece by piece in a fairly linear way, in which every new piece built conceptually on the last. In this sense they share the definition of experimental music applied to James Tenney's work by Bob Gilmore,

> that "experimental" in music should mean more or less what it does in the sciences. The composer would write a piece of music, try certain things out, and judge if they worked, didn't work, or only partly worked. Then in the next piece, the experiment would be followed up: like a scientist, one could go further down the same line (quoted in Gottschalk 2016, pp. 3-4; see Crispin 2014, p. 26).

Chapter 1 discusses the period 2014-15, in which my research was oriented towards staging the rehearsal process as a performance. This approach in turn relates to the idea of the work of art/music, and its place within the concert tradition. Looking at theories from theatre and performance studies (Schechner 2005), I sketch a basic definition of what the rehearsal process is, and how it interacts with works. Drawing on ideas from musicology (Goehr 1992, Small 1998), I then explore how, in music, the work came in part to define the concert tradition, and link this idea back to rehearsal in specifically musical settings. The primary example I examine in depth is Peter Ablinger's *Wachstum und Massenmord* (2010), which I interpret as articulating a critique of this nexus of connections, before discussing *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'.* The chapter ends with a discussion of failure (as defined mainly by Priest 2013) in regards to this piece, and my eventual rejection of the concept as a theme for practice-led research.

Chapter 2 discusses the transitional phase in 2015, when I first started to explore sound as a medium for notation. Continuing the investigation started in my previous work regarding staging first encounters between performers and scores, I develop the themes of using field recordings as scores, exploring colloquial verbal notation, and heightening composer / score agency on stage, and relate all three to aural notation. Citing research in psychoacoustics (Bregman 1990), verbal notation

(Lely and Saunders 2012), and performance studies (Auslander 2006, Groth 2017), I study several examples of relevant precursors in composition (Lucier 1970, Westerkamp 1989, Bailie 2011, Crowe 2013-) before applying the theoretical framework to *for_____ on_____*.

Chapter 3 discusses the final period of research, 2015-18, in which I focused on writing audio scores that are communicated privately via headphones to performers. After finding parallel examples of headphone practice in theatre, TV and dance, I draw on studies in the fields of semiotics (Saussure 1959), sound (Schaeffer 2017, Norman 1996), and composition (Bhagwati 2018, Sdraulig and Lortie 2019) to elaborate a framework for analysing pieces (Bryars 1970, Chen 2009, Miller 2013, 2017) which relate to my own (*Laughter Studies 1-7, fantasy with motorbike, Vox Pop*).

In the conclusion, I suggest some aesthetic consequences of my approach, namely the idea of building empathy between audiences and performers (Cook 2013, Rutherford-Johnson 2017), before speculating on future avenues of research.

Chapter 1

Staging Rehearsal (2014-15)

In this chapter, I link together the related concepts of rehearsal, the work of music/art, and the concert as a socially and culturally specific format for listening. Looking at examples from theatre, visual art, and music performance, I set out the key concepts and parameters that frame my piece for String Quartet, *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'* (2014-5). I then discuss this piece in relation to the conceptual framework set out at the start of the chapter, explore the compositional decisions taken to fulfill its stated aesthetic aims, and finally evaluate what connection it may have to the concept of failure.

1.1 Rehearsal and the work

In a theatre production, writes director and scholar Richard Schechner, 'all elements need rehearsal – which means that all elements are capable of radical, total change' (2005, p. 62). In his account, rehearsal is a process which is integral to the making of artworks, conceived in the broadest sense.[2] As such, 'one must fold each work back in on itself, comparing its completed state to the process of inventing it, to its own internal procedures during that time when it was not yet ready for showing' (ibid., p. 204). Employing the means of 'repetition, simplification, exaggeration, rhythmic action, and the transformation of "natural sequences" of behavior into "composed sequences", the rehearsal process is concerned with 'how a work is reworked until it crosses a threshold of "acceptability" after which it can be "shown"' (pp. 205-207).

Writing about the art of Francis Alÿs, curator Russell Ferguson characterises rehearsal as a process which 'tends to reject conclusions in favour of repetition and recalibration' (2010, p. 195). Each rehearsal, he writes, 'opens the door to a further rehearsal, one more iteration in which things can be improved, simplified, or deleted. If a work is still in rehearsal, then it can always be changed. The moment of

[2] He includes Shakespeare, the Homeric epics, and Notre Dame Cathedral, for example.

completion is always potentially delayed' (ibid.). Rehearsal entails a deferral of completion. In that sense, it is something of an antithesis to the idea of the finished work of art. Citing Michael Fried's idea that, when one encounters a successful work of art, 'at every moment the work itself is wholly manifest' in an instantaneous moment of 'continuous and entire presentness', Ferguson separates the act of rehearsal from the idea itself of finality and closure (quoted in ibid., p. 194; see also Fried 1998, p. 167).

1.1.1 The work-concept in music

Both of these accounts delineate a relationship between rehearsals and works of art. In the more specific field of Western Art Music, this concept of a 'work' is a dominant but less easily defined one, owing in part to the fact that music is an immaterial, ephemeral, experiential thing.[3] Although appeal can be made to the written score, as historian Jim Samson notes, 'even the most basic ontology recognises that the written score underdetermines a musical work, which can only be fully realised in performance' (2002, p. 4). According to philosopher Lydia Goehr (1992), the decisive moment for the concept occurred around 1800, at which time music stopped being employed solely in the service of functional events—such as Church worship, courtly dance, or tavern song—and started to become appreciated in an autonomous, purely aestheticised way. Drawing on the contemporary theories of Kant, Schelling, Hegel, and Schopenhauer, Goehr claims the increasing aestheticisation of music led it to become appreciated in a more object-like way. This new object or concept emerged to be 'the work'.[4] Autonomous, unified, self-sufficient, and springing forth from the mind of the composer, each work 'embodied and revealed the Infinite or the Beautiful', and 'contained something valuable, something worthy of aesthetic or "metaphysical" contemplation' (ibid., p.

[3] Of course, this is also the case for theatre, but unlike claims historically made about music (see Cook 2013), Schechner does not equate the 'work' with anything other than its existence through temporary, contingent performances and productions. As such, 'all theatrical works change over time as they are adjusted to immediate circumstances' (2005, p. 205). This makes theatre, for Schechner, unique in its dependence on continually (re)making works (even traditional ones) through the rehearsal process.

[4] In an example which demonstrates the power the theory had on practitioners, and the lofty status attributed to works, in 1835 Liszt would call for 'the foundation of a musical Museum' for 'religious, dramatic and symphonic music, by which the works that are considered best in these three categories shall be performed every day for a whole month in the Louvre'; this 'museum' would be accompanied by the publication of 'the most important works of old and new composers from the musical Renaissance to the present time', a publication which, Liszt suggests, 'might be called the "Pantheon of Music"' (Walker 1987, pp. 159-60; see also Goehr 1992, p. 205).

174). Samson similarly characterises Romantic conceptions of musical works 'as monads, "containing" their own meaning rather than exemplifying a genre, articulating a style or confirming an institution' (2002, p. 22).

Under the work-concept, notation became the medium between the transcendental work and its concrete realisation in sound. Through notation, the idea of Werktreue—being 'true to the work'—could be enforced effectively on performers. Accordingly, composers—most famously Beethoven—started to specify metronome markings, instrumentation, and dynamics in ever more precise ways, expecting musicians to comply. For the first time, 'the score was thought to embody a kind of intentional knowledge – an "idea" that originated with the composer, so that the performer's responsibility was to unlock the mysteries to make available the idea, to interpret' (Samson 2002, p. 4). Performers had a duty to interpret the score as well as possible, the better to express the work's content. Their relationship to the score started to be based on fidelity—or even subservience—above all other things (Goehr 1992., pp. 231-2). The score was taken away from its erstwhile role as a mere memory-aid, and instead started to represent a musical ideal to be strived for. The equation of Werktreue with Textreue (being true to the text) would reach points of absurdity by the time we got to Schoenberg, who is reported to have called the performer 'totally unnecessary except as his interpretations make the music understandable to an audience unfortunate enough not to be able to read it in print' (Cook 2001; see Newlin 1980). Cook is right to doubt how seriously to take such a flippant claim, but, quoting Goehr, nevertheless makes the point that 'transparency, invisibility, or personality negation' have widely been held to be qualities performers should demonstrate in transmitting musical works (ibid.; see Goehr 1996).

Music's newfound work-oriented status had consequences for the way it was rehearsed. According to Goehr, at the start of the eighteenth century, 'the term "rehearsal", and its equivalents "*die Probe*", "*die Wiederholung*", and "*die Aufzählung*", were often used interchangeably with terms designating performance' (1992, p. 193, italics in original). Her claim is that, having been unnecessary in an age when 'music was not so much listened or attended to, as it was worshipped, danced, and conversed to' (ibid., p. 192), rehearsals were now a key part of the practice and dedication that was required to perform musical works. She points to the fact that,

before the concept had become regulative, *one* rehearsal taking place before a performance of Handel's music in 1784 was seen by historian Charles Burney as 'indisputable proof of the high state of cultivation to which practical Music is at present arrived in this country' (quoted in Hogwood 2007, p. 238). This was by all accounts for a concert of unprecedented prestige and scale: backed by the monarch George III, 'between three and four thousand' audience members and '513 performers' amassed in Westminster Abbey for it (ibid.). Although today, such prestige would doubtless guarantee extensive rehearsal, at the time it was still not the norm. It surely did not help matters that such enormous forces must have presented considerable logistical problems (which is perhaps also what Burney was getting at).

At the other end of the spectrum, where practicality, finance and logistics met theory head-on, is the example of Stockhausen's *Carré,* first performed in Hamburg, 1960. The score includes the detailed rehearsal plan, undertaken in the run up to the piece's premiere, which resembles a schedule of monastic discipline and rigour. It involved what must have been exhausting 12-hour days for the four conductors, and started two months before the performance (**Figure 1.1**).

So much rehearsal time for such large forces is enough to make any composer's eye water. While the frustration around insufficient rehearsal time with orchestras is something still ubiquitously felt by composers and conductors today (that this is especially so in Britain has historical precedent—see Ehrlich 1985), the case has surely always been different for music on a smaller scale. It is reasonable to suppose, for example, that the logistical ease with which a String Quartet can rehearse would have made this outfit far more equipped to meet the heightened aesthetic expectations of the nineteenth century.

REHEARSALS FOR THE PREMIÈRE PERFORMANCE:

Preceding these ca. 2 months of daily chorus rehearsals, choruses I, II, III, IV separated.

1.	I	II	III	IV
	11—13 chorus*	9—11 strings	9—11 strings	13—15 chorus*
	18—20 strings	11—13 {woodwinds / brass	11—13 {woodwinds / brass	18—20 strings
	20—22 {woodwinds / brass	13—15 {percussion / vibraphone	13—15 {percussion / cymbalum	20—22 {woodwinds / brass
	22—24 {percussion / piano	18—20 chorus*	20—22 chorus*	22—24 {percussion / harp/harpsichord

Rehearsal of the 4 conductors between 3.00 and 6.00 p. m.

2. like 1.

3.	I	II	III	IV
	9—12 {strings / woodwinds	11—13 chorus	9—12 {strings / woodwinds	13—15 chorus
	12—15 {percussion / brass	18—21 strings	12—15 {percussion / brass	18—21 {strings / woodwinds
	18—20 chorus	21—24 {percussion / brass	20—22 chorus	21—24 {percussion / brass

Rehearsal of the 4 conductors between 3.00 and 6.00 p. m.

4.	I	II	III	IV
	9—12 {strings / brass	11—13 chorus	9—12 {strings / brass	13—15 chorus
	12—15 {percussion / woodwinds	18—21 {strings / brass	12—15 {percussion / woodwinds	18—21 {strings / brass
	18—20 chorus	21—24 {percussion / woodwinds	18—20 chorus	21—24 {percussion / woodwinds

Rehearsal of the 4 conductors between 3.00 and 6.00 p. m.

5.			
9.30—12 all instruments	15.30—18 all instruments	9.30—12 all instruments	15.30—18 all instruments
13.30—15.30 TUTTI with chorus	19—21 TUTTI with chorus	13.30—15.30 TUTTI with chorus	19—21 TUTTI with chorus

Rehearsal of the 4 conductors starting 9.00 p. m.

6. like 5. only all rehearsals **with** chorus

7. 10—12.30/13.30—16 Tutti in concert hall on 4 platforms

8. 9.30—12 / 13—15.30 Tutti in concert hall on 4 platforms

9. 9.30—12 / 13—15.30 Tutti in concert hall on 4 platforms (recording)

10. 17.30—18 final rehearsal
18—19 recording
20—22 concert

77 instrumentalists, 32 (or 48) singers, 4 conductors

* At the première 48 singers were used.

Figure 1.1. Rehearsal schedule for the premiere of Stockhausen's *Carré*, which took place in Hamburg, 1960 (Stockhausen 1971, p. xiii). © Universal Edition 1971.

1.1.2 The concert as listening format

Driven by the expansion and increasing dominance of the bourgeois class in Europe from 1789-1848, these aesthetic expectations were expressed through the new format of the public concert (Weber 2004). Writing in the 1990s about the 'institution of the modern concert', Christopher Small outlines the main philosophical, social, political and cultural characteristics, set in motion in the nineteenth century, that define the format to this day:

(i) music was 'for listening to rather than performing';
(ii) public music making belonged to 'the sphere of professionals';
(iii) there should be a 'formal and independent setting' just for listening to music;
(iv) individual audience members should have to pay for admission to this setting (1998, p. 71).[5]

Throughout the 1800s, the increasing professionalisation of music (ii), and the commercialisation of concerts (iv), heightened the quality of musical performance, and, in turn, of audiences' expectations of it. These two practical considerations feed directly into the first, philosophical one (i). Separated from social or liturgical function, music came to serve its own ends, and came to be appreciated passively. With palpable scorn, Small mourns the loss of active musicking in formal Western society. Contrasting Western Art Music with other musical practices that have existed in different cultures throughout history, he rightly points out that the detached, contemplative behaviours of silent audiences is the anomaly (ibid.). As for concert halls, those buildings designed and erected specifically to provide this 'formal and independent setting' (iii), they represent the apex of Western civilization's investment in the concert format. Pointing out that cathedrals and palaces served as the venues of earlier times, Small shows that concert halls are not strictly necessary for musicking, even for large-scale events. Rather, they signify both that 'the performances that take place [in them] are an important social activity in their own right', and that 'those who consider them important have the confidence and possess, or at least control, the wealth and the power to actualize that belief in

[5] For a more comprehensive history of concerts as a listening format, see Weber (2001, 2004).

architectural form' (ibid., p. 21). They are physical manifestations of music's newfound autonomy, expressed through the political and financial dominance of the bourgeois class.

Another way to conceptualise the concert tradition is in terms of what Schechner calls 'efficacy' and 'entertainment'. According to him, these two ideas form two 'poles of a continuum' that define all types of performance from theatre to ritual (2005, p. 130). On one side, 'ritual' (Church services, court dances, tavern songs), which is focused on real-life transformation through active participation, and discourages criticism, is closely tied to 'efficacy'. On the other side, 'theatre' (concert music), which is for the fun of audiences, who appreciate and are encouraged to criticise but do not participate themselves, is closely tied to 'entertainment' (ibid.; **Figure 1.2**). Schechner stresses that no performance consists purely of one of these two sides; it is rather a more complicated question of differing amounts and characteristics of each. It is also a question of shifting priorities as different epochs fade into one another. Strikingly, his analysis supports Goehr's in claiming that 1800 was a watershed moment for the 'entertainment' side of the continuum in theatre. Whereas this subsequently changed again for theatre, Western Art Music is still dominated by the idea of the entertainment-heavy concert format (**Figure 1.3**).

EFFICACY Ritual	⟷	ENTERTAINMENT Theater
results		fun
link to an absent Other		Only for those here
symbolic time		emphasis now
performer possessed, in trance		performer knows what s/he's doing
audience participates		audience watches
audience believes		audience appreciates
criticism discouraged		criticism flourishes
collective creativity		individual creativity

Figure 1.2. Schechner's 'Efficacy-Entertainment Braid' (2005, p. 130). © Richard Schechner 1988, 2003.

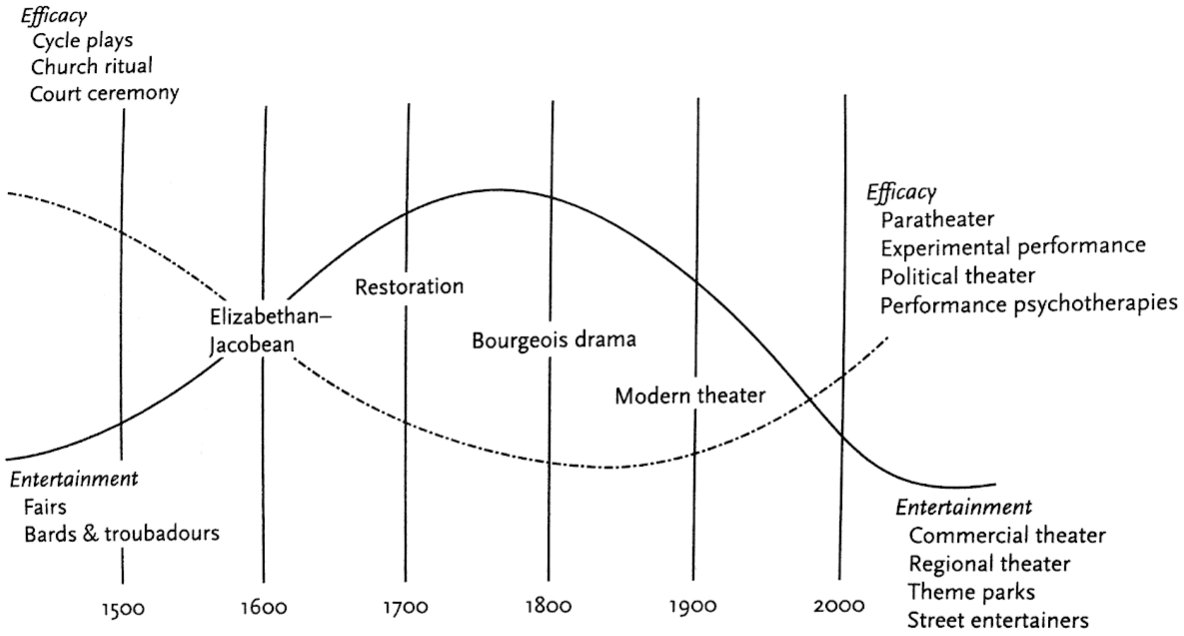

Figure 1.3. Theatre history defined in terms of interrelations of the 'Efficacy-Entertainment Braid' (Schechner 2005, p. 133). © Richard Schechner 1988, 2003.

1.2 Growth and mass murder in Donaueschingen

Today, the longest-running concert series for contemporary music is the Donaueschingen festival, which takes place on a yearly basis. Read from a socio-cultural angle, it is an institution in its own right, which expresses and upholds the values and conventions of the concert format. Peter Ablinger's *Wachstum und Massenmord* (2010), for title, string quartet, and program note, explores this socio-cultural context as a theme through the compositional parameter of (lack of) rehearsal.

> I knew something was up when I saw the members of the JACK quartet fold their scores back to break bindings that had obviously still been intact a moment before. They started discussing rehearsal techniques for the piece. In the first moments the audience seemed not to know what to make of it. After a minute or so, we began to realize that what we were seeing and hearing was not a performance of the score, but a first rehearsal of the piece (Gottschalk 2010).

So starts Jennie Gottschalk's account of *Wachstum und Massenmord*, performed by the JACK quartet at Donaueschingen Musiktage 2010. As she notes, the simple fact of taking a process which is usually enacted in private as preparation for performance—rehearsal—and presenting it *as* the finalised performance itself, did not sit well with some audience members. After a few minutes, a portion of listeners in the room turned hostile. While there was natural variation in the audience's response, some not finding the situation all that contemptible, the overall situation became a confrontation, a battle to shut the piece down: 'Some audience members started clapping, shouting "bravo!" and being otherwise disruptive to get the quartet to end the performance' (ibid.). The hostile behaviour was ultimately repeated when the Diotima quartet performed the piece, despite the difference with which they interpreted it. Unlike the JACK quartet,

> They skipped through to different spots in the score, rather than going sequentially. They played up the comic potential of the situation, and had the audience laughing for quite some time. They came onstage for this piece in everyday clothes, rather than wearing the tuxes as in the rest of the concert. Pencils were dropped, and they spoke quite audibly, so that the audience could hear them. The performance was clearly a performance, and I suspect that it had very little to do with how they actually rehearse. This audience had already heard the JACK quartet's first performance, and it seemed that some people had decided how long they would 'let' it last (ibid.).

Although the Diotima's interpretation was better received, and by Gottschalk's account probably more varied (the audience was at least entertained before turning hostile), it strayed further from the instructions in the score. In his instructions, Ablinger stipulates that the performers should 'ignore the presence of an audience and stay private [...] Don't try to make it interesting for the audience' (2010). In this last line, we glimpse some of the intention of the piece, which hints at a self-awareness that it might be frustrating, boring, or antagonistic. The fact that Ablinger asks the performers to sit facing in on each other adds to this feeling (ibid.).

It says a lot about the expectations we have of the concert format that the Diotima quartet's overt 'performativeness' was received better than the JACK quartet's 'naturalness', or, to pick a stronger example, that any other 'normal' piece, in which the performers have rehearsed the score beforehand, would likely be better

received than any performance of this piece. It is as though some members of the audience found the experience of an act of private preparation unbearable, since it so fundamentally flouted the rules of the concert format, in which what is heard should already have been prepared, assembled, polished, and in which they (the audience) are acknowledged as the main target, or beneficiary, of the performance. The piece can be interpreted as playing with the assumption that concerts are occasions—'rituals' (Small 1998)—where strictly defined social roles (of 'audience' and 'performer', to name just the two most obvious ones) are maintained according to cultural tradition. Concurrently, Gottschalk entertains the idea that it was likely not 'an outright lack of patience' that caused the audience to react as they did, but rather 'an objection to the premise' (2010) of the piece itself. She gets to the crux of the matter when she asks 'Is the piece intentionally revealing not only aspects of the quartet itself, but of the cultural dynamic at play in the room?' (ibid.) Taking into account Ablinger's instructions in the score as well as the performances themselves, it is hard not to answer in the affirmative.[6]

Since, intentionally or not, the piece did engage with its particular socio-cultural context, factors come into play which would under normal circumstances be seen as subsidiary or unimportant. It is significant, for example, that the piece took place at Donaueschingen, the oldest, and one of the most (if not *the* most) prestigious festivals for contemporary music in the world. Gottschalk is aware of this factor, and its significance, when she says

> I'm almost completely sure that this event would never play out this way in the US. It's also worth taking into account that the audience had a high proportion of composers in it, and that there is a further sub-culture that builds around many of the people who go to the festival year after year (ibid.)

Placing this piece in such a specific context, defined by a highly evaluative culture, politics of style, and prestige, sharpens the interpretation of it as a form of institutional critique. So, arguably, does the fact that the Diotima, JACK and Arditti quartets were booked to perform the piece, given their high status in the

[6] Gottschalk asks a further question, 'Does intention matter, or is all about how it plays out?' (ibid.), which, in a way, provides an answer to those who doubt that the piece was *supposed* to provoke awareness of the wider social situation: it simply did, which is what is so interesting about it.

contemporary music world (which is coherent with the prestige of the festival, of course). That the Arditti quartet refused to perform the piece, seemingly unwilling to take such a risk, only strengthens this interpretation. Consider, for example, the same piece played at a free, DIY underground new music night in someone's basement, played by unknown performers, attended by an audience of twenty who had simply come out of friendship to the composer/performers/organisers. How would it be interpreted then? Would the audience really shut it down forcefully? Or would they just quietly take sips out of their cans of lager until the quartet decided to finish it themselves? I've been to far, far more boring performances where the polite (British?) audience has stoically and politely endured long spells of stifling non-entertainment. It is highly unlikely that the piece would have the same weight, the same layers of meaning, in this situation. A likely explanation for the Donaueschingen performance is that the socio-cultural context of the occasion activated expectations of professionalism and quality which were not upheld by the performers, causing parts of the audience to react in a hostile way.

1.2.1 Examples from theatre, performance and visual art

While *Wachstum und Massenmord* presents a particularly relevant articulation of the related concepts which form the rehearsal-work-concert nexus, other examples of pieces and practices which deal with the idea of rehearsal are Richard Schechner's work with The Performance Group in the 1960s and 70s, Francis Alÿs's works *Rehearsal 1 (El Ensayo)* (1999-2001) and *Rehearsal 2* (2001-6), Annika Kahrs's *Strings* (2010), and Luke Nickel's *String Quartet No. 1* (2014).[7]

Francis Alÿs's *Rehearsal 1 (El Ensayo)* links the ideas of rehearsal, repetition and failure through the medium of video. A car is shown attempting to drive up a hill in Tijuana. The soundtrack accompanying this action is a band stopping and starting as they rehearse a piece. The car follows the sound of the band: it accelerates when they play, and comes rolling back down the hill when they stop (Alÿs 2015). It is hard to avoid the allusion to the myth of Sisyphus, the king of Ephyra condemned to

[7] It is perhaps merely a curious coincidence that Ablinger's Nickel's, and Kahrs's pieces, as well as my own, explore the concepts of practice, rehearsal, and concert performance through the ensemble of a String Quartet. It is an even more curious coincidence that, completely independently, both Kahrs and I chose to base our pieces specifically on Beethoven's Op. 18.

rolling a stone up a hill, only for it to come rolling back down when he neared the top. The myth is often a point of reference in texts which talk about failure (see Le Feuvre 2010), a related idea which will be discussed further in sections **1.3.2** and **1.3.3**. *Rehearsal 2* takes a similar process—mapping action onto musical rehearsal—into a theatre. This time, the act of driving up a hill is replaced by a strip artist, and the music is a rehearsal of Schubert's *Lied der Mignon*. When the musicians play, the stripper takes her clothes off; when they stop and discuss the piece, she puts them back on. Her actions 'zig-zag' towards finality (Alÿs 2001).

Luke Nickel's *String Quartet No. 1* deals with rehearsal in a different way. It is written for four performers who read a script on stage, transcribed directly from a rehearsal by the Obsession Quartet, from Edmonton, Canada. Every instance of the musicians playing music in the original has been taken out, leaving long gaps of silence for the audience to imagine or reconstruct what was being played, using only the spoken words of the performers as input (Nickel 2014).

Annika Kahrs's Strings (2010) is a performance and video piece for string quartet that deals with practice, rehearsal, musical skill and professionalism in performance. Here, again, the expectations of traditional concert music are set up with a String Quartet, who—reading from sheet music on stands—plays the start of Beethoven's Op. 18 No. 4. They then stop abruptly, exchange seats with the player to their right—swapping instruments—and start again. This happens four times, the music becoming increasingly unrecognisable with each change of instrument. The musicians' professionalism and skill are suddenly revealed to be far more brittle than they usually seem, along with the socio-cultural system in which they are embedded.

