Locating Grunow and Oram after celebrating the Bauhaus Centenary: Using parallel canonisation as a curatorial method to re-establish marginalised figures

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Copyright Statement

Abstract

Bauhaus Imaginista was a global exhibition celebrating the centenary of the German art school, the Staatliches Bauhaus. Its final exhibition chapter, *Still Undead*, which focused on the impact of the Bauhaus in Britain from 1933, took place at Nottingham Contemporary between 21 September 2019 and 12 January 2020. This study worked with these exhibitions to revise two theorists' histories: Gertrud Grunow was an early Bauhaus master who used atonal music to establish links with colour and the natural world in harmonisation theory; Daphne Oram worked for the BBC in the 1950s and created a synthesiser, the "Oramics Machine". Both used visual elements in their sound practice and are linked by synaesthesia, and both were omitted from the centenary exhibitions. This thesis explores these figures, first establishing their theories through their respective archives. Using written source material, the aim was to piece together harmonisation theory and Oramics to establish them as composition methods to explore and recreate using contemporary practices. These were then used as the basis for a commissioned work, which is presented in the curatorial section of this practice-led project. The research focused on how best to showcase the two marginalised figures in conjunction with the work of two contemporary artists. In this "parallel canonisation" process, three curatorial theories – revisionism, anti-canonisation, and minor histories – were applied to actively disrupt dominant canonical representations. The theories were examined by commissioning an electronic artist, Afrodeutsche, to work with the archive materials, creating a new composition. This was then shared with choreographer Martin Tomlinson to create an accompanying piece. The final showcase took place on 7 October 2021, in *The Space* at Nottingham Contemporary. These two new works presented Grunow's and Oram's historical materials with modern digital tools and practices, and it used a rhizomatic curatorial process that could further the practice of revising marginalised figures.

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CHAPTER 1:
Introduction

Gertrud Grunow (1870–1954) was a music teacher and theorist who was responsible for developing a system called harmonisation theory – a system of producing creative balance within her students by using music to trigger movements that are responses to a set of colours and emotions. Her work spanned 60 years of development and, unfortunately, the unpublished manuscript of her life's work was destroyed by bombing during the Second World War. Until recently, very little was known about Grunow and harmonisation theory, and the remains of her legacy have been kept in the archive of the Staatliches Bauhaus, the German art school where she worked as a teacher from 1919 to 1923. Little has been done with this archival material or to establish Grunow's motivations for harmonisation theory; references to harmonisation theory have been limited to vague allusions to a teaching method that "worked between colour, sound, and movement".[1]

Figure 1 A portrait of Gertrud Grunow. Silver gelatine paper. Copyright Bauhaus Archive.

[1] Bauhaus Kooperation 2019.

Daphne Oram (1925–2003) was a music theorist, composer, and engineer who created her own synthesiser, the Oramics Machine. This instrument was unique in the way that it allowed the user to draw sound, using pen on 35mm film strips that the machine would read and convert into sound. The development of the Oramics Machine was Oram's main pursuit through most of her career, which started at the BBC in 1942. The BBC failed to support her interests in creating electronic compositions, as they believed that prolonged exposure to electronic music would cause psychosis.[2] Oram abandoned her newly founded Radiophonic Workshop in 1958 to pursue her passion for electronic music, and particularly the Oramics Machine. Unfortunately, while construction of the Oramics Machine was completed, it was not continuously in full working order, and the project proved too expensive to maintain. Little has been done with Oram's archival materials to attempt to establish her motivations for creating the machine.

Figure 2 A portrait of Daphne Oram. Silver gelatine paper. Copyright the Oram Archive, Goldsmiths University.

[2] Porter 1958.

These two historical music theorists are the key focuses of this doctoral study. Both women are figures who have been marginalised by the institutions that were supposed to represent them. The Bauhaus had to remove Grunow from their staff in 1923 due to mounting political pressure from the far-right government in Weimar; she was used as a scapegoat to escape a reputation for being a debaucherous school for parties and communist ideology.[3] Similarly, the BBC showed little interest in the work that Oram was producing, allowing her only a small amount of freedom to develop her own distinct theory due to being mired in traditional musical practices.

Both women were innovative musicians who examined ways of making music that abandoned constructs of harmony and tonality, examining how optical[4] stimuli could be used to create music. Grunow did this through an intricate system of training with colour and movement by which the user could connect to the spiritual world through a deeper connection to emotion as a creative force. Oram created a method of sound synthesis that was ahead of her time and highly complex, prefiguring future developments of digital composition. Oramics allowed the user to have complete control over the sonic output, a process that connected to the users' own spiritual recognition. Their practices are under-researched in relation to the emotional and spiritual effects that they had on those who engaged with them, and they remain largely unknown as music practitioners.

In 2019, with the centenary of the Bauhaus, an opportunity arose for both Grunow and Oram to be explored through the medium of a global exhibition called *Bauhaus Imaginista*. To celebrate this centenary, a global research and exhibition project was established and delivered over the year. This aimed to curate an ambitious programme of exhibitions and thought-provoking public events, revisiting the school's legacy. Focusing on the international dissemination and reception of the Bauhaus, the touring exhibition developed in four chapters: *Corresponding With*, *Learning From*, *Moving Away*, and *Still Undead*; these extended from the Bauhaus' education to its diverse histories beyond Europe[5]. The final chapter of this exhibition, *Still Undead: Popular Culture in Britain*

[3] Baumhoff 2001; Wingler 1969.
[4] A term which is used by Oram 1972 in her book, An individual Note. Optical sound is the term which I have used in this research to categorise the historical musical practice of Grunow and Oram. Optical refers to it being a visual practice of theorising music, i.e. based off colour and shape as the means of dictating the music and its creations. Afrodeutsche similarly uses her own version of sound composition which is based off visual means. The term is used quite heavily through this discussion; however, I do not claim this to be linked to optical sound as a method for recording or working with tape. C.f. Fielding, 1967.
[5] These exhibition chapters were displayed in a variety of different settings all over the world. All four came together at the Haus der Kulturen der Welt in Berlin in June 2019.

Beyond the Bauhaus,[6] took place at Nottingham Contemporary from 21 September 2019 to 12 January 2020. *Still Undead* aimed to act as a "collage of performance, music, and graphic design, which invokes the spirit of Bauhaus parties and theatre. The exhibition title, *Still Undead*, is borrowed from a 1982 song by the British goth-rock band Bauhaus, suggesting that "these spirits linger on".[7] The framework of this doctoral study was shaped by a collaboration with Nottingham Contemporary and Nottingham Trent University to use the *Still Undead* exhibition as the primary site of practice-based research. The research undertaken was to contribute to the public programme that was accompanying the exhibition, focusing on elements of the postcolonial research presented within *Still Undead* and the wider *Bauhaus Imaginista*.

Still Undead was a perfect exhibition in which to undertake renewed research into Grunow as a forgotten figure of the Bauhaus movement. This chapter of the exhibition was based on the departure point *Reflektorische Farblichtspiele* by Kurt Schwerdtfeger, and it aimed to examine more performative elements of the schools' diaspora, including the theatre workshops, parties, and music that were influenced by the school. In the context of these performative elements, an obvious gap emerged with the absence of Grunow, who was the only music teacher on the school's books. This gap provided a good place to begin the research of this project as a meaningful contribution to the centenary celebrations. Oram had been considered in the original proposal for Nottingham Contemporary's contribution to the *Bauhaus Imaginista* exhibition. The Oramics Machine displayed qualities of the unification of technology and art upon which the school had been founded. Her work, however, never made it into the final exhibition.

The opportunity to explore sonic practices with a direct link to the school was lost when Grunow was not considered for the *Bauhaus Imaginista*. Her status as a marginalised figure from the Bauhaus' archive meant that her inclusion in the centenary celebrations would have opened the possibility to examine music and musical forms that have links to the school and their dissemination all over the world. With Grunow omitted from the *Bauhaus Imaginista*, this trajectory for new research into the musical practices of the school remained unexplored. As a result, Oram's position and inclusion in *Still Undead* was a missed opportunity. The connections between Grunow's and Oram's theories

[6] Referred to from this point onwards as *Still Undead*.
[7] Nottingham Contemporary 2022.

meant that with inclusion of Grunow, inclusion of Oram would have also been more likely. Starting with Grunow, the *Bauhaus Imaginista* would have been able to examine optical sound practices as a global phenomenon, and similarly *Still Undead* could have traced other influences across the UK. Instead, they both remained as figures that were marginalised by their institutions, and the opportunity to showcase them in a global curatorial frame was not taken up. I identified this as a gap in the *Bauhaus Imaginista*, and this is where my initial research began.

To explore these two figures – marginalised by their respective institutions and seemingly now overlooked in the *Bauhaus Imaginista* – I undertook archival research to establish more about their theories. By examining the Bauhaus Archive in Berlin, the BBC Written Archives in Reading, and Oram's personal archive at Goldsmiths University in London, I collected information about both figures, which I hoped to present with the Live Programmes team alongside *Still Undead.*

1.1 The original practice-based research as established within this doctoral study

The first stage in the research was to collate and analyse the archival materials collected from my visits to these archives. This was done to establish complete versions of Grunow's and Oram's biographies and musical theories. Alongside this archival study, I attended many events that were associated with the Bauhaus centenary, and also those with a focus on revising marginalised figures. This was done so that I could survey contemporary practices that other institutions and curators were undertaking, with a view to achieving similar goals to those I intended to pursue for Grunow and Oram.

Within the early stages of this research, it became apparent that working directly with Nottingham Contemporary on the delivery of this exhibition was problematic; the infrastructure of the institution was unable to accommodate my presence within the Public Programmes and Research team (now called Live Programmes) to the extent that would be required for a practice-based doctoral study. Nottingham Contemporary's involvement in the research during the early stages was relatively limited, as was their contribution to the delivery of programme elements based on the research. It became clear that I would need to change the scope of the practice-based element for this study to work outside of the *Still Undead* exhibition programme and to incorporate it within a later public programme of events to take place at Nottingham Contemporary. With this change, I kept

the focus on exploring marginalised figure(s) within the Bauhaus centenary celebrations and used the programme to explore sonic practices with the Bauhaus as a departure point. The research would fit in with Nottingham Contemporary's programme titled *Sonic Continuum* from March to October 2020, and this programme would be used to build upon the research that was undertaken with *Still Undead* and the *Bauhaus Imaginista* in the previous year.

The public programme designed to work with *Sonic Continuum* contained three distinct elements that used the discussion of Grunow and Oram as the catalysts to explore optical sound practices. The first part was a proposed commission that was to be called *Eight to Infinite*. This name refers to starting with the Western harmonic system – called equal temperament – as the predominant way of composing using groups of eight notes – called scales. Grunow's practice worked past this, using twelve-note or chromatic scales as stimuli for her students to move to. Oram abandoned all notions of Western[8] tonality by creating an instrument with which it was possible to create any frequency of sound easily; this meant that Oramics allowed the production of an infinite number of notes. The commission was titled as such because its intention was to use the historical legacies of harmonisation theory and Oramics as a basis for creating a contemporary composition.

The second part of the programme was to set up a panel discussion that would explore optical sound practices. This would have been a panel in front of a live audience that invited current practitioners and theorists to share their work using optical processes of creating sound. The intended panellists were Dr Tom Richards, Tom Gunnersbrooke, Caro C, Holly Herndon, and Klara Lewis. Richards had recreated Daphne Oram's Mini-Oramics Machine, which was the second iteration of Oram's synthesiser. He completed his PhD research into the engineering behind this machine, creating an updated version that used acetate sheets instead of film strips to draw in sound.[9] Gunnersbrooke worked to develop a pedagogic model in which the student would compose music using colours as representations of musical notes. The student would roll dice with different coloured faces to select notes to work with and build their composition. Lewis is an experimental

[8] Through the discussion in this thesis, Western harmonic theory/harmonic systems are mentioned. This is specifically pointing to equal temperament. Equal temperament is a system of organising notes which fits with the piano keyboard, where notes are equal frequencies apart and divided into twelve notes with letter names. This system is discussed in the chapters dedicated to Grunow and Oram, as both of their theories interact with this system in a different way.

[9] Richards was approached to collaborate for the commissioned part of the research, and his recreation of the Mini-Oramics Machine was used in the composition.

electronic composer who manipulates electronic waveforms to create a "theatre for the ear",[10] combining her work with visuals that follow the development of the sonic output. Herndon similarly manipulates her own voice using computer artificial intelligence (AI) that she created herself, and she has researched the possibilities of AI in the compositional process. Finally, Caro C is a musician and composer who also works with manipulating the human voice and has conducted extensive research into Delia Derbyshire – another pioneer of the BBC's Radiophonic Workshop. These people were to be invited to discuss and perform their very different ideas on optical sound as a compositional process. These first two parts of the programme secured £8000 funding from PRS Foundation's Open Fund for Music Creators and Arts Council England's Grants for Arts, and they would be presented as part of the programme of *Sonic Continuum* at Nottingham Contemporary in late 2020.

The final part of the programme was to explore the possibilities of these practices with students at Nottingham Trent University. This was to be delivered as part of their Creative Short Courses programme, a week-long summer school that would use the facilities in the Bonington sound workshop. This was designed to use the first two parts of the programme as testing sites to establish a way of using Grunow's and Oram's optical sound practices to create music with little to no prior knowledge of composition. The commission would be researched as a way of combining Grunow's and Oram's historical sources with contemporary digital compositional tools. This involved working with a contemporary artist to establish a process combining the theoretical modes of optical sound with practical applications using current tools. Similarly, the second part would extrapolate other current optical sound tools to contribute to this pedagogic model. This final part was planned to take place in the summer of 2021, and it would feature a showcase at the end of the week to present the output from the students to a live audience. This was the intended practice-based research for this doctoral study, and it would have been undertaken in full collaboration with Nottingham Contemporary; however, this never came to fruition because of the coronavirus outbreak in early 2020.

[10] MIF 2019.

1.2 Reformatting the practice-based research into a practice-led study.

The effects of the coronavirus pandemic and the subsequent lockdowns meant that the original practice-based output of the research was pushed back and severely altered. With the uncertainty regarding when public spaces would open again, it was impossible to deliver the full programme described above. *Sonic Continuum* became a fully online programme that included contributions to Nottingham Contemporary's online journal, namely *The Contemporary Journal*. Indeed, Nottingham Contemporary would not restart its in-person public programme until September 2021. For this reason, and due to a lack of support from Nottingham Contemporary as the collaborating partner in the research, the practical output became limited to only one part of the proposed programme: *Eight to Infinite*.

Using the funding that was obtained from PRS Foundation and Arts Council England, in addition to the funds from Midlands4Cities Doctoral Training Partnership granted through their Student Development Fund, the commission was reformulated to be the only practical-curatorial part of the research. This would allow for a commissioned piece of music that was a total of 14 minutes long and pay for the live event. As the only practical output, the theoretical model that it followed remained largely the same – to work with a contemporary artist to create a composition based on using archive sources on Grunow and Oram and present it in a live event. The first step was to recruit an artist to work with during this collaborative process.

Henrietta Smith-Rolla, who performs and records under the stage name Afrodeutsche, was always a potential collaborator for this project. After seeing her perform at *Queens of the Electronic Underground* as part of *Manchester International Festival* in July 2019, I approached her to see if she would be interested in being the commissioned artist. Afrodeutsche's previous work has been based around site-specific composition, working with a range of different genres and musical groups, including orchestral film scores and dark electronic techno. Her compositions are also based around using colour as a coding for the work that she produces. These two elements were key to this commission, as I intended to work with the recreated Mini-Oramics Machine as part of the composition, as well as examining Grunow's use of colour. Furthermore, Afrodeutsche has been involved in work that looks to reclaim female figures in music composition. All these

aspects of Afrodeutsche's practice led me to consider her as an ideal collaborator for this research.

