Sonic Interventions: Portfolio of Compositions with Commentary

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Abstract

This practice research project aims to explore the relationship between music and audience by addressing the following questions:

- In what ways can one write and present music in a way that allows it to exist as part of its environment — without necessarily drawing attention to itself?
- How can music exist in a similarly quiet, 'passive' way that an object or a sculpture exists within its surroundings?
- In a typical concert hall situation, where the environment is designed and planned to draw an audience's attention to the music and to the performer(s), to what extent is it possible for music to blend into its surroundings, and in a sense draw attention away from itself to the wider environment? How do these ideas work differently within a concert situation compared to open public spaces?

These questions are investigated by way of a portfolio of compositions for various instruments and ensembles, including fixed media. The pieces contained within the portfolio are thus intended to make changes to a situation — sometimes noticeable, sometimes not — without expecting a particular reaction. I choose to borrow a term from the ceramic artist Edmund de Waal to characterise this intent: the creation of 'interventions' within an environment. My portfolio can therefore be regarded as a set of 'sonic interventions'. While the commentary presents the research narrative within the artistic output, it is the compositions themselves that are the focus of this submission, the sonic interventions which seek to respond to the creative challenges above.

Dedicated to the Memory of

Peter Reynolds

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[1] Due to illness, several of the gamelan players were not able to attend the recording session on 21 May 2025 and it was not possible to reschedule at the last minute. For this reason, there is no *garap* in this recording. In order to provide a sense of what the piece sounds like with *garap*, two workshop recordings from 2020 have been added to the portfolio. The first is of the opening section, with *garap* entering gradually; the second is of the gamelan part in its entirety, as it would appear at the end of the piece (from bar 273 onwards).

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Declaration

I declare that this thesis is a presentation of original work and I am the sole author of the written thesis. Whenever collaborators were involved in producing the performances, their roles are explicitly acknowledged. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

1. Introduction

1.1 Starting Points

The starting point for this portfolio dates to the final year of my undergraduate degree, when I collaborated with community artist Andrew Bolton on the *Newport Empty Shops Project*.[2] The project invited artists to utilise some of the city's many shop spaces that had become vacant after the recession, aiming to revive the area, and at the same time provide artists with much-needed space to work and exhibit. The result was a wide range of free art experiences accessible to any member of the public. In some cases, passers-by were invited into the shop spaces to partake in or create art; in others, the shops were used as exhibition or performance spaces. The artists involved were mainly working in the fields of fine and conceptual art. Bringing a sound element into the mix, therefore, added another dimension. The piece Andy and I created was very much directed outwards — that is, it was projected into the street from the shop, rather than requiring visitors to leave the street to enter. Andy created what could be described as a 'moving window drawing' by combining a whitewash stencil on the shop window with a projection. The sound was then projected via the ventilation grills underneath the shop windows.

Because the piece did not require passers-by to interrupt their journeys, it took on the quality of a street performance; it had the potential to engage people who otherwise would have walked past. At the same time, its comparative subtlety — both sound and image were not assertive but blended into the background — meant that it created the potential for the surprise of discovery, even for it to be passed unnoticed. The attention of passers-by was therefore not drawn by an obvious, noisy, unavoidable performance but, instead, could arise from a more organic process:

[2] Andrew was also my collaborator on *Linear Expansion*, which forms part of this portfolio.

registering an unexpected sound or movement, or seeing another person reacting to something. This elicited a gamut of responses ranging from surprise, intrigue, and annoyance, to amusement, fascination and indifference. In some cases, the piece sparked conversations, with people asking each other what was going on, and where the sound was coming from, while expressing their surprise, approval, or disapproval. In others, it simply went unnoticed. The whole process thus seemed very natural and wholly unchoreographed.

Moreover, because the piece was projected outwards onto a city-centre street, the audience demographic was not limited by the venue as is often the case with live music performances; in fact, many of the most engaged and animated reactions came from members of the public who would perhaps not be part of a typical classical or contemporary music audience. The primary responses, which seemed to be curiosity, amusement, and confusion, were openly expressed; because individuals were in a familiar environment, they were uninhibited in expressing their opinions. These things together — the outdoor public space, the undemonstrative sound and visual art, and the freedom with which people engaged and responded to the piece — generated for me the impression that it had a different existence to music performed within a concert hall: an existence that is more unpredictable and more vulnerable, more changeable depending on surroundings, and thus somehow true to real life. The possibilities it revealed were enticing to me, especially as a composer with a background in visual art and alternative music, and thus laid the first stones of the path towards this portfolio: it reinforced my interest in and passion for collaboration and art as a means of creating experiences that bring people from different walks of life together. It also encouraged my exploration of art in public spaces, specifically performance arts (as opposed to the sculptures and murals already common in many towns and cities).

1.2 Observations

From a purely compositional point of view, the *Newport Empty Shops Project* allowed me to work in ways which I found more productive and rewarding than 'just' writing notes on paper. Thus, collaborating with another artist, blending my music with another art form, or other art forms, and being allowed to be part of a larger overall project became more important to my subsequent compositional work. The fact that the project's aim had a social aspect to it, namely, to revive an area that had suffered due to the recession, and to engage with the public, was particularly inspiring.

On a more philosophical level, it fuelled my desire to remove myself (or my self?) from my work once it is completed, and to allow the work to have its own life. The idea of letting go of the piece, the belief that the conceptual ideas or inspiration behind it no longer matter once it is out in the world, a less clearly defined and more unpredictable audience experience, as well as less choreographed reactions and interactions, have all become integral to my work; it is the compositional challenges that emerge from this standpoint that I have sought to explore in this portfolio.

Presenting the piece in an open public space, in what could at the time be described almost as a disadvantaged area, was particularly interesting because, to me, it called into question the reputation of contemporary classical music as being a difficult, and indeed esoteric, niche within an already forbidding medium, and therefore highly inaccessible. In her article 'What do audiences want? Data-informed curation for diverse audiences in new music', Gina Emerson presents the results of a range of studies that investigated how audiences engage with contemporary music. She states that in one 'recent interview study with contemporary arts attendees, new music was viewed as the most isolated contemporary art form, with audience members finding little point of reference

for the genre, in comparison to film, visual art, and theatre.'[3] Another study that looked at new music audiences at three European festivals revealed that 'these situations "reproduce social inequality", in that it is predominantly an educated elite that attends and that educational concerts or similar efforts do little to re-shape the composition of the audience.'[4] The question then follows as to whether the reason for this really lies in the musical material itself. Or is it primarily context and the genre's associations that alienate audiences?

In her doctoral thesis, Emerson herself traces the root of contemporary classical music's reputation as elitist to the post-World War II era: the complex, serialist compositional style of the time, coupled with (more importantly, perhaps) 'anti-audience sentiment' and 'institutional isolation' that came as a direct response to the Nazi regime's 'musical censorship and appropriation.'[5] Although the phase was relatively short-lived, it was, according to Emerson, 'critical in establishing an image of contemporary composition as elitist, anti-audience and obsessed with the 'new' and the 'complex'.'[6] In other words, what began as a reaction to an oppressive regime's treatment of an art form, once removed from that context and that time period in history, could be seen as oppressive in itself. With this thought in mind, the act of placing the music into a context where it is vulnerable and open to criticism felt meaningful. If it is quite literally made (physically) accessible to anyone and put into a context where any reaction (or lack thereof) is acceptable, can any music still be said to be inaccessible, regardless of what it is? Can it still be considered to be isolated if it is just part of a wider soundscape?

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[3] Gina Emerson, 'What do audiences want? Data-informed curation for diverse audiences in new music,' *OnCurating* 47 (2020): 39.

[4] *Ibid.* The article cites Stephanie E. Pitts and Sarah M. Price, *Understanding Audiences for the Contemporary Arts Sector Handbook* (Sheffield: University of Sheffield, 2019); and Katarzyna Grebosz-Haring and Martin Weichbold, 'Contemporary art music and its audiences: Age, gender, and social class profile', *Musicae Scientiae* 24, no. 1 (March 2018): 60–77.

[5] Gina Emerson, 'Between the 'Experimental' and the 'Accessible': Investigating the Audience Experience of Contemporary Classical Music,' (PhD Thesis, Hochschule für Musik und Theater Hamburg, 2020), 39–40.

[6] *Ibid., 41*

The question of audience engagement also made me think about the notion of conveying meaning; In concert hall settings, programme notes, or pre-performance talks serve to clarify the intended meaning of a piece of music, often, it seems, to ensure that audiences understand and are thus able to appreciate its meaning. In her study 'What Do We Hear, When We Hear Music?', Nicola Dibben found that 'received theory as to how one should listen to […] music,' such as, for example, 'program notes, or enculturation into particular kinds of listening practices and aesthetic attitudes' may play as significant a role in how audiences listen to music, as performance setting.[7] From a composer's standpoint, however, the necessity to dissect a piece ahead of its performance might be questioned. Does revealing everything from influences to techniques make it more meaningful? Or does some of the potential appeal of abstract instrumental music not lie in the fact that it lends itself to ambiguity and interpretation? The possibility of letting a piece exist within a given environment, and without further explanation, felt to me like an opportunity to let its meaning be whatever any listener makes it.

1.3 Initial Research Questions

Coming from an alternative rock background, presenting contemporary classical music in a concert hall setting with the associated listening practices has often felt to me to be quite secluded, wilfully limiting itself to specialist audiences. Especially as a composer who is not very well-known, I sometimes miss the spontaneity and unpredictability of performances that I have witnessed performing in bands that are not very well-known — this, in contrast to the behavioural and dress codes that tend to attach themselves to more well-known musicians in the rock sphere. There is a danger in presenting something new to an audience that has no reason to care, and a corresponding

[7] Nicola Dibben, 'What Do We Hear, When We Hear Music?: Music Perception and Musical Material,' *Musicae Scientiae,* 5, no. 2, (2001): 185.

thrill (and sometimes a disappointment) in seeing the varied reactions. In contrast, the concert hall to me seems like a safe bubble, where, regardless of the performance, most reactions and behaviours (e.g., applause, silence(s)) are pre-determined and ritualised, and the excitement and risk factor of presenting something new and unknown feels somewhat dampened. I was curious to explore possibilities of bringing my music into contexts where it could unfold, emerge, and interact with the environment in a more surprising, organic and spontaneous way, without the need to instruct the audience to behave in any specific way (further discussed below). At the same time, I was interested in making music that would somehow play into, or create, this 'blending' effect in itself.

The ideas of dismantling the sort of concert hall conventions discussed above, highlighting the social implications thereof, and exploring different performance dynamics are, of course, not new, with composers having already been challenging these conventions through their work for decades. Thus, John Cage sought to encourage new ways of listening and experiencing sound through his musical happenings, exemplified by instrumental pieces such as '4'33"'(1952)[8] and 'As Slow as Possible' (1987),[9] as well as multimedia installation pieces such as *Writing through the Essay, On the Duty of Civil Disobedience* (also from 1987).[10] Promenade performances, where audiences are allowed to move freely around a space, and which are often site-specific, are a common fixture in contemporary classical music.[11] Meanwhile, composers such as Wojtek Blecharz, in his piece *Body Opera*, and Max Richter in *Sleep,* have actively encouraged unusual listening practices by inviting

[8] See for example Berliner Philharmoniker, 'John Cage: 4'33" / Petrenko · Berliner Philharmoniker,' YouTube video, https://www.youtube.com/watch?v=7lKo6TYDXCQ&list=RDAWVUp12XPpU&index=2

[9] See for example John Cage Project Halberstadt, 'ASLSP Chord Change 02.02.2022,' YouTube video. https://www.youtube.com/watch?v=_iFmaATli4Q&list=RD_iFmaATli4Q&start_radio=1

[10] John Cage, *Writing through the Essay 'On the Duty of Civil Disobedience,* 1987, Installation, Kunsthalle Bremen, 2015. https://onlinekatalog.kunsthalle-bremen.de/DE-MUS-027614/object/1956

[11] See, for example, Rolf Wallin, '"THE OTHEROOM" by Rolf Wallin,' Youtube video, https://www.youtube.com/watch?v=pAOkVU25N3Y&list=RDpAOkVU25N3Y&start_radio=1

audiences to lie down and even to sleep through a performance.[12] Others have chosen to involve the listener more directly by creating interactive pieces where audience members participate in the performance itself.[13] These practices also extend to organisations and festivals, with one example being 'The Long Now' event at Berlin's *MaerzMusik* 2016, which lasted 30 hours, and where audiences were encouraged to lie, sit, stand, dance or eat during the performances. Meanwhile, nonclassical, a London-based promoter and record label founded by composer Gabriel Prokofiev, regularly organises events in 'non-traditional performance settings' in order to reach new audiences.[14]

Academic works, too, have addressed issues regarding the classical concert hall as it emerged in the 19th century, and the socio-political implications they carry. Lydia Goehr's 1992 book *The Imaginary Museum of Musical Works* famously challenges the concept of *werktreue,* portraying the classical concert hall as 'monuments and establishments' designed to 'cut off' performances from all 'extra-musical activities' and encourage audiences to remain 'literally and metaphorically silent, so that the truth or beauty of the work could be heard in itself.'[15] Brandon Farnsworth also draws parallels between the concert hall and museums in the 19th Century, specifically the Crystal Palace exhibition, which he says produced a 'regime' that 'is constituted along the axes of both subjectification-via-architecture (both physical and social), as well as de- and re-contextualization of the exhibited objects within.'[16] Similarly, Darryl Cressman described concert halls as 'temples of a

[12] See Wojtek Blecharz, '"Body-Opera", Trailer, Pittsburgh 2024,' YouTube video, https://www.youtube.com/watch?v=8aaZcQjpjAE and Max Richter, 'Max Richter- SLEEP | Sydney Opera House,' YouTube Video, https://www.youtube.com/watch?v=lHMCE-c8sUc&list=RDlHMCE-c8sUc&start_radio=1

[13] See for example Gabriel Dharmoo, 'Gabriel Dharmoo's "Anthropologies Imaginaires,"' YouTube video, https://www.youtube.com/watch?v=ZmT4SJ8UStE, and Alexander Schubert, 'Alexander Schubert – Unitiy Switch,' YouTube video, https://www.youtube.com/watch?v=q-fVup4POWs

[14] See, for example 'about us,' www.nonclassical.co.uk/about-us

[15] Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (Clarendon Press, 1992), 236.

[16] Brandon Farnsworth, 'Curating Contemporary Music Festivals,' *Music and Sound Culture,* Vol. 47. (Transcript Verlag, 2020), 36.

secular religion […] constructed for the worship of music', where 'once inside, one can't help but feel reverence for the sacred art of music.'[17] In *Ways of Listening*, Eric Clarke states that 'Watching films and television, looking at paintings or sculptures in a gallery, and listening to music in a concert hall deliberately place perceivers in a relationship with the objects of perception that prevents them from acting upon or exploring those objects in an unhindered fashion.'[18]

This portfolio builds on the already existing body of critical research and creative practice that challenges the strictures of traditional concert performance. It does so by means of a collection of pieces that explore the possibilities of music existing not as a 'work' to be scrutinised, but as just one element of a whole (the surrounding environment.) It contributes to knowledge by means of a critical reflection upon the compositional practice and the resulting performances. Thus, the focus in this portfolio is on music that combines subtle dynamic changes with repetitive and seemingly random elements, mimicking in some ways the behaviour of certain environmental sounds that we take for granted in our surroundings, without imitating the sounds themselves. The research explores how one object within a wider context (in this case, the composed piece within its performance environment) interacts with and impacts its surroundings. The idea is not to overtly attract attention or to be the centre of attention, but to allow for more varied interactions, like those kinds of sounds or elements within our surroundings that could easily go unnoticed; the music nevertheless has the potential to draw in or capture the attention of those who do notice it. In that sense, it seems almost appropriate to quote the title of Milton Babbitt's 1958 essay 'Who Cares if you Listen?',[19] where the composer speaks in favour of composing for specialist audiences and of isolating contemporary music. In this case, listening is also optional, though the idea is the opposite of isolating the music from the general public.