In exploring both the structure of rehearsal (Ablinger, Alÿs, Nickel), and/or the inner workings, or hidden processes, behind performance (Ablinger, Kahrs), all of the above pieces resonate with Richard Schechner's account of theatre practices 'in the 1960s and 70s' in which 'artists emphasized and displayed rehearsal and backstage procedures' (2005, p. 131). Although such practices at first stuck to simple devices such as the half-curtain (also used by Brecht),

> since around 1965 what has been shown to the spectators is the very process of developing and staging the performance – the workshops that lead up to the performance, the various means of theatrical production, the ways the audience is brought into and led from the space, and many other previously conventional and/or hidden procedures. These all became problematic, that is, manipulable, subjects of theatrical inquiry. These procedures have to do with the theater-in-itself and they are, as regards the theater, efficacious: that is, they are what makes theater into theater regardless of themes, plot, or the usual 'elements of drama'. Theater directors and choreographers discovered reflexivity even as they were discarding (temporarily) narrativity. The story of 'how this performance is being made' replaced the story the performance more ordinarily would tell (ibid.).

Reading the works cited as examples above in terms of Schechner's framework suggests that they point back towards the 'efficacy' side of the spectrum, towards ritualistic actions that aim to transform the audience in some way and, in some cases, engender real-life political or social change. While the practices he describes do this in a much stronger way than any of the pieces mentioned before, Ablinger, Alÿs, Kahrs and Nickel's works nevertheless push towards the idea of performance-in-itself. In Ablinger's case, the story of 'how this performance is being made' takes precedence over any narrative structure, since he leaves this completely undecided. The same cannot be said of Alÿs, Kahrs and Nickel, who rather balance this idea out with narratives that are either entirely repetitive (Alÿs, *Rehearsal 1*) or repetitive within a broader teleological line (Alÿs *Rehearsal 2,* Kahrs, Nickel).

As all of these examples show, the (musical) work, performed and presented in concert, depends on the process of rehearsal. When this process is manipulated as a compositional parameter, it has the potential to affect the work's identity, and in turn interrogate the socio-cultural context of the concert format. These were the same ideas and parameters that informed my composition for String Quartet *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'* (2014-5).

1.3 *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'* (2014-15)

Set up by composers Alex Nikiporenko and Nicholas Peters in 2015, the *840* concert series quickly established itself in the roster of London's artist-led series for

new music (amongst, for instance Kammer Klang, ddmmyy, Bastard Assignments, WEISSLICH, and the older NonClassical, to name but the ones that I have been personally involved with). Their first event, which took place on 30th January 2015 at St. James's Church, Islington, and featured the Manon Quartet, was the setting for my piece, *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'.* The event in large part upheld the socio-cultural norms of the concert format: performers were kept separate from audience; the latter paid an amount of money for entry, sat down, and listened to the concert in silence; a selection of pieces—works—was played, all of which used notated scores; the performers played unamplified violins, viola and cello; perhaps the only piece missing was the use of a dedicated concert hall. As a composer asked to write a piece for the series, I sought to use the means at my disposal to probe and challenge these conventions.

I had been interested in the idea of rehearsal-as-performance since my 2013 piece *Study of a process,* and it was a technique I wanted to develop further. Stipulating what, how or for how long performers should rehearse entails an enlargement of the composer's parameters. A good example of this is Charlie Sdraulig's *between* (2012-13). Rather than acting as a prompt to be used (visually or otherwise) in performance, the score provides 'a detailed description of the learning process required to play *between*' (Sdraulig 2013, p. iv). Most of the score describes exercises, illustrates processes, and provides examples of the 'sonic identity' Sdraulig wants the performers to assume, not just so they can 'merely reproduce this identity' but also so they can 'act within it' (ibid.). As such, it is a score dedicated to the mental and acoustic preparation required for a performance, as much as it is an account of the sonic details or structure that performance could/should have. Of course, this score is an exception to the general scheme of things. Usually, this preparatory time period spent learning the score is not specified by the composer, but is rather the prerogative of the performers (or maybe orchestra managers). The time it takes for performers to prepare goes up to infinity, since scores are there to be mastered and the work interpreted as faithfully as possible. It is this parameter of 'time to learn the score' which interested me. For *neither serious/or, I take the liberty/of not writing to you/regarding my serious 'Variations'*, I therefore reduced rehearsal time to zero, as Ablinger did in *Wachstum und Massenmord*. It may seem a trivial point, but this was

communicated via email to the performers at the start of our collaboration. I mention this because it highlights the fact that the social and personal interaction between them and I became entirely significant—as the phrase 'enlargement of parameters' suggests. Here I was grateful to work within a small-scale musical enterprise, where one has more control, and can take more risks (I doubt the idea for this piece would have ever made it past the bureaucratic levels of a professional orchestra).

1.3.1 Familiarisation, de-familiarisation, re-familiarisation

The way I conceptualised the whole process of no-rehearsal was by thinking of the musicians' relationship with the piece (via how much knowledge of the score they have). Listening to pieces and playing them creates familiarity, up to the point where music can be played by heart. On the other hand, lack of contact (aural, visual, conceptual, musical, circumstantial, etc.) precludes familiarity. When musicians first encounter and subsequently rehearse a piece, they engage in a process of *becoming* familiar with it. I sought to engage the performers on all three of these levels: the familiar, the unfamiliar, and the becoming-familiar.[8] My approach was to take a piece with which the musicians were already familiar, de-familiarise it by making a new piece based on it, and finally ask them to re-familiarise themselves with the derivative version, playing it for the first time in performance. After an email exchange in which they told me their entire repertoire, I listened to them play two pieces: Beethoven's Op. 18 No. 2 in G, and Shostakovich's Op. 108 No. 7 in F# minor. The Beethoven seemed like an irresistible choice, being from around 1800, the exact same time around which the concert format started to coalesce. A further benefit to using this as a source was that the audience could even potentially recognise bits of the music, if they knew the Beethoven quartet (**Figure 1.4**).

The next questions were focused on what I would do to the source material. What compositional material works best when the performers encounter it for the first time? And how can the material also work within the logistical constraints of the concert series itself? What I did with it had to satisfy two main conditions:

[8] I had also explored this concept in *My Favourite Piece* (2014).

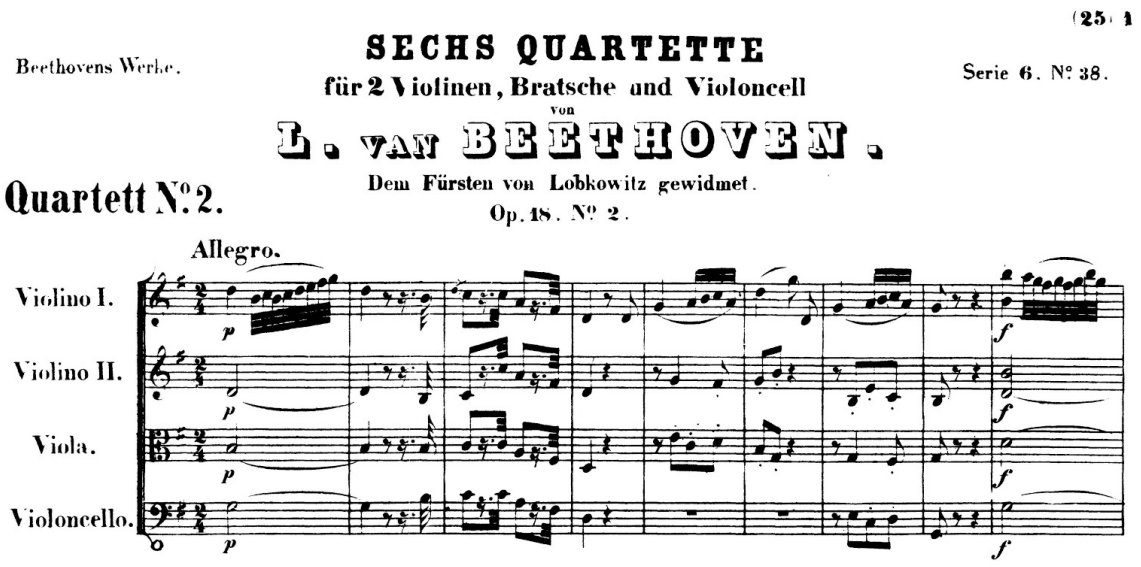

Figure 1.4. The opening bars of Beethoven's Op. 18 No. 2 for String Quartet. (Beethoven 1970, p. 25).

(i) The piece had to last around 10 minutes. This is due to the format of the *840* series, in which roughly eight similar-length pieces are played over the course of the evening, with an interval in the middle.

(ii) It had to be in a 'Goldilocks zone' of technical difficulty. If it was too easy, the risk would be that the musicians sight-read it perfectly; in this case, potentially no one would know that they had had no time to prepare for the performance, and it might even come across like a standard, rehearsed, piece of music. On the other hand, if it was too difficult, they might get absolutely nowhere with it given the time limit. It would be much more interesting if there were elements of both: a challenging assignment, during which we saw them learn the score and attempt to play it, with mixed levels of success.

Taking Beethoven's Op. 18 No. 2 as the starting point, I made a derivative miniature piece with four movements, Fast-Slow-Compound Time-Fast, all in sonata form. The tonal centres of each movement stayed within the norms of Classical style: G-D-C-G. The first subject of each movement was taken directly from the Beethoven, specifically, bars 4-6. Each movement would have a time limit of 2 minutes, kept by a stopwatch or timer. With talking in between, this would make a

piece of a little over 8 minutes. Due to condition (ii), I wanted each movement to feel like it was playable in its entirety, or almost, given the time limit (rather than have the performers know from the start that there was too much material for them to play in the restricted time limit). Therefore, rather than write fully developed sonata forms lasting several minutes each, I simplified and truncated the forms heavily. Each element (especially first and second subjects) was reduced to its bare minimum. The second subjects were ruthlessly functional, serving the sole function of appearing first in the dominant, and then in the tonic at the end of each movement. There were no transitional themes. The development sections enabled me to provide complexity and difficulty needed for condition (ii). In movements I and II, I reiterated different versions of the first subject, causing changes in time signature, and moved upwards harmonically towards a climax (**Figures 1.5, 1.6**). In movement III, I made a gradual rhythmic accelerando. Since it is a Scherzo, I included a little musical 'joke': the second subject's final chord is implied rather than stated (**Figure 1.7**). In movement IV, I went back to reiterating the first subject and moving upwards towards a climax, with less rhythmic variation than in movements I and II (**Figure 1.8**).

1.3.2 Failure (**Success**)

Taking such an active role in the composition was perhaps a little too much. One critique articulated by colleagues and supervisors was that it was excessive to compose a piece on top of the conceptual conceit of having the performers sight-read. I could have achieved the same effect by simply taking an existing string quartet which the performers did not know, which would have made the piece a bit tighter, and cleaner, conceptually. While these critiques are valid, there were certain challenges about making this piece that would then have gone unfulfilled, which seemed to me to be worth exploring, namely, how to write material that feels both familiar and unfamiliar at the same time. That said, although an interesting compositional challenge, it is doubtful whether I really succeeded in writing that material. The performers told me that they had had such a short amount of time in performance that comprehending the sonata form structure, and the reference to

Beethoven, did not feature at all in their interpretation. That kind of depth occurs only after hours, days, weeks spent with the material. Sight reading starts at the surface: the right notes in the right order. Trying to fulfill this objective (of different levels of familiarisation), as well as the overall objective of the piece (a rehearsal-performance), may have been too ambitious.

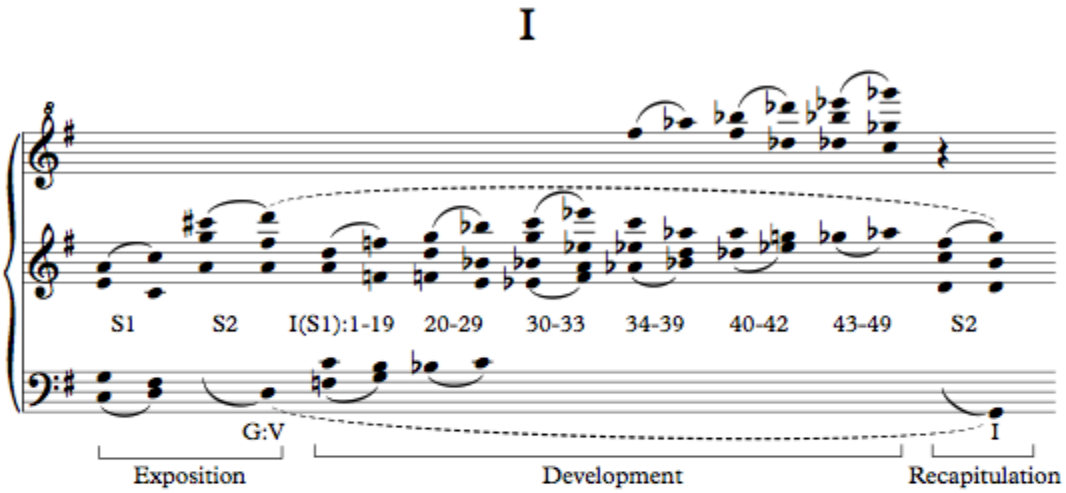

Figure 1.5. Harmonic analysis of *neither serious* movement I. All four movements are in a rudimentary sonata form. S1 = first subject, S2 = second subject. I(S1) = iteration (of first subject), followed by the number of iterations.

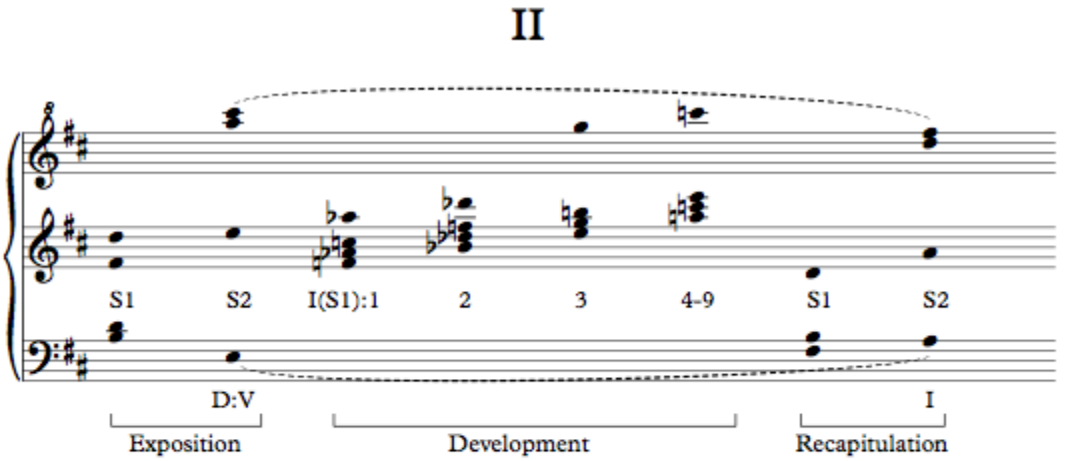

Figure 1.6. Harmonic analysis of *neither serious,* movement II. Abbreviations as in **Figure 1.5.**

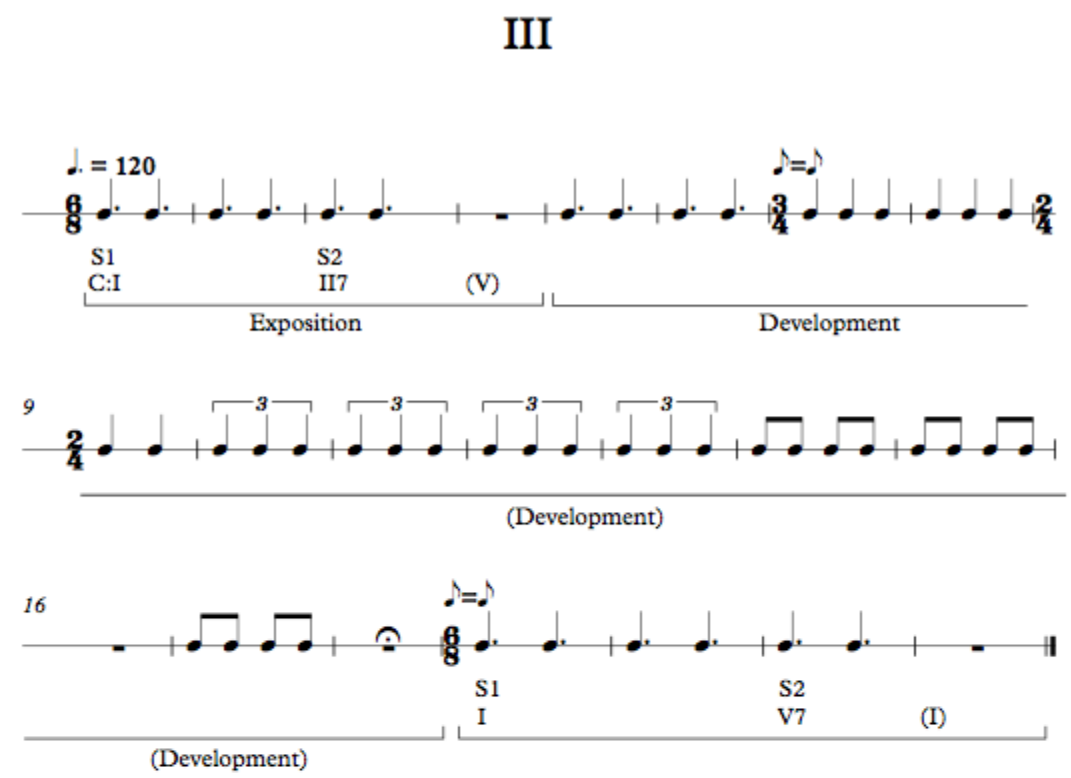

Figure 1.7. Rhythmic analysis of *neither serious*, movement III. Abbreviations as in **Figure 1.5.**

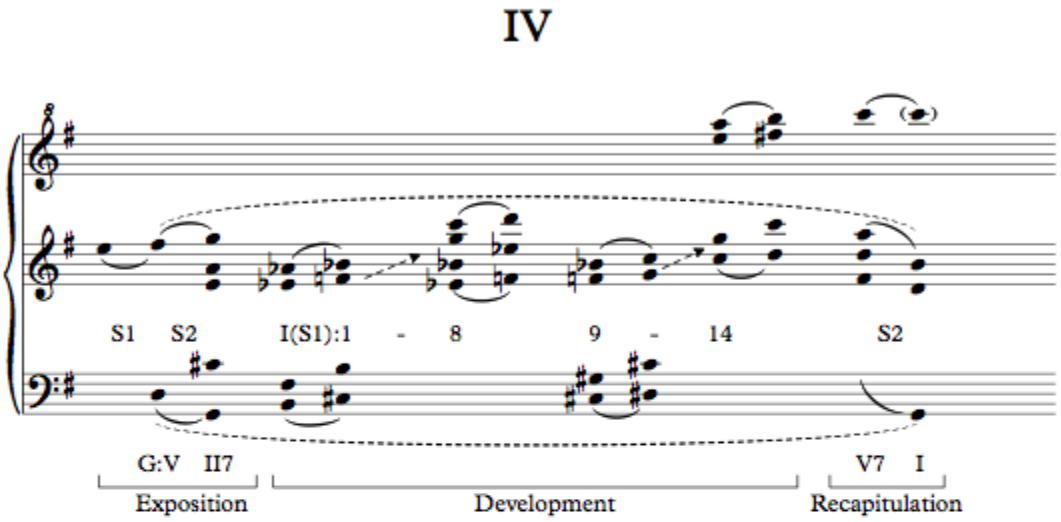

Figure 1.8. Harmonic analysis of *neither serious*, movement IV. Abbreviations as in **Figure 1.5.**

The piece did work, in the sense that the performers talked awkwardly, stumbled, used the metronome to determine the tempo, and tried to play the piece as well as they could. Ultimately, they did not bring about a successful performance of the score in movements 1-3, but played movement 4 pretty well—it is telling that this was the movement with the simplest rhythm. Watching them rehearse, attention was directed back towards the very human, physical, material, things happening on the stage. In this sense, the performance reminds me of Schechner's phrase: 'the story of "how this performance is being made" replaced the story the performance more ordinarily would tell' (2005, p. 131).

Recalling Goehr's discussion of *Werktreue*—the idea that performers must strive to execute the score as faithfully as possible—the piece raises an interesting paradox: the members of the quartet had not accurately interpreted the subsidiary scores on the stage, but, in so doing, successfully interpreted the actual score, and overall idea of the piece. In this sense, *neither serious* can be read, as with *Wachstum und Massenmord*, as a piece which adheres to *Werktreue* while simultaneously criticising it. Whereas Ablinger's critique had caused frustration amongst the audience, mine was met with polite applause. That this was so is a complex question which I cannot answer authoritatively, but some of the factors undoubtedly include: the audience themselves, many of whom knew me personally and were probably therefore sympathetic to the idea of the piece; the concert series, which was more DIY and low-key than Donaueschingen, encouraging, as subcultures tend to do, a feeling of sympathy and inclusivity between all involved parties; the compositional decision to keep the action moving every two minutes and end the piece at eight, which prevented a stand-off where the audience would have to forcibly terminate the piece once they had had enough.

Reflecting further on *neither serious,* the theme of failure started to emerge as a kind of outcrop of the piece. After all, wasn't it through failure of the musicians to play the score 'properly' that I had subverted the expectations and ideals of the concert format? Borrowing terms from artist and writer Emma Cocker, hadn't I used 'failure and error' as methods to 'inversely reflect the drives and desires of the wider systems in which they (mal)function' (2010, p. 160)? Cocker's article resonates well with the aims of my piece when she writes that failure's 'inadequacies give shape to

habitually unspoken and yet tacitly enforced values, expectations and criteria for success by indicating the point where an accepted line or limit has been breached' (ibid.).[9] The line in this case was an adequate performance of music, as we have come to accept it culturally. Following this 'outcrop', I started to think about making failure more of a guiding principle for future compositions. It will therefore be fruitful to follow the thread of where the idea led me, and explore other works and theories which deal with it.

1.3.3 Failure (**Failure**)

Re-reading the point made earlier under this new lens, *neither serious*'s global or conceptual success depends on a lower level ephemeral, physical, performative failure. If the performers fail to play the notes on the page, the piece succeeds. If they play all the notes successfully, the piece fails. This process of failing on one level to succeed on another is beautifully dramatised and musicalised in Tom Johnson's *Failing, a very difficult piece for solo string bass* (1975). In this piece, the double bassist plays a piece of varying technical difficulty as accurately as possible, whilst narrating out loud as they go along. The text in the score makes reference to the performance itself, giving the piece a self-awareness about the fact it is concerned with failing, simultaneously making genuine acts of failure that occur richer and more meaningful. Shortly after the piece's most difficult passage, the performer says

> If I *tried* to fail, and then failed, that would be a kind of success, and not a failure at all. So I must try to succeed. That way, when I fail to succeed, I will succeed in communicating the essence of the piece, even though I will fail to accomplish the task as it is set up. In other words, I will not be able to fail unless I am trying to succeed, and I won't succeed in interpreting the piece sensitively unless my performance turns out to be a failure. Or, putting it another way, I will probably succeed in failing to succeed, not only because the music is so difficult, but also because, if I fail to succeed in failing to succeed, I will fail to fail and will miss the point, since *Failing* is obviously about failing (1975, pp. 9-10).

[9] Cocker, E. (2010) 'Over and Over, Again and Again', in Le Feuvre, L. (ed.) *Failure.* London: Whitechapel Gallery / Cambridge, Massachusetts: MIT Press, pp. 154-163.

This same process is theorised by composer and writer eldritch Priest as a 'corkscrew of thought', a 'semantic loop that arises if one intends to fail and does so, whereupon one succeeds and therefore fails to fail, but in failing to fail one fails and therefore succeeds, and so fails again and succeeds again…' (2013, p. 1).[10] It is an interesting conceptual game, and, as I said, had me tempted to explore failure as the theme of my creative practice. However, I did not, partly because Priest's book, *Boring Formless Nonsense: Experimental Music and the Aesthetics of Failure,* serves to show that failure can be played with in much more interesting ways.

Near the start of his book, Priest compares his definition of failure to Cocker's. She comes closest to his kind of language when she writes that 'failure is rarely a measure in itself but rather a vague and unstable category that is used to determine all that is errant, deficient, or beyond the logic and limitations of a particular ideology or system' (2010, p. 156). Ultimately, however, he sees her definition as too assertive, 'too satisfying, too sufficient' (2013, p. 6). She gives purpose to failure, which for him 'misses the point', since 'failure has no particular point, [...] is radically perspectival and, ultimately, despite the regularities that restrict its measure, radically indeterminate' (ibid.). Priest likens his account of failure to a 'gamble', orbiting around an endlessly complex and elusive category which can never be defined assertively. Rather, failure is a thing whose 'twinklings' may sometimes be discerned or brushed against obliquely:

> If it is to avoid an explanation that converts its dim twinklings into shining successes, the implication of failure must take a chance in not being registered or discerned. And it's in this respect that failure begins to resemble a gamble, for there is no certainty that failure's significance as a virtual or implicit cipher for the relevant beliefs, expectations, and goals of a culture or social group will be perceived in such a warped discursive hand (2013, p. 3).

As such, Priest's account of failure essentially precludes any practitioner from consciously engaging with it as a theme *a priori*. If it is there at all, failure may produce a twinkle in the peripheral vision of the theorist, who may or may not (mis)interpret it, *a posteriori*. His aesthetics of failure potentially have nothing to do

[10] Priest, e. (2013) *Boring Formless Nonsense: Experimental Music and the Aesthetics of Failure.* New York: Bloomsbury Academic.

with the more prosaic actions of people, bodies, on stage, attempting to perform clear tasks and not succeeding—especially not when those actions are the very things the people *should* be doing, as they were in *neither serious.*

Indeed none of Priest's examples involves failure in this more obvious sense. Consciously trying to make failure is not what failure is about; such is the radically oblique and slippery nature of failure. It is 'never where it is sought and always where it cannot be found' (Bogue 1989, quoted in Priest 2013, p. 10).[11] As an example, Priest calls to attention the New Hampshire band The Shaggs's 1969 album *Philosophy of the World.*

> Although while the Wiggins sisters clearly fail with respect to the conventional norms of practicing an instrument, performing in a band, and writing songs, the impossible consistency of their gormless performance on *Philosophy of the World* has a way of mystifying expectations and subverting the usual set of expressive correspondences such that anyone who listens to this music for anything greater than the time it takes to dismiss it cannot help but feel a qualitative realignment in how things like competence and originality are satisfied. In this regard the aesthetics of outsider music, which revolves around a logic wherein the absolute failure to satisfy an already determined purpose coincides with the success to satisfy an *unintentional* objective, draws explicit attention to the ultimately indeterminate nature of failure (2013, p. 10; italics mine).

Whether we agree or not with Priest's complex and deliberately obtuse definition, it is hard to get away from the sense that, at the very least, his account of failure is richer than the narrow definition I was seeking as a conceptual framework for my composition. The fact that he explicitly uses examples from the experimental music tradition throughout the book made me reflect further on whether I was engaging in the concept in the most interesting and rewarding way.