Afrodeutsche is a British-born Ghanaian/Russian/German artist, composer, producer, and DJ based in Manchester, UK. Her compositions integrate a wide variety of musical genres, including Afrofuturistic electro, techno, classical solo piano, and Detroit legacy house. Her music characteristically creates memorable journeys into deep, abstracted sound. Afrodeutsche's debut album *Break Before Make* was released on the Skam label in 2018, and this was followed in 2019 with the debut release on Eclair Fifi's label River Rapid. Afrodeutsche has written and performed scores for films and documentaries, including the BAFTA-nominated film *Kamali*, which is about a young female skateboarder in India, and a live rescore of renowned Earth documentary *Baraka* at The Royal Northern College of Music. In September 2020, Afrodeutsche released a sample library for the Spitfire Audio library,[11] which illuminates much of Henrietta's writing process as a self-taught musician and composer. Inspired by her work with the Kyma sound-design environment,[12] this is a set of tools for composition based around colour. Her aim is to offer a new perspective and a sense of freedom for those delving into the library, no matter their level of experience. In the summer of 2022, she scored Bottega Veneta's SS2023 collection runway show during Milan Fashion Week, working closely with head designer Matthieu Blazy. After years hosting a regular radio show *Black Forest* on the renowned NTS radio platform, Afrodeutsche now leads BBC 6 Music's Friday night schedule with *The Peoples Party*,[13] a peak-time show in which she entrances listeners with her idiosyncratic combinations of crate-dug party tunes from any point in the last 50 years, acid, rave, electro, breaks, footwork, ghetto tech, and jacking house. In 2022, she regularly presented BBC 6 Music's live coverage of festivals at Glastonbury and Cardiff.[14]

Once Afrodeutsche had been recruited to *Eight to Infinite*, we began to collaborate to examine the archival materials that were collected in the early stages of this doctoral study. This process began in December 2020, and it continued until the live event had finally taken place on 7 October 2021. During this process, given the importance of dance

[11] Smith-Rolla 2020f.
[12] Burtt et al. 2023.
[13] BBC Radio 6 Music 2023.
[14] This biography has been edited from her official biography written by Decca Publishing; Decca 2022.

in harmonisation theory, we agreed that we should also work with a choreographer and dancer in this project. Afrodeutsche had wanted to work with Martin Tomlinson (a performance artist and former lead singer of the punk band *Selfish Cunt*) for quite some time, and she believed that this project would suit his artistic interests. Tomlinson was recruited to the project in September 2021. Now that the collaboration had been established and the initial archival study had been completed, all that was left was to establish the theoretical aims and objectives for the practice-led output of this project.

1.3 Aims and objectives for this doctoral study

The research aims are as follows:

1. To explore the forgotten legacies of Gertrud Grunow and Daphne Oram by undertaking an archival study.
2. To recognise these legacies as genealogical constellations, which removes them from their institutional histories.
3. To show these legacies through a curatorial event that creates a renewed appreciation of their lives and works by combining archival materials and contemporary artistic practices.

The research objectives are:

1. To work with contemporary artists to create a response to harmonisation theory and Oramics.
2. To create written biographical versions of Grunow's and Oram's legacies that are informed by their archival material, from which the grounding of the curatorial parts of the study can be explored.
3. To explore curatorial methods and work with marginalised figures to establish parallel canonisation as a rhizomatic framework that incorporates different methods of curatorial revisionism.

I have used the term "parallel canonisation" to refer to the theoretical curatorial model that has been established in this project. Parallel canonisation is a triangulation of two curatorial methods – curatorial revisionism and anti-canonisation – that is shaped by a philosophical framework of "minor histories". This triangulation aims to create a version

of Grunow's and Oram's legacy that removes these marginalised figures from the current institutional canons in which they reside while allowing for their contextual affiliations to be maintained. The commission, and its presentation as a live event, was designed as a method to analyse how their historical materials could be engaged with in contemporary practice, and how the contemporary practice could be presented to a live audience. However, this would not have been possible without the archival study that preceded it.

The overarching methodological framework for the research was a rhizomatic approach that was a combination of archival research and curatorial research. My method for this research began with the archival study. This archival study examined Grunow's and Oram's lives and works to create their theories, which would in turn be used as the curatorial departure point from which the rest of the research could be undertaken. The archival study sought to extrapolate information about Grunow's and Oram's musical theories as responses to ideas of music as a way of exploring links between a person's physical body and an enhanced mental state. Once the archival study was completed, the resulting biographies were used as the basis to examine how a contemporary artist could engage with Grunow and Oram's threories. Engagement through commission was the way in which this would be undertaken, and this meant that the contemporary artists, Afrodeutsche and Martin Tomlinson, would be able to establish their own meaning from Grunow's and Oram's biographies.

The commission process between me and Afrodeutsche, in which we examined the biographies on Grunow and Oram to create the musical response to them, lasted ten months. The commission took the form of regular meetings in which we would discuss themes of the philosophy and the specifics of the historical musical practices, so that they could be examined and positioned within contemporary practice. Writing of the actual music happened in the last two months of the commission, which Afrodeutsche undertook on her own. After the music was composed, Afrodeutsche wanted to explore the movement elements within both Grunow's and Oram's biographies, so we decided to work with a dancer. Afrodeutsche chose to work with Tomlinson, as they had been seeking to collaborate for some time. Tomlinson was given the tracks three weeks in advance of the event, from which he created his own response to the music that embodied a personal perspective.

Once Afrodeutsche and Tomlinson had had a chance to create their own contemporary artistic responses, these would be displayed in a public event that would present the new commissioned work to a public audience. The feedback from the audience would then be used to evaluate the success of the transmission of Grunow's and Oram's theories through the contemporary artworks as a way of establishing the viability of parallel canonisation as a curatorial method. The contemporary artworks were also revaluated with Grunow and Oram in mind, so as to extrapolate tangible ways of working with of their respective theories. As a way of revising Grunow and Oram in the parallel cannon, creating a direct link to the historical work within the contemporary response established the viability of using harmonisation theory and Oramics as compositional processes.

Chapter 2 presents Grunow's biography and the development of harmonisation theory. The biography was created by analysing the limited range of remaining archival materials that explore her life and work. This is the first time that these materials have been organised and interpreted to establish Grunow's biography in English. This starts with the establishment of the main sources that were translated and examined, as part of the research, to create a version of her life and work to draw upon for this study. Tracking through the different theorists, collaborators, and institutions that Grunow worked with throughout her career as a genealogical process, this chapter builds a version of her legacy that is outside of the Bauhaus, which also acts as this project's first step to remove her form the Bauhaus canon. After establishing Grunow's legacy, I turn to examine some of the theoretical points that influenced Afrodeutsche's composition. This examines the three movements of the composition as direct responses to harmonisation theory.

Similarly, Oram is subjected to the same genealogical process in the Chapter 3. Unlike Grunow, Oram has been researched rather widely in the last decade, with a particular focus on the engineering of the Oramics Machine. This study again looks to establish contextual links that are removed from the BBC, but it also seeks to examine her theoretical motivations rather than her engineering. At the end of this chapter, Oram's theoretical motivations is examined in relation to the composition that was created for *Eight to Infinite*.

The chapters on Grunow's and Oram's biographies are essential to the practice elements of this research. If this research is to create a successful parallel canon, including full biographies is essential to recognising how Grunow and Oram developed their practices

over the courses of their careers. These two chapters create contextual links that are outside of the Bauhaus' and BBC's institutional canonical representations of them, and they establish Grunow's and Oram's ideas in relation to other influences, other theorists, and other institutions to build a version of their legacies that can break from the dominant canon relating to them. This research creates a basis from which the contemporary artists in this project are able to analyse and create works that respond to Grunow and Oram, which removes them from the institutional canons that have marginalised them. In addition, these biographies can be used as a resource for other research to be undertaken on Grunow and Oram, certainly in Grunow's case; no other text in English establishes harmonisation theory or Oramics as this discussion does.

Once Grunow's and Oram's biographies have been established, Chapter 4 looks to examine the process of creating the curatorial method that would be undertaken for *Eight to Infinite*. I examine three curatorial methods, curatorial revisionism, anti-canonisation, and minor histories through the lens of exhibitions and events that I attended during the field survey. In this process, I identify the strengths and weaknesses of each of these curatorial methods and aim to establish parallel canonisation in relation a rhizomatic process of selecting the parts of these theories that best showcase Grunow and Oram through the commissioning process. This chapter also establishes some of the core elements of the commission that shape the overall event as an output that features a curatorial polylogue of the artists' voices working with the researcher's curatorial voice.

Having established the intention of parallel canonisation as a curatorial model, my attention then turns to analysing the performances of Afrodeutsche and Tomlinson at *Eight to Infinite*. Chapter 5 looks to examine how Tomlinson's dance piece was constructed in the commission through a process that is referred to as "passing of dissonance". Mapping the journey from the archive study to the creation of the composition and to the dance performed at *Eight to Infinite*, this chapter examines how I limited my curatorial voice in favour of letting the artists create responses to the archive materials that were inherent to their own previous practices. Thus, this chapter aims to establish the parts of harmonisation theory and Oramics that were present in Tomlinson's interpretation of Afrodeutsche's composition.

Chapter 6 looks in detail at the collaborative process that was undertaken between Afrodeutsche and me. The chapter maps out how we worked collaboratively, including

our work with Tom Richards and the Mini-Oramics Machine. Further to this process, I also examine the "living" elements of the composition that display elements from harmonisation theory, Oramics, and Afrodeutsche's own practice – as a polylogue within a polylogue. I discuss how harmonisation theory and Oramics were extrapolated to create the music, with a particular focus on the creation of musical scores to establish connections to both historical practices. It is important to note; the analysis in this chapter is based heavily off the conversations between Afrodeutsche and myself. The way in which the scores are engaged with are based off the intent by which we wished to create the music. The scores and the musical piece are subjective in so much as they way they are considered in this thesis, will not be how others engage with them.

I have also created a digital portfolio to accompany this written thesis. Hosted on the Research Catalogue platform, the portfolio displays Afrodeutsche's and Tomlinson's performances at *Eight to Infinite*, the individual movements as individual tracks, visual scores of Afrodeutsche's composition, and the question-and-answer[15] section that happened after the performance. There is also additional information, including artist biographies, introductions to Grunow and Oram, and a synopsis of the project. These are available via the following link:

https://www.researchcatalogue.net/shared/1ad377245960da12e521458fac937379.

The following chapters signpost specific parts of this portfolio that will be directly commented on to provide a contextual link to the performances. However, I encourage the reader to view the research catalogue before they engage further with this written thesis.

This thesis concludes with an evaluation of the whole research project through questioning elements of parallel canonisation that may need alteration. In this instance, *Eight to Infinite* is a case study for the effectiveness of the curatorial method in revisiting marginalised legacies. I also reflect on potential improvements to the process, should other researchers wish to take on similar projects using this method.

[15] Referred to from this point onwards as Q&A.

CHAPTER 2:
Gertrud Grunow and harmonisation theory

After the initial research undertaken into Bauhaus, *Bauhaus Imaginista*, and *Still Undead*, Grunow's presence was identified as a gap in the centenary celebrations. Grunow's status as a master of the Bauhaus was excluded from both the events and the wider celebrations, with only brief mentions of her practice, including harmonisation theory. Starting with uncovering her as a marginalised figure, I undertook a process by which I would attempt to recreate her life and work within this project. For the past 100 years, the representation of Grunow's legacy has been controlled by the institution with which it is most closely associated: the Bauhaus. As a result of the incomplete representation of her theories and ideas, it could be argued that the potential impact of her legacy has been impeded. Grunow's representation, in general, is limited to a minimal understanding of her biographical information, her profession as a teacher from 1919–1924, and her work with colour, sound, and movement.[1]

Recent research around the centenary has uncovered little else about her work beyond this commonly used narrow description. Art historical scholars, such as Linn Burchert (2018) and Elizabeth Otto (2019), have started the process of looking into Grunow as a marginalised figure by uncovering materials that expand on her practice. Burchert's article investigates her as a figure, examining at what is *not* said about Grunow from the diary entries of her students. Otto also explores the "negative space" within the archive, following the same research strategy as sociologist Avery Gordon (2008). Their research examined the negative space in the complete Bauhaus archive to find common elements in her students' work that uncover Grunow's influence. By mapping her students' work in this way, it is possible to recreate a version of her teaching through recognising the common elements in their work. The emergence of harmonisation theory can be identified by using this approach. These two studies have uncovered much about Grunow's harmonisation theory that was previously unknown; however, these studies are limited as

[1] Cf. Wingler 1969.

they reduced Grunow's practice to the Bauhaus and incorrectly consider it as the origin point for harmonisation theory.

To uncover more about Grunow's practice, I undertook archival research to further this line of enquiry. My first exploration was to investigate the archival material within the main Bauhaus archive. From this, I was able to identify two secondary texts that attempted to piece together Grunow and her life's work before, during, and after the Bauhaus. The closest text to Grunow's authorial voice was from her friend and assistant, Hildegard Heitmeyer, in which she attempts to piece together Grunow's work after her death in 1953. Heitmeyer worked directly with Grunow from 1909-1944, across several institutions. Heitmeyer's work does not cover Grunow's biographical journey, instead it explores the development of harmonisation theory. The other pivotal text comes from German academic Cornelius Steckner. In 2002, Steckner undertook a biographical study to depict Grunow's life and career, and this examined sources such as newspaper articles, municipal records, and other print media. Steckner's exploration covers many pieces that Grunow wrote in newspapers, which is related to her development before and after the Bauhaus. Between Heitmeyer's and Steckner's sources, a more thorough version of Grunow's biography concerning the development of harmonisation theory has been constructed, and this can be examined as a genealogy akin to Foucauldian ideas on the development of artistic practice.

From this study, I have identified the influences of different theories with which Grunow engaged during the development of harmonisation theory. Harmonisation theory is a constellation of different methods from other theorists with whom Grunow worked directly and indirectly with in the development of her practice until the end of her time at the Bauhaus. This is not surprising, as harmonisation theory simultaneously covers gymnastics, sonic theory, colour theory, and psychology. Steckner's and Heitmeyer's texts show evidence of Grunow's own ideas on these elements and their role in the development of harmonisation theory. It is important to highlight a full and detailed biography of Grunow's life within this thesis, as it may be the only instance in which such a biography exists in English.

Heitmeyer's and Steckner's texts were translated for this study from German into English[2] as it is important that these translations form part of the research for the purpose of creating a parallel canon: they will provide links between Grunow and the other theories that influenced her. The translations are essential when thinking about creating a parallel canon, providing a basis from which working with her materials can be expanded and other research and artistic practices can be developed. They provide the source material from which a genealogical constellation can be created to portray Grunow's influences, and better acknowledge the workings of harmonisation theory. Analysis of these translations was used to create the musical composition for *Eight to Infinite*, so having this inherent recognition of Grunow's history and harmonisation theory's development helped to improve the understanding of the composition and performance.

Throughout this chapter, I aim to explore Grunow's harmonisation theory in full, from her work before the Bauhaus, as the development of harmonisation theory used different theoretical models from her music education and early teaching. This includes the work of people such as Ferdinand Sieber, Giovanni Battista Lamperti, Mathis Lussy, and Émile Jaques-Dalcroze, as well as other influential figures in her career who pushed and tested harmonisation theory. These figures are explored chronologically with her career, and their impact on harmonisation theory is then mapped in terms of its influence at the Bauhaus. Grunow's teaching at the Bauhaus is categorised into three orders, and these depict the method that she undertook with the students. These three orders form the crux of harmonisation theory as a whole which would then be developed after her work when the Bauhaus ended in 1924.