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[17] Darryl Cressman, 'The Concert Hall as a Medium of Musical Culture: The Technical Mediation of Listening in the 19th Century,' (PhD Thesis, Simon Fraser University, 2012), 2.

[18] Eric Clarke, *Ways of Listening* (Oxford University Press, 2005), 20.

[19] Milton Babbitt, 'Who Cares If You Listen?' *Chromatone Center,* https://chromatone.center/media/pdf/who-cares-if-you-listen.pdf

1.4 Other Explorations

This research project was initially focused on the creation of pieces that would all be performed in non-standard environments, specifically public spaces where there is a natural flow of visitors or passers-by, or in spaces where there is at least a possibility for the audience to move around, and come and go, freely. However, many of the opportunities that were available to me as a musician during this time required me to also engage with traditional performance spaces. While I was initially reluctant, it did present an interesting, different angle that applied specifically to the compositional (as opposed to socio-political) aspect of this project; that, musically, this concept could be applied to traditional (internal) spaces, as well as external ones. Two additional questions thus emerged: To what extent is it possible, within a concert hall situation, for music to blend into its surroundings and, in a sense, draw attention away from itself to the wider environment (or the wider experience)? How do these ideas work differently in a concert hall compared to an open public space? The pieces contained within this portfolio are thus intended to make changes to any given situation, sometimes noticeable, sometimes not, without expecting a particular reaction. The completed project applies the concept of music as a part of a wider environment and experience to work presented both inside and outside of designated performance spaces. I have borrowed the term 'interventions' from ceramic artist Edmund de Waal to characterise this approach.[20] The relevance of de Waal's concept of an 'intervention' will be considered in more detail in the following chapter. Overall, this project aims to explore the possibilities of writing music that is not so much a 'piece of art' or a 'composition' (a 'work'), but that could instead be described as a 'sonic intervention'.

[20] See for example Edmund de Waal, Michael Tooby & Hilary Williams, *Modern Home: An Intervention by Edmund de Waal*, High Cross House, 1999.

1.5 Less is More: Compositional Approaches

Central to all the pieces in this portfolio is the idea that music can be offered merely to facilitate experiences rather than as a 'work of art' or 'exhibit' — that is, an object in itself. My technical approach relied most frequently on the idea of 'less-is-more', that is, on the use of very limited amounts of material that are reused or repeated throughout the piece, mimicking the way in which a sculptor might shape an object out of one piece of clay. The concept of groove in popular music — something that is simple, repetitive and hypnotic, underlying whatever is then layered on top — is also related to this. However, my aim was never to create actual, danceable grooves in my own compositions. I sought instead merely to provide a solid foundation that would root the piece and somehow 'hook' the listener by providing familiar, recurring patterns, whether or not these are consciously perceived.

Hence, this portfolio overall is characterised using limited amounts of material and very simple ideas. Most notable, perhaps, is the recurrence of what I will refer to as the 'go-to chord.' This chord formed the basis for *Equinox*, an orchestral piece that was initially intended to be part of this portfolio but was left unfinished. Thereafter, the chord was used for 'aus dem Leeren', the later-discarded optional double-bass part in *Linear Expansion*, and 'piece for Gamelan and Viol Consort'. As a basic sonority, the chord consists of a stacked fifth, tritone, and fourth, though it also occurs in inverted, transposed and expanded formations throughout the portfolio.

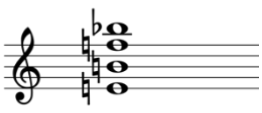

Figure 1. The go-to chord

I used this chord in what were initially three pieces belonging to this portfolio for reasons that were both practical and conceptual: at the onset of this project, I planned to create a final, large, twenty-four-hour event, or happening, that would integrate all of the pieces composed for the portfolio, with the musicians and performers working in shifts throughout the performance. The use of the go-to chord, therefore, was a means of creating a degree of continuity — a sort of glue — that would allow me to combine the different pieces into a larger whole. Moreover, as alluded to above, to use just one chord was, in a sense, rather like having only a specified amount of clay or paint with which to work. The compositional task in which I have engaged in this portfolio, then, has not been concerned with discovering or generating new material for each piece, but rather with exploring in different instrumental contexts the possibilities of a limited set of materials to which I chose to restrict myself.

1.6 Summary of Research Questions and Methodology

It is now possible to draw together the above discussion. I propose that the relationship between music and audience may be explored and challenged by way of the following research questions:

- In what ways can one write and present music in a way that allows it to exist as part of its environment without necessarily drawing attention to itself?
- How can music exist in a similarly quiet, 'passive' way that an object or a sculpture exists within its surroundings?
- In a traditional concert hall situation, where the space is designed to draw the attention of the (passive) audience to the performance onstage, to what extent is it possible for music to blend into its surroundings, and in a sense draw attention away from itself to the wider

environment? How do these ideas work differently within a concert situation compared to open public places?

My chosen method to investigate these questions is composition as a form of practice research, in particular, pursuing a 'less-is-more' approach.[21] The research focuses specifically on insights gained through documenting and reflecting on the practice, and in doing so, makes an original contribution to knowledge. The research narrative in this commentary will make clear how the compositions in my portfolio can be regarded as 'sonic interventions.'

1.7 Overview of Chapters

While they form individual responses to the research questions, the pieces within this portfolio can be understood in groups which focus on separate themes. Therefore, following a literature and practice review (Chapter 2), Chapters 3 and 4 will look at interventions within the particular context of the concert hall environment, an environment which I find to be peculiarly restricted, where durations and space are predetermined and highly controlled. Chapter 3 will look at 'rotations' (2017-18) and 'aus dem Leeren' (2018) and discuss what I would describe as the 'physicality' or 'physical nature' of music, addressing the limitations of the performance context by exploring the more 'physical' elements within music, and how they interact with the body that experiences them. Chapter 4 looks at 'for Hong / canopy' (2019), 'Piece for Drum Kit' (2019), and 'piece for Gamelan and Viol Consort' (2019-20) and how these pieces approach the idea of shaping perceptions of time, both within a very limited and a more expansive time frame, allowing time for the space to exist within it; and Chapter 5 discusses how *passage* (2017) and *Linear Expansion* (2018-19) incorporate

[21] James Bulley and Ozden Sahin, 'Practice Research - Report 1: What Is Practice Research?', (British Library, 2021): 4. Accessed June 2, 2025. https://doi.org/10.23636/1347.

space, spatial elements and other art forms to create multi-sensory impulses and experiences. The final chapter draws these threads back together and considers how applications of the idea of ‘sonic intervention’ may be pursued in the future.

2. Literature and Practice Review

1.1 Artworks outside of the concert hall

As already touched upon in the introduction, the ideas and concepts that inform this portfolio relate closely to those of many other composers, artists and musicians who create work that has a social aspect to it, as well as those engaged in music as process, quiet sounds, and concepts of time. Several of these have, of course, directly informed and shaped my own work and thinking as a composer, while others overlap in certain aspects and areas but have little or no direct influence on what I do.

In his Interventions, artist Edmund De Waal creates site-specific artworks by placing ceramic objects in locations they do not belong in. In installations such as *Lettres à Camondo* (2021), the objects are so subtly executed that they somehow blend into their surroundings, and could therefore be overlooked, while at the same time appearing out of context enough to be noticed.[22] For de Waal, titles are a foundational component of his artworks. He describes the 'gamble' of 'making fragile objects out of porcelain and placing them near each other and inscribing a name over the whole enterprise in the air', stating that 'Giving a work a name is the start of letting it go, making a space to start again.'[23] My work sets itself apart from this in that it avoids titles wherever possible, or tends towards titles that avoid evoking any specific narrative or idea. This, too, is a way of letting go: the conceptual ideas that may have been important during the compositional process are now no longer

[22] Edmund de Waal, *Lettres à Camondo*, 2021, installation, ceramics, 2021, accessed Oct 31, 2024, https://www.edmunddewaal.com/making/2021.

[23] Edmund de Waal, 'You take an object from your pocket and put it in front of you and you start. You begin to tell a story,' *Edmund de Waal*, https://www.edmunddewaal.com/essays/you-take-an-object-from-your-pocket.

relevant. The piece now takes on whatever meaning it has for those who encounter it as an intervention.

Similarly, Meriel Price's piece *Staring at the bin* (2016) is so subtle that it can (and in most cases probably does) go unnoticed—yet, as is the case with De Waal's work, particularly observant members of the public might suspect something. They may begin to notice that the coughs and sniffles of three other computer users at the library follow a rhythmical pattern, or that the movements of the people waiting at a bus stop seem choreographed.[24] While they may not be sufficiently evident to transport observers out of their everyday routine, these vignettes nevertheless have the potential to make people stop and take notice, and by hiding her pieces in plain sight, Price sets her audience a compelling challenge. The subtle changes that the work creates within the environment are comparable to de Waal's installations, and this is something that my own work also seeks to achieve. One notable difference that sets my own approach apart from that of Price's is that her material consists of actions and sounds that might occur naturally in the given environment, while mine consists of instrumental or electronically generated sounds, sounds that might more often be heard in concert settings. In that sense, her work can blend into the background more, while mine is more obviously out of context. Moreover, while Price, in a way, incorporates the audience and its reaction as a part of her pieces, mine are more concerned with the space and the way that the space is altered by the presence of the music.

Swiss artist Thomas Hirschhorn's work has a strong political undercurrent that revolves around the idea of presenting art in public, non-exclusive places to 'non-typical' audiences; it often makes use of materials that are found, recycled or otherwise easily accessible. The objective of pieces such as *Bataille Monument* (2002) and *Robert Walser Sculpture* (2019) is to actively create opportunities for encounters and interactions between diverse groups of people. Like Price's work, visitors and participants thus become a part of the finished piece. However, Hirschhorn's pieces engage the audience-participants much more actively by creating hubs that visitors are drawn to or

[24] Meriel Price, *Staring at the bin* (2016) Performance, https://merielprice.com/staring-at-the-bin/

invited into (much like many of the artists involved in the *Newport Empty Shops Project*). My own ideas, which in this sense align more with Price's, avoid any active effort to entice audiences to engage with the work.

Sound (specifically) as part of the wider environment is also the focus of artists or composers such as Janet Cardiff and George Bures Miller, for example, who create sound walks and similar projects where the work blends into, or even consists of, the sounds that occur naturally within the (potential) listener's surroundings.[25] This typically again involves actively guiding knowing participants through environments and alerting them or inviting them to pay attention to certain sounds or certain moments. Thus, while I, too, seek these blends between composed and environmental sound, my work sets itself apart in that I wish neither to be an explicit guide nor to solicit knowing participants.

Ventures such as Zeitgenössische Oper Berlin's *Ankunft: Neue Musik* festival, which ran between 2009 and 2015, are perhaps more pertinent to the present context. The project combined contemporary classical music with strong performative and contextual elements, and because the performances took place in the middle of a train station, a multitude of environmental sights and sounds blended with the performance. Akin to a flash mob, they facilitated spontaneous experiences directly embedded in everyday life. They accepted supposedly 'difficult' or complex material on occasion, but they always offered an audience options to engage fully, somewhat, or not at all.[26] At the same time, the performances were made to be noticed, rather than to blend into the background. My work again differs from this in that it aims to make subtle, perhaps almost unnoticeable alterations to the environment, rather than demanding attention or deliberately eliciting responses.

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[25] Janet Cardiff & George Bures Miller, 'Sound Walks,' *Janet Cardiff & George Bures Miller*, https://cardiffmiller.com/walks/.

[26] Zeitgenössische Oper Berlin, *Ankunft: Neue Musik*, https://www.zeitgenoessische-oper.de/produktionen/ankunft-neue-musik#:~:text=Ankunft%3A%20Neue%20Musik%20ist%20ein,die%20Kulturverwaltung%20des%20Landes%20Berlin.

1.2 Works within concert hall and theatre settings

Composers and artists who operate (or operated) in a more traditional concert hall and/or theatre setting have also explored and continue to explore similar ideas that inform my own work. Theatre practitioner and filmmaker David Weber-Krebs uses subtle ways to challenge performance conventions within more traditional settings. Pieces such as *This Performance* (2004) disrupt the conventional way in which work interacts with audiences. [27] The piece plays with audience expectations and reactions, drawing them in using minimal material, or even almost an absence of any material altogether; the piece almost exists by the audience just being in a specific space at a specific moment. Nevertheless, in Weber-Krebs' work, the use of words and narration often drives the tension/expectation and therefore heightens the audience's attention. My own work, by contrast, deliberately attempts to avoid narrative (both verbal and musical) as a means of diffusing the audience's attention.

Like Watching Paint Dry (2002) by Mawson-Raffalt + Faulder-Mawson (Ursula Mawson-Raffalt and Anthony Faulder-Mawson, a collaborative pair of multi-disciplinary artists) plays with how various sensory elements within a space interact to create a holistic experience.[28] This was one of the first events at which I became acutely aware of environmental elements — the interplay between sound, visuals, scent, lighting, temperature, and the many other factors — that play into experience. The latter included, in this instance: a deep-blue light that evoked a sleep- or dreamlike visual context; a dronelike soundscape; and, most memorably, arrangements of lilies that imbue the performance space with their heady scent. The absence of designated seating areas allows audience members to sit, stand or lie almost anywhere they wish except for the area where the performance

[27] David Weber-Krebs, *This Performance*, Performance, https://www.davidweberkrebs.org/work/this-performance/.

[28] Mawson-Raffalt + Faulder-Mawson, *Like Watching Paint Dry – from 2002-*, Facebook Post, https://www.facebook.com/story.php?story_fbid=1624910044259664&id=129441680473182&_rdr.

itself takes place. Thus, the performance becomes just another aspect of the experience of 'being there.'

Both Weber-Krebs's and Mawson-Raffalt + Faulder-Mawson draw heavily on factors such as repetition, cyclical forms and ritualistic elements; elements that can also be found in the work of most of the 'classical' composers that have directly influenced my own work, such as Morton Feldman, Giacinto Scelsi, Alvin Lucier, and Fausto Romitelli. These themes are, of course, explored by many other composers as well, although their work has not directly influenced my own. Some elements of my music could be compared to those of Clara Iannotta's concert music, for example, which plays with the gradual transformation of sounds and soundscapes, rather than relying on a straightforward narrative.[29] Bryn Harrison, too, works with the concept of time, cycles and repetition. However, the sonorities and textures within my pieces are very different to Harrison's, which also often contain a lot of movement.[30] What separates my pieces from all of these composers' works is that while most of this concert music is, of course, intended for audiences to sit and listen to, my own would, ideally, be performed in less formal contexts. Even in concert hall settings, it tries to diffuse attention away from the work towards the general situation, by allowing for a lot of breathing space.

In that sense, it also overlaps with some of the ideas of the Wandelweiser group, an international 'informal network' of composers whose work is based around concepts such as sparseness, fragility and silence.[31] Inspired by the ideas of John Cage and by the work of composers such as Christian Wolff, Wandelweiser explores, for example, what composer and member Michael

[29] See for example Clara Iannotta, 'vacant lot (strange bird)' (2023, for ensemble), http://claraiannotta.com/works/ensemble/vacant-lot-strange-burd-2023/.

[30] See for example Bryn Harrison, 'Dead Time.' YouTube video, https.//youtube.com/watch?v=J8YHGSEHmwa.