That failure did not end up as my the topic of this thesis has to do with a few additional factors. Here I have to thank Luke Nickel, at the time also completing his PhD at Bath Spa, for his feedback on the piece. 'Is it really compelling?' he asked me. In other words, if I really wanted to deal with failure, was concert music really the best way to do it? If this was the overriding theme of my whole work, why would I choose to explore that theme through people reading scores on stage? Wasn't that

[11] Bogue, R. (1989) *Deleuze and Guattari.* London; New York: Routledge.

making a rather petty point, instead of seeing the artistic power the idea has in itself (in a way similar to Priest's suggestions)? I had started with composition as methodology, and then retro-fitted the failure question to that, rather than seeing the problem the other way around: if failure is the question (assuming, *pace* Priest, that it can indeed be one), the methods to investigate it in an interesting way then have to be found, and need not be limited to composition.

There was another concern. Although pleased with the result, and having obtained full consent from the performers (of course), had I not still essentially used them in an unethical way? Made them fail, so I, and my piece, could succeed? The fact that I imposed a two-minute time limit on each movement could be read in ways that both support and refute this idea: it ensured that the musicians would 'fail', and never accurately and fully play all the movements. But it also ensured that the focus was on the phase of first contact between them and the scores, where timings, technique and interpretation have to be negotiated, and conversations between players have to happen—it therefore also made the piece about *showing the usually hidden rehearsal process*.[12] All of this notwithstanding, there was still one criticism which I felt was valid: if I was to explore 'failure'—or at least, let's say, vulnerability—wouldn't it be more interesting to make myself fail, to make myself vulnerable? Part and parcel of the experimental music methodology is to make work with disregard for traditional labels and boundaries, to expand or dissolve seemingly set roles and concepts, including those of 'composer' and 'performer'. So why couldn't I expand my role further to include performing?

[12] I do also wonder: if four string players making some wrong notes is unethical, what about Santiago Sierra paying prostitutes a shot of heroin in order to tattoo their backs? Sometimes art has to make a point.

Chapter 2

Transition towards sound (2015)

Going away from failure, and seeking new ways to stage performer-score interaction that were less obviously critical of the concert tradition, I looked to more experimental scoring practices. The first result of this was *for_____ on_____* (2015)[13], which features an audio score. This chapter is broadly concerned with the following three ideas, which articulate the compositional concerns of *for_____ on_____*: (i) field recordings as stimuli for performers (as forms of aural notation); (ii) using colloquial language in verbal instructions to performers; (iii) composers and scores as visible/audible agents in performance. It may be immediately apparent that these three do not exist separately, but rather interrelate: verbalised instructions may be delivered by a composer on stage; a field recording can be played on speakers to the audience, making it an audible agent in performance, while simultaneously being treated as a score, etc. Applying theories on verbal notation (Lely and Saunders 2012) and performance (Auslander 2006, Krogh Groth 2017) to various recent examples in the field of experimental music, I build a framework through which to discuss the characterological and compositional methods and implications of *for_____ on_____*.

2.1 Audio scores

Since the 1950s, a number of composers and practices, particularly those operating within experimental music, have sought to redefine notation. Earle Brown had pioneered graphic scores with *December 1952* (Brown 1961). The Fluxus artists had opened up the world of verbal notation shortly afterwards (e.g. Brecht 1963). Since then, composers have extended the practice by making the medium or object of communication an important parameter in its own right. One such example is

[13] The title of this piece should be 'filled in' by the names of the players and the date of performance each time it is performed. As such, individual performances are called something like 'for Brenda and Moses on 31st August 2019'.

Jennifer Walshe's *THIS IS WHY PEOPLE O.D. ON PILLS/AND JUMP FROM THE GOLDEN GATE BRIDGE* (2004), which instructs performers to learn to skateboard. Reflecting the aesthetics, lifestyle and philosophy of skaters, it is printed on a T-shirt (see Lely and Saunders 2012, p. 372). Another example is Michael Baldwin's *ephemera #8* (2012), in which the score is written, in ink, on balsa wood. The wood is then burned in performance, such that 'the speed of the performance is dependent on the rate by which the fire consumes the score' (Baldwin 2012, p. 13). Then there are composers who have eschewed aural and visual modes of communication altogether: Claudia Molitor's *Touch,* for example, takes the form of a collection of tactile scores made of different materials (Saunders 2012).

Narrowing in a bit, there has been over the last fifty or so years a multitude of score-making practices which primarily use aural (and oral) modes of communication with performers, a few of which I will sketch out here. In a practice which can also be described as making 'living scores', Eliane Radigue's *OCCAM* series involves collaborating face-to-face with musicians to develop scores that are made in conversation, and subsequently exist only in the memories of the participants (see Nickel 2016). Although they involve a written, verbal element, several of Pauline Oliveros's *Sonic Meditations* focus on performers interacting with environmental sound cues, and thus turn the world itself into a series of aural scores (1974). Finally, and of most relevance to my practice, certain composers have explored using sound recordings in/as notation. An early example of this type of score is Alvin Lucier's *(Hartford) Memory Space* (1970)[14], which asks performers to make field recordings to be used as scores in performance. Already, in extending its musical scope to include noise from everyday life (as Oliveros's example also does), the technique of using field recordings as notation is indebted to the well-known lineage of twentieth-century movements which includes Luigi Russolo's *The Art of Noises* (2004 [1913]), Cage's injunction to extend music to 'any and all sounds that can be heard' (1961, p. 4), and the tradition of *musique concrète* established by Pierre Schaeffer and Pierre Henri, which sought to make recorded sounds the primary material of music (Schaeffer 2012

[14] Another contingent title: the 'Hartford' should be replaced with the name of the place of the performance (Lucier 1980, p. 43).

[1948]).[15] Lucier's piece furthermore engages with compositional parameters which have direct resonances with my approach, and as such deserves deeper discussion.

2.1.1 *(Hartford) Memory Space* (1970)

Written as text instructions, *(Hartford) Memory Space* reads

> Go to outside environments (urban, rural, hostile, benign) and record by any means (memory, written notations, tape recordings) the sound situations of those environments. Returning to an inside performance space at any later time, re-create, solely by means of your voices and instruments and with the aid of your memory devices (with additions, deletions, improvisation, interpretation) those outside sound situations (Lucier 1980, p. 43).

Through the use of recordings of outside environments as scores to be recreated on musical instruments, the piece holds as an aesthetic concern the process of translation from one soundworld to another. When asked about how the performers should approach the score(s), Lucier answered that 'if they imitated speech by speech then there wouldn't be any medium displacement and I wanted *(Hartford) Memory Space* to have to do with that, with imitating one set of sounds with another' (ibid., p. 51). In his account of the methods and affordances of audio scores, composer Sandeep Bhagwati comments on this 'medium displacement' that occurs when using a recorded found sound as notation (Bhagwati 2018). In words which resonate with Lucier's, he highlights that

> part of the interest will be the actual, physical inability to exactly imitate the sounds presented on one's instrument: e.g. when a flutist hears a waterfall's bass rumble, or a keyboard player hears a microtonal glissando. The strain to imitate the impossible will produce music that the performer would not have used in the course of their usual idiosyncratic improvisations (ibid., pp. 27-8).

Bhagwati adds that these possibilities are examples of the kinds of 'registers and opportunities of musical conveyance' afforded by audio scores that distinguish them from visual scores (ibid., p. 25).

[15] 'I have coined the term *Musique Concrète* for this commitment to compose with materials taken from "given" experimental sound in order to emphasize our dependence, no longer on preconceived sound abstractions, but on sound fragments that exist in reality and that are considered as discrete and complete sound objects, even if and above all when they do not fit in with the elementary definitions of music theory' (Schaeffer 2012 [1948], p. 14).

Analysing the compositional decisions Lucier takes, there are four key points that come to light: (i) Lucier lets the performers make their own recordings; (ii) he lets them use any recording means ('memory, written notations, tape recordings'); (iii) he leaves open the possibility for the performers to learn the scores, and for them to repeat and rehearse them prior to performance; (iv) he conceives of the scores as traditionally 'closed off' from audience perception, specifying: 'When using tape recorders as memory devices, wear headphones to avoid an audible mix of the recorded sounds with the re-created ones' (ibid, p. 43). Turning these into questions, we arrive at a useful line of inquiry for working with field recordings as/in audio scores:

(i) Who is responsible for recording the sounds?
(ii) How are they recorded?
(iii) Should they be learned by the performers, or reacted to spontaneously?
(iv) Are the scores audible to the audience in performance?

Note also that some of these are pertinent to scoring practices which do not use recorded sounds. To go back to two earlier examples, Oliveros stipulates that performers react to sounds they hear in the environment—she neither prescribes the sounds herself (i), nor does she expect the performers to learn them (iii); Radigue's answer to (ii) is that the scores are recorded in memory, rather than on tape; etc.

2.2 Verbal instructions

Writing about the use of language in verbal notation, composer and scholar John Lely draws upon Michael Halladay's Systemic Functional Grammar (SFG) as a framework (Lely and Saunders 2012, pp. 3-74). He identifies as important the domains of '*register, processes, tense, modality, mood, voice* and *circumstances*', a number of which are worth describing in detail here (ibid., p. 5; italics always in original).

Register is defined as 'the configuration of linguistic choices that make up a distinctive "style" that is used in a particular context' (ibid., p. 8). Lely identifies the three further factors of *field*, *tenor* and *mode* as contributors to register:

> *field* refers to the setting and purpose of the interaction (for example, instructions from composer to performer), *tenor* refers to the relationship between participants involved in the interaction (includes aspects of status, formality and emotional involvement), and *mode* refers to the medium of communication (for example, whether the text is written or spoken) (2012, pp. 8-9).

Particularly relevant for delimiting participants' agency is the domain of *modality*, which 'enable[s] a writer to give different levels of commitment to a proposition' through the use of '*modal auxiliaries* such as "can", "might", "should" and "must", as well as *semi-modals* like "need to" and "dare to"' (ibid., p. 26). Occupying 'the area between "yes" and "no"', modality prescribes the degree of permission or obligation for performing an action, as well as the possibility or necessity for an outcome to occur (ibid., pp. 26-7). According to Lely, *mood* in English primarily falls under two categories, '*imperative*' and '*indicative*', with the indicative having two further sub-types of '*declarative*' and '*interrogative*' (ibid., p. 28). In general, the imperative mood is useful for giving commands, the declarative for making statements, and the interrogative for asking questions. While 'a predominant or exclusive use of declaratives may promote a degree of formality, such as scientific papers and official documents', the imperative mood 'is commonly used in more interactive settings such as instruction manuals, recipe books and spoken conversation' (ibid.). Whether something is communicated according to any of these significantly affects the register of a text, and can, once again, delineate sharply the role relations between writer/speaker and reader/listener. Finally, *voice* determines who is responsible for performing actions or enacting processes. When writing in the active voice, the agent is specified, contrary to the passive voice, when agency is indeterminate. To illustrate this, Lely contrasts La Monte Young's instruction 'Draw a straight line' (active voice) with Sol Le Witt's 'A straight line [...] is drawn' (passive voice) (ibid., p. 47). Lely adds that the passive voice 'tends to contribute to an impersonal and perhaps less interactive register than the active voice' (ibid.), making it useful in certain forms of academic and legal writing.

2.3 The composer's voice on stage

The idea of composers becoming staged agents in their own performances has been discussed recently in an article for Danish new music publication Seismograph by Sanne Krogh Groth (2017). Her main three examples are Juliana Hodgkinson's *All The Time* (2001), Simon Steen-Andersen's *Buenos Aires* (2014) and Niels Rønsholdt's *Ord for Ord* (2014), all pieces in which the composers play a theatrical role on stage. Immediately, Groth notes a disconnect with traditional music-making, in which we find 'composers sitting at their desks writing scores to be published as well as interpreted and performed by highly skilled and professional musicians' (2017). She also identifies as a useful guide Jennifer Walshe's idea of 'The New Discipline', a term designed to describe a way of working in which composers draw on many different artistic disciplines ('dance, theatre, film, video, visual art, installation, literature, stand-up comedy'), to create works 'rooted in the physical, theatrical and visual, as well as musical [...] in which the ear, the eye and the brain are expected to be active and engaged, [and] in which we understand that there are people on the stage, and that these people are/have bodies' (Walshe 2016).[16] Seeing theatre and performance as key sources of inspiration, Walshe and Groth both place high importance on bodies being on stage. When expressed through voice recordings, the speaker's presence is disembodied, and therefore arguably weaker or more obscure, but is present nonetheless.

Groth argues for an interpretation of her examples which 'sees such performances as both criticizing and reflecting history while also accentuating the tradition and role of composer in a Romantic sense' (2017). As we have seen in chapter 1, this Romantic model of music sees performance as a game of faithfulness and subservience to the score, through which musicians ought to channel the composer's intentions in the most unadulterated way. By being part of the performance, Groth argues, composers disrupt this flow of information—disrupt the primacy of the score—by providing an equally true embodiment of their intentions. They also recall the era before the work-concept, when music was socially useful craft rather than autonomous art, and when being a composer was synonymous with

[16] Walshe, J. (2016) *The New Discipline*. Available at: http://www.borealisfestival.no/2016/the-new-discipline-4/ (Accessed: 22 July 2019).

being a performer. In this manner, '[p]erformance and score, presentation and representation, are being reconsidered [...] live on stage, where we find [them] entangled, presented and represented in the performances themselves' (ibid.). It is therefore possible to read such approaches as critiques of the traditional, bourgeois Western Art Music tradition, which sees the composer as sole true author, but, paradoxically, only by a multiplication of the composer-author's artistic remit. In this light, Walshe's account of New Discipline composers as 'auteurs', with all the hierarchically-arranged ideas about authorship that word entails, becomes especially significant.

Writing from the perspective of performance studies, Philip Auslander proposes a useful framework for interpreting *who* (rather than *what*) it is musicians are performing when they perform (2006). According to his model, there are always three levels of identity present in a performance: the 'real person', the person as defined within their field (what he calls the '*persona*', a term adapted from David Graver's 'personage'), and, if applicable, the character that person is representing in the piece itself.

> For instance, there are at least three Jack Nicholsons layered into any of his filmed performances: the real person, the celebrity movie star (Graver's personage), and the actor portraying a character. As Graver suggests, the audience inevitably reads character through personage: we do not just see the character Nicholson portrays—we see "Nicholson" portraying a character. The "Nicholson" personage is not simply equivalent to the real person; it is the version of self Jack Nicholson performs in the discursive domain of movie stardom (Auslander 2006, pp. 101-2).

Extending this notion to musicians, Auslander argues that '[w]hen we hear a musician play, the source of the sound is a version of that person constructed for the specific purpose of playing music under particular circumstances' (ibid., p. 102). Auslander's model is aimed to show that, even in nondramatic musical performances lacking any obvious portrayal of external character, musical personae are always present. As such, '[m]usical performance may be defined, using Graver's terms, as *a person's representation of self within a discursive domain of music*' (ibid.). This is useful to remember when assessing who it is they are performing when composers make their own entry onto the stage. Even if they do not play an overt character, each composer

is always performing their musical persona, their identity as constructed within the field of contemporary music. If it is the case that they play a fictional character who happens to be a composer—as is the case in Steen-Andersen's *Buenos Aires,* for example—the lines between character, persona and real person become even more blurry.

2.3.1 Three examples: Westerkamp, Bailie, Crowe

To illustrate these ideas, I will discuss three examples in which composers use their (recorded) voice in performance: Hildegaard Westerkamp's *Kits Beach Soundwalk* (1996 [1989]), Joanna Bailie's *Artificial Environments 1-5* (2011) and Stephen Crowe's *Tenvelopes* (2013-). Using Auslander's framework for analysing these pieces, it can be shown that they all engage in different ways with the three levels of 'real person', 'persona', and 'character', providing a clearer context for my own use of performing through the voice.

In Hildegaard Westerkamp's *Kits Beach Soundwalk*, an acousmatic piece, the composer-narrator's voice prefigures and comments on the sounds that occur around her. Her overall tone is neutral, clear, and composed, but occasionally contains swells of overt performativity and characterisation. One such moment occurs at 5'36", when she rhythmically chants the words 'smacking and clicking and sucking and spitting and howling and biting and singing, and laughing and weeping and kissing and gurgling and whispering' in a poetic fashion. Her delivery seems deliberately performative, and tends away from natural speech. In moments such as these, the focus shifts away from her field-defined persona, and towards her in-piece character. She becomes more easily heard as 'Hildegaard Westerkamp, narrator in *Kits Beach Soundwalk*' than 'Hildegaard Westerkamp, composer and sound artist'.

Throughout the piece, these two layers, plus the third one of 'Hildegaard Westerkamp, real person' are constantly confused and intertwined, since the text is nearly always in the first person, describes real-life extra-musical experiences, and makes constant reference to the sounds that she has made and manipulated herself. It is hard not to think of Westerkamp's persona when she says things such as 'luckily, we have band-pass filters and equalisers. We can just go into the studio and get rid of

the city', since the studio is the site of professional activity which corresponds to Westerkamp's persona, expressed in the domain of new or electronic music. It is equally hard not to think of Westerkamp simply as a human being when she tells us that these sounds occurred in her dreams (assuming she is telling the truth). The entanglement of these three layers is reinforced by the close-miced, crystal clear recording of her voice, as direct and intimate as it is ambiguous. Furthermore, at all times, Westerkamp/Westerkamp/Westerkamp stands outside the sonic landscape, the timbre and amplitude of her voice remaining consistent even as the sounds around her transform. We are left asking, Was it a real dream? Is it just part of the script? Is it a part of the script that strongly expresses her identity as a composer and sound artist? As the piece progresses from outdoors (Kits Beach) to indoors (her studio), and from the external world of nature to her internal world of dreams, she makes the audience aware that they (and she) are listening to sound in Brechtian acts of heightened awareness (if not alienation). At times affirming, at times breaking the 'fourth wall' of aural-theatrical space, her multiple identities jostle for presence.

In Joanna Bailie's *Artificial Environments 1-5*, Bailie's pre-recorded voice describes the sonic properties of a series of imagined acoustic 'environments', before an ensemble plays music bound by the restrictions of these various environments (Bailie 2011a, 2011b). Some environments focus on clear musical parameters such as tempo, rhythm and pitch, while others are more conceptual. An example of the latter is Artificial Environment Number 5, whose explanatory text reads:

> Artificial Environment Number 5 might be thought of as a kind of junction point for many different sound worlds. It's probably not very big, with just enough space to contain a largish mixing desk to which each of the external sound worlds is connected. Exactly what happens there is up to whoever's in charge — but needless to say the aim of the game is to try to find the music that exists somewhere amidst the perpetual raising and lowering of faders (Bailie 2011a, p. iii).

In all Bailie's voice-overs, the tone is formal and deliberate, the recording quality (like Westerkamp) that of a pristine, sound-proofed recording studio. Her delivery is neutral and objective, lacking any overt emotion or characterisation.

Contrary to Westerkamp, the voice-over *is* affected by the surrounding sonic landscape. This suggests that Bailie's in-performance character inhabits a space that

is both inside and outside her 'environment(s)'. While she describes the restrictions that affect each environment, usually before the ensemble plays, in the manner of someone who is observing them objectively, she is at times included in the ensemble's subsequent playing (for example in Artificial Environment Number 4), and at others herself subjected to the environment's manipulations. An example of the latter is the voice-over for Artificial Environment Number 5, which is itself subjected to the 'raising and lowering of faders'. The text then becomes perforated with elisions which hinder its comprehensibility:

> Artificial Environment Number 5 might be thought of [...] many different sound worlds. It's probably not very [...] just enough space to contain a largish mixing desk [...] the external sound worlds is connected. Exactly what [...] is up to whoever's in charge — but needless [...] the aim of the game is to try to find [...] exists somewhere [...] perpetual raising and lowering of faders (Bailie 2011b, 11:53).

These moments confound the task of discerning which of Bailie's performed identities is more dominant. Had she stayed out of her sonic manipulations, we could have more easily identified her according to her persona: Joanna Bailie, composer. This role is congruent both with the content of the text, which describes compositional and sonic parameters of the piece, and with being conceptually located as separate from the musicians (which is where composers writing after the 19th century are assumed to be). However, rather than existing separately from the instruments, she becomes more like them. She is implicated in the piece as the 'announcer of text in Artificial Environments'.

Seen this way, what is to be made of the lack of overt characterisation in her vocal delivery? Is it, as it could be assumed at first listen, an expression of her persona? Or rather, does the studied neutrality paradoxically reinforce her character, the neutral, quasi-artificial, benign announcer? Since Bailie wades within her 'environments', joining the musicians, does that make her more or less characterful? After all, the musicians themselves do not play any overt fictional characters, and the context—nondramatic concert music—rather pushes things in an anti-theatrical direction. It is in fact only the text delivered by Bailie and the tape part which conjure imagined, fictional worlds. If we read Bailie as portraying a character, then,

she also brings the musicians in with her. In that case, they are all agents acting within her Artificial Environments. If we reject her incursions as representing anything other than her persona, then it seems difficult to also imply the musicians as anything other than contemporary music practitioners. Somehow, however, this seems to impoverish the piece.

Stephen Crowe's *Tenvelopes* is written for solo performer, audio track and scores enclosed in envelopes (Crowe, no date). An ongoing commission from hornist Samuel Stoll, it uses a pre-recorded track where a voice tells Stoll to open the set of (numbered) envelopes one by one. Each envelope has a different score contained within it, which the performer has not seen before. A new track is made for each performance. In most of these, Crowe uses a computer-generated voice. While this strips the voice of human nuances of speech and intonation, the text, written by Crowe himself, uses colloquial language, and occasionally contains jokes. There is therefore tension between content and delivery: the timing and tone required for the colloquialisms is rendered in a stilted, robotic way by the computer voice, making them sound uncanny and awkward (e.g. Crowe 2013).

Using a computer to read the text assigns a clear character to the voice. The voice addresses Samuel personally by name, but again, since it is a computer and not Stephen's own voice, the relationship between the two is absurdified: a disembodied, digital computer AI, who exists only within the abstract realms of this piece, greeting a flesh-and-blood human, Samuel Stoll, as though they were acquaintances, with quasi-personal phrases such as 'Hello Samuel. We meet again' (Crowe 2019). The power dynamic is explored the furthest—and again exploited for comedy—in the version performed in New York in 2013. After leaving Stoll the option to wave at the audience, the voice says, 'it's up to you. You are the boss. Well, I'm the big boss, you are more like… the line manager' (Crowe 2013). The voice also comments on the performer's interpretations afterwards, praising or denigrating their quality ('Wowzer. That knocked my socks off. I am literally getting goosebumps over here' (ibid.)). Having, of course, never heard the interpretations, or even possessing the ability to, the comments offer moments of dramatic irony that are frequently absurd and comic. At their most effective, they lavish high praise on long spells of mundane, generic material and create a bathos which characterises *Tenvelopes*. The implicated

self-deprecation—Crowe making fun of his own piece—is communicated via a tension between Crowe's performed identities: his in-piece character making fun of his persona as a composer. It could even be argued that this tension reveals something about Stephen Crowe the 'real person': someone who is happy to use comedic devices to undermine their own persona in the (often overly serious) discursive domain of new music.

One notable exception to the computer voice is a 2014 performance in Helsinki, where Crowe uses his own voice and opens by identifying himself (Crowe 2014). In this performance, Crowe's constructed AI character is weakened in favour of his persona. Through the 'authenticity' of his own voice, it becomes a version of the piece in which the persona layer of 'Stephen Crowe, experimental music composer' is more strongly perceived.

In summary, *Tenvelopes* most clearly involves the portrayal of a character, who occasionally undermines the composer's persona; *Kitts Beach Soundwalk* features an intertwining of character, persona, and 'real person' where the identities emerge in different extents throughout the piece; Bailie's voice in *Artificial Environments 1-5* sits on a knife-edge between persona and character, and additionally implies the musicians in this balancing act.

2.3.2 Scores on stage

Aside from questions of the composers' character and persona, *Tenvelopes* stages interaction with the notation—both the visual one in the envelopes, and the aural one in the speakers—in a way that gives the score heightened performative agency on stage. As with all agency in general, the amount and extent of agency given to scores that are used in this way is variable. A few examples will serve the purpose of illustrating this claim.

In G Douglas Barrett's *A Few Silence* (2008), performers make their own scores live in performance by cataloguing ambient sounds as they hear them in the space. They then perform these scores on a 'battery' of instruments and objects (Lely and Saunders 2012, p. 93). In the first part, there is therefore a visible process of score-making: rather than having been fixed beforehand, the scores are *mutable*

objects imbued with *the potential to change* during the performance. However, unless particular audience members are sitting very close, any further information about what those scores end up containing remains a mystery. In the second part of the piece, then, the audience can only guess as to what is stimulating the performers, albeit with the knowledge that *something* was written in the first part.

Ryan Ross Smith's animated scores represent a comprehensive body of examples of scores with more overt agency. To date, Smith has written over fifty pieces which involve projecting the score above the stage, in a way that allows both performers and audience to follow it simultaneously (2014). Smith's scores are based on sets of abstract graphic symbols which are animated. One or more elements are always in motion, giving the scores a temporality that matches the sonic results.

The oldest precursors to this approach are Kagel's *Prima Vista* and *Diaphonie I, II and III* (1964). These latter pieces involve (static) graphic notation projected on slides above the performers. Separate slide operators decide independently of the musicians how long to show each slide, meaning that the musicians have to react spontaneously to them. Writing about these pieces, Bjorn Heile has commented that

> The use of slide projection means that the unfolding of the performance is transparent for the audience: they can follow the relation between notation and sound and the ensuing social drama. This is quite a radical empowerment. Just like the Bible in church, the score is a symbol of power: only the conductor has an overview of the whole text, and the musicians each have a small share, whereas the audience is presented with a quasi-magical spectacle. In *Prima Vista* and *Diaphonie,* by contrast, the audience is let in on the secret and has a share in the process, the use of experimental forms of notation also reducing the need for competence in reading music (2006, p. 72-3).

These remarks apply just as well to Smith's scores as they do to Kagel's, and highlight some of the aesthetic avenues opened up by giving scores a heightened agency. In this case, the aesthetic is one of increased democratisation or even empathy: the audience can follow along with the performers in real time, and even have the opportunity to anticipate what is about to unfold.

Since they are not limited by medium or content, the stimuli in these scores can take on a vast array of guises. In Kagel and Smith's examples, they take the form of abstract shapes that serve the function of interacting with the score in a musical

fashion. A different example is provided by Celeste Oram's *mirror #1* (2013), which features a video-score projected above the stage. In this case, the video-score features everyday actions such as shaving, chopping an onion, or a boxing match. As such, an additional *semantic* connection to the score is opened up to the audience: they understand it not only in terms of its stimulating gestural and musical results, but *also* in terms of its representations of concrete events. The performers' interactions provide a supplementary layer of meaning, in which associations between everyday events and musical sounds can be created.

Scores can also act directly on audiences themselves, rather than through the medium of performers. In Aviva Endean's *A Face Like Yours* (2015), the score is a video in which Endean performs a set of actions which are to be reproduced by the audience in real time. The actions include Endean manipulating ear buds inserted into her ears, rubbing her face and neck, and opening and closing her eyes. In David Helbich's *No Music - a performative rehearsal* (2014), each audience member is given a paper score, and is instructed by Helbich himself as to how to perform it. Similarly to Endean, the score involves manipulating one's ears. The piece functions as a rehearsal that is also a performance, and explores the idea of the listener as a performer (ibid).