Identifying Grunow's influences by exploring these other theorists not only creates a greater realisation of harmonisation theory but also shows it as a polylogue. Through this chapter, harmonisation theory is mapped as a constellation of contrasting theories to identify the multiple voices present in its development. This was undertaken as a genealogical[3] process that starts from recognising harmonisation theory from the perspective of its iteration at the Bauhaus.[4] This definition of harmonisation theory is

[2] Some translated by the author, some by an external translator. These are included in Appendix I for the purposes of evidencing this research. The original texts in German are public domain, available through the Bauhaus Archive.
[3] From Foucault, explored in relation to the centenary exhibitions later in this section. Cf. Foucault 1990.
[4] Harmonisation theory at the Bauhaus was not the final version of Grunow's practice; however, it is the most complete historical version of it. Harmonisation theory developed for 30 years after her time at the [continued]

displayed in a diagram that I recreated (Fig. 4), which depicts the 12 note, colour, and emotion combinations that were crucial to Grunow's teaching at the Bauhaus. This diagram was the most influential part of the materials that were shared with Afrodeutsche in the commissioning process and laid the groundwork for realising how to use harmonisation theory as a compositional method in a contemporary setting.

Recognising Grunow's work as a polylogue will help to build contextual links to other interpretations of the individual parts of harmonisation theory. Having these links to other theorists, it will help to create a stronger base for the parallel canon, because it removes agency from the dominant canonical framings of Grunow's history, which has marginalised harmonisation theory through the representations of the Bauhaus, including *Bauhaus Imaginista*, and *Still Undead*. Before examining Grunow's history, it is important to first understand the motivations for this genealogical study by looking into Foucault and his conceptualisation of genealogy as a tool for analysing this archival material. For Foucault, genealogy is a notion that fights against ideas of Western modernism and its assumption of a single origin point from which history develops; his critical focus is on modernity's teleological assumption that history moves upward or forward. In contrast, he argues that the genealogist finds no such origins, as origins are often fabricated. What the genealogist finds instead as they explore is randomness, piecemeal fabrications, dissension, disparity, passion, hatred, competition, and "details and accidents";[5] "petty malice", the minute deviations – or conversely, the complete reversals – the errors, the false appraisals, and the faulty calculations[6] are mixed with devotion to truth, precise methods, and scientific discussions. In other words, Foucault does not deny that reason is part of history, but it is only one player amid a much broader case on the dramaturgy of modernity.

Given that this project aims to create a parallel canon that links Grunow and Oram as practitioners of optical sound and then to use their historical materials to commission contemporary artists, it is important to have a full version of their histories available upon which to base the commissioned work. With the limited nature of Grunow's history from within the wider Bauhaus canon, other ways of deciphering her legacy were needed to

Bauhaus, but as mentioned in the introduction, the manuscript that explores this full development was destroyed.
[5] Foucault 1990, p. 373.
[6] Ibid. p. 374.

make commissioning possible. I am referring here to being able to create a wider back catalogue of her work that is more thorough than a simple explanation of a theory that used colour, sound, and movement to assess a student's artistic ability. Thinking about Grunow's development through genealogy was the way to best complete this task. Acknowledging the other theorists that were so essential to her own development will help to trace back the individual components of harmonisation theory.

Presenting Grunow's work as a constellation of the other theorists[7] not only establishes the genealogical influences on the work but also helps to give it a wider grounding. Looking outside of the Bauhaus and attending to other sources for her history also helps to untangle her from the Bauhaus as the institution that has been the gatekeeper of her history. Taking her out of the context of the Bauhaus and presenting her full career outside of the institutional legacy within this thesis will create a base for the formation of the parallel canon, and it will provide contextual links for her work that do not rely on the history of the institution alone. Through this, the research will establish a full study of Grunow's life and work. This study will form the basis for removing agency over the legacy of Grunow away from the Bauhaus; furthermore, through accepting harmonisation theory's other points of origin, it will create a space that others can build upon. The best way to present this is to look through the development of harmonisation theory by mapping Grunow's career through the different influencers, practitioners, and theorists she encountered and who had a direct effect on the development of her work.

Without a full surviving manuscript of her life and work, it is difficult to make this claim directly. Instead, the points have been inferred through looking at her writing in different contexts: personal correspondences, newspaper articles, and the work of others who wrote about their encounters with her work. These materials have been translated from Steckner's study, and they have been examined with Heitmeyer's text in mind so as to best establish the following: (i) Where do the connections of Grunow's work to other theorists lie? (ii) What did these connections mean for Grunow's practice? (iii) How did this shape the understanding then taken forward into the commissioning part of this project?

[7] As identified previously in this section.

2.1 Grunow's biography

2.1.1 Music education 1870–1898 and the influence of solfège and bel canto

Gertrud Grunow was born in Berlin in 1870. Little is known about her early life in Berlin; however, it is known that she was trained in music, learning singing and the piano from an early age. At 20, Grunow is recorded as learning under and assisting Ferdinand Sieber (1822–1895) at the Stern Conservatory[8] in Berlin, founded in 1850. Sieber[9] was a composer and singing teacher whose primary practice was the art of solfège.[10] Solfège is a vocal technique that seeks to develop singing from single vowels. It explores the possibility of singing with different intonations and inflections, and it works with these different ways of producing sound as individual starting notes. It takes a macro approach to learning the possibilities of individual notes and how they can then work together for the piece that is being learned. It is a process of learning the full range of possibilities for a note, not just for a piece of music, and training the ear to learn how that note can be moulded and changed. In other words, a student will identify all the ways in which a note can be sung before they learn its application to a wider musical score. This development is also present within harmonisation theory.

To use a binary example, thinking about the development of the notes in a wider context opens the possibility to other influences on the note such as emotion. A piece of music may demand that notes are sung with a "sad" inflection to them because of the wider context of the rest of the score; however, a student who was confident in solfège would be able to make these notes produce a "happy" version of the music instead. In this way, it better equips a student to have a fuller understanding of notes and how to use them rather than learning them in the context of musical scores. This method for teaching music

[8] Now called the Julius Stern Institute.

[9] Sieber published writings on singing, including the *Complete Textbook of the Art of Singing* (Magdeburg 1858, 2nd edition, Leipzig 1885), and he was regarded as of one of the foremost singing teachers of his time (Meyer 1889, in Steckner 2002).

[10] In **solfège** (Italian ***solfeggio*)**, vocal exercises that are sung to the solmisation syllables (do, re, mi, etc.) and, by extension, vocalises, or exercises sung to a single vowel, are often florid and challenging to master. Solfège collections survive from the 17th century onward, with examples by leading composers of 18th-century opera, such as Nicola Porpora (a singer and famed singing teacher) and Alessandro Scarlatti, and reaching into the 19th century, Luigi Cherubini. Later composers of such exercises include Maurice Ravel, Gabriel Fauré, Vincent d'Indy, Ralph Vaughan Williams, Heitor Villa-Lobos, and Sergey Rachmaninoff. The word *solfège* sometimes refers to an intensive course in the knowledge of musical intervals and their notation (cf. Encyclopaedia Britannica 2022c).

was not unique to Grunow, but it helps to explain her fascination with exploring notes more deeply than other vocal teachers.

After Sieber's death, Grunow used her connections at the Stern Institute to work together with Giovanni Battista Lamperti (1839–1910), a private teacher from the Music Conservatory in Milan from 1850–1875. Lamperti pioneered a singing technique called *bel canto*,[11] an operatic technique focusing on the tone of a small range of notes. Following from solfège as a practice, this would also then develop from individual notes, their purposes, and also their importance to groups of notes. Combining these two theories contributed to notions in the first and second orders of harmonisation theory. The first order starts with small units that can be learnt, and the second order then develops to include a range of notes and their application together. The ideas of solfège and bel canto can thus be put into practice here. Starting with the macro level of learned understanding, the response of the student then becomes wider as they begin to incorporate other notes to the teaching. Both methods of teaching hinge on emotional recognition of how notes affect the singer, and they attend to the physiological processes required to achieve particular tones.

Solfège and bel canto, as singing practices, both place unique importance on the individual notes and their use. Rather than looking at melody, they emphasise the qualities of individual notes and how to accentuate and manipulate them, which is not present in other vocal techniques. As these techniques were taught on a one-on-one basis, Grunow would have experienced how her students learned these processes, developing a deeper connection between the body and the individual note. She would have been present as they attempted to follow the practices and experienced each note as an individual expression of their musical ability. As a result of working with influential musical

[11] Bel canto, (Italian: "beautiful singing") is a style of operatic singing that originated in Italian singing of polyphonic (multipart) music and Italian courtly solo singing during the late 16th century and that was developed in Italian opera in the 17th, 18th, and early 19th centuries. Using a relatively small dynamic range, bel canto singing is based on an exact control of the intensity of vocal tone, a recognition of the distinction between the "diapason tone" (produced when the larynx is in a relatively low position) and the "flute tone" (when the larynx is in a higher position), and it demands vocal agility and clear articulation of notes and enunciation of words. Among the masters of bel canto in the 18th and 19th centuries were the male soprano Farinelli, the tenor Manuel del Pópulo García, his daughter, the dramatic soprano Maria Malibran, and the soprano Jenny Lind. The technique of bel canto had nearly died out by the turn of the 20th century, as the trends in opera encouraged heavier and more dramatic singing. The late 20th century saw a revival of several operas for which the style was appropriate – especially those composed by Vincenzo Bellini and Gaetano Donizetti (Encyclopaedia Britannica 2022a).

theorists,[12] Grunow's early development encompassed a wide variety of influences; importantly, she learned the fundamental building blocks of what became harmonisation theory from these figures. During this time, it is likely that her teaching took place in Berlin; however, this is not recorded within the archive materials. According to Steckner, her first teaching post was in Remscheid in 1898.

2.1.2 Early teaching in State Licensed Conservatory in Remscheid and the impact of eurhythmics

After completing an apprenticeship in music education in 1898, Grunow began work as a singing teacher in Remscheid. Another student of Sieber, Hedwig Boldt, had set up a choir of his peers after Sieber's death in 1895, which Grunow took over in 1898. This group had their first public performance in 1899, and they would continue to perform under Grunow's leadership across the region until 1907.[13] During this time, she also performed as a solo singer. In 1907, she set up a school at her house, and her vocal lessons attracted the attention of Willy Trappmann, director of the recently established Trappmann Conservatory. Trappmann sponsored her school and included it as part of their curriculum. A year later, in 1908, Grunow was also contracted as a singing teacher at the State Licensed Conservatory in Remscheid. Here, Grunow began to develop a network of students and plotted her initial observations on the relationship between the body and sound.[14] These observations were in various capacities, as a singing teacher and choral leader. However, she also taught a range of other instruments, including the violin, piano, cello, and the music theory of Émile Jaques-Dalcroze. In the summer of 1908, she travelled to Geneva to undertake Jaques-Dalcroze's course in rhythmic gymnastics, or "eurhythmics".

With Grunow's starting point from solfège and bel canto, Jaques-Dalcroze's eurhythmics had a similarly profound effect on her teaching and understanding of music. Jaques-

[12] Grunow is also reported within Steckner's study to have worked with eminent musicians such as the conductor and pianist Hans von Bülow (1830–1894), Heinrich Ehrlich (1822–1899), a teacher at the Stern Conservatory in Berlin and critic of the *Berliner Tageblatt*, and Albert Becker (1834–1899), composition teacher at the Scharwenka Conservatory in Berlin from 1881, then 1891 Director of the Berlin Cathedral Choir. Bruno Walter [Schlesinger] (1876–1962) was also among her acquaintances. All these composers and theorists are reported to have worked with her; however, there is little to suggest they played a part in harmonisation theory.

[13] From Steckner's work, there are mainly newspaper articles that show the performances of this choir in Remscheid.

[14] Burchert 2018.

Dalcroze's work looked deeply into the relationship between sound, movement, and singing. Eurhythmics teaches concepts of rhythm, structure, and musical expression using movement.[15] It focuses on allowing the student to gain physical awareness and experience of music through training that takes place through all senses. Eurhythmics often introduces a musical concept through movement before the students learn about its visual representation.[16] Encountering movement before learning to read music should translate to heightened body awareness in the students, creating an association of rhythm with physical experience. Jaques-Dalcroze's method reinforced concepts of music and rhythm kinaesthetically through engagement at an early age. Again, there is little to go on from the archival materials on this period of Grunow's life and career; however, it is plausible to assume that this time was spent honing and developing these three practices of solfège, bel canto, and eurhythmics within her teaching, finding a way to combine them.

After attending this course, Grunow would go on to offer her version of eurhythmics at the State Licenced Conservatory of Remscheid, which began in October 1908. This course was advertised though an article in the local newspaper, the *Remscheider Zeitung*, which it is likely that Grunow wrote herself. This article includes a lengthy section on the purposes of Jaques-Dalcroze's eurhythmics. Grunow was incredibly invested in the method and the possibility of incorporating body movement into vocal teaching, as can be seen from this extract:

> What is the essence of Dalcroze's method? The master divides the method into two parts, which he treats in turn: 1) rhythmic-gymnastic training. 2) the solfège. The former is the basis of the whole method, and it is unique in its approach. It is of eminent interest to those who are to learn music and their teachers. Rhythmic education develops the whole human being, every organ of it. We live in a time of reforms: new methods are struggling to gain acceptance in piano playing, singing, and school singing. … The child is taught attention, obedience, and willpower, and the system proves to be a general educational tool for the youth.[17]

Grunow emphasises here that Jaques-Dalcroze's methods are exciting, as they are a new development for teaching singing that provides an original perspective on the entire process. She commends the method for placing importance on the physical movement of the body as part of the singing process. For Grunow, this is a revelation, as a strict form

[15] Jaques-Dalcroze 1930.
[16] Here, visual representation refers to classical notation through traditional Western scores.
[17] *Remscheider Zeitung, vol. 61, no. 271, 2 October 1908.* In Steckner 2002.

of movements in response to music helps to further the singer and create a form of discipline by which there is a prescribed set of movements for each part of the music. From this exploration, we can see the development of Grunow's practice is shaped through thinking about how the body moves in response to music. There is amazement at how movement leads to a greater understanding of music and how training the body becomes a crucial part of her teaching. Later in the article, she goes on to talk about the process of movement that is characteristic of eurhythmics:

> For each note, Dalcroze's method has a foot mark; one arm movement for each time signature; the pauses are expressed by the absolute stillness. Training in proper breathing is of health value; it is beneficial in developing the voice for speaking and singing. …These aim for concentration and clarity of mind, and everything resolves in harmony and beauty; …The method is not at all strenuous, not even for children; they know the movements with pleasure and evident joy. Most exercises are accompanied by music. Solfège is ear training through singing; students are taught to give an account of every note sung or played; they are practised in hitting the tones, etc.[18]

There seems to be an awakening of the possibilities Grunow could achieve with this way of teaching music through movement. Breaking down the music into distinct parts of the body, as she describes here, leads to ideas of grace and harmony. It is a method that translates music into visual representation using the body as the carrier of the information. Students able to apply these principles to their body show not only grace but also joy in undertaking these exercises; they are the physical embodiment of the music, and they carry this as joy. Aside from the physical movement being a revelation to the process of learning music, she ties this into practising solfège. Grunow mentions "an account of every note sung or played", which furthers the notions of there being a range of articulations for each note, like the practices of bel canto. With this method of movement, there can also be a physical articulation outside of the voice that can represent the notes. The same note could be played twice with a different time signature, for example, and this would yield two different physical movements as a response through this method. These combinations of several factors move the singing practices beyond the idea of different articulations and emotional responses to notes and separate groups of notes, which creates a more complex and elegant response to encountering music. In addition to the musical possibilities, these concepts were now tied into ideas of strength, clarity of

[18] Ibid. *Remscheider Zeitung, vol. 61, no. 271, 2 October 1908.* In Steckner 2002.

mind, and concentration. Grunow was now thinking about the possibilities that these methods could have for the human mind as well as the body.