[31] Alex Ross, 'The Composers of Quiet', *The New Yorker*, 29 August 2016 https://www.newyorker.com/magazine/2016/09/05/silence-overtakes-sound-for-the-wandelweiser-collective

Pisaro refers to as 'the relationship between silence and […] 'the noise of the world'.'[32] This approach is exemplified by pieces such as Wandelweiser composer Kory Reeder's 'Untitled, 1959' (2020, for pitch-pipes), which presents a number of notes — to be played 'always quiet' — whose order and duration is not pre-determined. Reeder tells the performer to 'engage in the silence; engage in listening; feel the spaces.'[33] A 2025 performance of the piece in Maru Park, Seoul, South Korea by Uijin Oh, illustrates how the sparseness of the material allows it to blend into and engage with its environment, in this case the rustling of trees, birdsong, and other sounds present in the park.[34] 'Shades of Night' (2024, for flute, ondomo, cello and percussion), by fellow Wandelweiser member Sylvia Lim, engages with a more 'familiar' concert hall environment; the piece blends into and incorporates its surroundings through the use of lighting elements, and working with sounds that are fragile and at moments mimic environmental noises.[35] These are just two aesthetically relatively similar examples of Wandelweiser's output. Given the number of artists involved (their website currently lists over thirty members), it is, however, difficult to pinpoint one specific aesthetic or idea that defines the group. Pisaro himself confirms this by pointing out that, in his opinion, 'Wandelweiser does not embody […] a single aesthetic stance.'[36] Nevertheless, while the Wandelweiser artists mostly work individually, the exchange of ideas within the community is important; thus, several members of the group might share 'phases' of focusing on common philosophical concepts, such as the number 1.

Perhaps the individual composer whose aesthetic is most closely related to my own — in a concert hall environment, at least — is that of Ramūnas Motiekaitis.[37] Motiekaitis, too, questions the

[32] Michael Pisaro, 'Wandelweiser', *Erstwords* (blog), September 23, 2009, https://erstwords.blogspot.com/2009/09/wandelweiser.html

[33] Kory Reeder, *Untitled, 1959* (Edition Wandelweiser, 2020)

[34] Kory Reeder, 'Untitled, 1959 (2020),' YouTube video, https://www.youtube.com/watch?v=ZVjSh3LKp9M&list=RDZVjSh3LKp9M&start_radio=1

[35] Sylvia Lim, 'Rubiks Collective: Sylvia Lim – Shades of Night (2024),' YouTube video, https://www.youtube.com/watch?v=Z7Hk1ieJng0&list=RDZ7Hk1ieJng0&start_radio=1

[36] Michael Pisaro, 'Wandelweiser', *Erstwords.*

[37] Not related to Wandelweiser.

notion of meaning in music, stating that 'the very sound and the hearing are more important than generating any 'meaning'.' He, too, is interested in music and/or sound as part of the wider environment, highlighting its capacity to subtly alter our perception of our surroundings. 'Rather than being an art practised to conquer a certain space, to build a monument within its limits', he says that he 'always wanted music to be an art that exposes the larger space that surrounds it — the space we listen to intently and, by doing that, become part of it.'[38] Silence and the observation of naturally occurring sounds play an important part in this: 'I admire silent music, silent enough to be drowned in street noises or extraneous sounds. It goes, reluctant of indicating any direction or dominating its environment.' Motiekaitis, too, mentions Morton Feldman's influence, and the way that 'his music contains a lot of stillness and focusing on one point, one chord. They flow into you without any efforts, like sounds of a forest or the sea.'[39] This approach is exemplified in pieces such as 'Light on Light' (2004, for trombone and string quartet)[40] and *Insect's Steps* (2011, for symphony orchestra).[41] Motiekaitis has also extensively collaborated with visual artists. His music draws from his studies in musicology, and even more so, philosophy. There are, however, still ways in which my work differs from his. To Motiekaitis, the act of listening — actively listening — is very important, especially in his more recent work; listening to music is something very intimate. In a 2021 interview, he compared it to reading a book: 'The concert situation, from the beginning, was not very suitable for me, because in a concert, there are many people. The music has to be played quite loudly.' Rather than taking the music outside, into the wider environment, he thus looks for more intimacy: 'I prefer

[38] Eglė Grigaliūnaitė, 'Ramunas Motiekaitis – Biography,' *Music Information Centre Lithuania,* https://www.mic.lt/en/database/classical/composers/motiekaitis/?fbclid=IwY2xjawGekhZleHRuA2FlbQIxMAABHcsVSkG9rVWwKBVPA-gQReFQLYYmO7L8S9NjPxj05HwkHu77wekcs5KK6w_aem_HlV1wqeZqmjwlKZ-Ej9oEQ#bio.

[39] Eglė Grigaliūnaitė and Veronika Janatjeva, 'Ramūnas Motiekaitis: From the Black Square to Alba,' *Lithuanian Music Information Centre,* https://www.mic.lt/en/discourses/lithuanian-music-link/no-7-october-2003-march-2004/ramunas-motiekaitis-from-the-black-square-to-alba/.

[40] Ramūnas Motiekaitis, 'Light on Light,' *The Music of Silent Things*, 2010, CD.

[41] Ramūnas Motiekaitis, 'Insect's Steps,' *Zoom in 9: New Music from Lithuania.* 2012, CD.

listening at home or making music at home. Or in some very [sic.] chamber circumstances. Like a book. We read mostly […] at home, and we enjoy, we reflect, what is said there. So, if music would exist in such a way… I prefer such kind of existence. [sic.]'[42] Motiekaitis, therefore, in line with Cage, wants to actively encourage us to listen, and not necessarily to the music alone. Nevertheless, the act of listening and being with the work is treated as an act of concentration and reflection. My aim, on the other hand, is again not for the music to be the object of attention, but, instead, to exist like one element of an environment, whose presence subtly alters its surroundings but may or may not be noticed in and of itself… This again puts it more in line with de Waal's idea of an 'intervention'.

[42] Lithuanian Culture Institute, 'Lithuanian Art Music Showcase: Composer Ramūnas Motiekaitis,' YouTube Video, https://www.youtube.com/watch?v=GrWlr7eFQo8.

2. Physicality

2.1 Introduction

My research questions concern music as part of a wider environment, and therefore, the role of the body and all the senses in experiencing a given environment, including sound, is crucial. In *Deep Listeners,* Judith Becker states that 'we experience music with our skins, with our pulse rates, and with our body temperature. To subscribe to a theory of musical cognition which cannot deal with the embodiment of music, of the involvement of the senses, the visceral system, and the emotions is to maintain a Cartesian approach of mind/body dualism.'[43]

The problem of mind/body dualism in music already informed my 2013 master's thesis on the use of music as a device of torture. Perpetrators who have utilised music in detention settings often justified their actions on the grounds that music (or sound in general) does not constitute physical touch and therefore does not qualify as 'actual' torture.[44] Music was deemed acceptable because its ability to cause distress rested to a great degree on its ability to alienate or cause some sort of 'moral' offence, without causing physical injury. Sexually explicit lyrics, for example, especially when sung by female performers, were employed by American forces to cause distress to Muslim

[43] Judith Becker, *Deep Listeners: Music, Emotion, and Trancing* (Indiana University Press, 2004), 6.

[44] A 2002 memorandum sent by US Assistant Attorney General Jay S. Bybee stated that 'physical pain amounting to torture must be equivalent in intensity to the pain accompanying serious physical injury, such as organ failure, impairment of bodily function, or even death. For purely mental pain or suffering to amount to torture ... it must result in significant psychological harm of significant duration, e.g., lasting for months or even years.' In other words, it needs to cause trauma. (Jay S. Bybee, 'Memorandum for Alberto R Gonzales, Counsel to the President - Re: Standards of Conduct for Interrogation under 18 U.S.C.§§ 2340-2340A', Washington D.C. 20530: Department of Justice, Office of Legal Counsel, Office of the Assistant Attorney General, (01 August 2002): 1, accessed May 13, 2021. https://www.justice.gov/olc/file/886061/download).

prisoners' sensibilities during the 'War on Terror'; children's songs, such as *Barney the Dinosaur,* were used to ridicule or infantilise the victims. Such techniques were seen to induce comparatively minor distress, being merely offensive or irritating rather than causing 'real' (i.e., physical) suffering. However, survivors and witnesses of this treatment frequently recalled the ordeals and their subsequent symptoms in very physical — and physically violent — terms.[45] They also frequently highlight the elements of music that might be described as more 'physical': they talk about dynamics, timbre, repetition, or relentlessness, not about melodies or lyrics. They also mention volume and acoustics — how the space where the experience occurred affected their perception of the music — and the circumstances, especially their inability to escape the situation or to choose what music was being played and when.[46]

The significance of physical context is not unique to extreme conditions such as the ones outlined above. Thus, in her 2001 study on music perception, Nicola Dibben found that 'particular musical practices, such as the location in which the music occurs, and the physical relationship of the listener to the music within that location, are both aspects which will influence what aspects of the music the listener attends to.'[47] Meanwhile, Balkwill and Thompson found that the more 'physical' aspects of music, or 'Psychophysical cues (tempo, timbre, stimulus complexity) […]', which are 'common to all auditory signals', can be seen as 'basic perceptual cues' that, to some degree, at least 'transcend cultural boundaries', are universally understood, and override the need for 'knowledge

[45] Maja Palser, 'Violence and Violation: Music in the hands of the oppressor,' (MA dissertation, University of Bristol, 2013), 25.

[46] Amnesty International, 'USA: US Detentions in Afghanistan: An Aide-Mémoire for Continued Action', Amnesty International, AI Index: AMR 51/093/2005 (6 June 2005): 5, https://www.amnesty.org/en/documents/AMR51/093/2005/en/; and Suzanne G. Cusick, '"You are in a place that is out of this world…": Music in the Detention Camps of the "Global War on Terror"', *Journal of the Society for American Music* 2, No. 1 (2008): 1-26.

[47] Nicola Dibben, 'What Do We Hear, When We Hear Music?: Music Perception and Musical Material,' *Musicae Scientiae,* 5, Issue 2 (2001): 185.

of cultural convention' to understand the emotions conveyed through music of different cultures.[48] In addition, the ability of music to elicit actual physical sensations was explored, for example, by Putkinen et al. in a 2024 study into the connection between music and bodily sensations. Similarly to the article mentioned above, it, too, focused on emotional perception across two different cultures (Western and East Asian). It concluded that 'Timbre, tonality, rhythm, and dynamics […] all played similar roles in the physical sensations that subjects felt', and that these point 'toward a biological component in music-induced bodily sensations.'[49] It is clear, therefore, that there is a tightly-knit relationship of sound and space and experience, the physicality of which I have aimed to be mindful of in order to create sonic interventions.

Again, the concept of exploring the physicality of music is not a new one, with Wojtek Blecharz' *Body Opera* (mentioned in Chapter 1.3), being a good example of a piece that does just that. The main difference in the case of this portfolio is the absence of actively involving the listener: the audience and the sound simply exist, alongside other elements, within the same space. Thus, one could imagine, in contrast to the music-as-violence example, music as a means to soothe within an otherwise traumatic space. My intention remains, however, to avoid such direct 'purposeful' interventions: the sounds I introduce are not deployed in such an instrumentalist way, but rather as opportunities for a listener to reshape their encounter with a given space.

[48] Laura-Lee Balkwill & William Forde Thompson, 'A Cross-Cultural Investigation of the Perception of Emotion in Music: Psychophysical and Cultural Cues,' *Music Perception,* 17, No. 1, (1999): 44, 58.

[49] Vesa Putkinen, Xinqi Zhou, Xianyang Gan, Linyu Yang, Benjamin Becker, Mikko Sams, Lauri Nummenmaa, 'Bodily maps of musical sensations across cultures,' *Proc Natl Acad Sci U S A*, 121, no. 5, (2024) https://pmc.ncbi.nlm.nih.gov/articles/PMC10835118/

2.2 Social and Political Implications

To return briefly to the discussion of the classical concert hall (introduction, chapter 1.3), Shusterman and Dewey both directly link the supposed divide between mind and body in art to the contrast between 'high' and 'low'. In Art as Experience, Dewey observes that 'life is compartmentalised, and the institutionalised compartments are classified as high and low; their values are profane and spiritual, as material and ideal.'[50] Shusterman further points out that the concept of 'mind' in neo-Platonism, Christian theology, and modern philosophical idealism, signifies something that is not only separate from, but superior to, the body. This mind-body discrepancy, therefore, carries with it numerous implications, including those of master and servant, male and female, high and low, and so forth.[51] It is not surprising, then, that, in classical concert halls, institutions that are largely reserved for the consumption of 'high' art, the body is completely inactive and almost constrained, while the mind alone is encouraged to follow, think, and feel in response to an auditory stimulus.

Therefore, creating a set of pieces that aim to simply exist as a part of a wider, or multisensory experience also carries socio-political implications. The exploration of the two aspects of physicality discussed above, space on one hand, and the physical body, on the other, thus forms the basis of the pieces discussed in this chapter. They represent an attempt at eschewing culture-specific references via easily recognisable melodic or rhythmical structures by focusing more on the psychophysical elements referred to by Balkwill and Thompson (see p. 31) and outlined in the introduction to this chapter. In trying to subtly alter perceptions of space, time, and physical sensations via sound, the music aims to exist in a manner that is neither high or low, that does not demand or encourage analysis or understanding of 'the Work' but simply allows the audience, space,

[50] John Dewey, *Art as Experience* (New York: Pedigree Books, 1934), 20.

[51] Richard Shusterman, *Body Consciousness: A Philosophy of Mindfulness and Somaesthetics* (Cambridge University Press, 2008), 5.

sound and all other sensory impulses that may be present to exist as equal players that form part of the overall experience. While certain elements of the creative process towards these pieces, in particular decisions regarding structure, pitches and durations, are governed by abstract principles, decisions regarding effects, dynamics and timbre focus on specific sounds that are likely to be associated with specific physical sensations, most notably, textural contrasts and fragile timbres and dynamics. This will be discussed in more detail in the following two sub-chapters.

2.3 'rotations'

At the time I began work on 'rotations' (for piano with one or two players and fixed media, 2017-18), I had already developed an interest in 'art as experience' (I refer to Dewey here, although at the time I had not encountered his work) and in the interplay between music and context. I had begun to shift my focus more towards creating music that would not be the focal point of a 'performance', that did not loudly demand attention, but that slowly became noticeable, almost organically emerging from the ambience of a space and allowing responses to happen in real time, depending on an individual's awareness, interest, and perception. I wanted music and its context to make the focal point of the experience 'being in that exact place at that given moment with those particular people', not 'the work'. Would it be possible to make a piece that was simply part of the concert-hall ambience and might be perceived on the same level? If so, such a piece could theoretically become part of any space, changing according to its surroundings. In 'rotations,' then, both elements (piano and fixed media) were designed in a way that they would, first, allow space for natural, ambient sounds to be heard and, second, might sometimes be, themselves, perceived as natural, ambient sound.

The piece was commissioned by Bangor Music Festival for their 2018 season, which centred around the theme of 'space'. Though conceptually based on 'space' in the festival's intended meaning (i.e., 'cosmos'), 'rotations' is also concerned with 'physical space', specifically the space

within which sound is experienced (i.e., the performance space). Connected to this is the physicality of sound (within the space), and this, in turn, invokes the physicality of the body that perceives the space, with all that is contained within it — including the composed sounds.

'Rotations' — like most of the pieces in this portfolio — is very much a 'construction'. However, it is also primarily about sound and, more specifically, sound as experience. Writing in 1965, Morton Feldman observed that 'the preoccupation with *making* something, with systems and construction, seems to be a characteristic of music today. It has become, in many cases, the actual subject of musical composition.'[52] At the time, Feldman was primarily working with indeterminate processes, and he was critical of the tendency for contemporary composers to focus on structure and technique rather than on the actual results of 'making' sound. My own approach to technique, in some ways, mirrors that of Feldman's indeterminate pieces: it is not (or at least not intentionally) pertinent or necessary to the way an audience experiences the music. The mathematics and the extra-musical impulses that inform this piece (and my music in general) are simply a means to an end, a way to generate ideas and material and then to process these. Thus, complex processes are not used to create something that is recognised *by others* as complex. Instead, they build only the most basic level — the 'filling of bars', so to speak; they are a way to create patterns and continua. In 'rotations', specifically, the complex construction serves to blur or even obscure the process that brought it about. In other words, the method somehow obscures both itself and the raw materials that it processes.