To summarise, and link back to Sanne Krogh Groth's earlier analysis, all of these examples share a concern to renegotiate some of the tenets of the Western Art Music tradition. Since, traditionally conceived, this is a tradition in which composer and score are both inaccessible to the audience, exposing either or both of them can in turn be read along Adornian or Bürgerian lines as 'exposing the inner working[s] of history and musical performance' (Groth 2017).

Having sketched out the primary parameters of using field recordings as scores, the grammar of verbal notation, and composers/scores as agents on stage, and elaborated on some of their aesthetic and compositional concerns, I will now discuss *for*_____ *on*_____ in relation to this conceptual framework.

2.4 *for_____ on_____* (2015): overview and chronology

for_____ on_____ is scored openly for any selection of instruments and players. The score is made up of verbal instructions and a field recording, both of which are played on speakers to everyone in the room. Having not heard the field recording before the piece, the performers learn it by playing it back as many times as they like on an audio device, reproducing it as best they can on their instruments. There are no further instructions for how they choose to reproduce the recording: that is up to them. The instruction—to 'reproduce'—is left deliberately vague, affording the performers a significant degree of agency in interpretation. The verbal instructions are delivered via a recording of my voice. Both this and the field recording are fixed prior to performance, while the learning process is contingent on choices made live by the performers. At all times, the process of interaction between performers and score is presented in an open way to the audience. The overall structure can be summarised in the following way:

Section	**Timing**	**Features**
1. Introduction	~1'	Verbal instructions explaining piece to performers and audience
2. Learning	~5'	Performers listen to field recording and try to recreate it on instruments; details of interpretation discussed in conversation
3. Presentation	~1'	Verbal instructions interrupt 'Learning' stage; performers show interpretation to audience without field recording

Comparing the piece to Lucier's *(Hartford) Memory Space,* and recalling the four questions that piece brought into play,[17] reveals the following compositional decisions: (i) I make the source recording; (ii) it is an audio recording; (iii) the performers do not know the scores beforehand, but rather learn them for the first time in performance (which is why it works best if I make the recording, and not them); (iv) the score is presented to the audience in an 'open' way, making it a staged agent which they have access to when hearing the piece. One way to summarise these differences is to say that Lucier's emphasis is on the memory of a space or

[17] (i) Who is responsible for recording the sounds? (ii) How are they recorded? (iii) Should they be learned by the performers, or reacted to spontaneously? (iv) Are the scores audible to the audience in performance?

situation, his focus being the 'lag between when [the performers] went out to observe the space and when they came back to play' (1980, p. 45), whereas my emphasis is on staging a visible sonic encounter with a previously unknown space or situation in performance.

for_____ on_____ took several iterations before assuming its final form. Each iteration served as a step in a process of trial-and-error, through which I could hear the piece from the outside, and gradually refine its composition. It will be instructive to therefore talk of each performance separately.

2.4.1 for David and Ruben on 14th February 2015

for_____ on_____ got its premiere at *WEISSLICH 2*, an event I co-curated with David Pocknee and Michael Baldwin at the Hundred Years Gallery, London, on 14th February 2015. The performers were David Pocknee on electric guitar and Ruben Zilberstein on violin. This iteration then became *for David and Ruben on 14th February 2015.* The field recording I used was recorded on a Zoom H4N in one single take at Dalston Kingsland Overground station in Hackney, London. In the recording, some of the salient features include two trains coming and leaving the station on opposite platforms, the hubbub of voices as people exit the train, the train's motor, its doors beeping, and a suitcase being rolled on the platform by a passenger leaving the train (**Example 2.1**). In this version, I had decided to include the recording during the final 'presentation' section of the piece. Having learned it, the performers would 'accompany' it one more time. After feedback from supervisors and peers, it became clear the piece would be much more interesting if the performers presented their interpretation *without* the audio recording. This would change the piece entirely. Instead of ending with the performers accompanying the audio track, their interpretation would be presented all by itself. The contingent, personal decisions they had made in the learning process would be heard independently of the recording, which would itself be transformed into a purely instrumental interpretation.

2.4.2 for Tim and Edward on 27th February 2015

The piece was performed shortly afterwards at *Bastard Assignments* by Tim Cape and Edward Henderson. The field recording was taken from Ridley Road Market—also in Dalston—, and was similarly recorded on a Zoom H4N in one take (**Example 2.2**). In this version, the performers used everyday objects rather than traditional musical instruments. Thus, a plastic bag rustling in the recording was easily matched by a plastic bag on stage. Something which was present in David and Ruben's performance was lost when this happened. The fact that the sound was too easily matched turned the piece into an exercise of matching sound perfectly, rather than interpreting or transforming. I found this immediately unsatisfying. To ensure that the recording would be transformed, the piece would have to have a built-in impossibility. The performers' instrumental sounds should never be able to match the sounds in the recording accurately, but rather should have to try to approximate them as best they can; this echoes Lucier's decision for there to be a 'displacement'. I therefore decided to add the condition that each player use one musical instrument only.

2.4.3 for Michael, Peyee and Rodrigo on 19th April 2015

The piece took its final and definitive form with this version, in which I implemented changes to resolve the problems of the previous versions. I made one further change: the sound recording, rather than being made in one take, was slightly edited (**Example 2.3**). Taking another recording of Ridley Road market, sequences of less interesting sounds were omitted, to present an edited version of walking through the market. One small segment was also repeated. The field recording was nevertheless kept within the realms of realism: the alterations were subtle enough, and the overall environment consistent enough, that the recording did not sound overly manipulated or fake.

2.5 Picking the sounds

The idea that the performers reproduce a sequence of naturally occurring found sounds felt like an important aesthetic concern. Rather than making a 'composed' sequence of sounds, which could include (as Cage says) any and all conceivable sounds, I thought it crucial to restrict myself to a sonic *objet trouvé,* a realistic and relatively untampered depiction of a natural occurrence in the world. To a small extent, the spontaneity of the recording was designed to mirror conceptually the unpreparedness of the performers' learning process; both I and they found ourselves in situations where we encountered unknown sonic material. The importance of this idea should not be overstated, however. If it had been the main concern of the piece, I would have ensured the recording was truly left to chance—I could have predetermined the location, date, time, and duration using chance operations, recorded whatever happened in that time/place, and stipulated that there be no editing, for instance. Of greater concern was that the sonic material include ear-catching content for the performers to reproduce—the point of the piece, after all, was to foreground their interaction with the audio score, not to explore the idea of spontaneity on the joint levels of compositional process and performative result. It therefore became a game of balancing the element of chance in finding the sounds with the element of controlling the acoustic result.

With this in mind, I took appropriate measures to include foregrounded sonic features that would likely make the score more interesting to listen to *in itself* on top of any interactions taking place. Since a significant part of the piece would involve simply sitting and listening to the score, it seemed important to make sure that this process was valuable in itself, both for performers and audience. Ensuring that the score was indeed rewarding to listen to also fell entirely (and uniquely) within my remit, having relinquished control over the performers' interpretations. This is what ultimately led me to select and edit the recordings to include a variety of clearly identifiable sounds, with the single, fairly loose restriction that it stay consistently within the same time and place (e.g. Ridley Road Market at 9 a.m.) and not sound obviously manufactured, manipulated or over-produced. Choosing a market was

therefore not an accident: markets tend to be busy, noisy places with many different types of sounds occurring at once. When appropriated as audio scores, such content-rich environments furthermore provide a wealth of interpretive possibilities. Rather than give myself over, in Zen-Cagean fashion, to whatever sounds occurred as I was recording, I therefore exercised some authorial control with the aim to present the performers and audience with recordings filled with multiple levels of sonic detail.

The intuitive idea of what makes a sound 'ear-catching' can be enriched by a discussion of psychologist Albert S. Bregman's theory of a*uditory scene analysis,* which proposes a model for human auditory perception. One of the key concepts of Bregman's theory is the idea that we parse sensory data out into 'streams', enabling us to distinguish between different sources of sound in an environment where there is a (sometimes large) mixture of them. Bregman calls this 'auditory stream segregation', a phenomenon in which 'the auditory system is grouping tones that are similar to one another in preference to grouping tones that follow one another immediately in time' (1990, p. 47). Backed up by experimental data, the theory holds that our brains are hard-wired to segregate sounds according to timbre. Finding constancies of timbre allows us to identify and make perceptual representations of discrete environmental events, helping us to navigate the wealth of sensory data in the world around us. This is demonstrated by the 'cocktail-party' example:

> A friend's voice has the same perceived timbre in a quiet room as at a cocktail party. Yet at the party, the set of frequency components arising from that voice is mixed at the listener's ear with frequency components from other sources. The total spectrum of energy that reaches the ear may be quite different in different environments. To recognize the unique timbre of the voice we have to isolate the frequency components that are responsible for it from others that are present at the same time. A wrong choice of frequency components would change the perceived timbre of the voice. The fact that we can usually recognize the timbre implies that we regularly choose the right components in different contexts (ibid., pp. 2-3).

More specifically, Bregman theorises that certain timbres are easier to segregate than others. There is evidence for this in research which shows that if a set of simultaneously sounding partials are harmonics of the same fundamental, 'they will

tend to be assigned to the same stream; that is, they will be fused and heard as a single sound' (ibid., p. 232). Bregman calls this the 'harmonicity principle' (ibid.). According to this principle, inharmonic noise is harder to parse into one stream, contrary to sounds with greater harmonicity.

Using a spectrogram analysis of the recording I used in *for Michael, Peyee and Rodrigo* shows which features I heard as being most 'ear-catching' and 'foregrounded' (**Figure 2.1**). What is perhaps not surprising is that the score is structured around a string of these features which are higher in amplitude than most of the other sonic data. What is more telling is that all of these sounds bar one contain clear enharmonic spectra: high pitched laughter, a single car horn, a single voice close to the microphone, another single voice laughing (the anomaly is the unidentified 'drum-like pattern'; **see Figure 2.1**). Watching the documentation confirms that all of these 'foreground' sounds are reproduced by the performers. This supports the idea that both I and the performers shared the same method of access to the audio score—that we all generally 'heard the same thing'. While the performers have agency in how they reproduce the sounds, I could still dictate the flow of the piece by using these foregrounded sounds, permitting me to a small extent to predict what sounds the performers would choose to reproduce. With this in mind, the 'background' sounds became very important in ensuring greater indeterminacy and interpretive variety. Giving the performers the chance to hear the recording multiple times offered them the chance to focus on these background sounds, and not only reproduce the most prevalent ones. An example of this in the documentation is when Rodrigo chooses to focus on 'some of the textury stuff' (**Docu 2b**, 01:54): the quieter, hard-to-identify sounds with inharmonic spectra.

2.5.1 Learning the sounds

There is no hard and fast method to guarantee that this whole recording will be learned and reproduced. The time it takes for this is entirely contingent on each individual performer, (as well as on the material). When staging such a process of learning in a concert situation, this indeterminacy presents a challenge for composers, since concerts (almost always) depend on performances occurring within

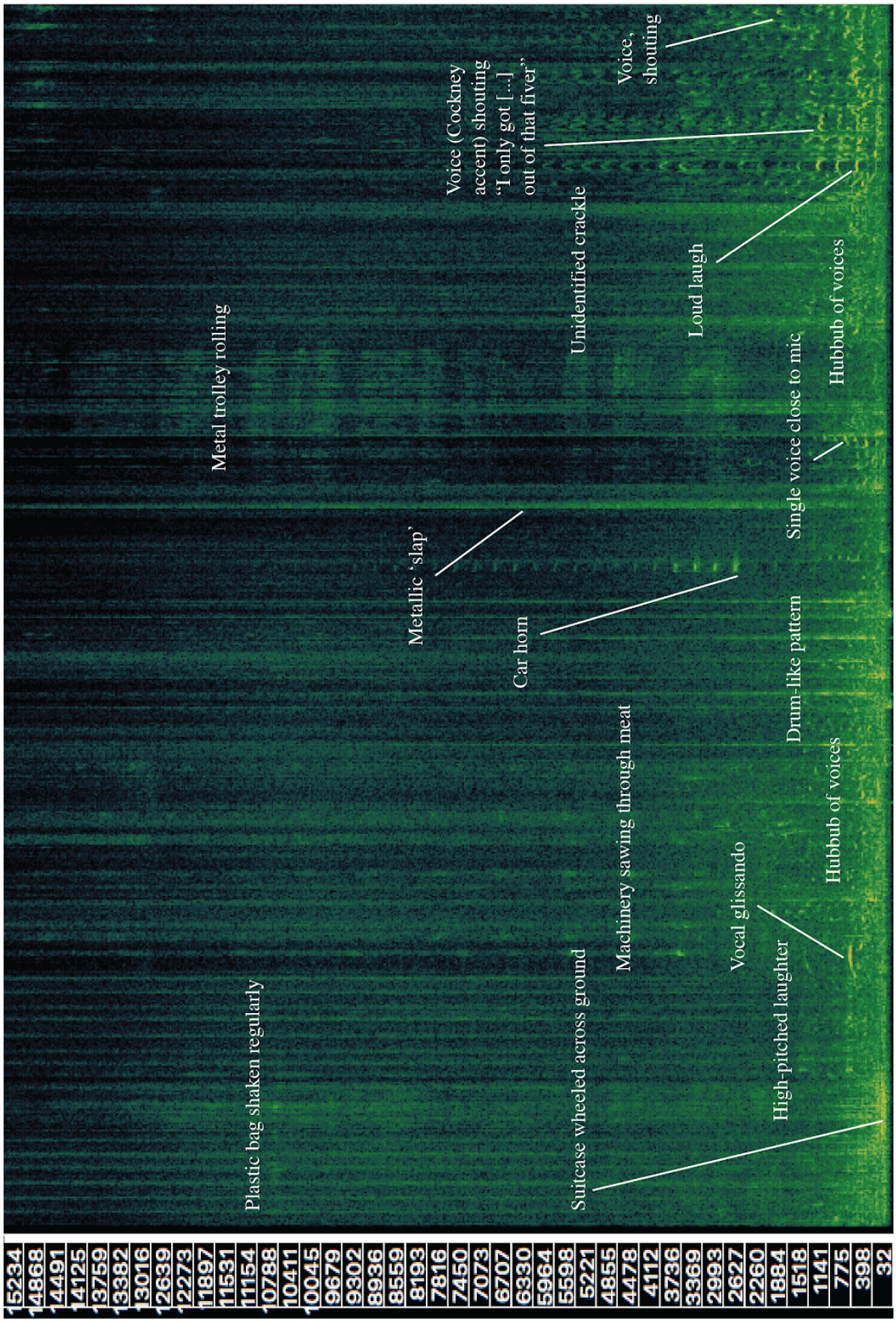

Figure 2.1. Spectrogram analysis of audio score in *for Michael, Peyee, Rodrigo on 19th April 2015.*

a specified time-frame. The riskier approach is to leave as much time as it takes for performers to reach a specified outcome ('the piece is finished when X performers can do Y'). The less risky approach is to impose a time limit on the learning process ('the piece is finished after Z minutes, whether or not X performers can do Y').

Two pieces which involve the former are James Saunders's *in which one thing depends on another* (2016) and David Pocknee's *Conditioned* (2013). Saunders's piece 'tasks players with associating sounds and words. They work together to create a set of stable pairings by arbitrarily labelling a set of sounds with key words and reinforcing these associations until they are learnt' (2016a). Saunders leaves the amount of materials up to the performers, specifying only that they use 'at least 10 each, but preferably more' (2016b). In Pocknee's *Conditioned*, one performer is tasked with associating a set of abstract visual shapes with a set of sound-producing objects. A second performer provides the visual stimuli, which are shown to the first performer on a computer screen, and rewards the first performer with edible nuts whenever they make a correct association. Through these rewards, the first performer eventually learns which shapes correspond to which noises. Pocknee includes eight shapes and sound-objects: 'a metronome, a horn, a whistle, a tuning fork, a bell, an electric buzzer, a bottle, and a pump that pushes air through tubes to create bubbles in a bucket of water' (2019). All are taken from Ivan Pavlov's famous experiments on conditioning dogs' behaviour in the early 1900s.

Both Pocknee and Saunders leave the timing of their pieces indeterminate, but consider how much material should be learned. In specifying 'at least 10' items, Saunders leaves open the possibility that the piece could take a very long time indeed (the two performances documented on his website clock in at 6'57" and 18'36", and both use the minimum 10 items (Saunders 2016a)). Pocknee's eight items in each category was due to there being eight items mentioned in Pavlov's lectures. Pocknee places importance on the audience seeing the full learning process, which is why he feels the piece works best in a concert situation:

> I would always choose a concert rather than an art installation for presenting this piece, because this ultimately decides the form and narrative of the work. In an installation setting people are free to enter and leave as they please and, unless you stay from beginning to end, the experience of the conditioning/learning process is only partial. The work is ultimately the story of one person becoming conditioned to a set of stimuli and I don't think the piece works as well if that narrative is experienced in an incomplete way (2019).

Having a restricted amount of items makes it more likely that the audience will also retain the full set of shape-sound correspondences, a factor which will help their comprehension of the piece's formal structure.

Comparing my approach to Saunders's and Pocknee's reveals that I chose the less risky path, and imposed a time limit. The parameter of 'amount of material' was the length of the audio recording, which was in each case limited to 30-35 seconds.[18] My reasoning was not due to simple conceptual cowardice: the fact that there is no clear goal in sight for the performers—they can always potentially produce a 'more accurate' representation—is conducive to limiting the length of the learning process, as opposed to a situation where a quantified amount of material is learned according to a measurable outcome. Controlling these parameters then became a game of ratios, T_M:T_L, or 'time-length of material' : 'time-length of learning process'. After trialling the process myself, I started with a ratio of 1:10 (30 seconds of material to be learned in 300 seconds, or 5 minutes), which worked well in *for David and Ruben* and *for Tim and Edward*: it was enough time for them to get to know the material and develop interesting responses to it, whilst not allowing them the time to become overly familiar and stop engaging with the material. Perhaps due to the editing of the soundtrack, and consequent concentration of attention-grabbing sounds, this ratio felt like too little in the rehearsal of *for Michael, Peyee and Rodrigo.*[19] The ratio was then extended to roughly 1:11 for the performance.

Specifying these ratios was a balancing act between giving the performers enough time to make a satisfying interpretation of the recording (at least one which is as long as the recording itself, manages to reproduce some if not most of its salient

[18] This does not take into account the difficulty or density of the material itself, but as this is likely to be hugely subjective depending on each performer, it did not seem like a parameter which I could control very effectively.

[19] In all cases, I rehearse the piece using a different but equally long audio track, to preserve a 'first encounter' in performance.

features, and takes into account its basic structure), and (as with *neither serious*) making sure that the piece did not drag on too long. It was another compromise favouring audience enjoyment over conceptual cleanness. Doing the piece again, or extending it, this ratio could be played with more, allowing the piece to tackle more drawn out situations, and see what comes of the performers' interpretations in them. There could be very simple material, and a ratio of 1:20 or 1:30, for example.

2.6 Verbal instructions in *for_____ on_____*

Recalling Lely's framework sketched out in section **2.2**, the instructions in *for_____ on_____* can be said to employ an informal register reminiscent of spoken conversation, reinforced by the mode of delivery being recorded speech. In all instances of the piece, I use the active voice and address the performers by their first names, making clear that they are the primary subjects of the instructions. The grammar is colloquial rather than formal; the use of contractions such as 'you've' is frequent. All these factors contribute to the tenor of our interpersonal relationships seeming informal. That said, the modality implies an obligation on the performers' part, suggesting a power relationship between me and them of 'giver-receiver' or 'commandant-executant'.

In *for David and Ruben,* for instance, the mode is constructed as them *having to do something* through the modal auxiliaries 'have to': 'You've got five minutes to reproduce as accurately as possible the sounds you hear on the ipod, using your instruments. OK?' (**Docu 2a**, 00:28). The mood is declarative ('you have to reproduce') rather than imperative ('reproduce'), and ends in the rhetorical ('OK?'). It is rhetorical, of course, because there is no meaningful, desired response to the 'question'. Given that the voice is employing language that presumes interaction when none can happen, this last 'OK?' comes across as absurd, or even deliberately obtuse (and is not the sole linguistic feature to do this). The 'giver-receiver' relationship set up beforehand reinforces a reading of the 'OK?' as rhetorical, since the aim of the giver—to give the instructions—is fulfilled without this final word-question. Most importantly, this use of language forfeits function for meaning and (comic) effect, reinforcing the conversational register of the text.

Consequently, the score's grammar can be said to have redundant linguistic features, rather than exemplifying the efficient and precise character of (for instance) good legal writing. Lely starts the chapter on grammar by citing a prescriptive account of such 'correct' grammar, Wydick's *Plain English for Lawyers* (2005), whose chapter titles are

> Omit Surplus Words.
> Use Base Verbs, Not Nominalizations.
> Prefer the Active Voice.
> Use Short Sentences.
> Arrange Your Words With Care.
> Choose Your Words With Care.
> Avoid Language Quirks.
> Punctuate Carefully.
> (Wydick 2005, pp. vii-viii, quoted in Lely and Saunders 2012, p. 4).

Significantly, the language in *for_____ on_____* flouts all of these rules apart from 'prefer the active voice'. It is better characterised as being colloquial and informal in style.[20]

Seeking to reverse the mood in *neither serious,* which, as mentioned earlier, had felt close to being overly serious and negative, I sought to match the rough, 'unfinished', and playful aesthetic of *for_____ on_____*, and frame the situation as an open-ended exploration, rather than a foregone failed attempt at score-reading. I opted to record the speaking in one take and without a script, to ensure a rough, 'live' quality which would include hesitations in my delivery and natural deviations and irregularities of speech. Again, the spontaneity of my delivery, assured through lack of scripting and single-take recording, sets the tone for the spontaneity of the performers' learning process. This recording technique furthermore supports the colloquial language: precluding the opportunity to edit, and capturing the quasi-improvised delivery, ensures that colloquialisms, speech rhythms and personal language quirks are retained.

The mode of access to these instructions is temporally limited by virtue of the fact that the instructions are delivered as a spoken text not heard before by the performers. Although spoken instructions are necessarily temporal, this is not to

[20] The desire of composers to eschew purely functional writing leads Lely to warn of the limitations of prescriptive grammar, in favour of a descriptive approach which seeks to describe a corpus of existing texts (Lely and Saunders 2012, p. 4).

deny the factor of time in interpreting written instructions. Composers making written text scores can and do also consciously play with time. For example, in his score *Only* (2005-6), composer Michael Pisaro starts by taking an existing poem by Kenneth Rexroth (Lely and Saunders 2012, p. 316). He then writes his own text, which makes reference to Rexroth's poem, drawing on it as textual and conceptual material. Commenting on this score, Pisaro says

> by the time you get done thinking about what Rexroth was trying to describe, and then you read a set of instructions that say 'well, you might do something like this', you're involved at a level that's a little different than a postal score piece, something that's a few lines on a score that you can grasp instantaneously (quoted in Lely and Saunders 2012, p. 321).

More important than medium, therefore, is the question of *how the interaction with the score is framed.* Is it a visual score accessible only for 5 seconds in performance? Or an audio score which is sent in advance to the performers, allowing them ample time to learn it perfectly? etc.

If the parameters of time to access and realise the score had been left up to the performers, my instruction 'reproduce [x] sounds as accurately as you can' would maybe have yielded a greater variety of interpretations. The performers could have had weeks, months, or years to mull over the particular details of how they would interpret it; the word 'reproduce' could have led to them exploring a variety of different instruments they deemed the most appropriate for the task; the adverb 'accurately' could have been interpreted in multiple different directions—accurately in terms of timbre, emotion, or environment, for example. Denying this variety by staging the immediate reaction to the score is arguably an aesthetic weakness of the piece. It also manifestly asserts authorship—if not authoritarianism—and reduces the agency of performers. With no time to think or plan, the mode of interpretation is likely to be more restricted. However regrettable, this is a necessity for prioritising a process of familiarisation and real-time negotiation. Insofar as this is the aesthetic aim, restricting the mode of access to the instructions is therefore also a strength.

2.6.1 Character and persona in *for_____ on_____*

Using Auslander's (2006) theory to read *for_____ on_____* reveals that I perform 'Louis d'Heudieres, "real person"', 'Louis d'Heudieres the UK-based experimental composer' and 'Louis d'Heudieres (?) the composer-voice who explains what the performers have to do for the next five minutes'. Although the context of *for_____ on_____* is nondramatic music (similarly to Westerkamp, Bailie and Crowe's examples in section **2.3.1**), a semi-theatrical situation is still set up by my disembodied voice giving instructions to the performers. It is in implicating this set of relationships through the text that my voice can be interpreted as portraying a character. The line between this character and my persona is blurry, since I am performing the role of someone giving instructions to the performers—a role traditionally performed by composers and conductors. My 'authentic' delivery, featuring my unscripted, unprocessed voice, furthermore strengthens the presence of my persona and 'real personhood' over a fictional character. What makes the role of the character strong, in turn, is the occasional over-emphasising of (again) redundant linguistic features for comic effect, something which I would not do were I to communicate interpersonally with the performers. This is perhaps clearest in *for David and Ruben,* when I tautologically announce to them that they should stop playing after the five-minutes 'Learning stage' with the following lines: 'After the five minutes, I'm gonna say stop. You'll hear me say stop, um, and then you've got to stop—obviously—when you hear me say stop. So I'm gonna stop you playing, and you've gotta stop when I say stop. Just stop playing at that point… when you hear me say stop' (**Docu 2a**, 00:40).

2.6.2 Score agency in *for_____ on_____*

In the case of *for_____ on_____,* playing the instructions and audio recordings openly to everyone in the room instigates a mental mirror of inclusivity: the audience know that the performers are unprepared; the performers know that the audience know they are unprepared. Moreover, the audience, having been prepared for the performers' task, then see how they accomplish it, and perhaps even imagine how

they would accomplish it themselves. As with Kagel's and Smith's scores discussed in section **2.3.2** then, it could be suggested that the scores' openness and agency on stage encourages an aesthetic of empathy between the audience and performers.

Chapter 3

Headphone pieces (2015-18)

The final portion of this thesis examines pieces which communicate audio scores to performers via headphones. Forms of live performance in which performers receive information in this way has precedents in theatre, dance, TV and music. After discussing briefly the use of headphones in the former three artforms, I turn to musical performance via the detailed taxonomies of audio scores provided by Bhagwati (2018) and Sdraulig and Lortie (2019). Delving more specifically into ideas of signification and meaning, I discuss Saussure's theory of linguistics (1959), which provides a springboard for discussing referential and reflective modes of listening (Schaeffer 2017, Norman 1996). After looking at Luc Ferrari (1996, 2009) as an important precursor of composing with real-world sounds, I use the theories above as a lens for analysing my own audio score practice. The pieces I discuss are *Laughter Studies 1-7* (2015-18), *fantasy with motorbike* (2016) and *Vox Pop* (2016), all of which involve pre-recorded audio scores being communicated to performers in performance via headphones.[21]

3.1 Theatre, dance and TV

According to theatre scholar Tom Cantrell, 'verbatim theatre is a form of documentary theatre which is based on the spoken words of real people' (2012). Its development is 'closely linked to a simple technological development – the invention of the portable cassette recorder', which enabled writers and directors to go out into the world and record the testimonies of real-life people 'in their own environment' (ibid.). These testimonies could then be used as the basis of, or simply as, scripts for theatre. Peter Cheeseman's *Fight For Shelton Bar* (1974), a play 'which was part of a campaign fighting against the closure of a major steelworks in the heart of Stoke' is an early example of the style (ibid.).