Grunow's eurhythmics course ran for a year at the State Licenced Conservatory, in which she worked with 65 students to develop the method, with her influences including grace and gesture from Jaques-Dalcroze's method. After the first year's success, the course was split into children and adults. Her focus in the second year of her course then moved to establishing a more significant link between the students' movements and the accuracy of the pitch they were singing. The movement was supposed to represent the note and simultaneously achieve the correct pitch for the note, creating a stronger bond between the movement and the music. On 17 July 1909, she presented her class to a public audience. She reported on this public presentation in the *Remscheider Zeitung* after the event, describing what she was able to highlight:

> The demonstration lasted about two and a half hours, … giving examples of performing by ear and understanding different time signatures, the same and changing ones, and those with varying note values. There was a gradual increase in the difficulty of the exercises, up to the exceedingly difficult syncopation. Dynamic gradations from fortissimo to pianissimo were also demonstrated in their rhythmic movements. … Following this exercise, there was a small pantomime,[19] where the children started with their eyes closed, kneeling, and they began to rise over the course of the performance. … One could see from all the participants the joy in the abilities they had acquired and the conviction that they were dealing with precious educational moments. In any case, quick grasping and conversion into willed activity have an extremely favourable effect on the development of mental powers. It strengthens the ability to think and promotes mobility of the limbs. … awakening the rhythmic feeling means awakening dormant abilities and strengthening the musical instinct, which is further awakened by the child's independent cooperation. … Herein lies the high educational value of the method.[20]

What can be seen is the variety of the distinct parts of music that are being explored through the movement. There is reference to dynamics,[21] rhythm, and tonality; different body parts respond simultaneously to these different elements of the music being played, and the sensitive nature of each movement is ingrained within the students to respond

[19] Note on translation: here, "pantomime" refers to an unrehearsed presentation. The original is *die Pantomime*, of which "pantomime" is the closest translation, which I decided to keep.
[20] *Remscheider Zeitung, vol. 62, no. 194, 18 July 1909.* In Steckner 2002.
[21] Fortissimo and pianissimo are the markers in classical notation for very loud and very quiet. Grunow is using them here to show that there is a notion of volume, which is also present within eurythmics.

accordingly. Her description also shows that there is a universality in all the children conveying a similar level of joy while they are presenting their movements to the audience. Grunow describes this as not being dependent on musical ability, which suggests this method helps to break down all these various levels of music in a way that is universal to all, not just to those with a well-trained ear or those gifted with musical ability. This idea of the universality of comprehension of music is appealing to Grunow – not just as a way of teaching music, but also to help with recognising emotion and also maintaining a level of physical fitness.

What is most interesting from Grunow's articulation here is the mention of "the awakening"; which the process of Grunow's method allows students to access within themselves. This idea is the first explored inference that relates to a connection of eurhythmics to a spiritual dimension. The suggestion here is that this process helps the student to recognise part of their psyche and that we all share as a response to music. The process of learning eurhythmics allows the body and the mind to create harmony between our response to the music being played and this inbuilt acknowledgement through movement. This idea continued to be developed within harmonisation theory through the next ten years before Grunow began working at the Bauhaus. With the course renewed for another year, there were more possibilities for exploring this method; it also attracted more students to the conservatory, including Hildegard Heitmeier.

Hildegard Margarete Heitmeyer (later Nebel-Heitmeyer) settled in Remscheid and took part in Grunow's eurhythmics course from 1909 at the State Licenced Conservatory. Heitmeier was fascinated by the teaching method's potentially better appreciation of the human psyche and its relationship with music. The two became close friends during this period, and Heitmeyer became a permanent fixture for the rest of Grunow's life. One of Heitmeyer's most important contributions[22] at this stage was introducing Grunow to the work of Swiss pianist and theorist Mathis Lussy.[23] Lussy recorded in his publications that for a singer to be able to produce a note, they would have to have the same posture to

[22] Heitmeyer created one of the most detailed accounts of Grunow's career, *Die Grunow-Lehre: Eine Erziehung der Sinne Durch Ton und Farbe*. This is one of the main sources for this exploration.

[23] Mathis Lussy was a nineteenth-century Swiss-born pianist and pedagogue who studied and lived in Paris for most of his life. In 1874 he published the *Traité de l'Expression Musicale: Accents, Nuances et Mouvements*. In this highly original treatise, he espouses the view that the basis of a sound musical interpretation is the knowledge that can be codified into laws or rules. Since certain notes and musical figures demand specific reactions of the performer, musical expression is not a matter of caprice. However, it is written into "the structure of each piece and each phrase" (Steckner 2002).

recreate the tone that they were producing. Lussy was an enormous influence on Jaques-Dalcroze, Sieber, and Lamperti; however, he did not directly influence Grunow, who had always dismissed his thoughts.[24] Nonetheless, with a renewed introduction to his work, after having worked with eurhythmics, Grunow seems to have changed her opinion of his ideas.

Figure 3 Heitmeyer at the Grunow Class, 1917 or 1922, reproduction, approx. 1968, 11 × 85 cm, silver gelatine paper, copyright unknown. © Bauhaus-Archiv Berlin, inv. No. F6580/3.

With a greater recognition of movement within music education, Grunow opened herself to Lussy's wider ideas on shape and colour as well as movement and music. Through practice, this would mean that the vocalist's movements would be consistent and depend on the piece of music they were performing. Through the addition of colour and shape, the movement of the vocalist could also be codified much in the same way as the written score. This was an alternative way of recognising how movement can represent music. Similarly, a musician can learn from reading music and movement to recreate the sounds produced by other vocalists. The theory at this stage would become significantly influential to Grunow's understanding of eurhythmics and would begin to develop into notions of harmonisation theory.

[24] Cf. *Rheinische Musik- und Theater-Zeitung*, vol. 12, 1911, pp. 462–464, in Steckner 2002.

2.1.3 Observation from the eurhythmics course in Remscheid, 1910

In 1910, in the second year of the course in Remscheid, Grunow continued to develop her eurhythmics course. Thinking about the influences of Lussy, the movement became curtailed in the development of her pedagogy. Part of her study was to make young people in class sing the same notes in groups and to observe the movements that were collectively performed by the group. In her observations, it was noted that the students all moved in the same way to achieve the same notes. Grunow made this observation of the consequences of an action: "Sound and colour trigger movements in people, specifically in particular centres, for particular tones and colours" (Steckner 2002). She found a system of matching tones and colours using the consequences of movement (Itten 1919 in Steckner 2002) in connection with the prerequisites given by Lussy, which led to the development of the "Grunow doctrine" as she began to develop ideas past the original sessions of Jaques-Dalcroze's methods.

She began to think about the application of gymnastics exercises beyond the purely physical and started to consider their application in other areas. Her interest then moved beyond students mastering the movements of the music to a broader application of a universal acceptance of how the human brain inherently deciphers music and how that translation manifests itself through movement. Through consistent exposure, Grunow's students gained a deeper appreciation of the muscle movements of the eurhythmics process, which developed from passive actions into a more active understanding of the music. Grunow wanted to explore this process further to acknowledge whether it moves past a comprehension of music, instead reaching a recognition beyond music to some sort of higher spiritual knowledge.

In 1911, Grunow began to move away from Jaques-Dalcroze's method of eurhythmics. In correspondence with Jaques-Dalcroze, she stated the importance of looking more deeply into Lussy's work beyond the physical, and that the approach Jaques-Dalcroze was suggesting did not go far enough to examine other possibilities for the method. Grunow refers to Lussy's "Art of Musical Presentation"[25] for her new line of development alongside Jaques-Dalcroze's method. She wrote an article in the *Rheinische Musik- und Theater-Zeitung*, in which she outlined the development from eurhythmics with a focus

[25] M. Lussy, *The Art of Musical Presentation*, Leipzig 1886, pp. 4, 13, & 18, translation by Felix Vogt, based on the 5th edition of Lussy's *Traité de l'Expression Musicale*.

on solfège and atonal singing as the starting point for the physical exercises of the student. This article shows her feelings about the new methodology and her reasoning for moving away from eurhythmics. She began by stating:

> When Jaques-Dalcroze appears in demonstrations with his students, the audience is as amazed as they are delighted. Amazed at the ability to see different time signatures performed with legs, arms, and head simultaneously, and delighted at the gracefulness of the gestures and pantomimes that are presented at the end. Of the other sections of the lesson, the only thing that arouses interest and deserves recognition is the translation of heard rhythms into sculpture, especially when dynamics and tempo are added. The effect on the spectators is entirely superficial, meaning the pedagogy remains misunderstood. And the musicians? It is true that people no longer dare to relegate rhythmic gymnastics to the realm of gymnastics, as was the case in the beginning. However, many musicians and artists still cling too firmly to the belief that education in eurhythmics is only for the less gifted musicians or stage artists … It would undoubtedly be just as encouraging as it would be interesting for artists of different genres to spread the theory of rhythm by writing about their experiences. Then the accusation would fall that Jaques-Dalcroze hoped and believed too much. … In pure pantomime, Dalcroze's stagecraft can be entirely accepted in one direction, absolutely in the lyrical. I reserve the right to comment on these things.[26]

From this exploration, Grunow is heavily criticising the response to the practice of eurhythmics. Her argument is that the response is limited to an aesthetic function only, in which the audience sees the performances as related only to dance and stage education. What she hopes to achieve is an understanding of the method, which is more than an aesthetic application to music and is instead a method that can be applied elsewhere. It is evident that she believes there is more to this method that cannot be achieved without further development to Jaques-Dalcroze's method. The limits are stopping at the human body, and not looking deeper into the phycological impact of Eurythmics. This leads to the assumption that wider spiritual forces are at play with this level of training. Potentially, this is a lack of vision on Jaques-Dalcroze's part, as he has taken the method as far as one person can develop it and she is the person with the drive to take it further. This is not a direct criticism of the method but instead a critique of its reception in these contexts.

[26] *M. Daubresse, Die rhythmische Gymnastik, Rheinische Musik- und Theater-Zeitung, vol. 12, 1911, pp. 133–151.* In Steckner 2002.

Grunow sees the limitation to applying the lessons that she has learned in such a narrow field and begins to think about the other applications that this method could have in other disciplines. The musical community around Jaques-Dalcroze did not see much benefit to his method. Grunow, who was practising it outside of his understanding, began to see other avenues for developing this past the limitations of other methods. Grunow thought to develop eurhythmics to look beyond the movement in the exercises as being purely representative of only rhythm, and she explored how tonality and harmony could be represented as well. She was using movement to demonstrate all elements of music. It was vital for Grunow's acknowledgement that the nerves were not just the carriers of the information from the brain to the muscles. The nerves functioned to translate the harmonic qualities of the music, creating physical responses that could be mapped as the basis for the exercise. The rhythm of the pieces could stay the same, and the movements in response would also change depending on the harmonic qualities. This observation was where Grunow began to develop her theories beyond eurhythmics.

To explore the notion of harmony in the practices even further than the application of rhythm, she began to abandon notions of tonality[27] and look to abstract forms of music. Grunow created a process that brought together her training as a singing teacher and the process she learned from the eurythmic processes. This process would develop the solfège part of the process and focus more heavily on the process of the voice and its movement in response to music. In her words:

> It is clear from the previous lines that rhythm cannot be understood as meaning beat. As far as singing is concerned, it has been known since Tosi[28] and earlier, so-called "singing" is an expression of the soul, the authentic "beautiful singing". It is necessary to know the physiology of the respiratory system and larynx organs, especially muscular sensations. … I would like to emphasise the mechanical tone indication in so-called singing, which unfortunately is the case with the usual quick studies in striving for an extensive repertoire. … the complete inner and outer human being belongs in perfect balance to perfect rhythm. Any rhythmic study for singing, such as speaking exercises, should not be rushed. On the contrary, this would mean that an individual's education would become an enemy of the entire body, an

[27] Tonality here refers to *equal temperament*, a notion of Western harmonic structures that classifies notes into scales based on 12 notes from C to B. Equal temperament is discussed in length alongside Daphne Oram in the next chapter.
[28] Referring to Pier Francesco Tosi (1646–1727). *Opinioni di Cantori antichi e moderni*, 1723, German by J.F. Agricola, 1757; ders., *La Scuola di Canto dell'Epoca d'oro*, Naples, 1904.

> enemy of perfect balance. Like many other paths, this may lead to the final goal, but it has no advantage.[29]

This articulation puts the body at the centre of recognising the qualities of singing as a process that takes time. The body can experience music, but for it to be meaningful, there needs to be an understanding of how the body reacts to the different notes that it is producing. This is a type of meaningful interaction that places the conscious mind at ease with the body; there must be an active engagement over time that creates a deeper connection between the mind and the body. Continuous practice is the only way in Grunow's mind to develop this, and this is achieved through a modified version of eurhythmics that incorporates the previous educational models she encountered in her earlier training. This would incorporate notions of bel canto in a more developed manner; there is a more profound development of the individual notes that can be achieved with the voice. Grunow describes this as follows:

> The old masters demand healthy, supple organs, a good voice, and musical talent. If a singer possessed these qualities, they began to train the voice, the breath, and the muscles. … They taught themselves to "sing" in a controlled, slow study and a favourable climate. That connection, the legato of the individual gradually increasing tones that leads to a shorter or longer line that is music, is the primary element of rhythm. Every sign of a muscle not moving in rhythm disturbed the musical ear (music also with the primary element rhythm in the Helmholtzian[30] sense), and the teachings of the ancients were built on this, physiologically more or less or not at all conscious, empirical as one likes to say.[31]

This reinforces the physical mechanics involved in vocal coaching. However, Grunow's reference here is much more in line with the practical training and the student's experience while learning. In her method, development needs to happen that locates individual notes to dig deep and identify the physical sensations within these notes. The voice, therefore, becomes a catalyst for a more comprehensive exploration of the senses. The student comes to terms with their own body and the emotional response they gain

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[29] *M. Daubresse, Die rhythmische Gymnastik, Rheinische Musik- und Theater-Zeitung vol. 12, 1911, pp. 133–151.* In Steckner 2002.

[30] Referring to the German physicist and philosopher, Hermann Von Helmholtz. Grunow references his work here from his text, *On the Sensation of Tone as a Physiological Basis for the Theory of Music*, 1863, in which Helmholtz tried to trace sensations through the sensory nerves and anatomical structures to the brain in the hope of better understanding the complete mechanisms of sensation (Encyclopaedia Britannica 2022b).

[31] *M. Daubresse, Die rhythmische Gymnastik, Rheinische Musik- und Theater-Zeitung, vol. 12, 1911, pp. 133–151.* In Steckner 2002.

from playing these notes. This exploration then goes deeper into how these notes can be achieved from the teacher's perspective, backed by other studies around this development.[32] Grunow's reference to Helmholtz shows that she is beginning to think deeper about other associations of sound to the body, and this source presents her first inference to balance as a major part of harmonisation theory. This is due to the relationship of the ear as the sensory organ for both sound and balance. Grunow is articulating that there is a wider function of sound beyond music into a deeper physiological exploration of balance itself.

Grunow's reflection shows development from eurhythmics, and she conceptualises a pedagogy that is less concerned with the gymnastic element, and more focused on individual muscles and the nerves. The physical elements of the body should, in theory, interact in the same way in every person. Through the observation of eurhythmics, there is a clear path taken with each student to the mechanical functions of the exercise that needs development where artistic training is concerned. She recognised a connection between the musical elements and harmony and rhythm on the one hand, and gesture and vocal organs on the other. The exploration would lead her to look not just at the traditional forms of musical education but also at a more comprehensive array of notes within atonal music. With the addition of the elements of solfège and atonality, Grunow's teaching began to break away from eurhythmics, and developed beyond Jaques-Dalcroze's methods.