The primary focus, as mentioned above, however, is sound and, specifically, sound within context; technique is merely a means of placing sounds in time. Broad structures, such as the ones which are discussed in more detail in the following chapter, might have been arrived at intuitively, e.g. by making the note values slightly shorter in each section or by simple tempo markings. Using strict number systems is, for me, just another way of reaching decisions when the possibilities might

[52] Morton Feldman, *Give my Regards to Eighth Street: Collected Writings of Morton Feldman* (Exact Change, 2000) 33-34. First published as Morton Feldman, 'Predeterminate/indeterminate,' in *Composer*, 19 (Spring 1966): 3-4 [dated 1965].

otherwise seem infinite, and concepts or sources function similarly in making compositional decisions. Thus, although the ideas and processes discussed here did very much inform the construction of the piece, I do not feel that they are particularly relevant to the final outcome, and they are certainly not the 'subject' of the composition. For these reasons, I feel, there is no need for an audience to 'understand' them; nor would the recognition of these processes in any way elevate a listener's experience of the piece. The following discussion concerns only how the piece was constructed; how this might or might not affect perception will be considered separately.

The concept of 'rotation' emerged in response not only to the theme of the festival but also to a range of topics that interested me at the time; these included Middle Eastern and Islamic literature and music, ritual and trance, the link between mathematics and spirituality, and — on a more 'technical', purely musical level — rhythm and repetition. I was interested in rotation as something organic and all-encompassing: apprehended in the movement of the stars, planets, and galaxies, of course, but also in human life and rituals, and of use as an artistic device. The festival theme suggested a 'rotation' that is omnipresent in the natural world; it felt as if rotating elements and movements might be able to become almost unnoticeably integrated or even absorbed into a performance space. A consequence that preoccupied me at the time was how music affects the perception of space and time, and vice versa. I found myself compelled by the hypnotic nature of rotation — rotating body movements, for example, or watching rotating objects, like mobiles, for an extended period. The idea of something that could move while remaining apparently unchanged and uninterrupted by other events, yet at the same time could constantly undergo subtle changes informed not only this piece but also others, most significantly the durational pieces *passage* and *Linear Expansion*.

Metaphorically, the compositional process of 'rotations' was inspired by the idea of capturing or replicating a glimpse (or perhaps an imagined experience) of the cosmos. Its structure was very much informed by the incomprehensibility and scale of the universe: when we look at the universe from planet Earth, we can catch only small glimpses; we never see its full expanse. Were we to stand or float amongst the planets and stars, the ones closest to us would appear so enormous

that they could not be seen in their entirety, while those furthest away would appear only as distant specks. We would see planets of different sizes, moving and rotating at different speeds.

While writing 'rotations', I was listening to a lot of Turkish and Persian classical music, and I was also immersed in Islamic mystical *('sufi')* literature and poetry, which frequently alludes to the cosmos.[53] These interests, which extended to other Islamic devotional music, led to my decision to use the *Muhammes usul* (one of the rhythmic modes of Turkish classical music) as a basis for the piece. I envisioned the rhythm, however, primarily as a framework or compositional tool; I wanted to avoid anything that might seem pastiche, and I wanted to explore how a piece might be perceived if a procedure was hidden to the point of becoming unnoticeable.

The piece is constructed from seven 'rotating' elements. Each of these elements is based on the *Muhammes usul*, and to each element a set of pitches was then applied. The elements range metaphorically from small to enormous: in the smallest, one beat contains one semiquaver; in the largest, one beat contains twenty-one semiquavers. The smallest element is repeated again and again throughout the piece, but the scale of the largest element means that it is never 'heard' in its entirety. (I place the word 'heard' in quotation marks because the element is never perceived as such by the listener; again, this is just a compositional device.) Thus, the longest pattern appears only once, the shorter patterns appear two or more times, and the shortest appears 84 times, though it appears in its complete state only at a certain culminative point and in all other instances is fragmented.

[53] The rotational movements of the dances of the Turkish *Mevelvi* Order (often referred to as 'whirling dervishes') are said to mirror the movements of the cosmos.

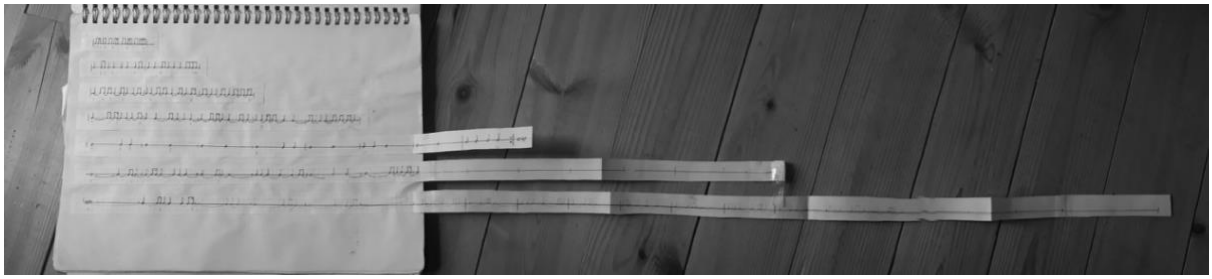

Figure 2. Sketch of the proportional relationships between the different iterations of the *Muhammes usul*

The *usul* itself is never quite discernible: not only are the rhythms overlaid, but they also all start and end at different points, in some cases within the seven-minute duration of the piece and in some cases outside this duration. What was initially very simple material, clearly identifiable, has been subjected to various processes, with the results then layered, again in different ways, making successive stages more and more obscure to the 'analytical ear'. By combining simplicity and complexity, the piece ends up being neither. Thus, although the piece is completely built upon a repeated, 'strict' rhythmic pattern, it is perceived more like an ambience or soundscape.

The fixed media track follows exactly the same temporal parameters; each of the seven rhythmic 'elements' comprises an electronic and a piano part, so the two are compositional equals, rather than relegating the electronic part to a sort of 'backdrop' for the instrument. Again, this was purely a compositional decision, not something that was intended to be 'meaningful' or 'symbolic' — or even perceivable — for an audience. In reality, though, the two parts do have very different auditory properties even though they are built from the same parameters: the result evokes a melody-and-accompaniment texture, or, to be more accurate, creates an auditory space in which a basic, subconsciously perceived ambient sound (the electronic track) is heard with more consciously perceived sounds (the piano part) — such as a dripping tap, for example. Thus, the electronic track could be seen to exist as an integral part of, or enhance, the physical space itself, while the punctuations of the piano part are the physical objects within that space, providing the context that allows us to perceive its vastness.

Focusing primarily on psychophysical elements (in this case, the timbral contrast between the two parts, subtle dynamic shifts, and a slow tempo) these two elements together then create a sort of fragile, subtle layer that is able to exist in addition to, and, in an ideal situation, on an equal level with the other sounds or sensory impulses that exist within the performance space. A concert hall with fixed seating arrangements still proves challenging in achieving this aim, due to the fact that the stationary audience inevitably focuses its gaze on the also stationary performers. However, on a sonic level, rather than existing as an object of perception within a space, the piece plays a part in creating the space, and the experience of the space and the moment at that given time. It is an intervention in that it both belongs and does not belong, and in so doing transforms the space in which it has been encountered.

2.4 'aus dem Leeren'

In 'aus dem Leeren' (for mixed ensemble, 2018), the exploration of physicality became more direct. Whereas 'rotations' was concerned with space on a large scale, 'aus dem Leeren' aimed towards something more intimate — to focus primarily on the way that sound can assume properties akin to physical touch, an idea that was in part driven by my previous research into music as torture, and which has been the subject of various studies, including those touched upon in the introduction to this chapter. Here, the aim was not to create anything forceful or overpowering. Instead, it was to make a piece that would be experienced as a gentler form of touch. This was not meant as a political response in which I countered the use of music in interrogation by creating an antithesis of 'violent' music, but as an exploration of the intensity of gentle touch. As Richard Shusterman states in Body Consciousness: A Philosophy of Mindfulness and Somaesthetics, 'Sensory appreciation is typically dulled when blasted with extreme sensation. The most intensely enjoyed music is not the

loudest. A gentle grazing touch can provide more potent pleasure than a thunderous thrust.'[54]The idea of physicality in 'aus dem Leeren' was also closely connected to ideas of the visual or visible. Partly to counter the very sound-focused concert-hall environment, I wanted to create not only sensations reminiscent of touch through sound but also something that might be analogous to images: feeling and also seeing — or more accurately, perhaps, feeling, and therefore seeing in one's mind's eye — something like a physical object or body through sound alone. The composition would thus explore one single 'object' from different angles, both tactually and visually.

In his article 'Painter Envy', Kyle Gann describes the constantly evolving melody line in Morton Feldman's *The Viola in My Life* as an 'irreducible image', which 'can't be analysed, only listened to.'[55] Feldman's concept of rotation and evolving shapes was, according to Gann, inspired by Alexander Calder's mobiles — a compelling image. If we lay the mobile flat on the table in front of us, we see a number of shapes, clearly, and separated from each other. However, if we suspend the mobile, it begins to rotate — both as a whole and as individual parts. The shapes that appeared to us very clearly when lying on the table now seem ambiguous, and we can't always make out what they are. Moreover, as they drift past each other, they occasionally overlap, creating new shapes. We are able to view the different elements from an ever-changing perspective. Feldman does just this with the musical fragments in *The Viola in My Life*, letting them continuously change shape and direction, overlap and drift apart again. Notions like this — actual musical entities that are tangible objects but completely separated from narrative (as opposed to more conventional, historical ideas of images 'painted' in music) — have profoundly influenced my own work. This is especially true when, as was the case for 'aus dem Leeren', circumstances preclude incorporating actual visual elements into a performance.

Another profound influence on my work, including this piece, is the music of Fausto Romitelli, especially his *Professor Bad Trip* trilogy and, even more specifically, the second piece of

[54] Shusterman, *Body Consciousness: A Philosophy of Mindfulness and Somaesthetics*, 37.

[55] Kyle Gann, 'Painter Envy: Morton Feldman ascends his pedestal as softly as possible,' *The Village Voice* (23 July 1996, https://www.cnvill.net/mfkgann.htm

the series, 'Professor Bad Trip Lesson II'. This piece, too, displays properties reminiscent of a mobile. A limited selection of gestures is repeated over and over; however, slight variations and rhythmical alterations make these repetitions appear not at all mechanical but rather organic and 'natural.' Rather than conjuring up something like a mantra — or even machine — his work recalls something obsessive-compulsive — an action that is repeated over and over, but in which successive iterations are never the same. Thus, the duration of each gesture varies, and elements (resonances, flourishes) are added and discarded.[56]

In its focus on simplifying material and process, 'aus dem Leeren' signifies a turning point in my work. In 'rotations', the generation and manipulation of material had very much followed previous work in that the earliest stages, in which materials and processes were determined, were very complex, even though the objective was to make something that was not 'challenging' and 'difficult' to listen to. There seemed to be a discrepancy between these two factors. The composition of 'aus dem Leeren' still involved very complex processes in the latter stages, but the generation of material was much simpler, and the amount of material was much smaller. If the aim was to re-create a sounding version of something as simple as a caress or a single, visible, touchable, if moving object, I thought, should this not be possible using simple, minimal materials and even processes? In the end, a harmonic structure based on a single chord (the go-to chord mentioned in the introduction) and a short, four-note isorhythmic *'talea'* made up the entirety of this piece; the compositional process involved a simple, almost mechanical treatment of these materials.

[56] Ictus. *Fausto Romitelli – Professor Bad Trip*, Brussels: Cypres, 2003, CD.

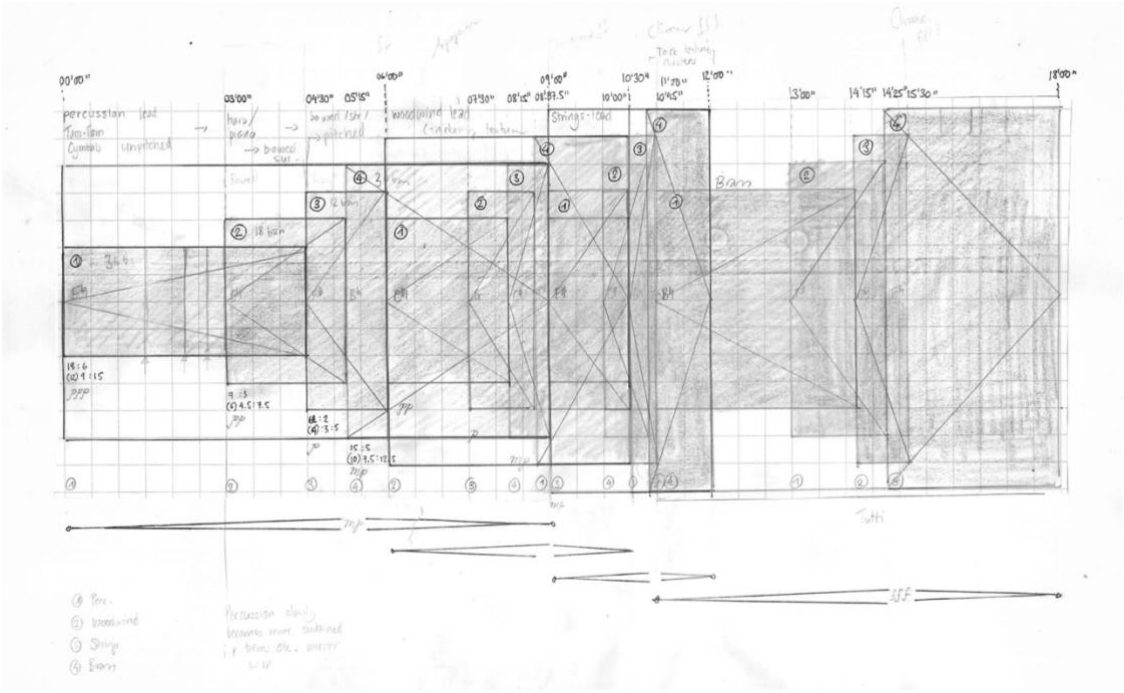

Figure 3. Layout sketch for discarded orchestral piece *Equinox,* later used for 'aus dem Leeren'

In ‘aus dem Leeren’, elements of isorhythmic processes lent themselves particularly well to both the physical and the visual ideas underpinning the piece: because isorhythm creates patterns of elements that are (often very obviously perceivably) repeated but nevertheless constantly changing and shifting (akin to the mobiles discussed by Calder) the technique seemed to offer an ideal means of creating (or re-creating) the intended visible and palpable three-dimensional ‘object’. However, in this case, the isorhythmic procedures were subject to both alteration and simplification. Thus, the *‘talea’* consists of just four values — 1, 2, 4, 5 — and these are rotated consistently throughout the piece: 1, 2, 4, 5; 2, 4, 5, 1; 4, 5, 1, 2; 5, 1, 2, 4; and so on. The entire piece itself consists of four sections based on the same ratios, expressed as 5:4:2:1, so the values get smaller within each section (which means the music gets faster) over the course of the piece.