[21] This commentary omits *Laughter Studies 5*, which is being revised at the time of writing.

Using testimonies from real people in aural form enables the new aesthetic dimensions of copying a person's accent, intonation, and rhythm with great accuracy. Director Alecky Blythe relates the process undertaken by American actress Anna Deavere Smith when she performed the 1998 play *House Arrest,* directed by Mark Wing-Davey:

> Anna would record interviews with people and then learn them word-for-word, appropriating the speaker's cadences and patterns of speech in very fine detail [...] By copying their speech-patterns with such precision, the real person behind the performance shone through. What Mark noticed was that in rehearsals, while the earphones were still on, the delivery was all the more extraordinary. He decided to keep them on during the performance (Hammond and Steward 2008, p. 80).

In some stagings of verbatim theatre, then, directors opt to keep the headphones on the performers as they are performing, precisely to ensure these exact vocal, linguistic and characterological qualities are reproduced in performance. Blythe, who uses headphones in performance herself, even named her company, *Recorded Delivery*, after the style (ibid.).

Similarly interested in life outside the theatre stage are practices which use headphones to co-ordinate action in real-life situations. The *Mp3 Experiments* by Improv Everywhere consist in events where attendees (sometimes in the thousands) 'download an audio file and listen to synchronized secret instructions in a public space via headphones' (Improv Everywhere, no date). Seeming like disconnected passers-by going about their daily business at first, when the audio track starts, they suddenly start to perform the synchronised choreographic instructions all together as a group. Another similar example is Michael Baldwin's *Talking Music* (2018), written for performing audiences equipped with earpieces. In the first phase of the piece, Baldwin asks the participating audience members to create a series of recordings. In the second, he asks them to 'embody elements of those recordings through a series of subtle, and increasingly musical, social acts that take place within intermission or post-event conversation' (Baldwin 2018). The audio scores have a sonic basis in the concert, but eventually turn the situation around to become cues for action themselves. His use of audio scores in this piece is therefore to compose and intervene in social interactions within/around concert settings.

In the dance world, choreographers such as Jerome Bel and Xavier Le Roy have used headphones in performances (examples also noted by Bhagwati (2018)). In Bel's *The Show Must Go On* (2001), performers wear headphones and sing selected phrases from pop songs as they hear them. In Le Roy's *More Mouvements für Lachenmann* (2008), Lachenmann's string quartet *Gran Torso* is used as an audio score through which Le Roy builds a choreography, obtaining gestures and movements from the sounds. Extending Lachenmann's idea of musique concrète instrumentale, Le Roy 'extracts from the dominant modes of listening and music-playing in contemporary music that which remains yet under-explored: the body with all its senses' (Le Roy, 2008).

Perhaps the earliest occurrence of using headphones for live performance is in television; Mexican telenovelas were reportedly using the technique as early as 1951:

> One does not commonly think of technicians as a source of cultural distinctiveness, but in 1951 a Mexican engineer invented an electronic earpiece for instant communication with actors that became a standard and somewhat unique element of the Televisa production process. Performers could be fed their lines, either between takes or while taping was in process; as a result, the speed of recording was greatly enhanced. The invention had particular commercial and artistic implications. As a crucial element of what was to become Televisa's production-line approach to telenovelas, the earpiece contributed to the company's economies of scale and eventual reputation as the world's most prodigious novela producer and exporter. At the same time, TV critics would complain, it often made for lazy actors and poor performances; lacking an incentive to learn their lines and thus to think ahead of time about subtleties of character, actors needed only to show up on set, look pretty, and speak as prompted. The Mexican novela's ongoing reputation for cartoonish acting may ironically owe in part, therefore, to Televisa's early technological edge (Paxman 2003).

This passage touches on a key feature of audio scores, namely the fact that they put the performer in a continuous present. Unless any extra preparation has taken place, this prevents performers from being able to anticipate what is coming up ahead. Instead, it prompts a mode of engagement where they react to the aural stimulus as they hear it. Of course, in traditionally notated scores, the arrangement of material spatially on the page naturally allows performers to look ahead and anticipate what is coming.

3.1.1 Music

Bearing clear similarities to all of these applications in theatre, dance and TV, the use of headphones in the field of music performance is particularly relevant to my practice. Writing about audio scores communicated via headphones in musical settings, Bhagwati similarly remarks upon the possibility of placing performers in a continuous present:

> audio scores, unlike visual scores, confront musicians with a score element, a message or instruction in real-time. One cannot, in an audio score, glance ahead towards things to come – rather, each instruction and example in the score arrives in the actual present, and must be processed (i.e. understood and musically realized) immediately (2018, p. 29).

Expanding this notion, he identifies five primary 'conveyance modes' germane to audio scores: 'information, instruction, imitation, inspiration, and instance' (ibid., p. 25).

Information is a mode which relies on basic auditory cues which assume that more precise contextual content has already been given; an example given by Bhagwati is '"Cue for your solo. Start NOW!"' (ibid., p. 26).

Instructions take four main forms, asking musicians to do any of the following: (i) recall or adapt musical material previously committed to memory, create new material, play precise pitches, or precisely co-ordinate entries ('musical instructions'); (ii) interact in different ways with other musicians—'"Imitate performer X" [...] "Accompany performer Y" [...] "Disturb performer Z"' ('interaction instructions'); (iii) move around the space, perform bodily movements and gestures, direct their gaze or orient their physical trajectories in different directions ('para-musical instructions'); (iv) provide interpretive contexts for other sounds or conveyance modes—'"Mimic the following sound", "Accompany the following sound", "Improvise like in the following sound"' ('indexical instructions') (ibid., p. 27). Bhagwati makes the important point that the wording of instructions should be as concise as possible, owing to the fact that, in audio scores, instructions take up time. In contrast to visual notation, in which it is possible to include long lines or paragraphs of text, 'the longer an [aural] instruction the greater the risk that it is not

fully retained or understood by the performer (who, after all, is usually playing while listening to the instruction)' (ibid.).

When *imitating*, 'the performer aims to closely lock into a synchronized (or, if possible, responsive echoing) imitation of a sound example heard in the headphone' (ibid.). This is a straightforward and commonly used mode in audio scores. For example, the earliest headphone piece I have come across, Gavin Bryars's *1, 2, 1-2-3-4* (1970), makes use of this mode. It asks musicians to record a sequence of songs that start off fast and gradually slow down, and ends with an organ chord. When listening to this sequence as a score, each musician imitates their instrument in the mix. Bryars similarly notes the 'intended 1 to 1 relationship between what [each performer] hears himself play and what he hears pre-recorded' (1972, p. 20), echoing Bhagwati's idea that the performer is as tightly synchronised as possible with the sound examples.

Requiring more creative agency than imitation, *inspiration* involves 'a way of playing that takes off from the example, expands, comments, counterpoints it' (Bhagwati 2018, p. 28). As such, the performers' interpretations in this mode will intentionally diverge to varying extents from the score's sounds.

Finally, in *instantiation*, 'the sound example the musician hears in the headphone is used indeed as an example, one instance of a particular style of musicking that the performer is expected to realize' (ibid.). Again, this mode asks the performer to depart from what they hear in the headphones, breaking with the idea of synchronicity, and tending towards relative independence between performer and score.

Another categorisation made by Bhagwati is the distinction between 'situated' and 'fixed' scores (ibid., p. 25). In a situated score, the 'audio messages are positioned, sequenced or even generated live', whereas in a fixed score, the 'audio tracks (i.e. parts) are prepared beforehand' (ibid., p. 26). Bhagwati comments that situated scores prevent any rehearsal or learning from taking place, and thus ensure spontaneous reaction, since they are generated on the spot, whereas fixed scores can in essence be learned and practised, since they exist prior to the performance in a readily accessible way. Highlighting the fact that a score's medium is not a totalitisingly determinant factor, he notes that audio scores 'can be as fixed, and thus

practice-able, as a written score', a characteristic they share with visual scores 'in spite of their real-time bias' (ibid, p. 25). 'And yet', he adds,

> what is - and how it is - practiced will not be the same as in a written score: practicing such a score will tend more towards creative response than towards faithful execution, more towards exercising the imagination than exercising the fingers or the instrument (ibid.).

In other words, according to Bhagwati, audio scores tend towards indeterminacy and creative agency for performers. However, that this is so may have as much to do with cultural tradition than score media: recall that visual scores functioned more as memory-aids for extemporisation than embodiments of idealised works until the late eighteenth century. In a future world, audio scores could themselves become the dominant way to enforcing musical subservience.

Building on Bhagwati's research, Sdraulig and Lortie provide a comprehensive account of audio scores in the field of musical performance (2019). They use as a methodological lens James Gibson's idea of affordances, a concept they define as 'the potential actions made possible by an object or environment to a given individual', which 'implies a mutually influencing, transactional relation between actor and object' (ibid., p. 38; see also Gibson, 1979). This allows them to discuss audio scores primarily in terms of the kinds of interactions they engender with performers. In this light, Sdraulig and Lortie

> identify two primary sub-categories associated with the temporal relations composed between performer and audio score: reactive and rehearsed. On the one hand, performers primarily react to the audio score *during* performance; on the other, the audio score shapes the performers' interpretations in rehearsal, well *before* public performance (ibid., p. 39; emphasis in original).

On the 'reactive' side, they place my *Laughter Studies 1-3* and Lara Stanic's *Open Air Bach* (2005, rev. 2013; chvayne 2017)); on the 'rehearsed' side, Carola Bauckholt's *Zugvögel* (2011-2012) and Cassandra Miller's *Guide* (2013). In the latter two, the audio scores are listened to and learned prior to performance. In the case of *Zugvögel,*

> the audio recordings, which consist of bird calls of various species, are not played in performance; instead, the quintet members are instructed to familiarize themselves with these bird calls and memorize all their nuances in order to reproduce them on their respective instruments (ibid., p. 40; see also Score Follower 2013).

In *Guide,* the audio score to be learned is a 1968 recording of "Guide me, O thou great Jehovah" sung by folk singer Martha Muldaur. Rather than having the performers imitate the sounds, Miller 'opts for a *qualitative embodiment* of the audio score' such that, in performance, 'Muldaur's vocal identity is appropriated and filtered through the bodies of each singer' (ibid., pp. 40-41).[22]

Sdraulig and Lortie finish by discussing Carolyn Chen's *Adagio* (2009), a piece which combines both reactive and rehearsed modes of interaction by having three or four performers listen to an audio score both in preparation for performance, and during it (maulwerker 2016). In this case, the audio in question is a live 1994 recording of a segment from the Adagio in Bruckner's 7th Symphony, conducted by Sergiu Celibidace and performed by the Munich Philharmonic Orchestra. Chen's score involves performing a facial choreography which is mapped onto the music, and activated in performance by it (Chen 2009). Two other examples of this 'hybrid' technique are Miller's *Tracery* project (2017-) and, again, Bryar's *1, 2, 1-2-3-4. Tracery* is based upon the sounds of singer Juliet Fraser singing while 'perform[ing] a body scan meditation' (Miller 2017). The process is recorded and repeated several times, with Fraser mimicking her own vocal recordings as they are layered and played back to her on headphones. The performance then entails an additional session of singing/meditating on top of these pre-recorded sounds. In *1, 2, 1-2-3-4,* Bryars leaves open the option for the score to be reactive or rehearsed, stipulating (rather colourfully) that each musician

> may try his part beforehand as frequently and as diligently as possible or he may choose to 'busk' 'on the night', like the accompanist in cabaret who is told, in the middle of the act on stage, that there is no part for the next number but that it is 'Happy Streets and Paper Rainbows in D flat 1, 2, 1-2-3-4' (1972, p. 20).

[22] Due to the rehearsed mode of interaction in these pieces, it is worth noting that the performers do not use headphones in performance, since they do not access the score.

With the distinction between situated and fixed scores, Bhagwati had placed emphasis on the essence of the score as a thing in itself. Sdraulig and Lortie's focus on performer-score interaction allows them to show that, in practice, Bhagwati's distinction between situated and fixed audio scores may have little impact on how they are interpreted in performance:

> Rather than emphasize the nature of the score-in-itself, we stress the character of the encounter composed between score and performer. For example, when an audio score is heard for the first time by a performer, it may make little difference to them if the score is generated 'live' (i.e. situative) or fixed beforehand. But 'live' or fixed, the relation between performer and score in this scenario will be reactive (ibid., p. 39).

This approach becomes especially relevant when considering *Laughter Studies 1-3,* pieces in which the audio scores are both fixed *and* reactive; even though they can be rehearsed, since the audio exists beforehand, ideally they are rehearsed *very little or not at all*, such that the performance involves a spontaneous reaction to them.

What further distinguishes my practice from the pieces mentioned above, and the comprehensive list provided by Sdraulig and Lortie, is that it focuses on everyday found sounds, and performers' interpretations of them. *Laughter Studies 1-7, fantasy with motorbike* and *Vox Pop* all feature vocalising performers, and are composed of two main parts: a repertoire of sonic material, and a set of verbal instructions for interpreting that material. In all pieces apart from *Vox Pop,* the material is conceived to include as diverse a set of sounds as possible: sounds produced by machines, nature, humans, animals, and computers, encompassing domestic, outdoor, artificial, industrial, natural, and digital spheres.[23] The instructions, in turn, are almost exclusively to 'describe' and 'imitate' this material—in Bhagwati's terminology, they are 'indexical' instructions.

3.2 Language/sound diads

In Saussure's well-known *Course In General Linguistics,* he sets out his theory that the linguistic sign contains two parts: a signifier, which takes the form of a 'sound-image', and a signified, which is a concept (1959, p. 67). The linguistic sign is

[23] Despite this idea, the soundworld is undoubtedly narrow, mediated by personal taste and circumstance.

therefore 'a two-sided psychological entity' in which 'the two elements are intimately united, and each recalls the other' (1959, p. 66) (**Figure 3.1**).

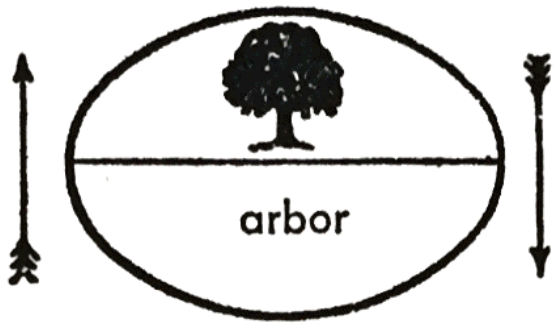

Figure 3.1. An example of a linguistic sign (Saussure 1959, p. 67). © The Philosophical Library, Inc., 1959.

At work in *Laughter Studies* is a Saussurean game of signification: the instruction to 'describe' everyday sounds creates linguistic signifiers for the signified concepts (which the audience does not hear), while the instruction to 'imitate' appends *sonic illustrations* of the concepts to the signifiers.

The imitations could also be seen as signifiers themselves, as they also refer to a concept sonically (as opposed to linguistically). On the other hand, imitating a sound does not necessarily entail signification. When one imitates a horse's 'neigh', one does not *necessarily* mean to signify 'horse' in the way one does when one uses the word 'horse', but could rather be giving an example of something that the horse does (hence the term 'illustration'). Imitations can signify, but they do not have to by necessity. They attempt to match sonically the concept they are potentially signifying, which distinguishes them from linguistic signification. In the latter, it should be remembered that 'the bond between the signifier and the signified is arbitrary' (1959, p. 67). As a way of illustrating this, Saussure points to the fact that different languages express the same idea with different sound-sequences:

> The idea of "sister" is not linked by any inner relationship to the succession of sounds *s-ö–r* which serves as its signifier in French; that it could be represented equally by just any other sequence is proved by differences among languages and by the very existence of different languages: the signified "ox" has as its signifier *b-ö–f* on one side of the border and *o-k-s* (*Ochs*) on the other (ibid., pp. 67-8).

While this arbitrary relation is easy to perceive for the vast majority of words, onomatopoeia presents a more complex case. Saussure holds that even onomatopoeic words are 'chosen somewhat arbitrarily, for they are only approximate and more or less conventional imitations of certain sounds', and that, furthermore,

> once these words have been introduced into the language, they are to a certain extent subjected to the same evolution—phonetic, morphological, etc.—that other words undergo (cf. *pigeon,* ultimately from Vulgar Latin *pīpiō,* derived in turn from an onomatopoeic formation) : obvious proof that they lose something of their original character in order to assume that of the linguistic sign in general, which is unmotivated [unrelated sonically to what it signifies] (ibid., p. 69).

For Saussure, in the end, even onomatopoeia is linguistic. As an example, consider the Oxford English Dictionary-approved word I used to signify the sound a horse makes: 'neigh'. Although involving a sonic aspect resembling the sound a horse makes, the discursive usage of the word, reified by the communally-accepted spelling, betrays the process of linguistic domestication crucial for Saussure's account of linguistic signs. In contrast to this, the acts of vocalised mimicry in *Laughter Studies* are specific, personal, and nonlinguistic. They are not signifiers in a socially mediated game of linguistic communication, but rather vocal attempts at replicating sonic phenomena. They are not arbitrary or 'unmotivated' in the way linguistic signs are, since they attempt to resemble their source perfectly. At the same time, they do sometimes also refer to concepts, especially when they occur in a context of linguistic signifiers for the same concept.

With this in mind, Saussure's diagram can be expanded to include three sections (**Figure 3.2**). The middle section represents what is in the score: a signified concept. The bottom section represents what one performer does: a linguistic signifier corresponding to the concept. The top section represents what the other performer does: a sonic illustration / nonlinguistic signifier of the concept.[24] The idea of a 'diad' thus refers only to what is done by the two performers, and perceived by the audience.

[24] Lacking an adequate visual or linguistic representation of sonic imitation, I have used the onomatopoeic form in double quotation marks as a shorthand.

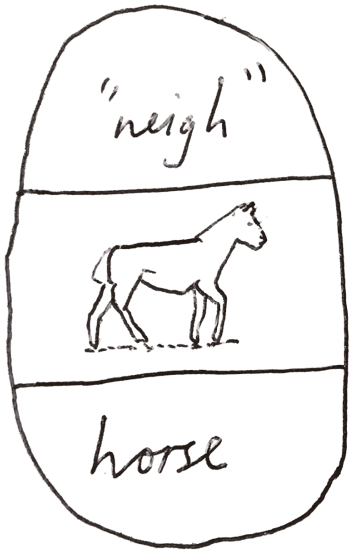

Figure 3.2. Expansion of Saussure's diagram to append sonic illustration to linguistic signification.

Creating a semantic bond between description and imitation is dependent on them arriving roughly *at the same time*. If they are too far apart, it becomes difficult to associate them: hearing a linguistic description of a sound one minute before an imitation of that sound does not make for a strong cognitive link between the two—is the sound related to the description at all? On the other hand, if description and imitation occur perfectly simultaneously, there can be too much perceptual information to sort through, preventing a decoding of the two sides in a way which associates them in a meaningful way. There is a 'sweet spot' whereby one has a linguistic signifier already in mind as one then hears a sonic imitation corresponding to the same signified concept. To achieve this 'sweet spot', the sounds to be described arrive a matter of seconds before the imitations. When trialling the technique, I found between 2 and 3 seconds to be the ideal amount. This takes into account the fact that cognitively, formulating a verbal description of a stimulus tends to be more taxing—and therefore takes a bit more time—than vocally imitating that stimulus.

Finally, establishing semantic-sonic diads involves an element of 'corroboration of events'. When the performers are seen to agree on the source material, their interpretations support each other, and form a coherent pair. However, when one describes a concept and the other provides an imitation which does not seem to correspond at all, there is a kind of dissonance, or conflict, between

the two interpretations, and the source material becomes much harder to discern (**Figure 3.3**). This idea of matching and conflicting interpretations is a key parameter in *Laughter Studies 1-4.*

Figure 3.3. A conflicting language/sound diad, with no single signified concept uniting the two sides.

3.2.1 'Referential', 'reduced' and 'reflective' listening

As these games of signification occur in the aural sphere, they occur via acts of listening. In his *Treatise on Musical Objects,* first published in 1966, Pierre Schaeffer directly invokes Saussure when marking the distinction between different listening modes (2017, pp. 210-214). 'When I listen to a galloping noise on the gramophone', he writes, 'I hear the sound as an *indicator*' of the concept of a horse (ibid., pp. 210-211). Similarly, 'when I listen to speech,' he claims, 'I target concepts, which are transmitted to me by this medium. In relation to these concepts, *signifieds,* the sounds I hear are *signifiers*' (ibid., p. 211). This mode of listening, whereby sounds are interpreted not so much for their acoustic properties, but for the concepts to which they refer, he calls 'referential listening':

> Most of the time, as we have seen, my listening targets *something else,* and I hear only indicators or signs. Even if I attend to the sound object, my listening will for an initial period be *referential listening.* In other words, there will be no point in being interested in the sound itself; at first I will still be incapable of saying anything else about the sound than "it's a galloping horse," "it's a creaking door," "it's a G-flat on the clarinet," "it's 920 periods per second" it's "Hello, hello." (ibid., p. 212).

Developing the idea of referential listening, composer and writer Katharine Norman notes that it is a common way to listen 'in real life', wherein we

> tend primarily to understand sounds as referring to objects and events, and we use memory to recall this essential information [...] Sounds lead us towards references to sounding things, and in this way referential meanings for sound could be attributed to reminiscences awakened through the sound's agency (1996, p. 2).

In this most basic sense, we may associate visual images of things to sounds ('dog', 'car', 'whistle'). In such cases where a sound is not clearly associable to an immediate, physical source, we are more at liberty to listen for it in terms of things it signifies that are external to itself. This may include anything from basic or abstract properties (movement, shape, weight, proximity) to aspects loaded with cultural, historical, or symbolic meaning.

One example cited by Norman is the weaving shuttle sound employed by Karlheinz Stockhausen in *Trans*. She notes that 'whether we recognize the sound as that of a weaving shuttle is less important than whether we interpret it as communicating a particular kind of mechanical side-to-side movement; an abstraction of the sound's real-world meaning is sufficient and intended' (ibid., p. 4). Abstraction can deepen and complicate referential listening, rather than changing it into something else altogether. Extending this idea further, sounds can be heard in terms of symbols, mediated by culture and learnt through experience, to which each individual attaches their own personal significance. Once we listen in this symbolic way, we are drawn 'into a world of conceptual meaning', in which 'we can obtain a deeper experience of qualities, rather than quantified relationships, of time and space' (ibid., p. 5).

Schaeffer seems to deplore this highly subjective form of listening. Appealing to ideas from Merleau-Ponty and Husserl, he argues instead for a more objective mode, which he calls 'reduced listening'. In this mode, information 'now only concerns the sound event itself: I no longer try, through it, to get information about something else (the speaker or his thought). It is the sound itself I target and identify' (ibid., p. 211). This mode is oriented towards perceiving the 'sound object', and

requires a rigorous, 'antinatural effort', a new way of listening, which goes against years of aural and cultural conditioning:

> Compared with these referential listening modes, therefore, listening to the sound object necessitates a new awareness: "What are the perceptions from which I derived these indicators? How did I recognize that voice? How, purely in terms of sound, can I describe galloping? What precisely did I hear?" I have to go back to the auditory experience, take hold of my impressions again, to discover, through them, information about the sound object and not the horse (ibid., p. 212).

The ideological ramifications of such a theory have been discussed at length by Seth Kim-Cohen (2009). Kim-Cohen describes as untenable Schaeffer's notion of reduced listening, as it calls for a type of experience that is unmediated by forces which contextualise—language, signification, culture, society, thought (ibid., pp. 121-9). To make his claim, Schaeffer cites Husserl's idea of a 'founding experience', a sort of primordial state by which we can experience the sound object as a thing-in-itself, free of any contextualising factor (Schaeffer 2017, p. 212; see also Husserl 1969, pp. 208-12). Using Derrida to argue his case, Kim-Cohen finds this to be reduced listening's fatal flaw. For him, the pursuit of sound-in-itself is at best wrong-headed in a world where *all* experience, aural or otherwise, is always already entangled in, and mediated by, context. At his most negative, he characterises adherents to the Schaefferian doctrine as 'seek[ing] an unsullied, prelinguistic, anodyne relation with sound' (2009, p. 125).

A more helpful term to describe listening to sound in a non-referential way is offered by Norman: 'reflective listening'. This way of listening involves 'a creative, enjoyable appraisal of the sound for its acoustic properties' (1996, p. 5). As opposed to referential listening, which mostly involves acts of remembering how things are, in reflective listening we 'use our ears and minds to create, or reinterpret, imagined meanings for the sound' (ibid., p. 6). Norman keeps returning to the idea that we cannot help but try to relate sonic data which is at first new, chaotic or meaningless to our lived experience. It is in this 'trying to relate' that we listen imaginatively, building metaphors for concepts which we are unable to explain precisely.

> If, estranged from its referential meaning, the ordinary real-world sound would have seemed confusingly random, making no sense at all, now we can take an unusually analytical approach in order to explain it. To find a metaphor we perceptually deconstruct the sound and listen to it as temporally shaped behaviour in a constant state of flux. We try continually to build relationships between what we are analytically perceiving and what we know (ibid., p. 8).

In an approach which resonates with Kim-Cohen's criticism of Schaeffer, Norman's account asserts that both referential and reflective listening take place in relation to our lived experience, to our own personal context. Listening within this context 'influences both the extent of our imaginative wanderings and the nature of the meanings they provide' (ibid.). By emphasising this personal context, and rooting her account of listening in acts of subjective remembering and imagining, Norman steers clear of Schaeffer's fallacy of aiming for an essentialised, objective listening mode; while Schaeffer had precisely called for a form of listening devoid of external meaning, Norman essentially refutes that this can happen.

3.2.2 The listening subject

Luc Ferrari, a composer who worked his entire life with real-world sound (at first, in collaboration with Schaeffer), echoes Norman in talking of sounds in imagistic terms. For Ferrari, using real-world sounds enables making personal narratives, creating images, and playing with them 'like one plays with words in poetry' (Ferrari 1996, p. 100). The amount and variety of images available to him dramatically increased with the advent of the first portable audiovisual recording devices (just as the portable cassette player opened up new possibilities for Verbatim Theatre). Concerning the period that led to *Hétérozygote* (1964), one of the earliest pieces born from the catalogues of real-world sounds he was able amass in environments outside of his studio, Ferrari writes

> There I had the complete scale from the abstract to the concrete, which allowed me to make an absurd discourse based on images which were absurd or put in absurd situations. For example, the wave from a heavy sea. It appears naive to bring it to people's notice, now that one is used to incongruous things, now that surrealism has been absorbed by the advertising world. But I had never heard, before it was possible to cut (cut and splice as they would say now), a wave

> starting from complete silence and going back to it. Because the sea produces a continuity of sound. But there it was a question of a poetic apparition. There was a confrontation between extreme realism and a complete utopia (ibid., p. 101).