2.1.4 Development of harmony in Grunow's practice

Grunow began working on a new atonal method that affects the physiology of the singer's respiratory and larynx organs. Collaboration with Jacob Katzenstein and Felix Krueger shortly before the start of the First World War, opened her to exploration of tonal dynamics. This exploration motorically analysed singers, actors, and dancers as well as painters, sculptors, architects, and poets so as to better understand what application her doctrine had in art forms other than performance-based practices. Grunow believed that

[32] David C. Taylor, The Psychology of Singing, New York 1908; Georg Wirz, The task of science in art to form voices, Rheinische Musik- und Theater Zeitung, vol. 12, 1911, pp. 100–116; Alois Schmitz, Health training for sick singing and speaking voices, Rheinische Musik- und Theater-Zeitung, vol. 10, 1909, 448–4501; Walther Howard (born 1880), How do I teach the grading system? Langensalza 1911; cf. Christoph Hust, Arnold Schönberg, Walther Howard and the concept of monotonality, Musiktheorie vol. 16, 2001, Leipzig 1910; idem., The Art of Ideal Tone Formation, 2nd ed., Leipzig 1910; idem., Practical Exercises for Gaining Singing Mastery based on Register Scientifically Explained, Leipzig 1916, to name a few.

the real value of education lies in the purely rhythmic, benefiting the individual musician just as much as the dancer, painter, sculptor, the poet, or even any person – who it can develop into an artist of life. Rhythmic education is life and power, a creation of the highest balance and harmony. In 1912, Grunow led a recital with her students that was reported on in the local newspaper, the *Rheinische Musik- und Theater-Zeitung*, in which the reporter comments:

> Miss Grunow … is successfully striving to educate singers of the good old Italian school[33] … In that case, you can say in principle:
> There was not a single voice among them that sounded overstrained; the vowel formation was apparent in all of them.
> Their pitch was definite.
> Their breathing was correct.
> … Every note should and must sound so that the listener has the pleasant feeling of being effortless when producing the sound.[34]

The explanation here is that Grunow's practice was producing incredibly talented vocalists. It also implies that there was a level of confidence that came with her presentations and her process, and that the students themselves had good technique but are also flawless in their delivery. To inspire this level of confidence across all her students is a testament to the method that she was developing. It also suggests that there was a greater level of emotional control that came with Grunow's teaching. Grunow's singing practices had produced a method that led to astonishment in the artistic community regarding the calibre of the music that her students were presenting. However, within this article, we can see a crucial difference from eurhythmics – the inclusion of colour in the presentation. This is stated as follows:

> At that time, the first findings about the symbol forms triggered by the phenomena had already led Gertrud Grunow to the understandable question of colour forms. These only arose when the inner tones of the means of expression received special attention. First, blue was shown as a circle, red as a square, and yellow as a triangle (with the point facing upwards).[35]

[33] Italian school referencing Bel Canto.
[34] *Gerhard Tischer, Rheinische Musik- und Theater-Zeitung, vol. 13, 1912, 20 January 1912; advertisement on p. 13 and information on p. 42.* In Steckner 2002.
[35] Ibid. In Steckner 2002.

These arrangements of shapes and colours are the same as those in Johannes Itten's colour theory.[36] The inference is that Grunow is beginning to portray her theory in line with colour theory. This also adds to the final part of the three-part structure of harmonisation theory. Therefore, for Grunow, a theory of musical expression was just as possible as a theory of harmony or musical form. Grunow's ideas would then move to triangulate these three parts (movement, sound, and colour) under the notion of balance. As early as 1912, she wrote:

> Education exerts a clarifying effect on the inner human being. It can free one from the compulsion and stiffness that every mechanical thing produces. Every beautiful tone is a delicate balance of the inner and the loose movement in the outer human being; everyone can gradually be found through the process and thereby make music, allowing the naturalness, and personality in the singing, will arise again.[37]

This passage provides evidence for Grunow's understanding of physical notions of singing as a method to balance the inner mind and the outer body. By the inner, she means the mind, the driver of responses to the outer, which is the body. Grunow would continue with the line of enquiry in collaboration with laryngologist Jakob Katzenstein. The enquiry would focus on the outer body and its response to the musical stimulus from harmonisation theory, with a particular emphasis on the larynx and its response to singing, ear, nose, and throat diseases, and he taught the physiology and hygiene of singing at the Stern Conservatory in Berlin, which Grunow had worked with in 1898. Katzenstein recommended Grunow to psychologist Felix Krueger in Halle, who – like Katzenstein himself – had also dealt with questions of voice training.[38] In Krueger's *Developmental Psychology* (1915), he indicated, "The psychological side effects of a central nervous system are initially, and still at prominent levels of development, regularly only melted down and experienced as diffuse overall states of consciousness. A considerable, undivided impact of motor and visceral elements is always expected. These complex qualitative colourings and fundamental forms of experience have only recently been discovered in the test subjects of our laboratories."[39] This notion of "colouring" undoubtedly influenced Grunow to attempt to look at the visual stimulus that would also

[36] Cf. Itten's *Art of Colour*, 1970. Itten makes reference to particular emotional states, which overlap with harmonisation theory. However, Itten's examination is not as comprehensive as the list of colours in Grunow's teaching.
[37] *Rheinische Musik- und Theater-Zeitung, vol. 10, 1909, pp. 448–449.* In Steckner 2002.
[38] Krueger 1910.
[39] Krueger 1915.

contribute to connotations of experiencing the world around them. There is little else that is reported about the work that these three would undertake. Grunow would continue to develop her theory and teach her progressive ideas on eurhythmics in Remscheid.

2.1.5 Development of harmonisation theory in Berlin from 1916–1919

On 29 January 1916, Grunow resigned from her teaching position at the State Licenced Conservatory in Remscheid to return to Berlin. The reason for the return after 18 years of work in Remscheid is not yet apparent. It is certain, however, based on later information, that she was again training a new group of singers. She became a member of the Künstlerhaus in Fasanenstrasse.[40] This artists' house was an important meeting place for architects, sculptors, painters, musicians, and theatre people in Berlin (Steckner 2002). Grunow befriended Adolf Meyer at this time, who would offer her a teaching position working out of his studio at Atelierhaus Lützowstraße 82. Meyers classes specialised in teaching subjects on colour theory, composition, anatomy, and rhythm[41]. Grunow would teach her theory at Atelierhaus Lützowstraße 82, educating singers and dancers, with a renewed interest in the implications of colour. She would continue to develop this work with the connections she made at the Stern Conservatory in Berlin and the contacts with Remscheid.

Grunow continued to expand her knowledge through 1917 and devoted herself more to the motor colour[42] phenomena. She also began to compile and show her findings in a series of her first public lectures, which can be traced back to 1919. In the autumn of 1919, Grunow gave three lectures in the Lessing Museum in Berlin.[43] These lectures were at the invitation of the publisher Eugen Diederichs,[44] who also organised a symposium at the Volkshaus[45] in Jena, Switzerland. There is no source of information for what Grunow did during this symposium; however, what happened after this was a correspondence between Johannes Itten and Mathias Hauler. In this correspondence, Itten encouraged Hauler to take up Grunow's course. In the letter between Itten and Hauler, Itten states he was in attendance of Grunow's symposium at the Volkshaus in 1919, leading to

[40] Künstlerhaus translates as "artists' house". This institution was a studio built to be a space for artists to practise and network (Secretcitytravel 2014).
[41] Cf. *Handbuch des Kunstmarktes*, Berlin, 1926, p. 256, in Steckner 2002.
[42] As explored above, the stimulus of colour mixed with the functionality of the larynx in singing.
[43] Nebel-Heitmeyer 1967, p. 14.
[44] Diederichs was a publisher and author, working in Leipzig and later Jena. His most influential work was called *Die Tat*, which was a neo-conservative political publication (cf. Walser Smith 2011).
[45] An art-nouveau classic music venue in Jena, Germany (Volkshaus Jena 2022).

correspondence between him and Grunow. In Itten's letter to Hauler on 5 November 1919, he states:

> A few weeks ago, a certain Fraulein Grunow came to see me from Berlin. … She says: "Sound and colour trigger movements in people, namely in particular centres, for particular tones and colours." In this way, she found a system of matching tones and colours utilising the consequences of movement. Try to let a tone be struck in yourself and then concentrate on this one tone, to let the whole body vibrate so that the body finally enters a characteristic form of movement that is different for each tone. The movement and the body's position are correct when it sounds most uninhibited and fullest. … The lady has good judgment, but I think there is a lot wrong with what she is doing, and I will tease her to see the findings.[46]

Here, Itten took a personal stake in Grunow's work, but also considered that there had been much development since her eurhythmics course in Remscheid. It is likely that significant development in her colour theory can be attributed to her work at Lützowstraße 82. Despite the differences between Itten's colour theory and Grunow's approach, he considered her work worthy of merit – so much so that he was encouraging his students to train with her. However, he did question the validity of her theory. Grunow wished to take her course to the Bauhaus, regardless of whether Itten invited her or not.[47] Grunow's and Itten's teachings were intricately linked, which suggests that because of this connection, it would make sense that Grunow was included as part of the preliminary course. The dominant canonical explanation for Grunow and Itten teaching together has been that he invited her to teach with him. However, from the extract above, it seems unlikely that he would have invited her to teach with him, considering the flaws that Itten saw in harmonisation theory. The two would work together at the Bauhaus from 1919, and Grunow was vital to the early teaching of Itten's preliminary course.

2.1.6 Grunow at the Staatliches Bauhaus, Weimar 1919

Grunow began working at the Bauhaus as a teacher in 1919, supporting Johannes Itten's foundation course.[48] Grunow held a unique position at the school throughout her time at

[46] *Wilhelm Rotzler and Anneliese Itten (eds.). Johannes Itten, Zurich 1972, p. 67f.* In Steckner 2002.
[47] Cf. Bauhaus Kooperation 2020; Wingler 1969.
[48] In the Bauhaus Manifesto, the foundation course run by Johannes Itten is described: "The preliminary course, the propaedeutic Bauhaus instruction (initially one, later two semesters), thus took on the character of an initiation rite (one had to have gone through it in order to be accepted into the Bauhaus community), also functioning as a selection instrument. At the same time, it became the pedagogical basis of the school. Its function was not only to cleanse from students the residual slag of prior formal conventions and [continued]

Bauhaus. Ulrike Müller (2009) portrays Grunow's position at the Bauhaus aptly as an "assistant on a fee basis" (Müller 2009). During this time, Grunow continued living in Berlin and teaching courses connected with Atelierhaus Lützowstraße 82. It was not until 1922 that Grunow moved to Weimar permanently, where she became an "official teacher", offering her course linked with the foundation course.[49] In the same year, Grunow took a seat in the master's council, as listed in the Bauhaus archives on 24 March 1922, and on 5 February 1923, she was listed under the "extraordinary teachers" together with Adolf Meyer (at the Bauhaus since 1 October 1919) and Karl Zaubitzer (at the Bauhaus since October 1919); 1922 also saw Hildegard Heitmeyer enrolled at the Bauhaus. The latter trained during the first World War in the Jacques-Dalcroze Educational Institute in Hellerau near Dresden during 1915–1917. Heitmeyer would take up a position as Grunow's assistant during this period while she was teaching at the Bauhaus.

The teaching Grunow undertook during this time took the form of extensive group sessions which the foundation students - called "the theory of harmony". Oskar Schlemmer would later suggest that it be renamed "the theory of harmonisation", or harmonisation theory.[50] The inference here is that Grunow's work was not just a theory related to music harmony but a way of "tuning" students in response to music as the catalyst. To harmonise was to bring connection with the musical stimulus and to respond to it in a way that shows an understanding of the original stimulus.

In the same way that one would tune a musical instrument to respond to the frequencies set as standard, so too was harmonisation theory supposed to bring a set of standards with the human body, mind, and its surrounding environment. Schlemmer saw the potential for Grunow's theory to calibrate students to the disciplines in which they were to specialise by allowing them to have a greater appreciation of the world around them through Grunow's training. This brought them into greater balance with their disciplines, teaching them a universal code, which they could then understand, bend, and break to further their own artistic practices. Grunow described this as balance, that was understood from her experience across her career that tied colour, sound, and movement together,

traditional, academically established aesthetic ideas and practices, but also to impart elementary basic design principles on which subsequent Bauhaus teaching in the workshops was to be based." (Gropius 1921; cf. Wick 2019).

[49] Cf. Müller 2009, p. 19; Wahl and Ackermann 2001, pp. 157 & 188.

[50] Bauhaus Kooperation 2020.

which performed well with the early esoteric outlook that the Bauhaus was teaching.[51] What was different at this point was the development that came from Grunow's encounters with colour theories. In the spring of 1920, Grunow gave a course for children in the Kurhaus Waldesheim in Düsseldorf-Grafenberg, on which Heitmeyer commented as follows:

> Every movement in its vast sum of qualities is associated with "noise" in its imperfection. Noise is an imperfect sound, and the more perfect the movement, the more precise, purer, and rounded, the more the noise will form into a tone. The most direct measure of a complete movement of the tonus (living moving body) would be a tone, a sound. Every movement is in one direction. Just as the organic movement in plant life follows the light that penetrates it, and just as all created creatures are subject to this law of following the light, the direction and form of human movement evolve according to the influence of the light phenomenon affecting the body and imagination. All colours dwell in pure light; they represent its degrees. Every sound has its colour, which depends on the order of the overtones; these are the "other" tones that fit into the whole in a specific order, depending on the direction of the lights, the tone of the colour, and the forms themselves. The 12 tones C–B correspond to the 12 colours in light: blue, red, and yellow; the colours combine and are blue–violet, red–violet, green, green–blue, orange, white, silver, grey, and brown. The tremendous primary order, which is only indicated here in its beginnings, is identical to the rhythm of life. It underlies the rhythm on which life is built. Through this order, the harmony resides in the rhythm, which is made up of the right good proportions. As a result, this intrinsically rhythmic nature of the movement has a harmonising, uplifting, and invigorating effect. This harmony in rhythm is harmony in its primary form, and it consists in the unity of tone and colour that I have been destined to discover.[52]

It is evident that at this time, there has been a massive shift within harmonisation theory. This relates to light as a significant effect on movement as well as sound. The ideas she presents here are now much more in line with ideas of the natural order – as there is a natural order on the notes, there is also a natural order to the colours through light. Balance is created from understanding how these all work together, and this is what Schlemmer was trying to conceive when he suggested changing Grunow's course's name to harmonisation theory. This statement begins to examine not just the physical condition of the effect of her theory but that of the natural world. Linking sound to colour through light suggests that harmonisation theory is more than gymnastics or singing tuition, but instead training for the world that develops a person to respond to the world around them.

[51] Wingler 1969.
[52] *Die Tat, March 1920, pp. 929–932.*

A possible influence for incorporating personal development as part of harmonisation theory comes from the work she undertook with Felix Krueger. However, this mode of articulation is unique to harmonisation theory. This idea of the natural order was reported by Diederichs, who attended a group lesson at the Bauhaus in April 1920. He states:

> Soul life is being moved according to cosmic laws, which is why it does not live in a chaotic jumble but forms itself into order through rhythm. Only out of order does the spirit develop the richness of forms. In the beginning was not the word, the logos,[53] but the procreative impulse of eros. … How do we gain ecstasy? By turning off our mind and balancing it in intense internal concentration, our ability to respond to the rhythm of sensual impressions increases. If we give this space, we begin to flow and then naturally crystallise. Anyone watching the young artists during a practice session of Gertrud Grunow at the Bauhaus in Weimar will experience in traditional forms what the mystery cults of the ancient Greeks brought, namely: the unconscious becoming tangibly visible.[54]

The concept of training relates to a greater appreciation more about the spiritual world around us. Linked to Greek notions of feminine mystery cults,[55] there is a conception that the masculine rationality, or logos, cannot fully understand the process. Grunow conversely can unlock this potential of letting go, of creating a space in which it is possible to learn and to attach oneself to the spiritual through her theory. There is a link to notions of pagan spirituality related to other forces – not nature, not the human mind, but both as part of the spiritual force – as the motivation of harmonisation theory. Wassily Kandinsky and Paul Klee, early Bauhaus masters, described Grunow as the "soul of the Bauhaus."[56] Lothar Schreyer, first master of the Bauhaus theatre workshop, explored this notion further, and described Grunow as follows:

> She, who was already approaching old age, struck us as one of the great men of knowledge of antiquity. The spiritual connections came from her inner clairvoyance of colour, shape, and tone as they build up the living to evoke shape. … [Grunow] brought people inwardly and outwardly "to balance". […] Gertrud Grunow was not only actually a *healing* person, but she also guided the practitioners in the exercises to clear recognition of the creative

[53] "Logos" here is relating to the Ancient Greek Philosophical understanding, i.e. reason, logic, and discourse. The later use of eros in this text also relates to its philosophical use as depicting a life energy. This interpretation leads to the inference that there is a connection to a more ancient and primordial understanding of light and sounds and the senses. This can also be read in terms of the Jungian architypes of masculine and feminine (cf. Jung 1927), which attaches Grunow once again to more psychic and spiritual understandings of her theory.
[54] *Eugen Diederichs, Subconsciousness and Form, The Act, vol. 12, no. 2, May 1920, pp. 136–137.*
[55] An example of this is the cult around the goddess Demeter, called the *Eleusinian Mysteries*. These mysteries are discussed in relation to Oram's theory in Chapter 3.
[56] Hofmann 1969.