As in ‘rotations’, the piece focuses on ‘psychophysical cues’ in music, as opposed to cultural cues, again working with fragile timbres and dynamics and subtle variations in tempo that aim to echo subtle forms of touch. With its constantly shifting and overlapping repetitions, ‘aus dem Leeren’ seeks to mirror, to some degree, the properties of sounds, sights and sensations that we might

encounter within any given environment; water dripping from a melting icicle; branches creaking or leaves rustling in the wind; light being revealed or obscured by moving shadows; and so on. In doing so, it seeks to blend into the environment, whilst at the same time emerging and disappearing into it. As is the case with all the pieces in this portfolio, for this aim to be fully achieved, it would be most effective for the piece to be performed within an environment where other such elements are present. Within the concert hall, the focus remained primarily on timbre, and its aim was to evoke a sensation of physical touch in the listener.

4. Time

4.1 Introduction

Chapter 2 discussed how two concert pieces, 'rotations' and 'aus dem Leeren', explore the spatial and physical aspects of sound to facilitate a more immersive experience in a classical concert hall. Both pieces seek to highlight the physicality of sound, both as a kind of 'touch' and as a part of a physical space, and both serve to counteract the tendency in Western art music to separate mind from body and to place the mind in a superior position. Rather than making the music or soundscape the focal point, they simply add sound to the space to, in some way, alter the experience of *being there*: they are sonic interventions. To accomplish this, they avoid narrative forms and focus instead on rotational, repetitive or fragmentary structures and textures, and on timbre, tempo and dynamics.

The current chapter will expand upon the relevance of time in creating sonic interventions, how one might approach the concept of time and the possibility that a sense of time can be deliberately lost in the context of certain musical or sonic experiences. Sonic interventions require particularly close consideration of temporal aspects because to alter or affect a certain space is, inevitably, to affect a segment of time — that which is occupied by the intervention. In creating a piece of art that is durational, there is the possibility of playing with the perception of time, and thus the perception of the moment, and the environment that we find ourselves in that given moment. An influential precedent to me was, again, the music of Morton Feldman — specifically, in this instance, his Second String Quartet. Since first encountering this work, I have been intrigued by the way in which it manages somehow to captivate and mesmerise to the point at which it is possible to lose oneself over the course of an entire six hours; one can experience the whole piece without

feeling that any measurable time—and certainly not six hours — has elapsed. This happens in a way that seems to be closely connected to the idea of time-space. Thus, it is completely possible to sit through the entirety of the six hours of the piece without it ever 'feeling' like six hours or like any particular amount of time or time-frame (e.g. 'long' or 'short'), for that matter.[57] In his review of Flux Quartet's 2014 live performance of the piece, referring specifically to 'Feldman's view of time', Georg Grella wrote that 'this music does not define the dimension as a linear path to a result. The Second String Quartet explores and expands on what can occur between the ticks of a clock. This is never boring.'[58]

Various studies have also shown that time perception is subjective and that sensory stimuli that occur within a certain space during a certain time affect our experience and perception of that time.[59] According to internal clock models, an increase in physiological arousal may make time seem to pass more slowly, while a decrease in physiological arousal does the opposite.[60] This also applies to sonic stimuli, and to music specifically. Again, the physical aspects of music are central to the findings, with research showing that music affects the perception of time primarily through pulse and tempo: a segment of time appears longer, the faster the tempo or pulse of the music or the more frequent the auditory stimulus.[61] Droit-Volet et al. conducted three experiments which

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[57] *String Quartet No. 2*, by Morton Feldman, performed by Flux Quartet, live streamed from Park Avenue Armory, New York. Apr 26, 2014.

[58] Georg Grella, 'Flux Quartet's artistry makes Feldman's six-hour opus an engrossing experience.' review of Morton Feldman, String Quartet No. 2, performed by Flux Quartet, *New York Classical Review*, (27 April 2014), https://newyorkclassicalreview.com/2014/04/flux-quartets-artistry-makes-feldmans-six-hour-opus-an-engrossing-experience/.

[59] H.M. Kondo, E. Gheorghiu, & A.P. Pinheiro, 'Malleability and fluidity of time perception,' *Sci Rep* 14, 12244 (2024), https://doi.org/10.1038/s41598-024-62189-7

[60] Kristian Folta-Schoofs, Oliver T. Wolf, Stefan Treue, Daniela Schoofs, 'Perceptual complexity, rather than valence or arousal accounts for distracter-induced overproductions of temporal durations,' *Acta Psychologica*, 147 (2014): 51-59. Accessed May 22, 2025. https://doi.org/10.1016/j.actpsy.2013.10.001. (https://www.sciencedirect.com/science/article/pii/S0001691813002229)

[60] Here, an 'unpleasant' version was created by playing the piece backwards.

compared various versions of a piece of music, i.e. piano vs. orchestral, 'pleasant' versus 'unpleasant' and fast versus slow.[62] While the orchestral version was considered more arousing than the piano version, and the 'unpleasant' version more arousing than the 'pleasant' version, the effect of tempo overrode all of these. This shows that, as the article states, 'the physical properties of music play a fundamental role in the time distortions associated with emotion.'[63]

Like the previous two pieces, the pieces discussed in this chapter were also the results of commissions for concert hall performances. Therefore, they, too, strive to create a sort of intervention of the space and, more importantly perhaps in this case, the moment. However, with these pieces, the parameters are more contrasting: the first two commissions set very tight temporal and instrumental boundaries: both are solo pieces (for guitar and drum kit, respectively) of very short duration. The third is a longer, larger-scale piece for gamelan and viol consort. The former could therefore be seen more as 'momentary' interventions — consisting of sounds that briefly fade in and out of their environment or emerge slowly to become fully revealed at the last moment, only to disappear as soon as they are noticed, or accepted as part of their surroundings. The latter, meanwhile, exists as more of an ongoing continuum, like a soundscape that blends into the space surrounding it.

Taking into consideration the available research into sound and time perception, it would make sense, faced with very tight time constraints within a concert hall environment, to try and make the available time for an intervention seem longer, that is, to write fast pieces that contain a lot of material. Nevertheless, regardless of their duration, the pieces in this chapter all primarily focus on the use of fewer stimuli over the course of a given timeframe, and thus on the speeding up of perceived time. At the same time, they also try to 'play' with time by increasing and decreasing the speed and frequency of sonic occurrences over a given period. According to Pereira et al., music that

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[63] Sylvie Droit-Volet, Danilo Ramos, José L. O. Bueno & Emmanuel Bigand, 'Music, emotion, and time perception: the influence of subjective emotional valence and arousal?' *Frontiers in Psychology* 4 (2013), https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2013.00417

captures more attention from the listeners is perceived as longer in duration.[64] Thus, the idea of a sonic intervention as something that does not demand attention but emerges slowly, perhaps almost unnoticed, only to disappear again once it is (perhaps) noticed was central to my less-is-more approach in these pieces, and perhaps most effective in the two shorter pieces. While the concept of space is again relevant in all of them, rather than using complex processes to highlight the physicality of sounds interacting with the body and with space, the aim in this case was to create interventions into the time that passes within that given space throughout the piece, using of more straight-forward overarching structures.

4.2 'for Hong / canopy'

'for Hong / canopy' (2019, for solo guitar) resulted from a commission from Malaysian guitarist Tee Hong Chu. The brief included several possible approaches, one of which was to base the composition on already existing Malaysian musical ideas or concepts. As I was already a member of a gamelan orchestra (the University of York's Gamelan Sekar Petak), albeit one from Java, it made sense for me to explore *Gamelan Melayu*, or Malaysian Gamelan to fulfil this criterion. This exploration takes place on a very reductionist, basic level, whereby the piece borrows two elements from *Gamelan Melayu*: a simple, binary structure, and a limited set of notes around which it is built. *Gamelan Melayu* is distinct in several ways from Javanese Gamelan (the tradition to which Gamelan Sekar Petak belongs) and also from Balinese Gamelan, though it typically uses a pentatonic scale that is possibly based on the Javanese *sléndro*.[65] Thus, 'for Hong / canopy' utilises scordatura that is based on this 5-note scale, with the notes selected to be those most compatible with natural guitar tuning (see Table 1). The

[64] Leandro A.S. Pereira, Danilo Ramos, José L.O. Bueno. 'The influence of different musical modes and tempi on time perception,' *Acta Psychologica*, Volume 229 (2022), https://doi.org/10.1016/j.actpsy.2022.103701.

[65] Patricia Matusky and Tan Sooi Beng, *The Music of Malaysia: The Classical, Folk and Syncretic Traditions* (Routledge, 2017), 109.

entire piece then utilises the go-to-chord (discussed in the introduction and previously already used in 'aus dem Leeren'*)* to build intervals around these pitches.

Table 1. Scordatura Tuning for *'for Hong | canopy'*

Open String	Scordatura
E	E
A	G#
D	C#
G	F#
B	B
E	E

The two contrasting sections of the piece focus on two aspects of Gamelan sound: the first section is based on the idea of 'resonance' and the second on the idea of 'percussion'. Both the limited set of notes and this simple underlying structure are representative of the less-is-more approach, which was already alluded to in the introductory chapter, and which became a central idea underpinning the pieces within this one. As already discussed in the introduction to this chapter, in this particular case, where the aim was to play with time within a very limited actual timeframe, the use of minimal material applied to a simple overall structure was one way of creating a sonic intervention that is very momentary, even highlighting its brevity. Nevertheless, some of the approaches regarding structure mirror those of previous pieces — they are just applied to a simpler overall shape. Therefore, as in 'aus dem Leeren', the structure is constructed with contracting and expanding proportions, in this case 12:10:8:6:3:5:7:9. Within the 'resonance' section, which makes up the first part of the piece, the sounds themselves are 'long', sustained by means of tremolos. The

proportions then gradually contract towards the 3:5 point of the piece, at which point they begin to expand. At the 'central point,' or epicentre of the piece, the percussion segment begins, and the sounds become very short: the tremolos have ended, and the notes represent single sounds that simply last as long as they ring naturally. The material coheres, of course, since the sounds are now much more closely spaced. However, after that, when the durations of the sections begin to expand, the tremolos do not return. The effect is that even wider spaces occur between sound events than in the initial, longest section. In this way, the piece tries to evade any sense of real time or pulse. Sounds are placed in time as if they were placed in space — in this case, in a kind of 'breathing space'.

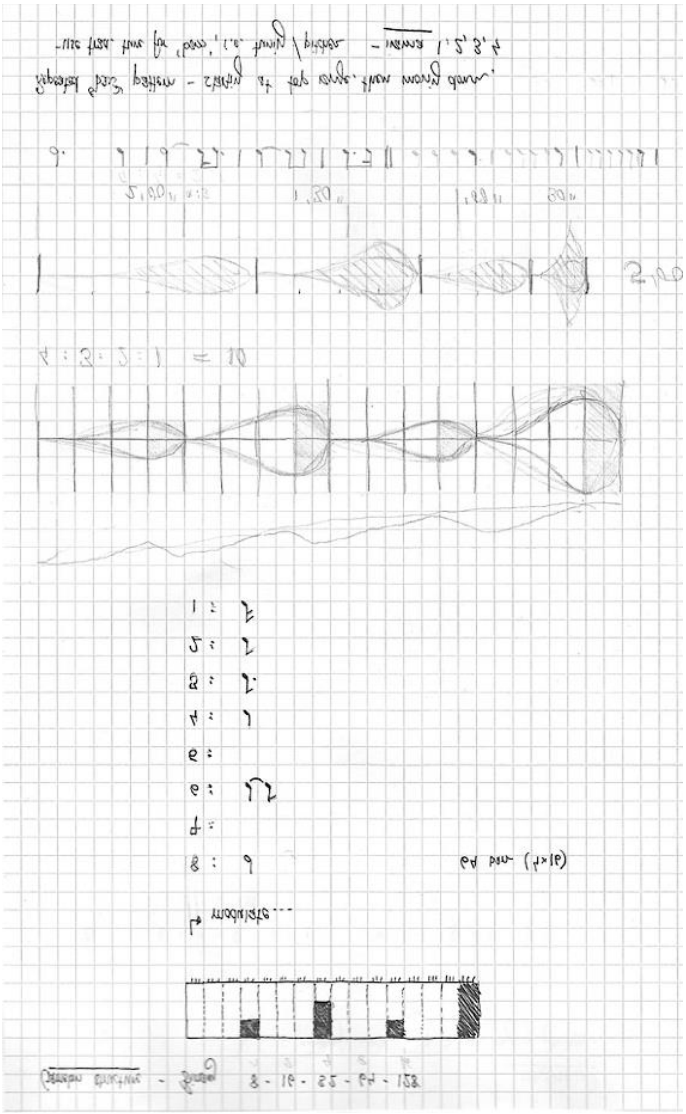

Figure 4. Sketch for 'for Hong / canopy'

Its proportions shape time in what could also be described as a kind of fractal form. This is consistent with several other pieces in this portfolio: 'rotations', 'aus dem Leeren', 'Piece for Drum Kit', and 'piece for Gamelan and Viol Consort'. In all these pieces, time is distorted through the use of the same number of events occurring within any given segment or section, regardless of the duration. In 'for Hong / canopy', the shortest section occupies fifteen seconds; the longest, one minute. This procedure, in the abstract, of course, produces a form of repetition. However, in practice, the differing durations — and especially the very long durations at the start and the end of the piece — obscure this. In contrast to the short sections, in which events have a recognisable pattern, the long sections contain events that are so widely spaced that no patterns are discerned, thus creating a degree of disorientation in the perception of time: there are only sounds, interrupted by silences, and all differ in length.

Research into music and time perception shows that when a piece ends at a moment when the audience expects it to, the duration is estimated more accurately than when it ends earlier than expected, in which case the piece is perceived to be shorter, or later than expected, in which case the piece appears longer.[66] In this case, from a listener's perspective, it might be unclear whether the piece has finished or not. How long can a silence be sustained before the intervention ends? Hence, in a sense, 'for Hong' attempts to become part of a time-space that, despite the very brief duration, allows audience members to 'get lost' in and emerge from with little sense of how much time has passed.

[66] Leandro A.S. Pereira, Danilo Ramos, José L.O. Bueno, 'The influence of different musical modes and tempi on time perception,' *Acta Psychologica*.

4.3 ‘Piece for Drum Kit’

Created in collaboration with drummer and percussionist Andrew Blackwell, ‘Piece for Drum Kit’ (2019) followed directly after ‘for Hong’, and the two pieces are related in their format and their approach to time. This piece, too, was the result of a commission that called for a short, solo, concert piece, and it, too, is based on the idea of a sonic intervention as something fleeting. ‘Piece for Drum Kit’ also uses a fractal structure, in this case consisting of three sections, and it, too, contrasts fragmented sounds (in sections 1&2) with more continuous ones (section 3). In contrast to the previous piece, however, ‘Piece for Drum Kit’ uses very fast tempo markings, which become even faster throughout its duration. However, due to the use of silence, particularly in the first section, the music often doesn’t seem fast-paced; instead, it grows gradually, and it is only during the course of the second section and at the end (bars 260-300) that its intense pace is truly revealed and even highlighted. Therefore, the effect on time perception is a gradual slowing down over the course of the piece. This shape was very much inspired by Hindustani ragas, which are a frequent fixture on my personal playlist and which I have also experienced in live performances on several occasions. The intensification and the loud, euphoric ending in this piece were in many ways a sort of tribute to the often euphoric and joyous finales in raga performances.

In terms of the instrumentation, the opportunity to write this piece fulfilled a long-term personal goal, since I had grown up around the drum kit and therefore felt a particularly close connection to and affection for the instrument. Thus, a significant part of the writing process involved re-visiting recordings of classic Jazz drummers such as Art Blakey, Max Roach, Buddy Rich, Tony Williams, and others, that I had grown up hearing regularly. However, from the outset, I wanted to avoid simply creating a showpiece by essentially ‘writing out’ a jazz solo. Instead, the aim was to make something that would capture some of the trance-like energy, excitement, and euphoria of a

great jazz drum solo through a carefully structured build-up and that would, at the same time, explore elements of ritual through repeated yet always slightly varying and intensifying gestures.