This 'confrontation' could also be characterised in Norman's terms as one between referential ('extreme realism') and reflective ('complete utopia') listening. Operating within this wide range, Ferrari explores as primary material everyday sounds and their meanings, a way of composing he eventually called 'anecdotal music' (ibid.).

Ferrari does not aim, as Schaeffer did, for an objective or primordial relationship with sound, but rather roots his practice in the subjectivity of his own listening. This aesthetic position started early. Reflecting on the formative stages of his creative journey, he notes: 'I was discovering that the feeling I had for time was subjective, that my creation was the billposting of this subjectivity and that it was contained within a society with which it was entering into conflict' (ibid., p. 99). As such, Ferrari is interested in the kind of narration which affords 'a concrete attachment to social, political and sentimental life' (ibid.). Extrapolating from this statement, Kim-Cohen notes that in Ferrari's work, sound's 'connection to a social reality is left intact. More than that, the social meaning of the sounds play a part in determining their placement and treatment in the composition' (2009, p. 179). For Kim-Cohen, Ferrari is more than a listener, he is a 'reader' of sounds; not only does he 'understand what these sounds represent, how they relate to one another, how and to whom they communicate' (ibid.), he is aware of his own presence and its influence in the processes of recording and composing with them.

A good example of this is *Presque Rien No. 2: Ainsi Continue La Nuit Dans Ma Tête Multiple* (1977). Recorded at dusk in the village of Tuchan in southern France, Ferrari's own voice, as well as those of Brunhild Meyer-Ferrari, his wife, comment on the sounds of crickets, birds, passing cars, distant church bells and cries of farmers which make up the aural landscape. Seeking at first to 'capture' and 'penetrate' the landscape, the composer-narrator eventually realises that it is the landscape that 'traps' and 'penetrates' him (Ferrari 2009). Speaking in an interview about this decision to insert his perspective into the composition, Ferrari reveals the playful but subversive nature of his method:

> There was also the idea of the walker/observer, who realises what he's recording and adds his ideas. In fact there's true and false involved-there are some things which were added for dramaturgical reasons, some commentaries which are completely bogus! (Laughs) In any case, playing with truth and lies is what makes up the concept, which came later when I realised that a "Presque Rien" was being born... Instrumental sounds are added too: putting the walker inside the recording process and recognising him as a person, led me to think: "There are these natural sounds, and I'm going to make sounds too, incorporate a symbolic transcription of what comes into my head and then intervene as composer" (Warburton 1998).

As Kim-Cohen suggests, this awareness of subjectivity is pushed furthest in *Far-West News,* written and recorded between 1998 and 1999 while Ferrari and Meyer-Ferrari were travelling across America. In the piece, we hear the couple meet a variety of figures as they make their way from Santa Fe to Los Angeles. Composers, video artists, teenage students, cafe owners, fellow travelers, etc. Interspersed in these meetings are philosophical musings about contemporary politics and the media, then documenting—or, as is suggested in a meeting with Alessandro Mercuri, *directing*—Bill Clinton's impeachment. In this sense, the work is less an objective or detached sonic documentation of a defined time and place as it is, as Kim-Cohen suggests, 'a record of interaction' where 'Ferrari's long-standing concern with the social, political, and sentimental are foregrounded' (2009, p. 183). As in his other works, Ferrari and Meyer-Ferrari's presence is revealed, acknowledged and manipulated, rather than obscured. The fact that the work is structured around a series of interpersonal encounters only highlights this subjectivity further. This results, Kim-Cohen suggests, in a 'problematic relation of [Ferrari's] work to the category of music' (ibid.). In foregrounding the interpersonal, social, societal, or sentimental, *Far-West News* can sometimes feel like a journalistic documentary rather than a musical composition. What hinders it from being (merely) a documentary are Ferrari's playful manipulations of the recorded sounds, as well as the interjections of composed instrumental music. In many places of *Far-West News,* what at first seems to be naturally-occurring sound is revealed to be artificial—we pass from referential to reflective modes of listening, sometimes sitting on a knife-edge between the two. Alternatively, after long sections of unedited ('real') sounds, we are jolted back into

the fact we are listening to music with a sudden burst of quasi-serial instrumental counterpoint.

Norman likens to film montage the technical manipulations that permit this kind of composition: electronic effects, cutting, splicing, looping, superimposing, processing, mixing, etc. In words which echo Ferrari's own, Norman writes that these techniques

> give the composer the opportunity to obscure real-world sounds, and so deny our easy access to referential clues without entirely severing our contextual connection with the source. She can guide us on a circuitous perceptual journey in which her re-perceptions of the sound direct our own, creative, listening (1996, p. 9).

Extending this thought—the idea of what occurs when we listen to real-world sound that has been manipulated in composition—Norman suggests that 'we could regard the composer as just another listener, but one who publicly reveals a rarefied listening process through her transformation of the sound' (ibid.). For her, composers working with real-world sounds share an experience and perspective gained and developed through listening. When listening to their work, our (the audience's) listening interacts with theirs. Referring again to film, she quotes Eisenstein as saying

> each spectator creates an image along the representational guidance suggested by the author, leading him unswervingly towards knowing and experiencing the theme in accordance with his own personality, in his own individual way, proceeding from his own experience, from his own imagination, from the texture of his associations, from the features of his own character, temper, and social status. The image is at one and the same time the creation of the author and the spectator (Eisenstein 1986, quoted in Norman 1996, p. 9).

In *Presque Rien No. 2* or *Far-West News,* Ferrari makes us aware that our listening interacts with his: that the image is being created by us, our subjectivity, in relation to his. Pushing the idea further, Kim-Cohen describes listening to these pieces as an interaction of 'symbolic grids' on multiple levels:

> the recorded sounds as received, the awareness of the process of the recorded sounds as rerecording, the recorder's interventionist presence in the recording, the listener's awareness of the walker/observer's awareness of himself, the listener's awareness of one's listening self engaged in the listening activity, and so on, ad infinitum (2009, pp. 182-3).

Bringing these ideas to bear on my own practice, I start by claiming a kinship with the aforementioned techniques common to composition with real-world sounds. Rather than communicating directly to audiences, however, I create aural scores with the sounds I record and manipulate. The instructions I give to performers to 'describe' and 'imitate' these scores stimulate a vocalisation—and a verbalisation—of the listening process. In the case that a clear real-world sound is used, it is likely that referential listening will take place, the performers seeking to find clear and concrete signifieds (to 'remember'). More abstract material lends itself better to reflective listening, the performers being likely to build metaphors while analysing the sound as it is encountered (to 'imagine'). As the composer, I play with these listening modes, at all times rooting the play through my *own listening.*

As we have seen, Ferrari frames his real-world sounds with personal linguistic interjections and/or sounds that reveal the recording process itself. In a different way, subjecting sounds to interpretations of performers (rather than presenting them as tape pieces) also roots my approach in subjectivity, and makes doubly evident the fact that sounds are being listened to in the context of personal, lived experience. Revisiting the passage from Eisenstein quoted in Norman, the 'spectators' in my headphone pieces are first and foremost the performers, who access the audio score. The audience's appreciation of my 'vision' happens via the performers' own perception as a medium or filter. Adding this extra layer perhaps comes at the cost of estranging my perspective from the audience's, although not completely. Since my listening is still present somewhere behind the sounds, these pieces involve listening to listening to listening.

3.3 *Laughter Studies 1* and *2* (2015-6)

The ideas put forward by Bhagwati ('indexical instructions'), Sdraulig and Lortie ('reactive' scores), Schaeffer, Norman (listening modes/recorded everyday

sound), Saussure (language/signification) and Ferrari (anecdotal music) provide a good framework with which to study *Laughter Studies 1-7.* All pieces in the series feature pre-recorded audio scores made of everyday sounds, with instructions to vocalists to verbally describe and vocally imitate those sounds. While the instructions to 'describe' and 'imitate' are common across all of the pieces in the series, the sonic material is specific to each one.

Laughter Studies 1 was first written for two friends, Joe Houston and Antonia Barnett-McIntosh, to be performed at a private house concert in Berlin in October 2015. The informal format, and the fact that I was writing for friends, led me to feel comfortable in taking risks with the way I was composing. It was doubtful to me at the time whether writing something purely on headphones would work—after all, part of the success of *for_____ on_____* had come from the audience also hearing the score. My doubts were put to rest after Joe and Antonia's performance, which worked much better than I had hoped. After positive feedback from peers and colleagues, *Laughter Studies 1* was then programmed to be performed in February 2016 at Cafe Oto, as part of the new music series Kammer Klang. I was curating a concert series myself, Weisslich, which was due to take place in January at the Hundred Years Gallery, a mere couple of tube stops away from Cafe Oto. Seeking to avoid repeating the same piece twice in front of what could be a similar audience, I decided to make a new version of *Laughter Studies 1* for Weisslich. At this stage, the division between separate pieces and different iterations of the same piece was blurry. It was only afterwards that I decided to think of this second 'version' as a separate piece in its own right. I could also see the potential in the technique, and started to imagine a long-term series of related pieces. At this point, the second piece became *Laughter Studies 2.*

Laughter Studies 1 and *2* therefore share many features. They are composed of a similar set of sounds, chosen according to four categories: everyday sounds, ambient environments, music, and emotive sounds.

Category	#	***Laughter Studies 1***	#	***Laughter Studies 2***
Everyday Sounds	1	car traffic (Girton, Cambridgeshire)	1	someone pumping an airbed

	2	amplitude modulation (made in PureData) played back on speakers	2	door shutting abruptly
	3	Canon MP495 printer printing a sheet of paper	3	vehicle driving past in busy street
	4	bottle of water being emptied into the sink	4	church bells ringing (quiet environment)
	5	bus at standstill	5	audience applause (distorted recording)
	6	airport announcement made over tannoy speakers	6	tennis match
	7	woman laughing, fast and irregular	7	paper being ripped
	8	can of soda being opened	8	large outdoor power generator
	9	two people talking in Chinese	9	young woman saying ‘mmm’
	10	laughter, high-pitched and regular	10	man talking in street (Received Pronunciation English accent)
	11	washing machine spinning	11	glass being filled up with water
	12	motorbike revving its engine	12	‘whoosh’ sound (made with bamboo stick)
	13	group of people applauding (distorted recording)	13	microwave beeping
	14	crickets singing (south of France)	14	feet swivelling in gravel
	15	audience laughing (as in TV canned laughter)	15	bubbles being blown into liquid via straw
	16	birds nestling in a bush	16	rain falling on plastic window (recorded from inside)
	17	water dripping onto concrete (recorded close)	17	cough
	18	footsteps and background chatter (street in Cambridge)	18	church bells ringing (noisy street, traffic)
	19	someone clearing their throat (recorded close)	19	body splash into swimming pool

	20	rain falling on plastic window (recorded from inside)	20	bubbles being blown (in swimming pool)
			21	baby cooing
Music	21	live recording of jazz trio (audience dining in background)	22	live recording of jazz trio (audience dining in background)
Ambient Environments	22	quiet street in Amsterdam	23	quiet street in London
	23	park in London	24	quiet street in Hamburg
	24	square in Copenhagen	25	quiet street in Amsterdam
Emotive Sounds	25	woman sobbing softly	26	woman laughing
	26	woman crying deeply	27	man crying

Sounds #1-6, 12, 14, 16-18, 20, 22-24 of *Laughter Studies 1* and #1, 3, 6, 8, 10-11, 14, 16, 18-20, 23, 25 of *Laughter Studies 2* were all recorded by me on my Zoom H4N in the years 2015-6. I take this recording device everywhere with me on the lookout for interesting things to sample. The list therefore reads a bit like a travel diary. The rest of the sounds were all found on www.freesound.org apart from #9 in *Laughter Studies 1* (taken from the 2012 documentary *Ai Weiwei: Never Sorry,* directed by Alison Klayman), and #22 in *Laughter Studies 2* (taken from Youtube (Kaushal Bajracharya 2012)).

3.3.1 Varying the sounds

Some of the sounds appear more than once. When this is the case, they are altered in any combination of two ways:

(i) the length, or portion of the sound, is changed
(ii) EQ and effects are applied

On top of these changes is the context provided by, and interaction with, other surrounding sounds. Interactions take place in three ways:

(i) Abrupt break
(ii) Gradual transition (via fading in/out or filter/EQ)
(iii) Layering of two or more simultaneous sounds

For example the sound #8 (soda can being opened) appears six times in *Laughter Studies 1*, each time with a different combination of context, length, and effects (**Examples 3.1-3.6** (isolated)**; Examples 3.7-3.12** (in context)).

Occurrence	Context	Length/portion	EQ/effects
1	Simultaneously with #4 (bottle emptied)	Full	None
2	Simultaneously with #11 (washing machine)	Start only	pitch/speed -15 semitones
3	Between #1 (traffic) and #6 (tannoy speakers)	End only	pitch/speed -15 semitones
4	Between #5+9 (bus+Chinese dialogue) and #3 (printer)	Full	pitch/speed +11 semitones
5	Simultaneously with #6+13 (tannoy+distorted applause)	Start only	pitch/speed -20 semitones
6	Simultaneously with #10 (regular laughter)	Full	pitch/speed +11 semitones, reverb 4.4s

Using EQ and effects to vary the sounds was a way to be more economical with the material. Since what was required was the *perception of semantic difference,* i.e. identifying a sound as being something else, this technique allowed me to use the same samples more than once, rather than find a new sample every time. As the table shows, the main change with sound #8 is the pitch and playback speed of the sample (using Logic's built-in EXS24 Sampler). When played back at -15 semitones, it is much harder to identify the sound as a soda can being opened, and could easily be heard as a nondescript piece of filtered white noise instead (**Example 3.2**). This technique is reminiscent of Pierre Schaeffer's famous 'cut-bell' experiment, in which a bell sound whose initial attack had been cut off was perceived as a flute (Schaeffer 2017, p. 332).

As mentioned in section **3.2.2**, effects are also used to engender a change of mode of listening. At the very end of *Laughter Studies 1,* for example, sounds #25 and 26 get gradually higher in pitch (using Logic's Pitch Shift plugin). As they do so, sonic artefacts brought about by the change in pitch start to emerge. As the sounds

shift ever further away from the natural human pitch range for crying, they become abstracted transformations of their referential source (**Example 3.13**).

3.3.2 Structure

Working with material that has a semantic dimension led to structuring both *Laughter Studies 1* and *2* in terms of *what the sounds signify,* as well as the texture and method for combining the sounds. This is reflected by the names I have given the sections. The following table provides an overview of both pieces and the relevant parameters (see also **Figures 3.4 and 3.5**).

Piece	**Section**	**Timing**	**Selection and usage of sounds**	**Matching descriptions / imitations?**
Laughter Studies 1	Dense	00:00-05:01	#1-21, combinations of sounds, duo (+solo)	Yes
	Ambient	05:01-07:54	#22-24, single sounds, long, solo	Yes
	Conflicting	07:54-09:44	A: #25, B: #1-21, single sounds, short, solo/silence	No
	Emotive	09:44-11:20	A: #25, B: #26, single sounds, solo/duo, imitation only, pitch shift up	Yes & No
Laughter Studies 2	Dense	00:00-02:16	#1-21, combinations of sounds, duo	Yes
	Ambient	02:16-04:53	#1-4, 8-11, 17, 21, 23-25, combinations/single sounds, diverging length, solo (+duo)	No
	Drums	04:53-06:26	A: #6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 19, 21 B: #22, single sounds, short, solo (+duo)	First no, then yes
	Emotive	06:26-09:22	#26-27, single sounds, solo/duo/silent	Yes & No

If we follow the rightmost column, we can see that a key structuring parameter in both pieces is whether the performers' interpretations support each other, or rather conflict. The idea of setting up linguistic-sonic diads, which is established at the beginning of each piece, is at some stage subverted. When this happens, the semantic bond between the two performers is broken. As the relationship between the two performers is questioned, attention is drawn in turn to

their interaction with the score—what in the headphones could have caused this change?

There is also a parameter of 'imitability' at play: whereas the first three sections of both pieces involve the performers imitating mostly non-vocal stimuli, the material in the final portions switches to human voices, and is therefore more completely achievable.

3.3.3 Texture

Mathematically, there are three possible textures with two performers (assuming equivalence between them):

(i) both people silent ('silence'),
(ii) one person sounding, the other silent ('solo'),
(iii) both people sounding ('duo'),

This is calculated by finding all two-value combinations of the set {0, 1} = (0, 0), (0, 1), (1, 1). ((0) and (1) correspond to the two states 'silent' and 'sounding'). I used all three of these to vary the texture as much as possible. The opening duo texture in both pieces is congruent with the aim to present a high density of information. The solo textures sometimes function in a way in which the two performers alternate, balancing each other out in terms of amount of material (e.g. 'Ambient' and 'Conflicting' sections in *Laughter Studies 1*), and at other times function as more traditional solos, with one performer describing or imitating for a relatively long time in a way that is not then balanced out by the other performer (e.g. final 50" of 'Dense' section in *Laughter Studies 1,* beginning of 'Drum' section in *Laughter Studies 2*). Silence predominates over sound in *Laughter Studies 1's* 'Conflicting' section and *Laughter Studies 2's* 'Emotive' section.

Between 07:05 and 08:02 of *Laughter Studies 2*, during which time both performers are continually vocalising, the score makes use of all combinations of the two instructions 'describe' and 'imitate'. Making the same mathematical calculation as before, there are three possibilities:

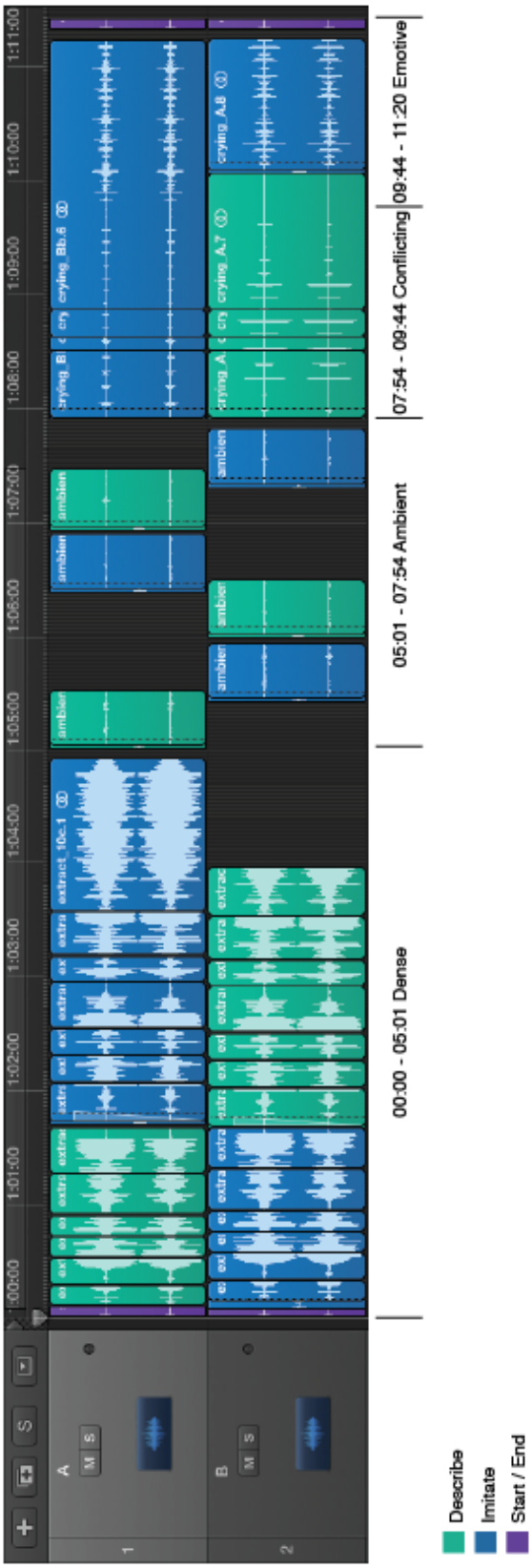

Figure 3.4. View in Logic of *Laughter Studies 1*. 'A' and 'B' are the two performers.

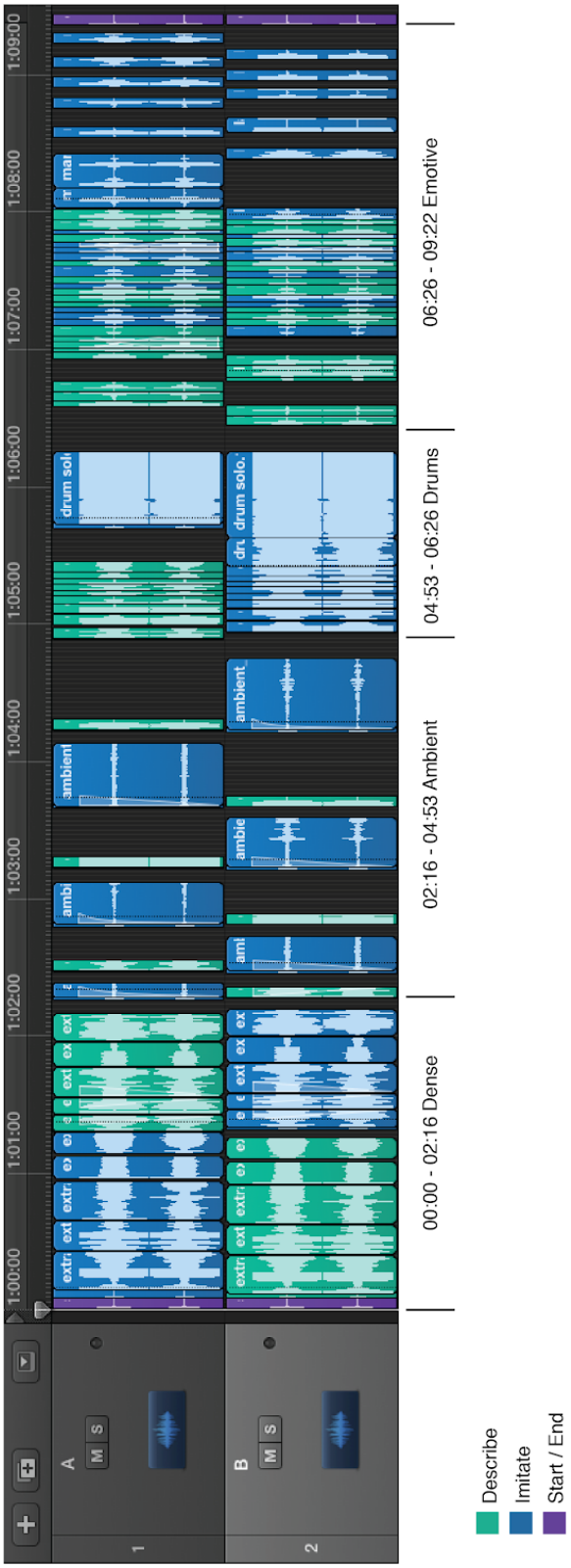

Figure 3.5. View in Logic of *Laughter Studies 2*.

(i) both performers describe;
(ii) one performer describes, the other imitates;
(iii) both performers imitate.

These micro-textures are explored in quick succession, such that no one of them predominates (**Figure 3.5**)

3.3.4 Speed of instructions

Recalling Bhagwati's comment about making wording as concise as possible, the significance of delivering time-based instructions becomes apparent in this passage, which requires very fast changes between describing and imitating. Delivering the instructions aurally means that, naturally, some amount of time has to pass during which the new instruction can occur. I spoke the words 'describe' and 'imitate' as fast as I could to make the changes as quick as possible (**Example 3.14**). The result is a lot of information in a short time-span, and therefore an increased risk that some of the instructions be misperceived or misinterpreted. Seeking a solution which keeps rehearsing to a minimum, the compromise I came to was to rehearse the piece once a day or two before the performance. That way, the overall structure could be known in advance, and difficult passages would not come as a surprise, while the details of the piece would still not be fully worked out, and be created spontaneously. Of course, this is much less of a problem for performers who decide to rehearse, internalise, and then create the illusion of spontaneity.

3.3.5 The 'Dense' sections

The 'Dense' sections can themselves be broken down into shorter (10-30") phrases, which I call 'extracts'. Each extract is made using different combinations of sounds, interactions, lengths, and effects, and contains a unique combination of sounds (**Figure 3.6**). Extract 1 of *Laughter Studies 1*, for example, starts with sound #1 (car traffic), before #2 (amplitude modulation) fades in. After a short interruption by sound #3 (printer), sounds #4 (bottle being emptied into the sink), #5 (low bus engine rumbling), and #6 (tannoy announcement at Copenhagen airport) enter in quick succession. The amplitude modulation gets louder as they do so. The extract ends

with #7 (irregular laughter) accompanying the tannoy announcement (**Example 3.15**). This technique of making short 'extracts' consisting in a combination of sounds and interactions is repeated in all seven *Laughter Studies*.

My approach when making the extracts was inspired by the idea of using high density of information in visually notated music. In pieces such as Evan Johnson's *apostrophe #2 (pressing down on my sternum)* (2009), the sheer wealth of information on the page—what he calls a 'superabundance of material'—presents acute interpretative difficulties for the performers. To start with, each player has three staves: one for the throat, one for the voice, and one for their instrument (flugel horn or trombone). Within each of these staves are intricate lines containing layers of nested tuplets, forming complex cross-rhythms across the three staves (**Figure 3.7**). Despite this, Johnson asserts that

> every possible attempt should be made to convey all the material on the page, even though it is of course impossible to succeed in doing so [...] *In absolutely no case should the performer ignore the presence of material on the page even if it is not literally playable – it must be "communicated"* (2009, n.p., italics in original).