> form to which they corresponded. […] I know that neither the pre-apprenticeship nor the main teaching would have been successfully carried out without Gertrud Grunow, and the Bauhaus would not have accomplished its creative work without her.[57]

Dietrich's and Schreyer's explorations here comment on the spiritual notions of harmonisation theory. Understanding harmonisation theory in this way shows that Grunow's work was perfect for the esoteric ideas of the early Bauhaus. Indeed, Schreyer attributes the early success of the school to her teaching. From these two explorations, there is a clear indication that this training had a significant influence on the students. However, it gives little indication as to what the harmonisation theory lessons "looked like" and what their purpose at the Bauhaus was.

2.2 Lessons in harmonisation theory at the Bauhaus

There is little known on the exact form Grunow's lessons took at the Bauhaus as there are few surviving materials from the archives indicating precisely the nature of her teaching. Instead, an overarching three-stage programme called the "Three Orders" remains. Each of these three orders added movement elements to train the students to better recognise sound and colour to create harmony between them and the outside world. Grunow conceptualised harmonisation theory in three orders in a balanced circle that investigated (i) soul, (ii) body, and (iii) spirit. What survives of this work is the writings of her students, including Heitmeyer, Schunke, and Erich Parnitzke's.[58] This account considers these writings to try to piece the individual orders together.[59] Each order links to an exercise covering sound, colour, and movement as its basis. Once all three orders were achieved, a student could gain "balance".[60]

2.2.1 The first order: training the soul

The purpose of the first order was to train the soul, i.e. to be able to identify how the soul felt and to allow the music and the movement to examine this. Exercises in the first order intended to develop students' intuitive emotional perceptions of colours and sounds.

[57] Schreyer 1956, p. 187.
[58] Cf. Burchert 2018 and Radrizzani 2004.
[59] The following summary of each order and the associated exercises that were associated with them is based on Heitmeyer's explanations (Heitmeyer 1936/1946) and an unprinted manuscript by Grunow from 1937 (Grunow, 1937c). As well as this, additional material has been gathered about the exercises from Radrizzani's notes (Radrizzani 2004, pp. 25–59).
[60] Grunow's idea of balance will be discussed in a later section.

Grunow first played the 12 notes of a scale, one after the other, while showing the colours corresponding to these notes. The students memorised the colours and internalised the associated sounds that accompanied them, thereby develop their ability to recognise the 12 colours by their sonic triggers as a way to create an optical/musical language. In Grunow's observations, she was able to see the effect that this had on her students, "the changes in the eye are visible and can be tracked by an observer until the eye viewing the colour has attained the right position and perspective".[61] Once the student understood each colour/sound well, the next set of exercises would be set to develop this relationship.

The purpose of this was to link colours to the natural world. In the next set of exercises, the student would start with their eyes closed, and be instructed to "feel out" colours by their matching sounds. Each colour had a corresponding place in the room. This resulted in the order of the circle being mentally spread out on the floor like a clock. In each segment of the balanced circle, various qualitative aspects of colour – fabric, material, and forms – were also present.[62] The purpose of this was to deepen the students' understandings of each colour by bringing them closer to the natural state they were supposed to represent. Grunow understood that the solid colours also represented natural materials, states, and environments as part of their natural laws. In her words, "when the colour becomes dense it releases an inner substance and leads to a primal experience of materials like stone, wood, ice, gold, silver, weaving and braiding materials, etc. the perception of these materials' density is released as palpable images of colour. They also demonstrate the affinity towards the artisan professions".[63] Here, Grunow not only states the correlation between materials and colours, but she is also giving the colours a tacit link to the natural world. This adds extra sensory qualities to the colour/sound combinations. The close connection of colour, sound, and material present in the first order complemented the Bauhaus' introductory course incredibly succinctly, and it helped students to prepare for their studies in the workshops.[64]

[61] Grunow in Heitmeyer 1967.
[62] In Heitmeyer's text, these materials are broken down as follows: grey corresponds to ordinary stone, white to marble, blue to argillaceous earth, red to wood, yellow–red to cloth, yellow to gold, silver to silver, green to iron, green–blue to steel, red–violet to porcelain, blue–violet to glass, and brown to wrought or cast iron (Heitmeyer 1967, p. 19).
[63] Grunow in Heitmeyer 1967, p. 6.
[64] The preliminary course was used as a way of identifying which specialism the students would attend, and Grunow's assessment, through harmonisation theory, was part of this process of choosing their specialty. Cf. Wick 2019.

As well as the movement of the body to the desired locations and the tactile understanding of the materials' connections to nature, the first order exercises also included drawing shapes in the air following the perceived tone or colour. Movements in the first order were not prescribed at this stage in harmonisation theory. These movements would be motivated by the student as an initial response to the music. The purely internal examination of imagined optical and tactile colour qualities was of the most significant relevance for Grunow's work at the Bauhaus.

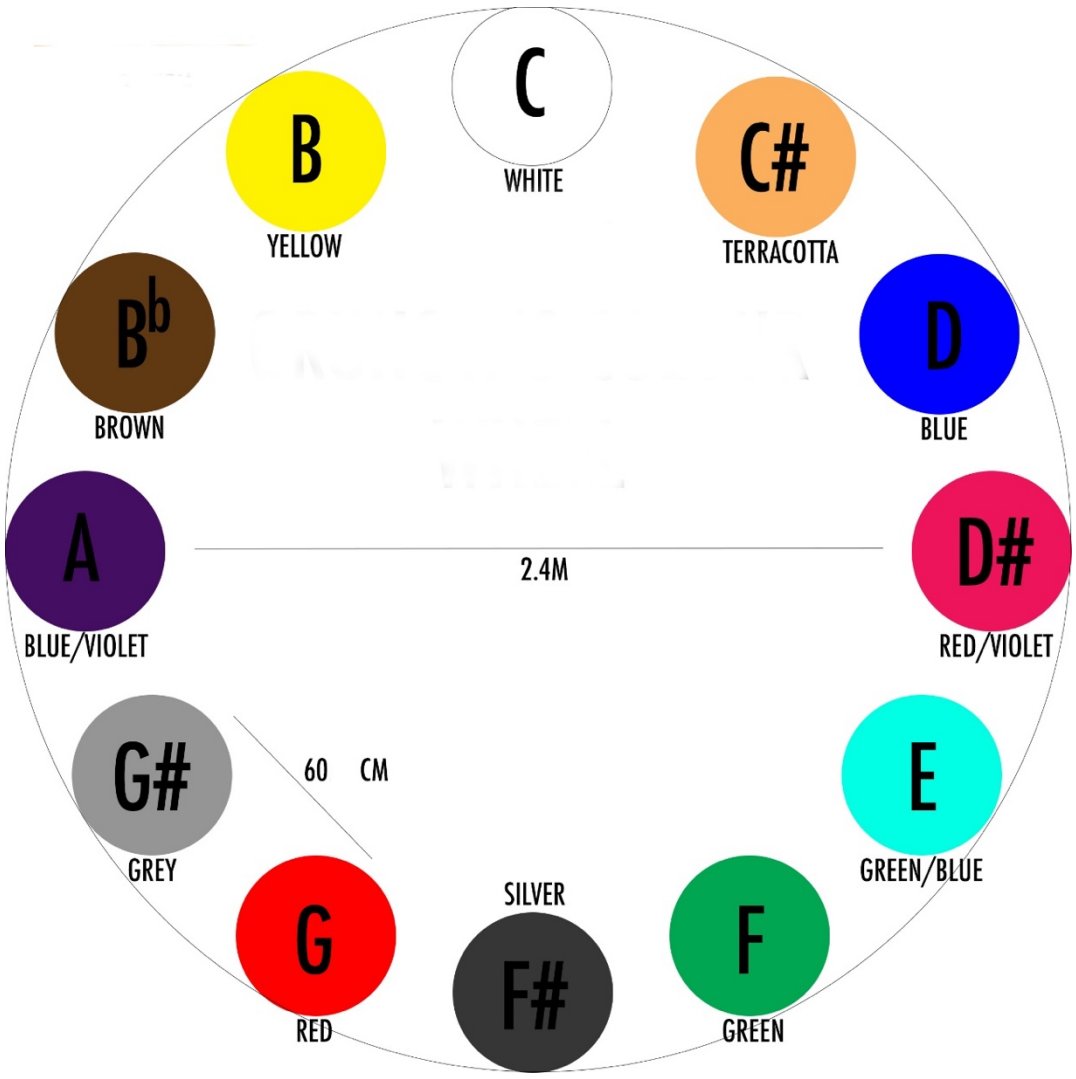

Figure 4 Adaptation of Grunow's colour wheel, from Heitmeyer 1967. Adapted by the author, 2019. The distances denote the approximate size of the space and the gaps between the colours.

The first order was primarily a "grounding" exercise, which would create the foundations for making the correct connections to colours, their sounds, and the natural laws they represent. During this part of the education with harmonisation theory, the student would learn to identify the sounds and the colours to which they were connected. This would then be translated into a movement without the visual stimulus of the colour. This

movement was directional to a part of the room representing the colour (as in the diagram above, in which the distances between the colours represent the distances within the classroom). Once this directional move had been made, the student would interact with a corresponding material placed in this room section to add a tactile element to the colour. Finally, they would draw in the air a representation of the colour that was unique to the student's understanding of what had been taught to them with the last parts. These steps within the first order would establish the fundamental parts of harmonisation theory to the students. By completing this stage, they would recognise the groups of colour, sound, and natural qualities that would each be part of the theory. It would be built from this point to establish the individual characteristics the student would bring to the exercise. These would be further examined in the second and third orders.

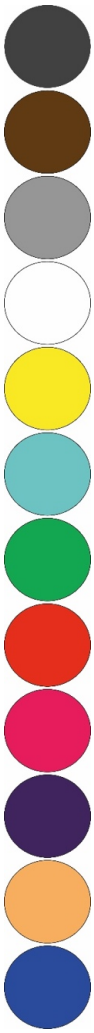

Figure 5 The second order, adapted from Radrizzani 2009. This moved from the circle around the student to being a vertical representation from their head to their feet and describes their movement by levels.

2.2.2 The second order: training the body

With the grounding from the first order, the vertical movement of the body would be explored in the second order. This order focuses more on the movements of the body – by this stage, the soul would be trained to respond correctly to harmonisation theory – so the body would now be trained to translate this into movement correctly. This includes "equilibrium positions" made by students when they hear certain tones and in response to seeing specific colours. These positions were focused on straightening the body, through the spine, to presenting the colours/tones as vertical movements. In the second order, the circle of colours is replaced by a vertical line of colours (Fig. 5). This meant the student's focus would be more concerned with their body movement, and rather than moving to an area, they would move up and down – moving down to the floor for blue and stretching out to the sky for grey. The circle is correspondingly transferred to a vertical arrangement in the same order as the balanced circle, as in Fig. 5, and this is analogous to the spine.

Once a student understood how to read both the sound and the colour in the first order, the exercises of the second order would allow them to further explore their natural association through the body. This equation of the physical movement, which went hand in hand with the conception of colour as a "living force", was fundamental for the teaching.[65] For Grunow, the movements taught in the second order were a way of channelling the colour's natural characteristics from the ground. Once this was established, every tone and every colour, according to Grunow, should evoke a specific posture. Thus, a particular movement is described through the tension in the body from which a movement is made. The shifts between relaxation and tension, bending and straightening, and distinct types of breathing were all observed.

Once students had a grounding in these movements, the exercises in the first order were re-examined and reformed to include movements of the second order. The students were asked to feel body tension and gravity. When changing tone and colour, it was necessary to look for a new place in the room that corresponded to the tone or colour. The sequence of movements took place as a cycle in a circular manner. As well as the horizontal movement, various gaits in the leg movements, and the position of the student's arms and

[65] Grunow 1923, p. 20.

gripping movements were present in the observations of these second-order exercises.[66] This idea is conceptualised by Diederichs:

> A young girl is standing there, thrusting arm by the arm in the air as if to hand bricks to the building, while her feet slurp across the floor in a dance rhythm. […] As a spectator, one is quite astonished by the expressive sign language of the girls' hands, this longing search in the accompanying body rhythm.[67]

Diederichs' words describe the second order, which takes the internalised information from the first and converts the colour/tone combinations into their corresponding physical movements.

The second order becomes more about exploring colours and notes as groups rather than as individual entities. Once the soul has been trained to identify them as individuals, they are placed together in succession. Much like training on a stringed instrument, one looks at the individual notes of the string before combining them with others; harmonisation theory breaks down into individual elements, and to combine them further into the teaching. The student's exposure in the first order was to develop the connection with the colours as static singularities; now, they are learning how to acknowledge them as combinations through the body's movements.

Relating the development from singular colours to combinations in the second order shows strong correlations to eurhythmics. If the basis of eurhythmics were to learn variations of movements that respond to singing songs and structures, then the second order would also respond similarly. By Diederichs' explanation, there is a series that looks like it is a practised form of choreography that looks to develop the colour combinations beyond their individual meanings. Attaching and learning them in sequence builds from the first steps, because in this way, there can be a fuller exploration of how they work together. Colour combinations are further explored in the third order.

2.2.3 The third order: training the spirit

The focus of the third order exercises is on actions as colours. Moving away from vertical movements, the third order now focuses again on movement around the room mapped as

[66] Radrizzani 2004, p. 53.
[67] Diederichs 1920, p. 137.

certain ways of walking in combination with a specific set of postures. These movements equate to the mental concentration on certain colours, and they incorporate not just posture, but also the wider space around the students. Symbolically, this is taking the previously learned motions from the inner body and allowing them to encounter the world around them, moving the inner to the other areas of the room. As well as this, there is more focus on movements and emotions that are displayed by the eyes. The eyes and the ears are crucial to the third order, as through the development of the first two orders, the students should now be completely comfortable with identifying colours and sounds in their basic forms. Increasing the range of movement will help to incorporate those lessons into more everyday movements so that students are subconsciously practising them.