While, as already mentioned, 'Piece for Drum Kit' is closely related to 'for Hong' in terms of its structural simplicity, raw materials, and compositional approach, it could in some ways also be seen as a 'sister piece' to 'rotations': like 'rotations', it is based upon a Turkish rhythmical mode — in this case, the *Çenber usul*.[67] *Çenber usul* was used in this piece in a way that also resembles 'rotations': at first, only fragments of the mode appear, with full statements emerging more and more as the piece progresses.

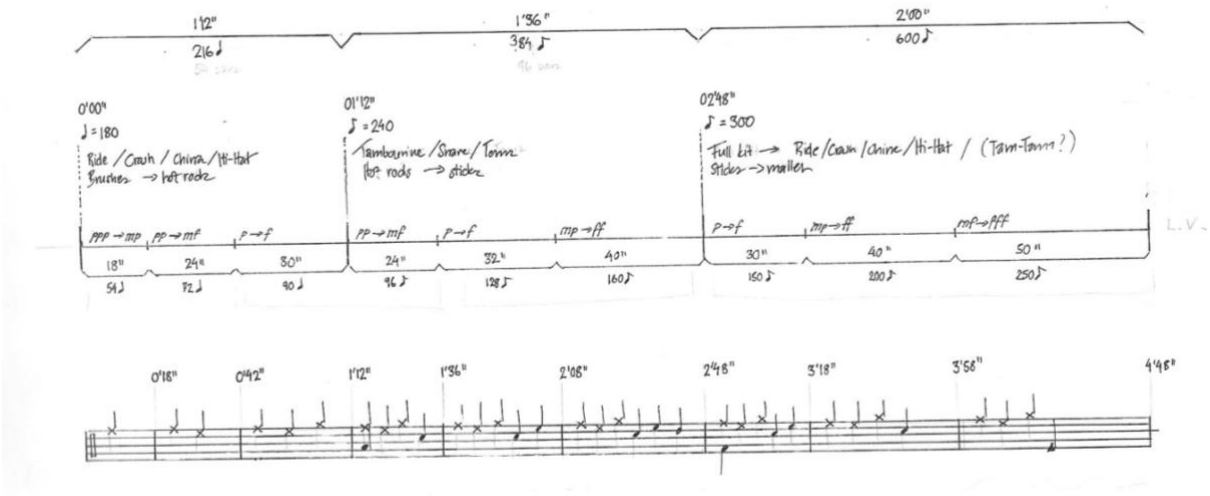

Figure 5. Sketch for 'Piece for Drum Kit'

As described in chapter 1, the crystallisation in 'rotations' occurs just after the halfway point, with the *usul* subsequently 'disintegrating' or dissipating again until it is once more completely unrecognisable at the end of the piece. In 'Piece for Drum Kit', on the other hand, the crystallisation process continues throughout, with the *usul* emerging only at the very end, forming what is,

[67] In this case, the mode also alludes to the connection between Turkish music and the evolution of the drum kit (specifically in the incorporation of cymbals) and to the use of Turkish and Balkan rhythms in Jazz drumming.

essentially, a sort of euphoric 'finale'. Because the mode is not layered (as it is in 'rotations'), it becomes easily recognisable as the piece progresses. (In the very final section, however, the rhythm is played on freely ringing cymbals, which blur and therefore obscure it to some extent). Thus, in an open space, it potentially begins to slowly and gradually capture the bystander's attention. In a concert hall situation, where the attention is inevitably already focused on the performance, the increase in intensity leads to time subtly being altered over the course of the piece.

In terms of its structure, 'Piece for Drum Kit' also mirrors 'aus dem Leeren'*:* it has three sections that remain essentially the 'same' in shape and content but proportionally expand in time over the course of the piece. (See Figure 5) However, the way in which the structure keeps building and building towards the very In that way, 'Piece for Drum Kit' also sits in direct contrast to its predecessor ('for Hong / canopy'): while both approach a sonic intervention in time as something momentary and understated, 'Piece for Drum Kit' tries to obscure its presence only to emerge fully at almost the very moment it completely disappears again. In a sense, it therefore tries to recreate a situation where a slowly emerging, or approaching sound is perhaps most intensely felt at the moment it is no longer present. The intervention in this case is perhaps therefore most impactful after the fact than during the performance itself.

At approximately 4'45", 'Piece for Drum Kit' is the shortest piece in this portfolio and therefore illustrates perfectly the challenges in terms of playing with time-space, perhaps even more so than in 'for Hong / canopy'. It resembles all the previously discussed pieces in that it tries to create time space by utilising proportion in a fractal form. However, its approach is comparatively reductionist. In 'rotations', the structural units were layered on top of each other; in 'aus dem Leeren', they overlapped. And although 'for Hong / canopy', more straight-forwardly, simply placed one section after the other, it nevertheless created a degree of diffusion by using a relatively large number (8) of sections as well as by avoiding a regular pulse. Both of these mitigating factors are absent from 'Piece for Drum Kit', which contains only three proportionally expanding sections and is built on a regular pulse derived from a rhythmic mode. It is true that each of the three sections contains fractal material that is treated much like in 'rotations'; those units, in isolation, are thus

longer and therefore somewhat more complex than the units in 'for Hong / canopy'. But the concept remains*:* the first section is fragmented (and therefore slow) and the music gradually crystallises over the course of the piece while always maintaining the same basic 'skeleton'. The first section is perhaps the most successful; as in 'aus dem Leeren'*,* the use of isorhythmic elements, specifically the idea of *colores* and *talea,* creates a continuum that is repetitive and at the same time constantly shifting. Together with the sparseness of the gestures, this creates the desired time-space. The rhythmic mode then gradually emerges, as was, of course, intended. However, the rhythmic drive thus created results in a sort of linear narrative that counters the sense of time-space. This very obvious trajectory results above all from the brevity of the piece, which makes it extremely difficult to make the emergence of the mode truly gradual and, ideally, unnoticeable. A larger time frame would allow the narrative to be expanded, so that the trajectory could become less obvious and more playful — as is the case, for example, in an extended raga performance — and therefore less obviously goal-oriented. One playful element could include alternately revealing and obscuring the rhythmical mode over a longer stretch of time before it emerges completely. With a longer duration, similarly, the 'finale' could be much more drawn out.

4.4 'piece for Gamelan and Viol Consort'

Both pieces discussed thus far, 'for Hong / canopy' and 'Piece for Drum Kit'*,* addressed the challenges of creating sonic interventions within a context where there are multiple constraints: on time, space, and instrumentation. Both use fractal proportions and contrasting types of sound (fragmented, continuous) to play with a sense of time: 'for Hong / canopy' approaches the idea of sonic interventions in time as something momentary, by consciously incorporating elements that may make the already short timespan appear even shorter: the use of slow duration in combination with a short timespan may make the piece end sooner than expected, which further enhances its

fleeting nature. 'Piece for Drum Kit', meanwhile, explores an increase in intensity to create shifting perceptions of time.

The opportunity for a more extended exploration of approaches to time arose with a piece for gamelan and viol consort (2019-20) — the final work undertaken for this portfolio. This piece was commissioned by Gamelan Sekar Petak and the University Consort of Viols for their joint concert on 13 May 2020 at the Sir Jack Lyons Concert Hall at the University of York (an event that was later postponed indefinitely due to the pandemic). The concert as a whole was based on a short extract from *The World Encompassed,* the memoir of the Elizabethan explorer Francis Drake wherein Drake recalls musical exchanges that took place between himself and Raja Donan of Java in 1580:

> One day amongst the rest, viz. March 21. Raia Donan coming aboard us, in requital of our musick which was made to him, presented our generall with his country musick, which though it were of a very strange kind, yet the sound was pleasant and delightfull.[68]

This text played a similar role in the composition of this piece as did the theme of the 2018 Bangor Music Festival for 'rotations': it provided a sort of framework of moods and ideas that helped in making decisions but was in no way a concept that the audience should somehow learn and apply

[68] Sir Francis Drake, d.1637, *The Vvorld Encompassed by Sir Francis Drake being his Next Voyage to that to Nombre De Dios Formerly Imprinted / Carefully Collected Out of the Notes of Master Francis Fletcher … ; Offered Now at Last to Publique View, both for the Honour of the Actor, but especially for the Stirring Vp of Heroick Spirits, to Benefit their Countrie, and Eternize their Names bu Like Noble Attempts ; Whereunto is Added the Third Voyage made by Sr. Francis Drake to the West Indies, in which He Tooke Nombre De Dios, with 52 Others in His Company* [World encompassed by Sir Francis Drake.] 1628. Available at Early English Books Online. Accessed Jul 20, 2021. https://www.proquest.com/books/vvorld-encompassed-sir-francis-drake-being-his/docview/2248541117/se-2. 107.
(Drake offers no further description of the music he heard, but it is compelling to think that this account refers to an encounter with Javanese Gamelan.)

to ‘understand’ the piece. From Drake’s encounter there emerged, for me, several topics: the surprise encounter with something new and unfamiliar — indeed, something ‘very strange’, which can nevertheless be perceived as ‘pleasant and delightful’ — and the function of musical experiences in real-life situations, both of which directly related to my research. Even more significant, though, was the idea of the vastness of time and space (in the sixteenth century, the vastness of the ocean and the time needed to cross it), and visual ideas, such as an unending expanse of water seen from the perspectives both of a seafarer and of an island inhabitant.

Thus, a loss of sense of time (and, potentially, space) again forms the fundamental idea of this piece. However, at least thirteen minutes long, ‘piece for Gamelan and Viol Consort’ differs significantly from the previous two pieces in the way the sonic intervention is achieved and perceived. Unlike ‘for Hong/ canopy’, and ‘Piece for Drum Kit’, the idea of an intervention here is not as something momentary, but as something constant; its larger scope and longer duration (which can also be extended at the player’s discretion), play a significant part in establishing a sort of vast, almost empty time-space that this piece would create and simultaneously be a part of. At the same time, it uses many approaches already utilised in ‘for Hong / canopy’ and ‘Piece for Drum Kit’, such as fractal structures, and contrasting sections of less and more active material. Thus, most of the piece manifests a combination of relatively long timespans with very little evident ‘activity’. At the same time, *garap* (see below) is implemented to varying degrees, providing an ebb and flow of activity over the course of the piece.

Like ‘Piece for Drum Kit’, ‘piece for Gamelan and Viol Consort’ is characterised by a very noticeable, steady pulse.[69] In both cases, this pulse is derived from borrowed ideas or materials: in ‘Piece for Drum Kit’, the Turkish *cenber usul*; in ‘piece for Gamelan and Viol Consort’, the gamelan itself and traditional gamelan playing, which underpins the piece and is combined with the kind of proportional relationships used in all the previous works. The building blocks for the piece thus are elements typically found in traditional *gendhing* (composition for gamelan): it starts with a *buka* or

[69] in this, both pieces differ from the pieces discussed earlier in the commentary, including ‘for Hong’.

introductory section, and this is followed by the main elements of the composition, the *ompak* and *ngelik*, which are repeated five times. As in traditional gamelan performance, each of the *ompaks* can in theory also be repeated once, and the *ngeliks* can continue for any number of times at the ensemble's discretion (which of course then further extends the duration of the whole). The gamelan component has a basic, notated tune in the style of a *balungan*, and around this, the other parts (most notably the elaborated *garap* elements) are constructed by the players (that is, they are not written out explicitly). The five iterations of *ompak* and *ngelik* are progressively and proportionally contracted, which again draws a parallel to the 'Piece for Drum Kit'. At the same time, even this could be seen as an allusion to another element of traditional gamelan, the *irama,* in which the tempo relationships between *garap* and *balungan* shift. In gamelan performance, however, the tempo shifts occur in proportions of four — e.g., 4:16:32 — whereas in piece for 'Gamelan and Viol Consort', the proportional relationships are 5:4:3:2:1. Just as in 'Piece for Drum Kit', the intent is to slowly establish a sort of warped time space by means of a very slow, almost static opening that distorts real time, and then to allow that to slowly unravel and accelerate.[70] Because of the much longer duration, however, the effect is different: the way in which the intervention unfolds is not fleeting as is the case with the previous two pieces. Instead, the ebb and flow, and the subtle increase (and apparent decreases) in tempo, allow for more of a continuous temporal disorientation.

Compositionally, the piece as a whole explores the meeting and merging of two different sound worlds — specifically, the parallels and commonalities, rather than the differences, between traditional gamelan materials and structures and historical viol consort music. Both musics evidence

[70] Because in this case the piece occupies a relatively large amount of time, this process was more effective; the duration of the slow 5/4 and 4/4 sections and the very minimal tempo difference between them allowed much more scope for the time-space to be established. Furthermore, the sense of time remained ambiguous in the 4/4, 4/8, and 4/16 sections (presented as 2/4 ad ¼ in the notated score) because the *irama* can be sensed as remaining the same (that is, the number of decorative notes in each beat may remain unchanged), while the tempo of the balungan changes.

a kind of egalitarianism: there is no conductor,[71] and many players are able to play several if not all instruments in the ensemble and to swap between them as necessary. More technically, both consort music and gamelan use set modes and forms, elaborated with interweaving counterpoint. However, the piece was meant to draw on traditional elements from both musics without 'recreating' or 'emulating' either style. I wanted to avoid this not only on ethical and aesthetic grounds but also because my knowledge was much too limited to achieve it, particularly for the gamelan.

Instead, as in 'for Hong / canopy', my focus was on the sounds of the two ensembles and how these would work together and complement each other in a performance — that is, in the time and space in which the piece would be experienced. The resonance of the gamelan instruments thus formed a sort of foundation upon which to build this sound-space. Decisions regarding pitch were guided by the tuning of Gamlean Sekar Petak and by my assumption that the viols would be tuned to 1/6 comma meantone. The former was particularly important, since there is no fixed tuning system for Javanese gamelans, and, as a result, the tuning of every individual gamelan is unique. The composition process, therefore, began with a very detailed analysis of the overtones of each of the gamelan instruments (in both *sléndro* and *pélog*) and a comparison of the results with the viol tunings. To maximize the blend between the two tunings, *pélog* was eliminated, as were certain pitches (most notably A) in the viols; others were selected to form the basis of the piece (see Table 2). Pitch B (or 6 in the gamelan) thus formed the overall basis of the piece; and each of the five sections of the piece emphasised the overtones of one of the gamelan's pitches respectively: 6; 3; 1; 5; and 2.

[71] In the gamelan, the drums act in a way that is comparable to a conductor, but they are not separated from the ensemble as the conductor of a Western orchestra does, nor do they direct the other player's interpretation of the music.