While in the 'Dense' sections of *Laughter Studies 1* and *2* there is a similar overabundance of material, contrary to Johnson, I allow for the possibility that the performers will *not* play (describe or imitate) everything in the score. This again hinges on the mode of performer-score interaction in the piece: rather than something to be learned and *rehearsed*, I conceived of the score as a *reactive* one which would elicit a series of spontaneous reactions from the performers (Sdraulig and Lortie 2019). Whatever they hear, in the moment, becomes what they respond to, no matter if it communicates everything in the score or not. Although they have to try to interpret as much of the material as they can, it is far more likely that the performers will have to ignore certain sounds at the expense of others. It is this spontaneous choice between sounds, in the context of an attempt to describe/imitate everything, that interests me. Conversely, the compositional decision to allow the

performers to learn the score is what, in part, leads Johnson to imagine and stipulate that all the material in his score can be communicated.[25]

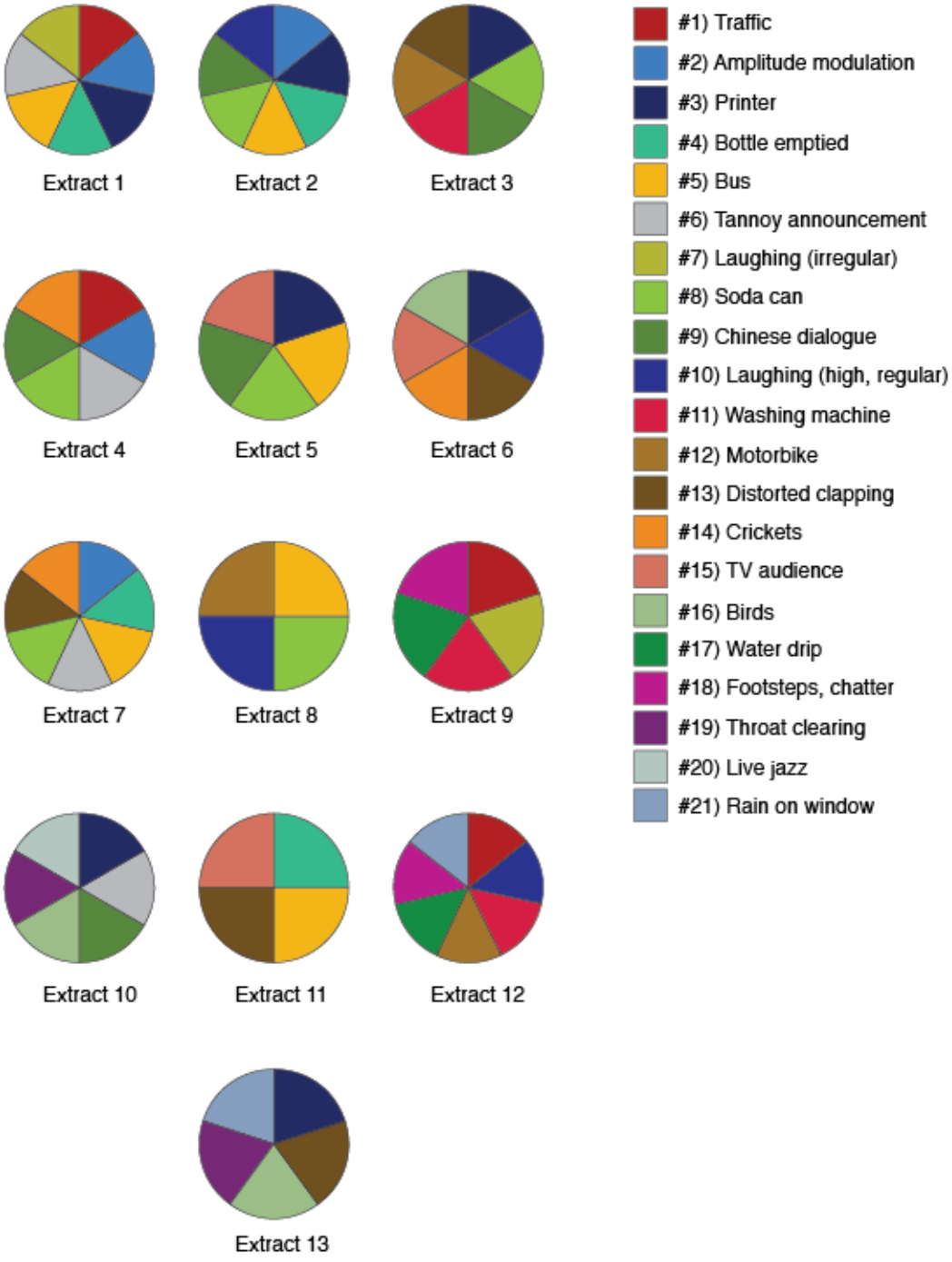

Figure 3.6. Distribution of sounds in extracts 1-13 of *Laughter Studies 1*.

[25] Johnson is furthermore aware of making performer-score interaction manifest when he writes 'It is also the job of the performer to *project* (not in any overtly theatrical or satirical manner, but through the choice of playing techniques and through the force of the *attempt* to succeed) the situation, i.e. that there is material not being played, that there is *too much* for the performer to deal with in these passages' (2009, n.p.).

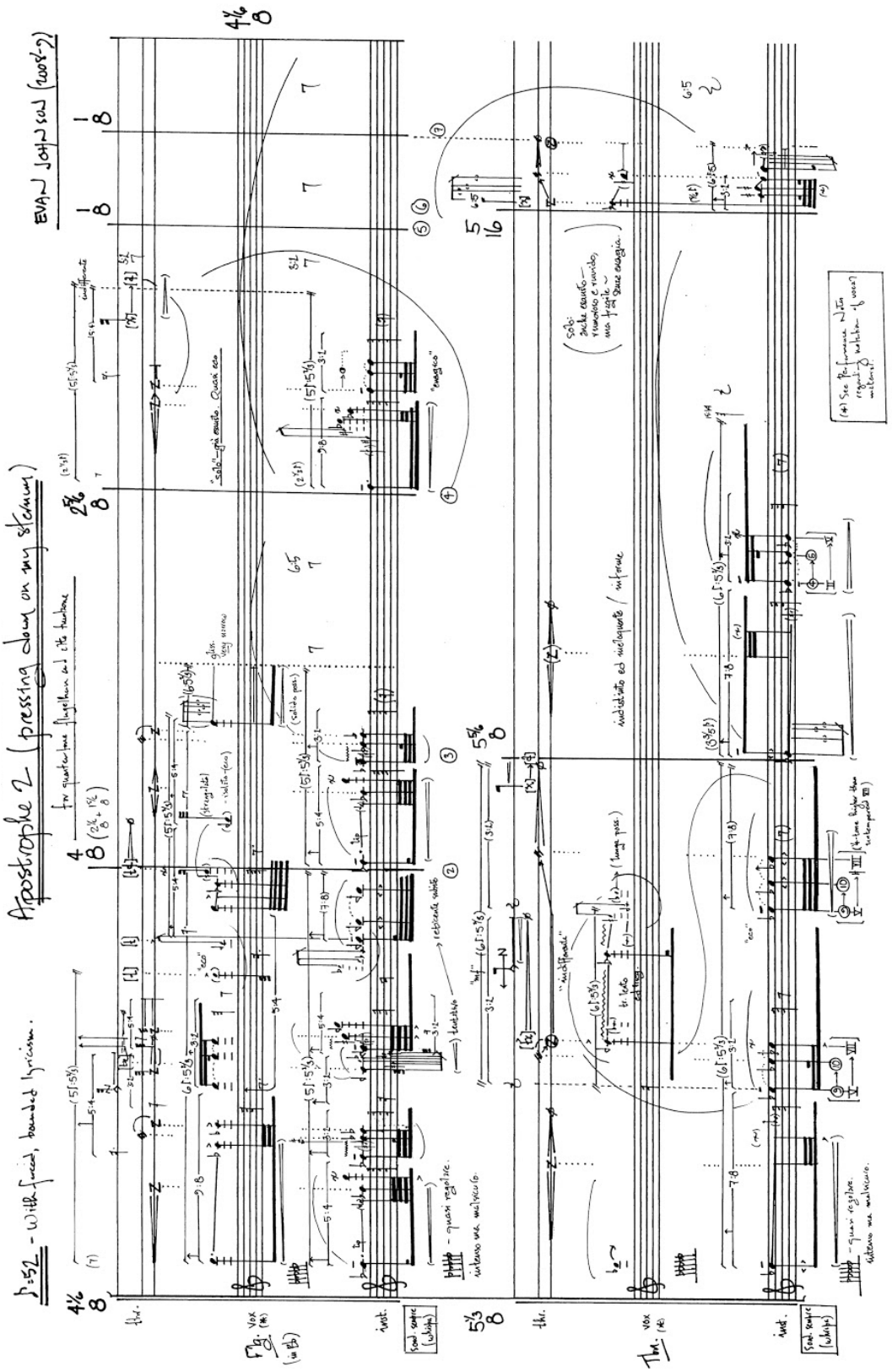

Figure 3.7. The first page of Johnson's *Apostrophe 2 (pressing down on my sternum).* © Evan Johnson 2009.

3.3.6 Rehearsing *Laughter Studies 1* and *2*

The intention to elicit a series of spontaneous reactions is at odds with the sometimes unavoidable need to rehearse. I had imagined that it would be better to simply do these pieces, with little to no rehearsal. That way, a spontaneous reaction to the sounds would be guaranteed. I was furthermore wary of over-rehearsing it, in case it turned stale and seemed premeditated. As well as aligning with Sdraulig and Lortie's designation of a score that is *reactive* rather than *rehearsed* (2019), my idea for how to rehearse these pieces echo Alecky Blythe's usage of aural scripts in her productions of verbatim theatre:

> In my experience, as you get further into a run, over-familiarity with the material actually deadens the performance. The fear of going on stage without knowing your lines certainly makes for very exciting theatre, but there is also something magical about the unique level of spontaneity that unlearnt delivery demands. As well as speaking, the actors are forced actively to listen to their lines. With so much going on in their heads, this leaves almost no time to consider how they will deliver them. The performances that result tend to be unselfconscious and incredibly free (Hammond and Steward 2008, pp. 80-81).

In stipulating that the pieces should be rehearsed very little or not at all, I was aiming for a similarly 'unselfconscious and incredibly free' performance style. In a performance of *Laughter Studies 2* on 27th July 2019 at the London Experimental Variety Show, at the Shaw Theatre in London, the performers, Julia Masli and Julie Nesher, who trained in physical performance and clowning, chose to not rehearse it beforehand for this very reason (**Docu 4d**). When I performed the piece with pianist and performance maker Gwenaëlle Rouger in Paris in 2016, she wanted to rehearse the piece thoroughly, the better to make it *seem* spontaneous. The first approach valorises the risk and vulnerability of a fresh encounter, something it shares with free improvisation (as well as Blythe's style of verbatim theatre). The second has antecedents in theatre, where lengthy learning, rehearsal and preparation leads to the illusion of spontaneity (or any other required aesthetic). In a 2007 interview with American television talk show host Charlie Rose, Peter O'Toole relates the story of the Moscow Arts Theatre, who

> had been playing a Tsarist repertory. [...] From 1898 until 1923, they were still churning out the same old plays, with the same old company. So what made it so spontaneous-seeming—which is what we're supposed to do—what made it so... electrifying in its naturalness, was the fact it was so completely rehearsed and so completely performed (KXM 2018, 10:48).

This is exactly the same method Rouger sought to use when performing the piece. In the end, I had to let go of my prioritisation of spontaneous encounters between performers and scores, and concluded that there is no reason to be dogmatic: to each different performer their own style of rehearsing, as long as the result is genuinely spontaneous or indeed 'spontaneous-seeming'.

3.4 *Laughter Studies 3* (2016-17)

Laughter Studies 3 was written for new music ensemble Retro Disco (Simone Keller, Moritz Müllenbach, Samuel Stoll) for a performance in Zurich in May 2016. Having been involved with my concert series, *Weisslich,* earlier in the year, and seen *Laughter Studies 2*, Samuel asked me to write a similar piece for three performers for his ensemble. I did not have the opportunity to rehearse and workshop the piece with the performers. I wrote it alone at my computer, before sending the scores over to the performers. In cases such as these, writing for vocalising performers is a huge advantage when it comes to gauging the result before the first performance: being able to perform the parts myself, I made mock-ups of the piece, filming myself performing all three parts and subsequently layering them together. Although a more cumbersome process lacking the energy of rehearsing and workshopping with performers, it was enough to get a feel for how the piece would turn out.

The broad trajectory of *Laughter Studies 1* and *2* was to start with a wide mixture of everyday sounds, and eventually focus in on one or two emotive sounds. This structure involves going from one group of signified concepts, which are not easily replicable vocally, to another, which are entirely vocal in nature, and therefore more easily reproduced. *Laughter Studies 3* reverses this trajectory. There are no 'music' or 'ambient' categories of sound. Rather, the two categories of 'emotive' and 'everyday' are explored in greater depth. As opposed to the previous two pieces, the everyday sounds are not recycled. Rather, I used the less economic method of finding

different individual sounds each time I wanted semantic difference. This led to a greater amount of sounds coming from freesound.org, where the required variety of sounds was available more easily and quickly than if I had recorded them all myself.

Section	**Timing**	**Selection and usage of sounds**	**Matching descriptions / imitations?**
Emotive	00:00-03:08	Emotive, single sounds, solo + trio	Yes
Cry-Sing	03:08-04:59	Emotive, single sounds, trio, pitch shift + time stretch, imitation only	N/A (imitation only)
Conflicting	04:59-05:52	Emotive + everyday, single sounds, solo + duo, 'describe with one word only'	No
Dense	05:52-06:52	Everyday, combinations of sounds, duo	Yes
Tutti	06:52-09:16	Everyday, combinations of sounds, trio, expanding length of extracts (2"-37")	Yes

3.4.1 Texture

The use of a third vocalising performer leads to new macro- and micro-textural possibilities. On the macro level, where 0 = silent and 1 = sounding, this leads to all three-value combinations of the set {0, 1} = (0, 0, 0), (0, 0, 1), (0, 1, 1), (1, 1, 1). In a texture in which all three are sounding, making the same calculation for the instructions 'describe' and 'imitate' gives the following micro-textural possibilities:

(i) all three people describing
(ii) two people describing, the other one imitating
(iii) one person describing, the other two imitating
(iv) all three people imitating

Going down this list involves a transition from prioritising semantic interpretation to prioritising sonic interpretation. In general, I use modes (i) and (ii) most sparingly, since they lead to more than one person talking at the same time, and prevent the perception of clear linguistic signifiers. Mode (iv) achieves the same result through including no linguistic signifiers at all. Going against the idea of setting up clear linguistic signifiers, the Tutti section alternates between modes (i) and (iv), where all three performers are always doing the same thing.

Using a third performer also entails new possibilities for matching and conflicting interpretations:

(i) all three people's sounds matching
(ii) two people's sounds matching, the third's conflicting
(iii) all three people's sounds conflicting

There is thus a small expansion of the idea of conflicting sounds: do two of them match but conflict with the third? Or are all three of them conflicting? The former can be seen as a weaker articulation of the idea of conflict, since it retains an element of matching interpretations between two of the performers. The latter can be seen as a strong articulation of the idea, since none of the interpretations match. In the 'Conflicting' section, I sought to present the idea as strongly as possible, and therefore exclusively used mode (iii).

3.4.2 Varying the instructions

After reflecting on the performance by Maulwerker in November 2016, I decided to introduce the first variation on the two main instructions to 'describe' and 'imitate'. Originally, the 'Conflicting' section had started with the instruction to describe the emotive sounds again. However, after the 'Cry-Sing' section, in which these sounds are developed and stretched, this felt like a redundant move, a pointless return to the beginning. I therefore changed the instruction to 'describe with one word only'. In this way, the performers are forced to engage with the material differently than the first time they had encountered it. The cognitive difficulty of this instruction is also higher, which can have interesting performative consequences, such as performers hesitating or erring on their choice of word.

3.4.3 Effects

Whereas in *Laughter Studies 1* and *2*, effects act as tools to transition between sounds, in *3* they are used in more sustained ways to redefine the sounds. In Extract 3, for example, sound #18 (heavy traffic) is put through a filter sweep, gradually taking out all bass frequencies and leaving only the highest, over a period of 18"

(**Example 3.16**). Effects are also used to define the piece structurally. The entire 'Cry-Sing' section is based entirely upon sounds #1-6 being stretched and their pitch being shifted (using Logic's Time Stretch feature and Pitch Shift plugin). What started off as sounds of people crying is turned into long notes (**Example 3.17**).

3.4.4 Rehearsing and synchronising

Diverging slightly from the idea of the whole score being reactive, the 'Cry-Sing' section can be rehearsed, as it benefits from interpretation beyond merely reacting to the sounds. Some emotional affect could even be applied. This potential for rehearsal entailed technical changes. Rehearsing individual sections is almost impossible with the use of ipods or mp3 players, which I had been using up until this stage. This is because they are not designed to be activated at a specific time-point precisely, making anything apart from start-to-finish playback very difficult indeed. A further problem I was encountering with mp3 players were performances being out of sync. They are, after all, also not designed to be synchronised perfectly, and yet many of the interactions between the performers depend on synchronisation to a finer degree than 1 or 2 seconds, which is generally what can be guaranteed when manually synchronising devices at the start. To solve both of these issues, I made a patch in Pure Data that allows performers to start from any one of the different sections in the piece, and guarantees perfectly synchronised playback of the audio scores.

3.4.5 Stretching the diad

In section **3.2**, I discussed the idea that linguistic signifiers and sonic illustrations have to occur roughly simultaneously to cohere into a convincing representation of a concept. The 'Tutti' section of *Laughter Studies 3* stretches this idea by preventing the simultaneous occurrence of description and imitation. Since all three performers first describe, and then imitate, the audience must mentally 'hold' the descriptions in their head when hearing the imitations for the two to correspond. This is easier to do for the first few extracts of the section (from 06:52), which are 2", 4", and 6" in length. By the final extract, which is 37" long, it becomes

very difficult to hold in one's head the entire description and subsequently make it correspond to the imitations (**Example 3.18**). This can be explained by psychologist George A. Miller's theory, first put forward in 1956, that the average number of items humans can store in short-term memory is seven, plus or minus two (Miller 1956).

3.5 *Vox Pop* (2016)

Vox Pop was first written for Post Paradise, a concert series for new music in Birmingham which had its first concert in September 2016. The performers were Andy Ingamells, James Oldham, Sam Taylor and Maya Verlaak. It was subsequently revised for a London performance by Bastard Assignments in November of that year. As with *Laughter Studies 1,* writing this piece for performers who were friends, in concert series similarly run by composers personally known to me, enabled me to take risks and go further than I would have with a traditional, more official and formal commissioning process. I also benefited from rehearsals with the performers, enabling me to tweak and refine things as I went along. This was particularly important for developing the choreographic elements of the piece, where having bodies in a space seemed essential.

Recalling Bhagwati's taxonomy, the type of instructions to do with movement and choreography can be called 'para-musical' (2018, p. 27). *Vox Pop* explores these types of instructions as a primary parameter, and introduces a wide range of other instructions not found in any of the *Laughter Studies*. Rather than everyday sounds, the material also focuses conceptually (and exclusively) on Wagner's Ring Cycle. The performers re-enact the music by responding to it in different ways: imitating the gestures and facial expressions of the conductor, singers, or instrumentalists ('para-musical' instructions), describing the set design (without, obviously, seeing it), describing the music analytically, speculating on childhood memories evoked by the music ('inspirational' conveyance mode), and singing precise pitches ('musical' instructions). Such a range of instructions involves a greater amount of speculation and imagination: often, the performers must make a mental image of what they are hearing to then replicate it. They do not see the conductor, singers, or instruments, but rather must imagine what they look like based on the sound of the music. In this

piece, then, sound is used to elicit visual and physical responses. This gap between what the score provides, and what is sought as a result, is where a large part of the interest lies: the inappropriateness of music for transmitting accurate interpretations of physical gestures creates an indeterminate space, filled in by the performers' imaginations.

The revisions to the score sought to make more of the para-musical instructions by having the performers stand, rather than sit in a sofa as they had done at Post Paradise (compare **Docu 8a, 8b, 8c** with **8d, 8e**). They also brought into clearer focus the Wagnerian source material, sticking to it exclusively throughout the score.

3.5.1 'Stacking' instructions

The expansion into the choreographic realm presented an opportunity to 'stack' different instructions on top of each other. *Vox Pop* thus introduces the idea of *vocalising while maintaining a physical gesture* (in Bhagwati's terminology, this can be described as 'para-musical' and 'indexical' conveyance modes occurring together). In visual notation, performing two different orders of gesture is easily communicated: one only needs to think of the letters 'Ped.' followed by a dotted line in piano music to clearly understand that the sustain pedal should be depressed while the hands continue to play on the keys. This is more difficult to communicate in the 'continuous present' of aural notation. Having specified that the instruction to 'freeze' in a posture could only be undone by the instruction to 'release' it, I found that performers would still release their physical pose whenever the next sound occurred (i.e., they would break their pose to imitate, describe, or sing). This tendency was heightened the longer the gap between the two instructions. To communicate the idea of 'stacking' more clearly, I therefore had to add the instruction to 'hold' their pose just before instructing them to vocalise (**Example 3.18**).

3.5.2 Fast changes

Vox Pop is also the only piece in the portfolio where indexical cues are given with no succeeding sonic material. This was again to accommodate fast choreographic changes which would have been unachievable if new sonic material had been given each time. Context is nevertheless provided in the form of repetition: the instructions to 'freeze in the conductor's/singer's posture' is repeated several times with audio examples, before then being presented on its own (**Example 3.19**). When presented on its own, it relies again on the performers' imaginations to fill the gap created by the lack of sound.

3.6 *fantasy with motorbike* (2016)

The first piece I wrote which explored audio scores with instruments other than the human voice was *fantasy with motorbike,* written for the orkest de ereprijs at the 22nd Young Composers Meeting in Apeldoorn, February 2016. It departs from the previous pattern of writing for a musical scene with which I was well acquainted. Unlike previous pieces, the process first involved applying to take part in a course for young composers to write a short (3') piece, have it workshopped and performed, and receive lessons from a group of established composers (in my case, Richard Ayres, Cassandra Miller, Mayke Nas and Martijn Padding). In other words, it was a much more formal process. I did not know any of the performers I was writing for. There would not be much time to trial ideas, go back and forth, and develop the piece after hearing it. I would have to make sure the piece worked before sending it in, and therefore take fewer risks. For these reasons, I departed from the technique of setting up linguistic/sonic diads, and focused instead on purely imitating an audio score. I had also imagined that in the short time frame of 3 minutes, focusing on this one idea would be better than trying to do too much.

3.6.1 Imitating with instruments

The instruction to imitate is given both to the large ensemble ('imitate on your instruments') and to five vocalists. There are therefore no descriptions or linguistic

signifiers. The material itself is again a series of everyday sounds. In order to prevent a situation where everyone in the ensemble is imitating all at the same time, I added the following instructions:

> Imitate the sounds you think you can faithfully reproduce on your instrument. Don't feel obliged to imitate everything, but rather do what you can. There should still always be at least one person imitating. Orchestrate the sounds and work together as a group: high instruments play the high frequency sounds, low instruments the low ones, etc. Experiment with everyone imitating more/less. Percussionists or musicians who play several instruments are free to try possibilities on different instruments.

These instructions were also aimed to give the players something to do in rehearsal (there were several rehearsals planned at the Meeting, conceived more as opportunities for refinement of an already made score rather than workshops to change aspects of the score). Responding to this text, the ensemble would have something to strive for—working as a group to find and determine the sounds they would play—rather than simply doing the piece once as a first-run-through-performance.

3.6.2 Looping material

The structure for this piece was inspired by Aperghis's 1982 solo vocal piece *Recitations* (Aperghis 1982). It is similarly built around a fixed set of material which is revealed through a series of repetitions; with each new repetition, a new portion of the material emerges (**Figure 3.9**). Another point of reference is Bernhard Lang's 2002 Darmstadt paper 'Loop aestetics' [sic]. In this paper, Lang talks about taking a sample (audio, visual, or both) and selecting different portions of it for looping: 'a sample is something given or found, something which already exists [...] Within the sample an area/zone is being defined, which is repeated' (Lang 2002, p. 3). As he points out, this zone can be modulated; this window can be opened or closed to different extents (**Figure 3.8**).

The 'loop' in *fantasy with motorbike* begins in the middle of a 24-second sample containing nineteen unique sounds, and expands backwards, adding portions of the

Figure 3.8. Sample and loop sizes. © Bernhard Lang 2002.

sample which precede the initial sound. At the last repetition, it omits the very start of the sample, and instead includes the end (**Figure 3.10; Examples 3.20-3.24**). The two groups (instruments/vocalists) alternate between imitating this expanding material. The whole process is then repeated a second time, with each individual sound shortened, and the two groups overlapping, rather than alternating. At the very end of the piece, the whole sample is played back on speakers to the audience (**Example 3.25**). This was designed to be a kind of 'reveal': the mystery of what was being listened to on headphones is heard by everyone. At the same time, lacking any overt explanation at any point in the piece, the association between the final sample and what the musicians were playing is merely suggestive and rather weak.

The decision to exclude any linguistic signifiers or explanatory context for the sounds—the reliance upon a purely sonic translation of them—led in the end to an unsatisfactory outcome. With too little information, the sounds could have been anything. Their meaning was not conveyed to the audience, and treated as of secondary importance. If I was going to use sounds from everyday life, their meaning had to be communicated, or at least a clear link had to be made between them and the musicians' interpretation. Otherwise, with too much information withheld, what would result was a rather uninteresting improvisatory sort of atonal music.

Figure 3.9. Recitation 12 by Georges Aperghis. © Editions Salabert 1982.

Figure 3.10. Visualisation of expanding sound files in *fantasy with motorbike.* The five extracts correspond to **Examples 3.20-3.24**.

3.7 *Laughter Studies 4* (2016)

Laughter Studies 4 was written for x.y ensemble between March and May 2016. I was personally approached by the group's artistic director, Richard Hames, to make a piece for them, in a concert which would exclusively feature young composers of experimental music based in the UK (the others were Michael Baldwin, Edward Henderson, Andy Ingamells, James Moriarty, Maya Verlaak, and Hames himself; proving how tight-knit the community can be, I had already been involved with four of these composers' works prior to this event). The generous amount of time the ensemble was able to give in rehearsals allowed me to hear ideas and make changes in between sessions, leading to more highly refined and specialised instructions—many of which were worked out face-to-face in rehearsals—and material. Establishing a personal connection to the members of the ensemble in turn allowed for a greater level of trust, and a tighter form of collaboration.

3.7.1 Instrumentation, structure

The piece is scored for soprano, jazz trio, and mixed ensemble. Each of these three groups has their own audio score. In the case of the jazz trio and ensemble, the same score is shared between members. *Laughter Studies 4* introduces two new types of interaction with the score: 'imitate on your instrument only when you hear your instrument' (as in Bryar's *1, 2, 1-2-3-4*), and 'learn this sound'. At the same time, it retains the parameters of matching/conflicting interpretations of *Laughter Studies 1-3,* and has structural similarities:

Section	**Timing**	**Material, instructions, other features**	**Matching description / imitation?**
Dense	00:00-04:47	Everyday sounds/musical sounds in combination, 'imitate with your instrument when you hear it', description and imitation phasing	Yes
Jazz	04:47-09:42	Jazz trio loop in background ('learn this sound'), single everyday sounds in foreground	No
Soprano Solo	09:42-13:32	Romantic music, solo describe / imitate, heightened conflicting interpretation	Yes & No

In the 'Dense' section of the piece, the instrumentalists (jazz trio and mixed ensemble) are told to imitate with their instrument only when they hear it in the recording (which otherwise includes everyday sounds). The rest of the time, they imitate vocally (**Example 3.26**). Rather than imitating indiscriminately (and indeterminately), this mode of imitation is therefore more selective and more determinate. Having told the clarinettist to imitate only the clarinet, for example, I knew any clear clarinet melodies or fragments would be reproduced exactly by them, whereas everything else would be imitated vocally by the rest of the musicians.

The distance between description and imitation in the 'Dense' section is explored as a parameter in its own right. Rather than remaining constant, I 'phase' their entries, so that they get closer, but always remain roughly together (**Figure 3.11**). Although during this process the imitations occur momentarily before the

descriptions, for the listener, their relative proximity makes them still easily correspond as sonic-linguistic diads—rather than preparing a sound with a linguistic description of it, sonic imitations prepare the audience for linguistic descriptions.

At the very start of the 'Jazz' section, the trio (piano, drums, double bass) imitates a series of samples taken from various live jazz concerts and albums. Using Logic's ESX24 Sampler, I changed the pitch and speed of some of these samples to be extremely low/slow or extremely high/fast. The result is a hyperreal cut-up of jazz trio improvisation, which was made deliberately difficult to reproduce accurately (**Example 3.27**).