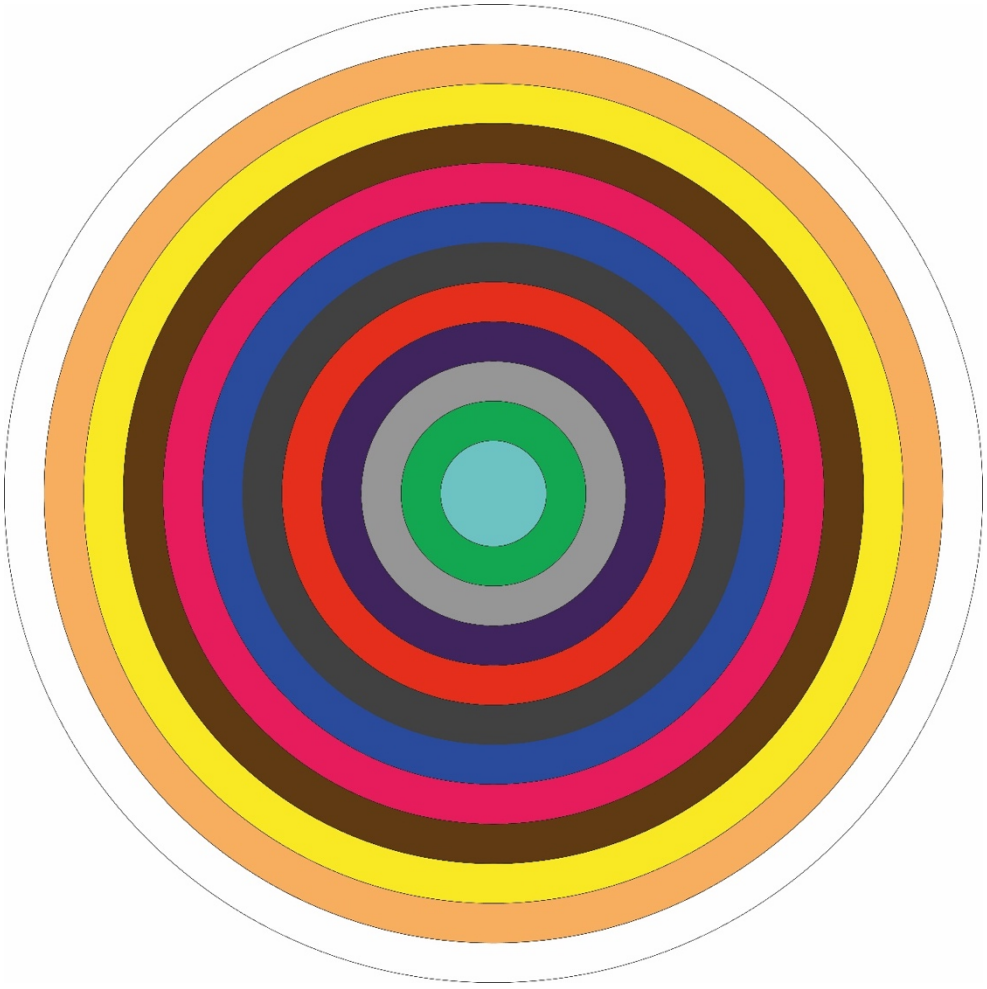

Figure 6 The third order, adapted from Radrizzani 2009. This order is now back to a circle on the floor that incorporates the vertical representation of the second order.

The sound stimuli are also more complex in the third order than those in the first two orders. Heitmeyer describes their development as “the sound we had heard in the first order as primitive clang has escalated to a chiming tune in the second. In the third, it will

be experienced through clear hearing and valued as a pure sound. It can be expressed as a tuning sound."[68] From the text, primitive clang is an inference to single notes, the fundamentals, as with the rest of the exercise. The chiming tune in the second order is a development through a combination of notes, and this shows the introduction of notes played in succession as melody. In the third, this is described as pure sound, which assumes that chords, based on complementary colours, are also included in the training. A more complex response would be assumed from the student, as there is more than one set of movements that would need to be applied to a chord. Heitmeyer also refers to the inclusion of the student's singing voice, which would add to the layering of notes. Playing notes simultaneously would have presented the students with multiple movements within the sound triggers.

This last stage of the development would be considerably influential for the work that Grunow was doing while at the Bauhaus. Students' responses in the third order would be unique to everyone, as they would all be responding to parts of the sound presented to them. These responses would help to assess which emotions the students would be responding to. These emotions had their own colour and sound attached to them, as learned in the first and second orders. In addition, each of these had their own material attached to them. The function of Grunow's teaching from 1922 onwards was to assess the student's potential to continue into other workshops past the foundation course. Their movement responses would have significance to a material, which they will have interpreted from the chord stimuli. For example, students that identified E within the chord showed likeness to the colour green/blue, linked to steel. This would be the basis of the argument that the student would be suitable for the metal workshop upon completion of the foundation course. Identifying these connections would have been the primary function of harmonisation theory within the Bauhaus.

Furthermore, the development from each of the three orders was the pinnacle of understanding harmonisation theory. Heitmeyer explores this by inferring the practice outside of the one-to-one session, and instead into students' day-to-day practices. She states:

> To achieve a balance between the spiritual and the physical, a harnessing and erection of the senses, the soul, the body, and the mind must be tuned together.

[68] Heitmeyer 1967, p. 7.

> The collaboration of the three elements leads to cognition, oversight, and appreciation. In a healthy individual, the three orders are constantly in use, it is only a question of which is more emphasised at any given time. There is a lively interchange amongst the orders.[69]

All three orders are essential for a student's development, as evidenced from this exploration above. Unity of body, soul, and mind allows students to be able to identify their own motivations from their emotional states, and to then be able to apply this to their practice as artists to create a universal balance within their work. They become connected to the wider spiritual motivations for creation of their own work. Ultimately, training in the three orders allows them to create balance, which is "healing" and "is an affirmative life direction and comprehension in a deeper understanding of man and the world".[70] The claim here is one of grandeur, of which the students can achieve their best work when balanced and appreciation of the natural world. Ideally, this should give confidence to the students to know that their practice tuned to them as individuals, but they will also be able to present their work as having universal appeal.

2.2.4 Purpose of the three orders

The third order attempted to establish the psychological motivation present in harmonisation theory, and what the students were supposed to experience as a final place in the journey. The mental and physical impulses triggered by a specific colour or sound are, according to Grunow, the same for all people, but the prerequisites first have to be created for these impulses to be felt and to be effective. Therefore, the order system had to be followed first, as a sort of calibration for students to go through, and everyone required a different process to get there. Based on the implementation of the exercises, Grunow judged the personal dispositions of her students.[71] From then on, physical and psychological disorders and inhibitions were worked on to best tune each student's comprehension based on her observations.

The students came to Grunow with different requirements – special abilities, problems, and inhibitions. At the end of the students training in the three orders, there should be a mental–physical–spiritual balance, which should especially enable a person to be creative. The order system centrally focused on this idea: to help a student to achieve

[69] Heitmeyer 1967, p. 7.
[70] Heitmeyer 1967, p. 8.
[71] Wahl and Ackermann 2001, pp. 167–169 & 300–302; cf. Burchert 2019a.

balance through the exercises, to achieve a state in which they are prepared to fully conceptualise their artistic understanding and energy, and to allow their body to be able to properly exercise these intentions through their physical movements. This recognition bridged different artistic practices that developed with music students and used specifically for the workshops at the Bauhaus, and it even had applications in psychology. After the Bauhaus, applying harmonisation theory to physiological research would be Grunow's key development, which would continue for the rest of her career.

2.2.5 After the Bauhaus

Grunow left the Bauhaus at Easter 1924; she was dismissed by the Bauhaus master's council as her teaching was seen to no longer benefit the school.[72] Grunow's teaching was removed from the curriculum by a masters' vote in October 1923 by six votes to two. The minutes of the council of 23 October state: "There is a lengthy exchange of views on the inclusion of Miss Grunow's harmonisation theory; it is generally stated that there was no definite recognisable effect of this teaching within the framework of the Bauhaus endeavours in the three years."[73] Her next position was at Hamburg University, working with Heinz Werner, from October 1924. Meanwhile, Heitmeyer married another Bauhasler,[74] the painter Otto Nebel, in the same year. The Heitmeyer and Nebel established themselves in Berlin, and Heitmeyer established her own harmonisation theory course. The pair remained close; however, their practices differed from this point onwards. Heitmeyer continued to teach harmonisation theory as it was taught at the Bauhaus, while Grunow began working with Werner to establish more about the psychology of harmonisation theory and its possibilities for exploring the human psyche. She would continue this line of enquiry up until the end of her life, working across Germany and Switzerland.

What can be seen even during her time at the Bauhaus is that harmonisation theory had developed a long way from a simple singing practice. The genealogical constellation points of solfège, bel canto, and eurhythmics were present within the three orders. Indeed, singing practice, which was so important to Grunow's earlier work, is barely mentioned in the three orders that were displayed from her teaching at the Bauhaus. By this point,

[72] Cf. Baumhoff 2001 and Wingler 1969.
[73] Wahl and Ackermann 2001, p. 314.
[74] "Bauhausler" refers to a "Bauhaus student".

most of the musical elements of harmonisation theory had been reduced to the 12 notes of the chromatic scale as markers and stimuli for colours. There was no further development regarding how this worked as a musical practice; instead, the notes were established as emotions. For the purposes of this study, there was little else that could be gained from examining her later work. At this point, it is instead worth taking stock as to what parts of this history are established through the practical component of the project.

2.3 The impact of the Bauhaus on Grunow's historical legacy

Grunow was a key figure at the Bauhaus for a third of its life from 1919–1924, and much of the work she did on harmonisation theory developed before this time and away from its influence. The Bauhaus Archive, however, holds all the remaining sources on her, including Heitmeyer's and Steckner's descriptions of harmonisation theory. By association then, this means that her legacy relies on the Bauhaus, which suggests her work was localised to the Bauhaus alone. In addition to this, their representation of her has never explored the full depth of her work, as has been done above. Her impact and her work are instead condensed into working between sound, movement, and colour, because of the conditions by which she left the Bauhaus.

While she was the first female member of staff to achieve the status of master, the different presentations of her position within the school lead to confusion regarding her role and function. Figures such as Walter Gropius, Hannes Meyer, and Ludwig Mies van der Rohe were always directors, and similarly, Paul Klee, Johannes Itten, and László Moholy-Nagy were always masters; however, Grunow never achieved the same level of prestige as her peers. Grunow's removal from the Bauhaus so early in its history meant that she was never able to achieve the same level of fame as her peers. Her marginalisation within the Bauhaus canon meant harmonisation theory never had the merit of being associated with artists before the school's formation, and the legacies of the other Bauhaus masters are continued with the celebration of the institution as being key figures. Grunow's work before the school was as extensive as that of her male colleagues at the school; however, she has never been celebrated in the same way. Grunow's removal contributes to her lack of representation; as the master's council wished to move away

from Itten's teaching and ideology, and the image that gave the school, it meant Grunow could no longer be part of the preliminary course.[75]

Many scholars link Grunow's departure and loss of favour with the master's council to her association with Johannes Itten. After conflicts with Gropius and other members of the college, Itten had submitted his resignation on 4 October 1922, and taught at the Bauhaus until March 1923.[76] Gropius had complained about Itten's preliminary course:

> The consequence of the previous system (Itten's preliminary course) that we have adopted has shown that the individuals, when they are accepted after the preliminary course, are overloaded with fermenting thoughts and consequently weakened self-discipline. They now enter the workshop and are expected to participate in hard manual work, for which they are not prepared. The result is perplexity, which makes them unable to carry out the manual work simply, steadily, and in an orderly fashion. Every stroke of the hammer becomes a philosophy, and the work itself gets stuck in a cycle.[77]

However, this charge of paralysing intellectualism could not be applied to Grunow's teaching. Grunow's pedagogy did not aim at the same ultimate goal of eliminating reason as Itten's teaching did, but it was instead focused on awakening individuals' creative powers.[78] Instead of conveying established paradigms of history and philosophy, her goal was to help students achieve their artistic potential through harmonisation theory. She attempted to set students the goal of creating the preconditions for creative activity – through the harmony of body and soul. In so doing, she emphasised emotions and subjectivity to an extent that did not fit the new pragmatic orientation of the Bauhaus and its turn to industry. Therefore, Grunow's lessons did not prepare students directly for the manual work that was demanded by the workshops.

The unconventional approach of harmonisation theory thus stood in conflict with the rationalist redevelopment of the school. From the summer semester of 1923, László

[75] As mentioned above, because Grunow's and Itten's approaches to spirituality, as well as their use of colour to denote emotional responses, are key focuses in their artistic practices, they are often placed together. Itten's teaching followed principles of Mazdaznanism; while many of his teachings were concerned with breathing exercises, meditation, and a vegetarian diet, outside the school, this gave a reputation to the Bauhaus students as being cultists. To appease the new right-wing government in Thuringia in 1923, the Bauhaus master's council removed Itten from the preliminary course, in favour of Moholy-Nagy. Association with Itten meant that Grunow was also removed, as the pair worked together closely. Cf. Bauhaus Kooperation 2023, Otto 2019, Wick 2019, and Wingler 1969.
[76] Cf. Wagner 200.
[77] Gropius in a circular to the form masters of 13 March 1923, in Whitford 1993, p. 139.
[78] Cf. Grunow 1923, p. 22.

Moholy-Nagy acted as the leader of the preliminary course. Although Itten's and Grunow's teachings were complementary, Moholy-Nagy likely knew little of what to do with Grunow despite central overlaps in their pedagogical approaches. With the rationalist changes brought in by Moholy-Nagy, coupled with Grunow's dismissal, it is clearer as to why she is not a prominent figure in wider canonical representation of the Bauhaus. Her association was to a part of the school's history that was undesirable given the rising right-wing sentiment in Germany. Little has been done since then to revise this position. Grunow's exclusion from the Bauhaus' main historical narrative has had a detrimental impact on her legacy. Since Grunow was unable to consolidate her life's work as she had intended, her legacy was left in the hands of the institutions that she worked for and represented. The prestige of the Bauhaus would have been able to highlight her theories and their intentions if she had been better represented within it. This leaves her marginalised by the dominant canonical version of the school's history, and in turn as a relatively unknown figure in general. With this in mind, Grunow was more than her work at the Bauhaus, and it is not solely her marginalisation that contributed to her being lost to history. The centenary celebrations were used as an opportunity to look to challenge marginalised figures and movements within the school's canonical representation.[79] However, Grunow was not included in this revision of the Bauhaus' history.

Recognising Grunow's work outside of the Bauhaus' canonical representation was established as a gap in the centenary celebrations. Her exclusion, as stated above, was as a result of the political climate, which impacted her historical representation considerably. The practices of Grunow's peers are celebrated as being part of an artistic revolution from the school,[80] a status that Grunow does not share. It is then crucial to create a base in which her legacy can be explored not as a product of the Bauhaus, but as a unique theorist with multiple influences. This was thus the basis upon which the rest of this research was undertaken. After establishing a version of Grunow that explores her beyond the Bauhaus,

[79] The *Bauhaus Imaginista* was meant to use the centenary as a departure point for exploring the other schools of modernism which happened outside of Europe. Presenting modernism as a global exchange of ideas, it looked to modernisms development as not a strictly European phenomenon. This is a major example of a curatorial project which attempted to look into more marginalised histories around the school. Within this project, as can be seen in Bauhaus Kooperation article, *Mysticism and Mazdaznan* (2019), some figure reputations were revised, which did not happen for Grunow.

[80] Art historian and curatorial researcher Gavin Butt is one of many examples of how the Bauhaus' pedagogic model was influential in other areas of art history. Part of *Still Undead* looked into the impact this model had on British art schools in the 1970s. Cf. Butt 2022 and Nottingham Contemporary 2019b.

the next step was to conceptualise how to make harmonisation theory work in a contemporary context.

2.4 Working with Grunow's archival materials for the commission of *Eight to Infinite*

The curatorial research in this project meant that conveying the importance of Grunow as a historical figure would need to be completed in a public setting. Working with the Live Programmes team at Nottingham Contemporary for *Still Undead*, this was first explored through a Study Session that looked to examine Grunow and Oram through the connection of optical sound; using colours and shapes to make music that nurtured connections to spirituality.[81] This session was used as a testing event to be able to recognise how an audience would receive information about both historical figures. The feedback from this event was that the musical element was what was missing most from this presentation, and that understanding how these figures' materials could be used in a compositional context would reinforce the potentials of their work.

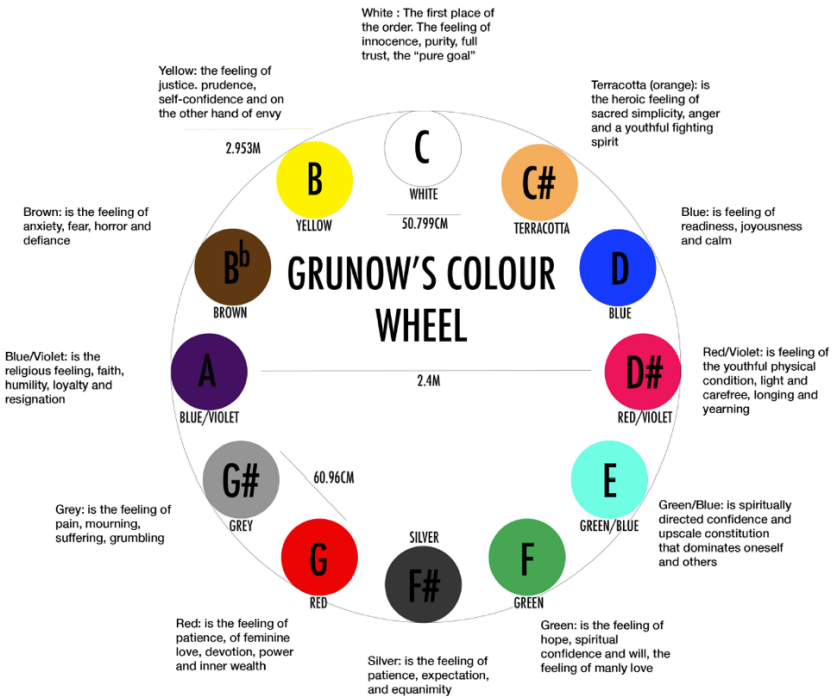

Figure 7. Diagram mapping Grunow's colours to notes and emotions.