Table 2. Pitch analysis for 'piece for Gamelan and Viol Consort'

Pitch	A=415 (Hz)	Meantone (Hz)	**Hz (approx)**	**GSP Slendro**	**GSP Pelog**
F#5	697.9	702.3	**702**	**3H**	
			687		**3H**
F5	658.8	654.14	654		
			629		**2H**
E5	621.8	623.1	623		
			611	**2H**	
Eb5	586.9	583.97	584		
			581		**1H**
D5	554.0	552.84	553		
			531	**1H**	
C#5	522.9	524.22	524		
			507		**7**
C5	493.5	490.83	491		
B4	465.8	467.76	468		
			462	**6**	**6**
Bb4	439.7	435.86	436		
			433		**5**
A4	415.0	415.0	415		
			405	**5**	
G#4	391.7	391.22	391		
G4	369.7	368.31	368		
			353	**3**	
F#4	349.0	351.2	351		
			341		**3**
F4	329.4	327.07	327		
			314		**2**
E4	310.9	311.55	312		
			305	**2**	
Eb4	293.4	291.94	292		
			291		**1**
D4	277.0	276.42	276		
			265	**1**	
C#4	261.4	262.06	262		
			253		**7L**
C4	246.8	245.46	245		

B3	232.9	233.88	234		
			231	**6L**	**6L**

Consistent with the theme of the concert, the piece draws on elements of sixteenth-century English viol consort repertoire, particularly on the *In Nomine*. *In Nomine* refers to a compositional tradition that emerged in the sixteenth century and remained popular into the seventeenth. *In Nomines* are built around the *In Nomine* plainchant in John Taverner's *Missa Gloria Tibi Trinitas*,[72] which in most cases appears in the tenor line (as it does in the original).[73] This suggests another parallel between viol consorts and gamelans: the function of a cantus firmus in Renaissance counterpoint could be seen to parallel that of the *balungan* or 'nuclear melody' of the gamelan, in that both form a sort of skeleton around or from which the other musical material is built. Of particular interest to me was the *In Nomine* by an obscure composer named Picforth, which was also included in the concert programme. In Picforth's piece, each of the five parts is confined to a particular note value throughout; thus, the *in nomine* part is in breves, the second alto in semi-breves, the first alto in dotted minims, the treble in minims, and the bass in dotted semi-breves.[74] This creates a constantly shifting rhythmical continuum that, in some ways, is very reminiscent of gamelan music. In my piece, however, the *In Nomine* does not appear in the tenor; instead, it forms the basis of the *balungan*. The fifty-five bars of the original tune were reduced to a sixteen-bar *balungan* through several processes of diminution, extraction, and contraction that rendered it suitable to be played and elaborated by the gamelan musicians. The viols then pick out certain

[72] Warwick Edwards, 'In Nomine,' Grove Music Online, 2001, https://doi.org/10.1093/gmo/9781561592630.article.13804.

[73] John Taverner, *Missa Gloria Tibi Trinitas*, ed. Gervais O. Frykman, 2018, http://conquest.imslp.info/files/imglnks/usimg/5/59/IMSLP546624-PMLP767142-Taverner_Missa_Gloria_Tibi_Trinitas_GOF.pdf.

[74] Picforth, *In Nomine à 5*, British Library Add. MS 31390 (c.1578), ed. Allen Garvin (2017) https://imslp.org/wiki/In_nomine_(Picforth).

overtones of the *balungan,* again based on the go-to chord, and drawing them out, create a sort of continuous sound wall that at the same time subtly shifts and becomes more dynamic as the pace of the piece picks up. This not only creates the sort of constant continuity that contrasts (and at the same time binds together) the more fragmented gamelan sections, it also tries to play with the sonority and reverberation of the gamelan within the surrounding space. In 'piece for Gamelan and Viol Consort', therefore, the idea of an intervention into time (expanding and contracting sense of time) is thus combined with the concept of intervention within a given space. This interplay between the two will be further discussed in the following chapter.

5. Time-Space

5.1 Introduction

As shown in the previous chapters, the circumstances imposed by accepting commissions that require an unalterable concert-hall setting and restricted durations presented a challenge when it came to fulfilling the aims of this research project. All of the pieces in some way highlight issues relating to what I refer to here as 'time-space'. Restrictions in time — a short piece that is set among eight or nine others on a single programme — are similar to restrictions in space — a concert hall that is focused entirely on the work. Both make 'the work' into an isolated entity that, although part of a programme, is separated from other works and from the physical context. Each piece, in some way, therefore, in addition to playing with physicality, attempts to disguise the passage of time. In 'rotations', the same rhythmic mode was layered seven times on various proportional scales (1:2:3:4:5:6:7). In 'aus dem Leeren', there are four overlapping sections that all follow an identical structure but again have different proportions (3:2:1:3). Material that would have otherwise been similar or even identical was stretched and contracted to fit into different time frames. In both pieces, the layering proved essential in disguising time and obscuring narrative

In the case of the following two pieces, 'for Hong / canopy' and 'Piece for Drum Kit', the commissions specified even more restrictions in terms of timescale, and also in terms of instrumentation. The question as to whether an intervention in time can be achieved through purely musical means without altering the limitations the curator(s) or commissioning artist(s) have established about duration or the performance environment became even more prevalent. The concept of an intervention into a time-space, or a moment, that is so fleeting that we only fully perceive it once it has almost passed, thus became one of the focal points when writing these pieces.

Instead of attempting to stretch perceived time, the structure and material in a way accentuate their momentary nature. The same structural concepts were then applied to the much longer and more expansive 'piece for Gamelan and Viol Consort', creating an intervention focused more on continuity and a gradual sense of temporal disorientation.

This chapter picks up and elaborates on the idea of a sonic intervention as a more constant presence within an open, public, informal space, as opposed to a momentary encounter within a formal space. Focusing on the issue of contexts for performance, it discusses two pieces that were specifically designed as extended performances or installations to be presented in spaces that were not concert halls. I explained in Chapter 1 that exploring performance possibilities outside a concert-hall setting was very much a priority at the onset of this project. Therefore, although chronologically these pieces are not the culmination of my research, they most closely represent what I was aiming to achieve with this project: both pieces are the results of multidisciplinary collaborations, and both pieces are flexible in terms of duration and space. Both are for fixed media, with or without live components. Nonetheless, they exhibit certain similarities to the notated pieces: both tend to use very limited amounts of material, which is recycled again and again not only within a piece but also across different ones. Both also utilise proportional relationships, patterns, and structures based on isorhythmic ideas. And in both cases, these are purely compositional devices that do not hold any specific symbolism and are not intended to be consciously 'perceived', let alone analysed by the listener. The technology used was mostly very limited: all the recordings were made using an old Sony MP3 player without an external mic, and the processing was done in Reaper. This followed in part from a lack of financial resources, but I was also perfectly happy embracing a more homemade, 'rough-and-ready' aesthetic.

In terms of time and space, the pieces presented the possibility of facilitating more spontaneous encounters with the interventions and the environment they inhabit. In both cases, the performance space is left open, allowing visitors to come and go freely. Additionally, their very long durations (six hours in case of the former, and indefinite in case of the latter) make it unlikely that any given individual will experience the performance in its entirety, which in turn eliminates the

sense of there being a beginning, middle and end. Even if someone is present for the entire duration, the material is composed in such a way that it attempts to diffuse any sense of narrative, which, in combination with the very long duration, also distorts the sense of time.

5.2 *passage*

passage (2017, for fixed media and performer) is a six-hour-long site-specific piece created in collaboration with dancer and performance artist Marega Palser as part of a PRS-funded research and development project. Chronologically speaking, it was the first piece made as part of this degree project, and it already incorporated many of the elements that I wished to explore, both musical and extra-musical. It directly preceded 'rotations', and the two are in many ways closely related, although the performance contexts were very different. Both pieces attempt to create a sonic intervention within and as part of a space in which most of the musical content could, in theory, be perceived simply as ambient. In that sense, they are both more like installations than performances. Both follow a clear structure, though this is obscured so that it is not immediately obvious to a listener, who might hear the result more like a soundscape. However, 'rotations' was created solely by a composer and its physicality and immersion were limited to the composition itself; *passage* was a project where space, sound, movement, and lighting were all components of the intervention and were decided upon in collaboration with the performer.

Experiencing *Like Watching Paint Dry* (mentioned in the introduction) was a significant influence towards wanting to create related sonic and multi-sensory environments. This preoccupation then became the driving force when the opportunity arose to create *passage*. The performance space and its characteristics were among the main starting points for the piece. The room itself — the basement of the Riverfront Arts Centre in Newport, South Wales — is angular, with black brick walls and a metal walkway that leads along one side, adding to the industrial

ambience. Because it is a basement, it feels quite oppressive and almost like a tomb, despite its large size. It also stands in stark contrast with the rest of the (very bright) arts centre. The development of this piece — the collection and distribution of musical material — was informed not only by consciously considering the atmosphere of the room but also by a strong, subconscious 'feeling' that came about 'organically' just by spending time in the basement: once inside, it is easy to quickly feel detached, somehow, from the outside world.

It quickly became evident that, to create an intervention in this particular space, something durational, installation-like was essential — a piece that was conceived as part of the environment, rather than as a 'work'. Something that would be present for long enough that visitors could discover it without having to be actively invited into the space. Ideas about 'ritual' also entered into this: at the time (the very start of my PhD), the concept for this portfolio was to create a series of pieces that would, at the end, become part of a large, twenty-four-hour performance-installation event (see chapter 1). The long, cumulative piece would be based on the idea of circadian rhythm, an idea that arose from rituals that celebrate or mark time, whether specific times of day (as are celebrated in monastic offices, for example) or recurring festivals that are linked to the passage of time (harvest, mid-winter, mid-summer, and so on). The piece would be designed to mark, or accompany in some way, the times of day during a twenty-four-hour period. The audience would be free to come and go as they pleased; they would also be able to sleep or rest during the performance.

In this context, the six-hour duration of *passage* was chosen to fill (in theory) the six hours between midnight and 6 a.m. (which, in the Christian Catholic tradition, are marked by the celebration of Matins at midnight and Lauds at 3 a.m.) During these hours, there typically occurs a 'passage' from sleep to waking. The piece itself is built as a kind of 'time microcosm': it consists of six segments, during each of which the passage of time is enacted — beginning in darkness and progressing towards light, then fading back to darkness. Lasting exactly one hour, these segments act as a sort of living (sounding, moving, breathing) clock. The repetitiveness allows the passage of time to be subconsciously felt rather than counted; one simply 'is' until the bell sound emerges once again, marking the passage of another hour.

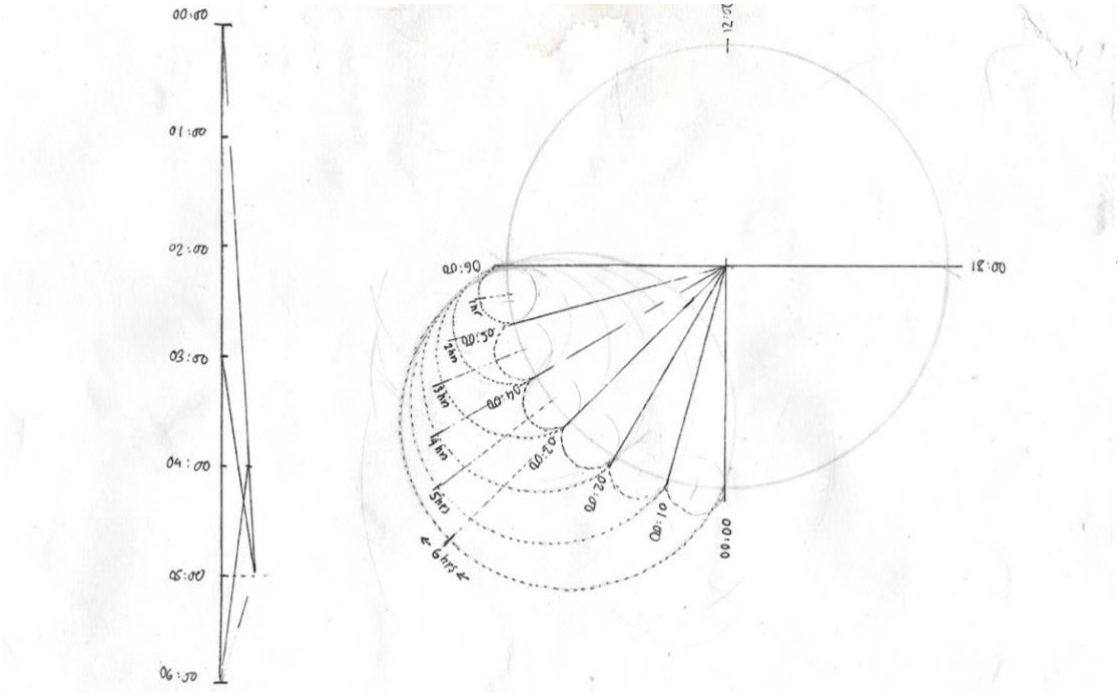

Figure 6. Conceptual sketch for *passage*

Because the segments last an hour, as opposed to a few minutes or even seconds, they are not recognised immediately or, indeed, recognised at all (for example, if an audience member experiences the space/intervention for less than two hours). In either case, to perceive the repetition, a person would have to spend a significant amount of (continuous) time in the space. Whether this happens, however, is something beyond my own or the performer's control, since there is no obligation to remain for any specified amount of time. Thus, as mentioned in the introduction to this chapter, the patterns that result from repetition are obscured. In this way p*assage* anticipates 'rotations', which was the next piece composed: in the same way that some of the 'fragments' used in that piece are too 'big' to be perceived, the structure of *passage* is, potentially, too long for an audience to become consciously aware of it. This further enables it to become just a feature of the space, rather than something that demands conscious scrutiny.

The primary sound source in *passage* was a recording of a church bell, which was subsequently also used in 'rotations'. By stretching this short snippet to various lengths, a sort of mensural canon was constructed. As in 'rotations' and also in 'Piece for Drum Kit', this fragment undergoes a process in which it is very obscured at the beginning and gradually revealed as the piece progresses. In this case, the church bells first appear as an almost breath-like noise that forms a sort of pulse. They then become increasingly recognisable as church bells as the piece progresses towards the halfway point, by which they appear in their (almost) original shape; as the full hour approaches, the bells fade out into birdsong, and the process begins again. A second sample that plays an important, percussive role in the piece is a recording of the dancer's feet actually performing some of the moves of the piece. This material was recorded in the actual space and creates a sort of glue — a blurring of boundaries — between the space, the sound, and the performer. Although the movements and the sounds are linked, it is clear that they are not perfectly synchronised. The progression of the bell-sound is mirrored in the lighting for the piece, which consists of just two spotlights, one on each side of the performance space or 'stage'. Over the course of the first half of the piece, as the sounds become increasingly recognisable as those of a bell, one light slowly fades in. When it has reached its full glow, the other light begins to fade in; as it does so, the other fades out. Thus, the lights follow the arch-shape that is already present in the audio track.

As explained above, *passage* was initially intended for performance between midnight and 6 a.m., as part of a larger event. On this occasion, however, the performance took place from 12 noon until 6 p.m., as an isolated event. As part of a research and development showcase, this was deemed more practical and more likely to attract visitors. Length of attendance time varied, as expected; some visitors stayed for only a couple of minutes, while at least one stayed for more than two hours. The performance itself was not publicly promoted (partly because the project was not, in a conventional sense, 'finished'), and this meant that there were relatively few attendees. However, this approach also meant that the piece functioned more effectively as a true intervention; not only an intervention in the performance space itself, but an intervention in the environment of the Riverfront as a whole. It was present for a continuous six-hour period and was easily accessible to

anyone who visited the arts centre during that time. However, the number of people who noticed that something was happening in the basement — or noticed and then also chose to explore — was purely accidental.

5.3 *Linear Expansion*

I chose to discuss *Linear Expansion* (2018-19, for fixed media) as the final piece in this portfolio, not only because it perhaps comes closest to what my aims for this project were at the outset, but also because we had the opportunity to show it in a variety of different settings, which highlighted the importance of context (and interaction of material with context) in the effectiveness of sonic interventions. *Linear Expansion* is an audio-visual installation piece devised in collaboration with artist Andrew Bolton, with whom I had previously worked on the *Newport Empty Shops Project* in 2010 and 2012, respectively. As mentioned in the introductory chapter, it was the 2010 project in particular that strongly shaped the ideas that underpin the present portfolio. Created in autumn 2018, about one year after *passage*, *Linear Expansion* was part of a research and development project funded by ACW (Arts Council Wales) working towards a larger, ongoing project by Andrew called Glimmer, which aims to explore and re-create aspects of sensory disturbances that he experiences as a result of a neurological condition. These include what he describes as 'blackouts, whiteouts and a sense of being absent, or moving to another place';[75] and they are also linked to 'the widely reported phenomenon of a sense of 'connection with the universe' at the onset of a neurological episode.' [76] In describing the project, Andrew quotes Dostoyevsky's The Idiot: 'All of a sudden, something seemed to open before him: a strange inner light flooded his soul.' All these ideas and references, of course, resonated very strongly with my own interest in exploring the connections between mind and body and between sensory impulses and perceptions.