3.7.2 Rehearsing *Laughter Studies 4*

Laughter Studies 4 develops the 'hybrid method' of rehearsing trialled in *3,* wherein some parts of the score are rehearsed, and others reacted to spontaneously. While the 'Dense' section can be done without rehearsal, the 'Jazz' section should be rehearsed. Both the 'hyperreal' part of the Jazz section and the ensuing vamp should be imitated as faithfully as possible—difficult though this is—rather than fumbled through haphazardly. With this instruction to 'learn these sounds', I definitively departed from the previous idea of *Laughter Studies* being purely reactive, on-the-spot pieces.

In another example of needing to assess rehearsal amounts on a case-by-case basis, parts of the Soprano Solo, which I had originally imagined could be done spontaneously, were heavily rehearsed by Christine Buras, the soprano of x.y ensemble, who felt she could perform them much better—and make them seem spontaneous—after rehearsing and knowing them well.

3.7.3 Affective description

The instruction to 'describe' is also pushed further. Benefiting from a closer form of collaboration, we were able to delve deeper into the kind of mood or affect of both spoken and instrumental delivery. The best example of this comes at the very end of the piece, which asks the soprano to describe the Romantic music she hears (Wagner again) in an overly grandiose and flowery way. The ensemble then illustrates

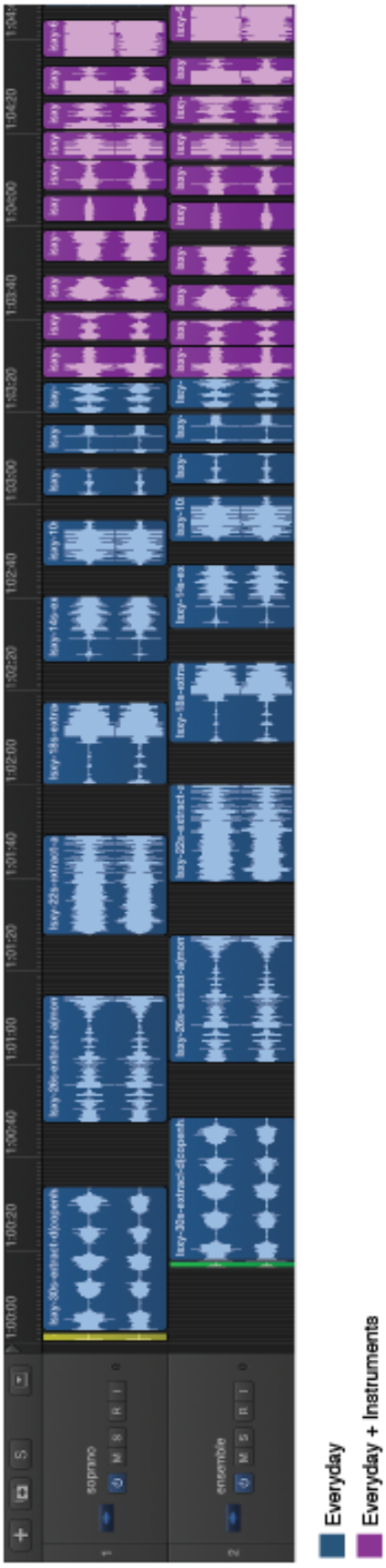

Figure 3.11. Phasing entries in *Laughter Studies 4*. The soprano is describing, the ensemble imitating).

the descriptions with an imitation of a straw being pushed and pulled through a plastic cup (**Example 3.28**). Together, the instrumentalists and I found ways to imitate this straw pathetically, heightening the conflict of the interpretations, and finding comedy in it.

3.8 *Laughter Studies 6* (version A, 2017)

Jack Sheen approached me to write a piece for his ensemble, An Assembly, at some point in late 2016. Although on paper a similar-seeming ensemble as x.y (ensemble dedicated to new/experimental music, performers recent graduates of music colleges), the working process with An Assembly was both more formal, and more restricted in terms of rehearsal time (two factors which almost always come together). This version was premiered at City University in May 2017, in a program which included another piece with a tuba. At Jack's suggestion, I included the tuba in my instrumentation as well, even though the group was only nine instruments, and a tuba would therefore risk making the sound rather bottom-heavy.[26]

The full instrumentation also included flute, clarinet, flugel horn, percussion, violin, viola, cello, and a purely vocal part for Jack. All described and imitated everyday sounds, as well as imitating excerpts of everyday sounds, Classical music and MIDI on their instruments (**Example 3.29**). I had attempted to stick to only providing the group with audio scores, as I had done with *Laughter Studies 4,* but had again stipulated that the parts where the instrumentalists imitate classical music and/or MIDI should be rehearsed. At the first and only rehearsal, there were immediate problems with the premise. The imitations of classical music were not as tight as I had imagined—I was aiming for a similar level of precision and synchronicity as x.y ensemble had achieved in *Laughter Studies 4,* which, without the benefit of extended rehearsal time, was an unfulfillable aim. Another problem was that the players could not be heard well at all when describing sounds, as opposed to when they were imitating them either vocally or with their instruments. This had been less of a problem in *Laughter Studies 4* because the soprano was the one doing most of the describing, and had been amplified. Fixing the issue with amplification in this case

[26] Having been a tuba player myself for many years, I saw some personal merit in the challenge.

was not an option, since that would have also made their instruments far too loud (barring some virtuosic fader-shifting across nine channels by the sound engineer).

There were deeper problems: the material somewhat went round in circles between three modes: a MIDI cadence, imitating/describing everyday sounds vocally, and imitating Classical music with instruments. None of it led anywhere, and, as Matthew Shlomowitz aptly put it to me after the premiere, the piece simply "didn't take off". This was a useful lesson: avoid recursive forms, keep the piece driving forward with new ideas or materials. Moreover, my determination to only use an audio score for everyone had in the end reduced my options and impoverished the piece. Finally, while it was already clear that describing and imitating everyday sounds vocally worked as a technique, I had not found a suitable role for the instrumentalists.

3.8.1 *Laughter Studies 6* (version B, 2017-18)

When revising the piece, the first two decisions I took were therefore to

(i) separate vocalists from instrumentalists;
(ii) use standard visual notation for the instrumentalists.

The new version was consequently scored for four vocalists and five instrumentalists (flute, saxophone, violin, double bass, and MIDI keyboard drums). It was first performed in Manchester in December 2017, in a program of different works by young composers. This precluded the use of tuba (which, after the first version, I had been indifferent to anyway) and allowed for a MIDI keyboard instead of live percussion. Owing to its fluid line-up of players, An Assembly performed it again, with Jack in one of the vocalist roles.

Having these two groups of vocalists/instrumentalists meant that I could have them react to each other in a way which made both of their roles richer and more interesting. While the vocalists start off imitating and describing everyday sounds on headphones, the instrumentalists eventually provide the live aural input for them to respond to.

Section	Timing	Material, instructions, other features
Dense	00:00-04:43	Part 1 of audio score triggered by keyboardist. Combinations of everyday sounds, gradual accelerando, instrumentalists 'listen' to their instruments.
Treadmill	04:43-05:55	Treadmill sound, instrumentalists copy vocalists
Music / Dance	05:55-c. 09:30	Instrumentalists play, vocalists listen and dance. MIDI keyboard drums solo.
Singing	c. 09:30-c. 11:15	Part 2 of audio score triggered by keyboardist. Vocalists imitate MIDI melody, instrumentalists play melody.

I was initially hesitant to use mixed media in the notation (one part visual, the other aural) as it was not immediately clear how the two could line up in a controlled way. The method of starting audio scores at the start of the piece and letting them run meant that those responding to the audio score were 'locked in' to its time frame. Those using traditional notation could use a click-track, but my experience of players playing along to a click track had in most cases rendered their playing stifled, lifeless and boring (I would get over this prejudice for *Laughter Studies 7*). Instead, I decided the instrumentalists could respond to the vocalists, in a cue-based way. This was a risky approach, since the nature of making scores which ask performers to react to them in indeterminate ways is that one does not know how they are going to react. What 'cue' were the instrumentalists supposed to look out for, when no one knew exactly what the vocalists would do? The audio score would have to be so clear, the material to be imitated so basic and/or repetitive, that the result would be predictable.

Searching on freesound.org, I found a recording of someone using a treadmill. They start off slowly, then their rhythm quickens gradually as they go from a walk to a jog to a run; the pitch of the treadmill also gets higher as this happens. They eventually hit their full speed and maintain it briefly before slowing down again to a walk. Finally, they let the machine grind to a halt (**Example 3.30**). This 'treadmill' sound ended up being the centrepiece of *Laughter Studies 6.* Its linear and predictable narrative arc (if that is not too grandiose a term) was interesting in itself, and also made it a good candidate for a clear aural cue. Seeking to make it more interesting for the vocal imitators, and take it from a sphere of naturalism to something more

surreal, I added Logic's Vocal Transformer plugin, and gradually modulated the pitch and formant parameters to go up to their maximum values (+24 each). The instruction to the instrumentalists was to copy the vocalists' sound, something which the predictable, regular rhythm enabled well.

Instead of triggering all the audio scores at the start by the players themselves, the keyboardist triggers them on the laptop. This enables the ensemble to play freely in the 'Music/Dance' section, and then trigger the audio score for the vocalists in the 'Singing' section, where the two groups need to be together again. The interaction between the two groups replaced the parameter of matching / conflicting interpretations as the primary driving force of the piece.

3.9 *Laughter Studies 7* (2017-18)

Laughter Studies 7 was written as part of Nadar Ensemble's International Summer School for Composers and Sound Artists, which took place in Antwerp in August 2017. The context for the work's creation is the only one of its kind in this portfolio. Applying to the Nadar Summer School had formal aspects, as any application to work with a previously unknown ensemble abroad does. However, unlike the other more formal setting described in the portfolio—the orkest de ereprijs course for which *fantasy with motorbike* was written—the amount of composers on Nadar's course was deliberately kept to the low number of four. This allowed greater time and energy to collaborate with each composer and develop the works as fully as possible. The call-out emphasised working in a theatrical way, something which characterises Nadar as an ensemble. Their violinist, Marieke Berendsen, is trained in scenography, and they have built their reputation on performing new music with a distinctly theatrical dimension (see for example their performance of Stefan Prins's *Generation Kill* at Ultima Festival, Oslo (Prins 2013)). We worked for a week in Antwerp's DeSingel cultural centre, and had access to a full black box theatre, with lighting, curtains, props, costumes, etc. Although much of the piece was already written before starting the course, there was time after each workshop to change and develop the scores as we saw fit. In summary, the context for this piece's creation had the dual benefits of working with an internationally

recognised ensemble in a close and collaborative way (something usually reserved for the tight-knit communities of DIY experimental music).

3.9.1 Structure

Laughter Studies 7 adds two mono tracks (L, R) and surtitles to the setup of (three) vocalists and backing band. With the instrumentation, it was possible to make *three simultaneous describe-imitate pairs,* who react to the same audio score with a delay between each pair, starting from the right of the stage (I recorded descriptions and imitations in the two mono tracks myself) (**Figure 3.12**). It is in five main sections:

Section	**Timing**	**Material, instructions, other features**
Intro	00:00-01:11	Loudspeaker L and surtitles only.
Dense	01:11-04:29	Tutti (sudden entry). Mixture of everyday sounds, band at fairly high intensity.
'Mirror image'	04:29-09:16	Vocalists describe/imitate recording of (different) audience in (different) concert hall. Band winds down to nothing.
Frantic	09:16-11:42	Band at highest intensity, vocalists imitate applause.
External	11:42-?	Vocalists describe live sounds in the room. Band exit stage.

3.9.2 Surtitles

The surtitles, since they are written as text, provide a kind of objective viewpoint over all the action on stage. They are written as a descriptive response to the same audio as the other elements (they always describe, never 'imitating in written form'). There is also a very dense aural texture which presents a high cognitive load for the audience—at its densest, it mixes three descriptions and two imitations, or two descriptions and three imitations, simultaneously (on top of the band's sound). The surtitles were designed to function as a kind of thread pulling the listener along in this storm. As such, they start off with clearly written sentences (Wydick's 2005 good legal grammar), in the aim that the audience would somewhat learn to trust them to get them through the piece. This allowed me to build moments where the trust was broken. One such moment occurs when the band accompanies a

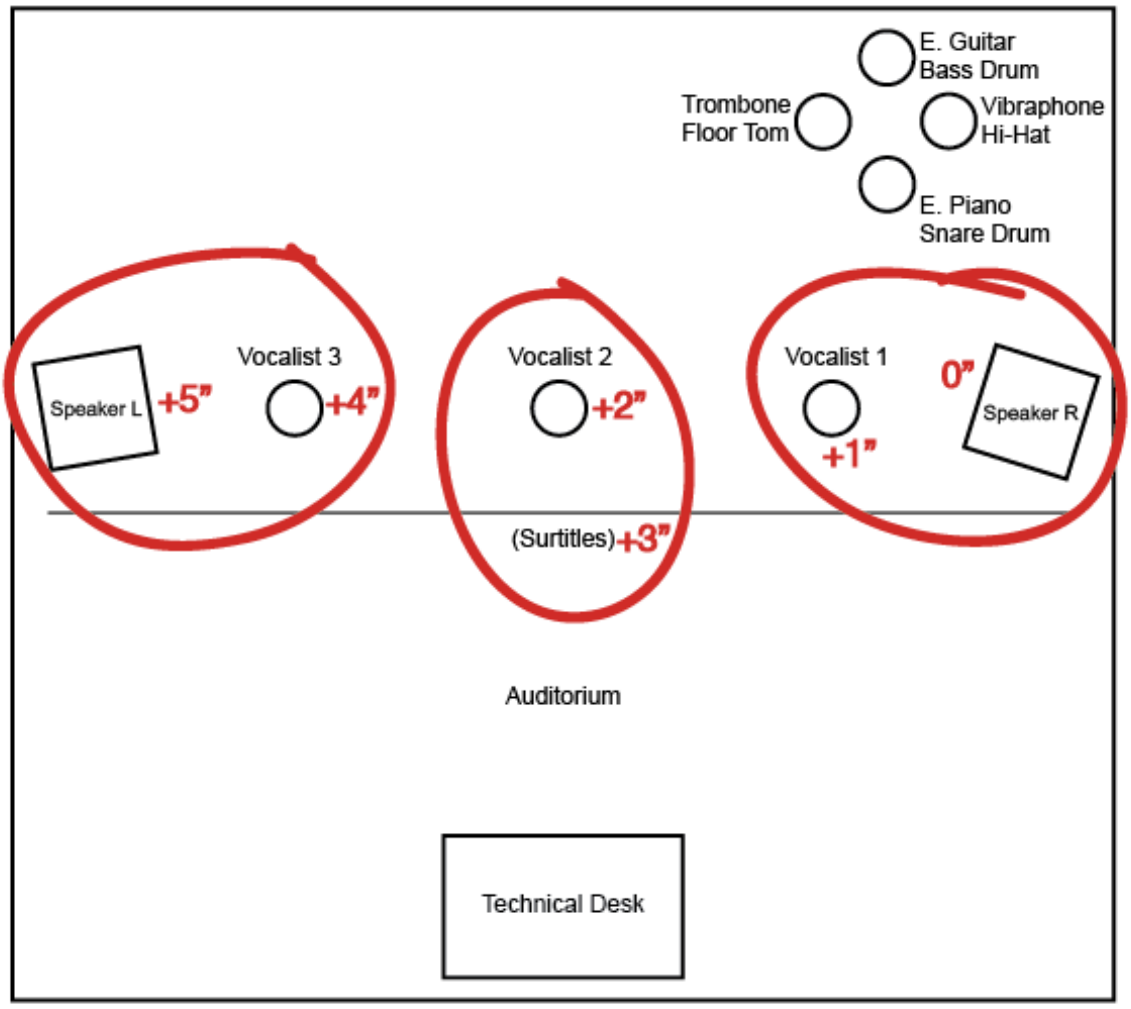

Figure 3.12. Diagram showing three describe-imitate pairs, with each entry delayed by 1". Audio is the same for all six. Throughout the section, each member of the pair alternates between the two different modes (apart from the surtitles, which always describe).

melody sung/imitated by the vocalists. At this point, the surtitles become 'lost for words' and say "And this is… a kind of… It's a…" (**Docu 10**, 00:54). This co-ordinated moment, between all the performers, one of the only points in which there is no clear linguistic interpretation, represents the kind of synchronised narrative device made possible with the use of the click track.

3.9.3 Texture

The textural element of the piece is more complicated than any of the other *Laughter Studies*. Leaving aside the band, whose material develops independently, there are six elements:

(i) vocalist 1;
(ii) vocalist 2;
(iii) vocalist 3;
(iv) speaker L;
(v) speaker R;
(vi) surtitles.

All possible basic textures can be found from finding all six-value combinations of the set {0, 1} = (0, 0, 0, 0, 0, 0) (0, 0, 0, 0, 0, 1) (0, 0, 0, 0, 1, 1) (0, 0, 0, 1, 1, 1) (0, 0, 1, 1, 1, 1) (0, 1, 1, 1, 1, 1) (1, 1, 1, 1, 1, 1), where (1, 1, 1, 1, 1, 1) is all six of these active at the same time, and (0, 0, 0, 0, 0, 0) is all of them silent. I explore the whole range of these textures in quite a systematic way by *gradually increasing the delay between each pair*. This has the effect of naturally thinning down the texture from all six elements active to one element active at a time (**Figure 3.13**). The band, which plays improvisatory, noodling material, follows this broad trajectory as well and gradually decreases its activity.

3.9.4 Material

As the texture thins down, the material progresses too. The first section features a mixture of everyday sounds, in the 'Dense' mode I had now become used to writing. The second section morphs into one sustained and repeated recording of an audience settling down before a concert (again, found on freesound.org). This creates a kind of 'mirror image' in the score of the situation really happening in the concert hall. Finally, the last section features no sound at all, but rather the instruction to the vocalists to describe what they actually hear in the environment around them.

The end of the piece involves the performers interacting with each other in a more developed way than any of the previous pieces. In the 'External' section (from

11:42 in the score), the vocalists are instructed to describe the band as they finish playing, before then describing the sounds they hear in the room. This often turns out to be air conditioning units and breathing, but in the performance at Darmstadt 2018, the audience very quickly understood what was going on, and started to 'play' the piece by deliberately coughing, or making other sounds, to provoke the vocalists into describing them (**Docu 10**, 11:41). The piece finishes as a kind of *4'33"* with live commentary.

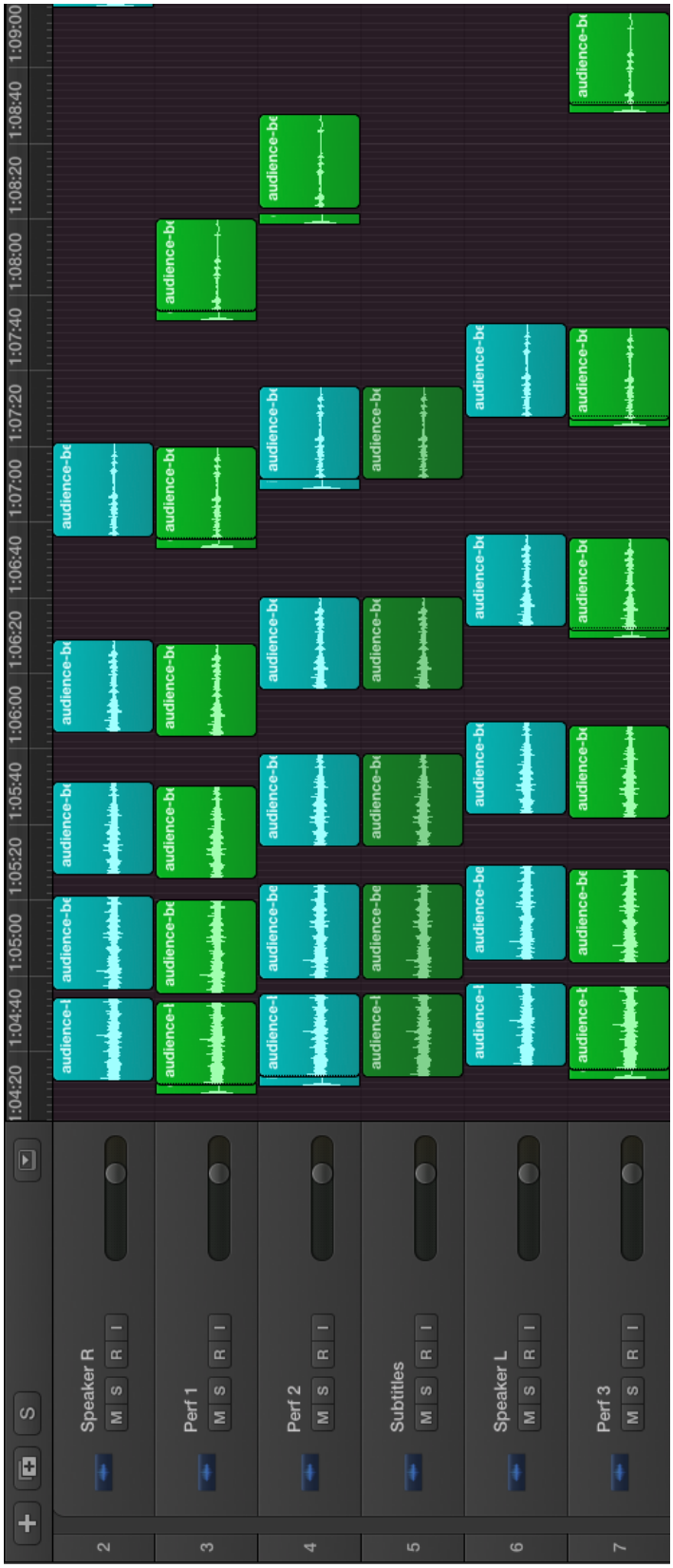

Figure 3.13. Increasing amounts of delay between each entry in *Laughter Studies 7*.

Chapter 4

Conclusion

4.1 (Re)staging spontaneity

I began this portfolio with the aim to stage the rehearsal process in *neither serious* (2014-15). Linking the idea of rehearsal to finished works of art (Schechner 2005) and the concert as a format for listening to music (Small 1998), I then considered the topic of failure as a compositional method and aesthetic aim. After exploring the concept, primarily through Priest's (2013) theoretical lens, I then rejected the approach on the grounds that composition was not necessarily a satisfactory methodology for tackling it.

After this point, my work turned towards sound as a medium for writing and communicating scores. With *for_____ on_____* (2015), I continued to focus on the process of performers becoming familiar with scores, but staged the score in a way that the audience could also access it in performance, a practice which has its roots in Kagel's music of the 1960s (Heile 2006). The material, rather than being traditionally notated pitches and rhythms, was a field recording. Drawing on similar approaches in the experimental music tradition, namely, those documented in Lucier (1980), I drew attention to the translation from one medium (found sound) to another (instrumental sound/gesture). The impossibility of reproducing one with the other was mined as a creative space of interpretation. It was a similar approach to that used in *neither serious,* but crucially substituted an aural for a visual (and culturally loaded) stimulus. I also framed these interactions through verbal notation (Lely and Saunders 2012) in a way which gave me heightened characterological agency in performance (Auslander 2006; Groth 2017).

From late 2015 until the end of the research, I developed my audio score practice by focusing on the idea of communicating the scores in a private way to performers via headphones. Again, some of the main concerns were to do with rehearsal and spontaneous reaction (Sdraulig and Lortie 2019). Through this approach, I explored performers verbalising and vocalising their perception of

everyday sounds (*Laughter Studies 1-3* (2015-16)), imitating everyday sounds on their instruments (*fantasy with motorbike* (2016)), imagining physical gestures arising from sounds (*Vox Pop* (2016)), learning sounds and rehearsing affect-laden responses to them *(Laughter Studies 4* (2016)*),* creating associations between vocal interpretations and simultaneously-occurring musical material (*Laughter Studies 4, 6, 7* (2016-18)) and incorporating parallel sounds occurring live in the room as additional aural stimuli *(Laughter Studies 7* (2017-18)).

4.2 Personalities, empathy

In all of my pieces from *for_____ on_____* onwards, there has been a shift towards valuing performers' qualities as individual people, as well as, or sometimes instead of, their qualities as skilled, professional musicians. In turn, some of the pieces started to be conceived for anyone, regardless of their level of skill or instrumental proficiency. My practice became more about finding an interesting way to *frame people expressing their personalities* and communicate it in a compelling way to audiences. Using material that was taken from everyday life was the key. As we all carry around our memories and perceptions of everyday events, we can relate to others when they communicate their relationship to the same events, even in such a reduced, performative form. This is expressed by writer Tim Rutherford-Johnson when he says of *Laughter Studies* that 'the fascination is in the gap between the intended sounds and their realisation, and between that and how we imagine we would reproduce them' (2017, p. 31). Speaking of compositions by Michael Baldwin, Claudia Molitor, Luke Nickel and Celeste Oram, as well as my own, Rutherford-Johnson suggests that these pieces examine the performer's body as a sort of threshold of score interaction; whereas traditional scores had entailed 'follow[ing] its instructions without letting the physical limitations of their bodies get in the way', these (technologically-mediated) scores activate and celebrate performers' bodies. As such, in parallel to aesthetic claims I make myself in the thesis, he adds that my pieces 'lay their performers very bare, but in a way that elicits a rare empathy' (ibid., p. 31).

It is not just performers' bodies that become activated in concerts, but audiences' bodies too. Citing research into mirror neurons, musicologist Nicholas Cook points to the fact that when we listen to musicians play, 'we hear with our bodies' (2013, p. 320). This happens most obviously when we watch performers, our muscles resonating sympathetically with theirs, but it also happens when we listen with eyes closed (ibid., p. 321; see also Godøy 2010). What this suggests is that the empathy created between audiences and performers may be on the physical/subconscious, as well as the conceptual/conscious, level. This claim has especially strong resonances for the purely vocal pieces (e.g. *Laughter Studies 1-3*), since, for these, Cook's theory suggests that every audience member with a voice is likely to empathise physically with the performers.

4.3 Future research

As Oram notes, scoring practices, which include how they are mediated technologically as well as how they condition performative interaction through compositional and poetic means, can extend the ambit of a work: 'by changing the dynamics of the score [...] you can expand the number of people involved in the music you make, and the kinds of expertise, intelligence and musicalities that are brought to music-making' (Rutherford-Johnson 2017, p. 31). Concurrently, the applications of using scores whose instructions bypass professional skill and whose material relates to everyone are wide, and go far beyond concert music. I have tried *Laughter Studies* with actors, dancers, and most recently clowns. I have had suggestions to turn them into participatory art installations. Outside of the art world altogether, in 2017 I was offered to use them in workshops for autistic children in Belgium, only for the project to sadly fall through. Such audio scores could be used as tools to further understand how, in situations with high densities of acoustic signals, we perceive and parse information into different streams (Bregman 1990), or be put to further use in the field of acoustic ecology (see for example Schafer 1973). With this in mind, these applications suggest some potentially very rewarding avenues for the research, both inside and outside artistic contexts.

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