[75] Andrew Bolton, 'Glimmer – an ongoing project.' *Andrew Bolton artist*, http://andrewboltonartist.co.uk/glimmer/4594708299.
[76] *Ibid.*

Once again, the concepts and materials used are very simple. As discussed already, fractal forms underpin many of my pieces, but in this case, it was Andrew who proposed using fractals to explore sensory disturbances. The correlation with my approach was just a happy coincidence. Andrew's animation is built from a series of pencil drawings of lines that expand and contract in a fractal-driven pattern (hence the title). This oscillation, together with a process that causes the image constantly to flicker and shake, represents his experience of sensory disturbances. In response to this, the music draws on three common auditory phenomena that I myself have experienced: (a) what one might term auditory 'white-outs', in which the sounds of one's surroundings seem to be numbed and replaced by a faint, muffled, high-pitched tone; (b) the sensation that everyday environmental sounds have suddenly become extremely chaotic and amplified or, conversely, very muffled and distant; and (c), hearing a familiar voice or voices, even though the people from whom the voices normally would emanate are nowhere within hearing distance.

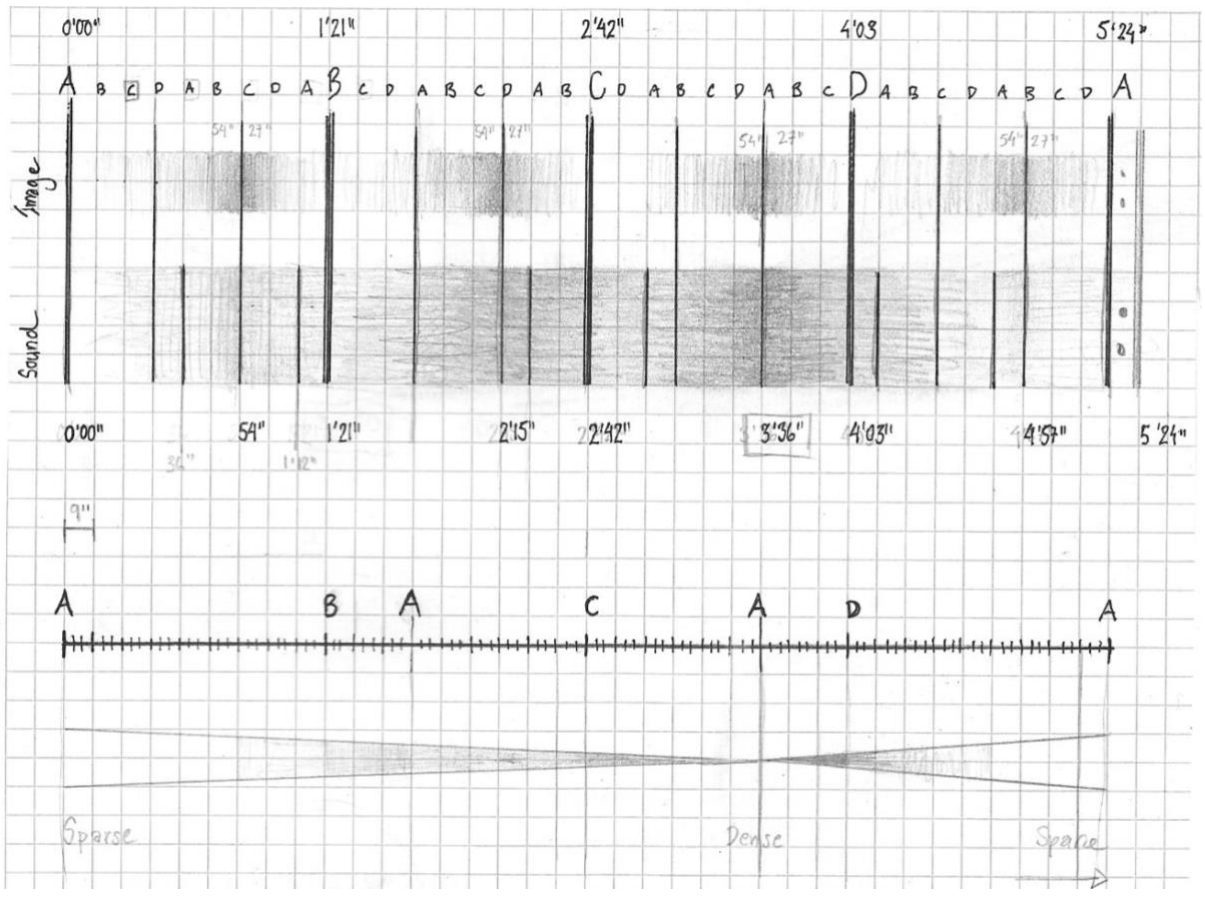

Figure 7. Sketch for *Linear Expansion*

The temporal parameter of the score also consists of fractals, thus mirroring and simultaneously forming an extension to, Andrew's animation. However, one iteration of the animation lasts 1'21", while one iteration of the audio track lasts 5'24". The structure of the audio track is identical to that of the animation, with the densest part occurring about two-thirds of the way through the respective materials (at 54" in the visuals, and at 3'36" in the audio). The audio track is divided into three units (A, A, A) and into four units (A, B, C, D), creating overlapping sections rather like 'aus dem Leeren'. The proportional relationships both between the audio and visual materials and in the audio track itself were first sketched out as a drawing before the audio materials were combined and manipulated in Reaper (see Figure 7).

As mentioned above, we were able to show *Linear Expansion* in three very different locations within very different contexts, thus making the piece particularly relevant to my overall research project. The premiere, on 5 May 2019, took place at the Stained Glass Centre, a deconsecrated medieval church in the centre of York; the second showing was at the University of York's Rymer Auditorium, a seated, black box theatre and performance space; and the third was in a small gallery called Canfas in the Canton area of Cardiff on 29 August 2019. I was lucky to be able to work with Jon Hughes and Lynette Quek, both of whom helped me to create different ambisonic versions of the piece — one with eight speakers, one with twenty-four, and one with six — for each of the three showings, respectively.[77] The performance at the University of York, which utilised twenty-four speakers, also included an optional double bass part, which I subsequently decided not to include in the piece. Given the concepts underlying *Linear Expansion* and this portfolio in general, ambisonic systems were directly relevant to my research. They offered the opportunity not only to work with sound within space but also to manipulate and accentuate the sense of space through sound

[77] The use of ambisonics had already arisen in discussions with my supervisor regarding *passage* and *rotations*, although the opportunity to do this in practice had not previously arisen.

dissemination. At the same time, they again revealed the importance of the space itself in shaping an audience's experience. For example, the York facility, with its twenty-four speakers supplemented by sub-woofers, appeared to be the most enticing, offering the greatest number of possibilities on a purely sonic level. However, spatially, that facility presented a problem in that the black-box theatre, containing rows of seats facing one single screen, inevitably directed attention towards one focal point; instead of being able to move freely within the space, most attendees therefore instinctively either sat in the seats or stood at the back of the room facing the screen. Thus, despite the elaborate audio capabilities, the effect was much more two-dimensional and work-focused than in the performances that used more limited technology. The smallest of these was at Canfas Gallery, a small space on the ground floor of a terraced house, which utilised only six speakers. In this case, visitors were unhampered in their ability to move around the space, and the presence of other artworks in the same gallery, as well as the placement of the screen, which was not flat but turned around a corner, meant that the piece was not the primary focal point of that space. The intended intervention was thus much more effectively achieved.

The performance at York's Stained Glass Centre, which was part of Move|Meant, an event curated by fellow composer James Redelinghuys, was arguably the most successful. Similarly to *passage,* the door to the venue was open to the street, making it possible for passers-by to spontaneously wander in, and because of the size of the space, visitors were able to explore it freely, alone or in groups. The eight speakers might have seemed relatively limited given the size of the venue, but the acoustics of the church further enhanced the effects of the ambisonics: as documented in the second accompanying video of this piece, the sounds present in the soundtrack itself blended into the very sonorous space in a way that blurred the lines between what was electronically created and what was the result of the surrounding space. Moreover, the visuals were not seen only on one screen but were projected onto several surfaces, which contributed to a more spatially expansive experience. Thus, the interaction of the visuals with these surfaces meant that they at times blended into their surroundings (with lines, for example, appearing as a flickering continuation of columns or windows), and at other times contrasted with them (see *Linear*

Expansion, video 2). For these reasons, the piece functioned as most effectively as an intervention in dialogue with the ambience and architecture of this particular venue.

6. Conclusion

This project grew out of two primary influences: the experience of being part of the *Newport Empty Shops Project* in 2010, and the research I conducted for my master's dissertation in 2013. It was further fuelled by a continuing preoccupation with questions about the function and purpose of music and its effect on social dynamics.

Thus, this PhD project sought to investigate how music interacts with wider contexts and environments, and how these various components may be combined in order to create pieces that blend into and become part of a wider context. The project focused specifically on the physicality of music (or sound) as one element of physical space that interacts (in other words, is experienced together) with other sensory impulses. It also explored how the way in which sensory impulses (sound, specifically) interact with time within that space. A major factor in wanting to explore music as an element of a wider experience was to challenge the intellectualisation of music (specifically in the behaviours expected of the audience) and to explore the possibilities of contemporary music created for a less constrained social context. If music is to be simply *experienced* — indeed, just one sensory component of a more inclusive experience — to require a deeper understanding of the 'work' in terms of technique and approach would actually impede the audience's ability to perceive it directly. The simple fact that music *is* means that it is experienced; how this experience is perceived depends partly on the musical material but also on the wider context and each audience member's own, individual character and taste. The 'accessibility' of the music derives from the combination of all those elements, not just the music alone. In considering music (or sound) as just one element of a broader, embodied experience, the project stood in opposition to the notion that to appreciate music — classical and contemporary classical music specifically — one must 'understand' it conceptually and intellectually. By extension, then, it challenged the notion that the *experience* of music requires any kind of 'appreciation of the work' at all.

In its early stages, the project quickly centred on multi-media and multi-art projects; the aim was to present these in non-traditional performance spaces that would enable the audience to engage in more intuitive, less restricted, choreographed, and scripted ways. Thus, the first piece, *passage*, was a six-hour performance/installation at which the audience was free to come and go and to sit, stand, or lie as they pleased. The long-term objective then was to work towards a twenty-four-hour installation piece, during which musicians would work in shifts (interspersed with electronic pieces) in a space that allowed the audience to come and go freely and also to sleep. However, as the PhD proceeded, several opportunities arose to accept commissions for pieces that were required to be very much in the realm of classical 'concert music'. This posed a challenge: To what extent would it be possible to explore the idea of sonic interventions within such a constrained context? Certain features of the concert hall—seating arrangements that restrict the audience's movements and a focus directed solely at the stage and therefore on the 'work' — together with the ritualised way in which audiences have been conditioned to behave, seemed directly opposed to the ideas underlying the initial research plan. The attempted solution, in the pieces of this portfolio that were written with concert halls in mind, was to play in various ways with the audience's sense of time and space. The objective was to create music that would somehow grow out of and exist as part of the space, without drawing too much attention to itself.

As I had expected, the concert pieces posed more of a challenge compared to the multidisciplinary pieces when it came to creating sonic interventions; the exploration of both physicality and space, and perception of time was insightful and the pieces in themselves achieved what they had set out to do to some extent, by, for example, highlighting the more physical aspects of music, avoiding narrative, creating sounds that could be perceived as part of a wider soundscape, and playing with perception of time. In doing so, they sought to allow the listener to perceive them as an element within a wider experience. However, the context of a concert hall still meant that the true intended effect of an intervention was not achieved to the same extent as was the case with the multidisciplinary pieces. As already discussed at the beginning of chapter 5, the concert hall context presents pieces of music as isolated entities, 'works' to which attention is inevitably drawn

in various ways (e.g via silence, and by placing the performer in front of a seated audience, and so forth). This effect is perhaps exacerbated when the piece is of very short duration, although the pieces all sought to address this issue in various ways by using compositional devices that play with the perception of time.

The pieces discussed in chapter 5, by contrast, represented a freer approach, where there was more opportunity to let the sounds (and visuals) interact with their surroundings. In *passage,* the performance was concealed, in a way, within a building, which meant that there was a possibility for discovery, but also for it to remain hidden. In addition, the piece was site-specific, responding in various ways to the space surrounding it. *Linear Expansion* meanwhile, was presented in three different contexts, which highlighted the stark differences in how a piece may function (or fail to function) as an intervention. In its most successful version (at the Stained Glass Centre in York), the architecture and acoustics were such that it managed to effectively blend sonically, as well as visually, into its environment.

Overall, the project addressed the topic of sonic interventions in more ways than it had originally set out to do, namely within a traditional concert hall, as well as in less formal environments, as had been the initial intention. This challenge to widen the perspective on how the interventions could be achieved was largely insightful. Most significantly, it compelled me to consider how music interacts with its surroundings when there are few other sensory impulses. This, in turn, led to the exploration of perception of the body and of time through compositional means alone. Nevertheless, the limitations imposed on these pieces also highlighted the problems of attempting interventions within a formal theatre or concert hall setting. A silent space, where attention is inevitably drawn to one object (the 'work'), cannot replicate an open, public space, or place where one can move freely, and where infinite possibilities for spontaneous occurrences, sounds and other impulses exist and interact with each other. Moreover, on a more socio-political level, a concert hall, i.e. a closed space that one must enter into, and where certain behaviours and rituals surrounding a performance are expected, cannot replicate a spontaneous, unexpected encounter during an everyday routine such as walking through a public square. An interesting next step, therefore, would

be to present some of the pieces, especially the concert pieces, within different settings more akin to the *Newport Empty Shops Project.*

While an open-air performance may not be suitable for all instrumentations, there are various other locations where the public moves freely that could be considered. Thus, one could imagine a piece like 'aus dem Leeren' or 'piece for Gamelan and Viol Consort' creating an effective intervention within a busy shopping centre environment. Here, the relatively large set-up (and the music in itself) would be partially obscured by the surrounding hustle and bustle, but the resonance of the space would also allow for some of the sound to carry. An unannounced performance at a historical site such as York Minster might be similarly successful: the space is resonant, while the architecture is such that it would allow for the ensembles to remain completely or partially obscured. *passage* and *Linear Expansion,* which use speaker systems (and even ambisonics, in the case of the former), might blend even better into the busy environment of a train station, for instance. 'for Hong / canopy', by contrast, would require much quieter surroundings: an unannounced impromptu performance at a public library, for example, might function well as a sonic intervention. 'Piece for Drum Kit' would perhaps work best in an outdoor space such as a park but could also function well in an indoor car park or museum foyer, as would 'rotations'. Thus, while these pieces all work, in some sense, as concert pieces, their functions as sonic interventions in the 'outside world' require more careful consideration. In this context, they all become, in a way, site-specific: the success of each piece as an intervention depends on how its instrumentation, duration and the presence of other media or performative elements interact with certain types of environments. An interesting future project based on this PhD research would therefore be to curate various performances in contrasting places, exploring the way that the pieces interact with their surroundings, on a purely sonic level, as well as in terms of affecting the dynamics of the given space.

Unfortunately, some preliminary plans for organising such public performances during my final year of study were cut short when the COVID-19 pandemic precipitated the first full lockdown. Meanwhile, other circumstances have also made such explorations challenging. Nevertheless, these

remain very much worth addressing and warrant further investigation even after the PhD is concluded.

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