[81] Nottingham Contemporary 2019a.

All the materials used to uncover more about Grunow in this chapter have been text based.[82] Translating these written sources into tools for musical composition was the next stage of the research. Having decided to work with a contemporary composer to explore this, the first step in the commissioning process was to work with Afrodeutsche as the composer on the project. Grunow was the first of the two figures that we worked through together. All the materials that I had collected on Grunow were shared with Afrodeutsche through setting up an online workspace. After our first meeting, Afrodeutsche interpreted her version of Grunow's archival materials for two months before the next meeting. From this, Afrodeutsche identified the most poignant parts of Grunow's which she would explore within the commission.

The two main sources she used within the composition were those which I created as supplementary materials for talks between 2019 and 2020. These were a diagram (Fig. 4) mapping Grunow's colours to notes and emotions, and a recording of the talk given at *Upload Festival* in 2020.

I created this diagram as an interpretation from translating part of Heitmeyer's text; it links the colours to the emotional states and is arranged to go clockwise from C/white to B/yellow. Here, I have prioritised the order of notes, as opposed to the colours. The diagram resonated with Afrodeutsche's previous practice and therefore became a focal point of her practice for this composition. Previously, she used colour to code distinct parts of the composition – e.g. the bass line, the drum part, the synth melody line – using the colours to help her acknowledge their place within a score. Working in this way meant that she was able to deepen this appreciation of the use of colour to incorporate an emotional response as well as the coding. For example, she might label a melody line so that it responded to one of the emotional responses of the colour as a way of further coding the colour; this sought to help to further develop her practice so there was greater realisation of the intention of the music and its perception. This was certainly the intention for this composition, as Afrodeutsche wanted to test the universality of harmonisation theory to see if the audience would respond in the intended way. In addition to using it as a compositional method, this was a way of testing how harmonisation theory would be put into practice from a contemporary perspective. As previously mentioned, there are no surviving scores or documentation of what the music associated with harmonisation

[82] With the exception of René Radrizzani's 2018 work.

theory was; therefore, there is no step-by-step version of how this music would have been composed. With no guidance from the archival material, there was free rein as to how to use harmonisation theory as a compositional practice.[83]

In harmonisation theory, Grunow observed the responses to individual notes, and the 12 notes of the chromatic scale were linked to the colours as a way of pitching the colour to the human response. The reactions Grunow observed then led to a range of emotions that were linked to colour and frequency and displayed through movement. Her theory rests on the way in which one physically moves to the colour triggers, and if a person moves correctly, they are intricately linked to the world around them. Relating the students' emotional responses to the musical triggers was a key point of interest for Afrodeutsche. She requested that more work should be done to identify Grunow's exact thoughts on each colour: what emotional responses did they trigger, and how did they then relate to each note? Acknowledging the relationship of the notes and the relationship to colour would be the focus in the early commissioning process, to collate and to understand how the colours were situated in Grunow's theories.[84]

Using the above diagram, Afrodeutsche explored different combinations of the notes by creating visual scores in card.[85] The colour of each card on the visual score represented a note and a set of emotional responses that she wanted to convey within the composition.[86] Within the composition, she also aimed to present all 12 of the colours that were shown in this diagram (Fig. 4). For this reason, she decided to create three movements in the composition, with each being made from four notes; this allowed for all the notes, emotions, and colours to be present within the whole composition. In addition, the music in the three movements reflects the process of the three orders. The first movement starts melodically simple, just as the student would have first encountered harmonisation theory. The intensity builds in the second movement, as the complexity of the second order also adds in extra parts to the process, building upon the first movement and first order. Finally, the third movement presents a more complex melodic section than the others. The piano here also adds in a voicing that is present much like the singing voice

[83] Explored in a later section; Afrodeutsche selected elements of harmonisation theory and represented them in the different movements of the composition.
[84] The main evidence for this comes from Heitmeyer 1967.
[85] Displayed in a later chapter.
[86] As will be discussed in Sec. 6.3, she did not follow the exact colours, however, and made her interpretation based on her previous practice.

within the third order. Each of these movements was first visually created in card, of varying shapes and sizes, and this was used to map the direction of the music.[87] Once the visual scores were created, the composition was built upon by adding in elements from Oram's work as well, presenting their two theories in conjunction with one another.[88]

One of the biggest influences that Grunow's work had on the final composition presented in *Eight to Infinite* was the addition of a dancer, Martin Tomlinson, within the live performance. Afrodeutsche had ignored the importance of movement during the composition process, focusing instead on how the music might take shape around the archival materials. It was only later on in the process that she explored movement from Grunow's perspective and its potential to work with harmonisation theory. Her decision was to involve a dancer, with the intention of having the dancer hear the piece for the first time during the performance. This was her way of testing how somebody would react with the music, however, in the end Afrodeutsche did give him access to the piece before the main event. The reasoning for this was so that he could develop a choreographic journey in advance of the performance, and to see how the reaction of a trained dancer might develop with this interpretation of harmonisation theory in mind.[89]

Relating this to the development that Grunow's students undertook during their lessons, it makes sense that there would be a greater exposure of the performer to the music beforehand. The way in which they would interoperate the movement was part of the testing of the composition; however, this was not to be a presentation of the same eurythmic process that Grunow had undertaken.[90] Instead, it was down to Thomlinson to create his own meaning with the materials with which he engaged before the performance; he then presented what was a journey through his own struggles and emotional representation of the theory, rather than exploring the time signature with his left hand, and rhythm with his right.[91] As with Afrodeutsche's work, I did not want to recreate Grunow's work (or just a presentation of the historical materials associated with it), but

[87] Here, direction denotes the movement within the composition, and this will be examined in detail in a later chapter.
[88] How Afrodeutsche worked with Oram's legacy is analysed in Sec. 3.1, and how this works with Grunow's legacy and Afrodeutsche's composition is analysed in Sec. 4.3.
[89] A full analysis of Tomlinson's contribution comes in Sec. 4.2.
[90] As Eurythmics was only an influence to Grunow, and not the whole of harmonisation theory, it would not be necessary to create a prescribed way of moving to particular notes.
[91] Ibid. note 85.

instead facilitate a contemporary response to it, influenced by Grunow's life and career so that a parallel canon can be established.[92]

2.5 Conclusion

Compiling a full biography for Grunow, this chapter is the first step in the process of creating a parallel canon. Establishing, through this biography, the genealogical constellation of theories that influenced the development of harmonisation theory, the research uncovers more about Grunow's history to use as a basis for the commissioned part of the project. Having understood the biographical version of her history and removed it from the Bauhaus' dominant canonical version, there can be a space for interpreting harmonisation theory in which new appreciation and response to her legacy can be created. The commissioned part of this project begins to manipulate these findings through the interpretation of Afrodeutsche and Martin Thomlinson. This further removes Grunow away from the marginalised version of her legacy.

Creating these new works builds from the initial break away from the dominant canonical representation, creating an alternative legacy. However, the exploration of the other theorists in this chapter, as well as the attempt to provide a fuller history of harmonisation theory, sought to create different anchor points for Grunow that were outside of the Bauhaus's representation. Contextualising her practice in this way means that there is now an alternative and more complete version of her legacy upon which other curators and artists can build. This can be in direct response to this work, the contemporary pieces that were created using the archival materials, or indeed looking to the motivations of the other theories that are constellation points within Grunow's practice. For example, it might take a different approach to examining movement and create a version of eurhythmics, developing from Grunow's practice instead of Jaques-Dalcroze's. This work would further the legacy of Grunow and add to the process of parallel canonisation, moving beyond the canonical representation of her work within the Bauhaus. For the purposes of this study, however, the direction that was undertaken for the curatorial practice was to attempt to incorporate another pioneering, yet historically marginalised, figure within the context of the *Bauhaus Imaginista* and *Still Undead*. This figure is Daphne Oram.

[92] Ideas of the parallel canon in relation to the historical materials will be analysed in Sec. 4.1.

CHAPTER 3:
Daphne Oram and Oramics

Having produced a critical account of the importance of Gertrud Grunow and harmonisation theory, the process of creating a parallel canon was underway. Through the initial research, the inclusion of Daphne Oram as the other significant theorist became pertinent and essential to the project. While the inclusion of Oram may be considered as an unusual addition to the collaborative framework of this project, these figures are linked by their exclusion from the exhibitions that had celebrated the Bauhaus centenary.[1] This is the main curatorial motivation for their connection, as marginalised figures, they present a gap in both exhibitions. There are many more things that link them, including optical processes for music, and the use of musical stimuli to achieve spiritual connection.[2]

When examining their practices and theories, one could see that there is a vast divide between Grunow and Oram that is perpetuated by time, institutional belonging, and differences in national affiliations. Oram operated after Grunow's death in 1954 and shared no direct or obvious connection to the Bauhaus. Oram's theory, Oramics, is not informed by a pedagogic practice; instead, it is concerned with technical approaches to making sound that create possibilities beyond traditional instruments. Harmonisation theory and Oramics from the outset seem to have little in common with one another; however, upon examining the broader aspects of Oramics, a significant number of connections can be found between their motivations and sound practices. Indeed, while the initial link between harmonisation theory and Oramics comes from their omission from *Bauhaus Imaginista* and *Still Undead*, there are more significant connections that can be established. Indeed, without Grunow's inclusion in the centenary exhibitions, the legacy of optical sound linked to the Bauhaus is not possible, which makes Oram another candidate for further marginalisation. Understanding Oram's career will help develop the

[1] Oram did not have any connection to the Bauhaus, and therefore it makes sense that she did not have any representation in the *Bauhaus Imaginieista*. Oram, however, would have been ablte to have a clear link to *Still Undead* if Grunow had been celebrated as a Bauhaus master, and would have clearly opened the musical legacy of the school.
[2] This is explored later in this chapter, in Sec. 3.4.3.

links to Grunow's theory based on the use of optical sound as a method to connect the human experience of music to a spiritual field.

This chapter will draw on the archival materials on Oram and Oramics located at Goldsmiths College, University of London, and the BBC Written Archive. These materials will be used to provide a critical account of Oram's career and the journey that led her to create the Oramics Machine. After this examination, I will examine Oram's philosophical motivations as mapped in her book, *An Individual Note of Music, Sound and Electronics*,[3] to understand the genealogical connections with other theorists. *An Individual Note* establishes Oram's motivation for the ideal compositional process as a method training the human mind through the Oramics Machine, as a conduit to connect to the spiritual through a mode of thinking Oram coined the "celetal".[4] Finally, Oramics will be analysed in response to the commission, *Eight to Infinite*. The journey Afrodeutsche took using the Mini-Oramics Machine[5] and Oramics within this composition will be evaluated.

Similar to the study of Grunow's work, a genealogical process was undertaken to understand Oram's motives and influences in order to construct the groundwork for the parallel canon. Understanding Oram's influences helps to establish contextual links for Oramics outside the BBC's dominant art-historical canon. In addition, this also creates a richer understanding of her motivations for creating the Oramics Machine and the theory behind Oramics. While Oram's influences are more complicated to decipher than Grunow's, she alluded to her motivations in her book, *An Individual Note*, in which she draws upon philosophy, engineering, mythology, and literature. Unlike Grunow, no direct sources point to collaboration with other artists, theorists, or composers; indeed, much of her work was done in isolation and was more of a response to a variety of different influential positions. In *An Individual Note*, Oram presents Oramics alongside a rich and diverse cultural motivation for her work, and she explores a deeper understanding of how she intended Oramics and the process of the machine to affect the human being. The works of Grunow and Oram are deeply connected, as both engaged in transcendental sound processes. Despite the functions of their versions of optical sound being

[3] This is shortened to *An Individual Note* for the rest of this chapter.

[4] Celetal, linked to the Greek myth of Demeter, is the term which Oram uses to describe a "feeling from the divine". This is explored in more depth in Sec. 3.4.3.

[5] A recreation of Oram's original Oramics machine, created by Tom Richards using blueprints from Oram's Archive at Goldsmiths. Cf. Richards 2018.

fundamentally different from one another,[6] they both used optical processes to achieve the same end.

Oram's connection to the spiritual is highly evident throughout *An Individual Note.* This text is the primary source for my discussion of Oram and Oramics, as it presents her own words on how she navigated a highly technical process to create the Oramics Machine in a way that can be linked to Grunow. Oram's instrumentation was vastly different to Grunow's, as Oram was concerned with identifying the notes between the keys, referring to the different frequencies or microtones that are not present on the piano keyboard. In *An Individual Note*, Oram explores this through a review by Max Harrison published in *The Times* newspaper, critiquing a concert at The Queen Elizabeth Hall in October 1968. She quotes this review as follows:

> The piano playing … was note-perfect as anyone might wish. Yet the expressive aridity of the major parts of his performance demonstrated – as clearly as anybody could wish – that music lies behind or between the notes, rather than consisting merely of them.[7]

Here, Harrison is talking about the quality of the performance, stating that though the rendition of the piece was "perfect", it left him unable to emote because it was simply a recreation. There was no performance, no other energy, just somebody playing the music as it was written. Oram, however, uses this quote to establish that further study is needed to understand what exactly is missing, leading on from this to two of the major points in *An Individual Note.* Firstly, on a superficial level, it opens her discussion onto how the equal temperment misses a vast range of frequencies of sound, and the "notes between the keys" should be included in music composition. Secondly, it establishes that there is another emotive force that needs to be considered when performing music. Oramics emphasised the connection to an enhanced emotional state with her compositional method, and this will be explored throughout this chapter as the crucial connection with harmonisation theory.

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[6] Grunow used colour as the basis for her optical method, whereas Oram used hand drawing. These are different processes; however, they ultimately present a similar version of the effect on the human being. Their respective methods, united by movement, allow the user to connect to a different way of thinking through the sound. The way of thinking operates as a means to transcend to a spiritual connection that is related to forces connecting individuals to a collective understanding about sound.

[7] Oram 1972, p. 26.

Grunow strictly worked with the piano as the instrument that created the sound as the basis of harmonisation theory. This distinction is important because the classification system used with Grunow's theory represents a fraction of the notes available from the Oramics Machine. This disconnect is what that Afrodeutsche would choose to explore within the commission with respect to the feasibility of using the notes of the chromatic scale in conjunction with Oramics. Attempting to connect their theories would be a crucial part of the commission, while drawing these links also helps to create a parallel canon. Combining the contextualisation of harmonisation theory and Oramics adds links to the dominant canon; connecting them will allow for a stronger foundation upon which the practical work can further this idea as a parallel canon.

This chapter aims to explore Oram's practice through the progression of her career to demonstrate her development towards creating Oramics, which was used as the basis for the commission. Again, I will explore this as a genealogical study, but with a difference in how I attempt to create the constellation points. In this part of the study, I will use *An Individual Note* as the primary source for the discussion. Within her text, Oram does not explore outside influences as direct collaborations but instead as philosophical motivations to add to her argument. These are used to justify the mechanical and technical elements of why the Oramics machine was created. Most of the current literature on Oram investigates the processes of how the machine was built and used, not the motivation behind it, and therefore overlooks *An Individual Note*. This means that there is much more literature to draw on to understand how Oramics is used, and how it can be used as a compositional tool. Since there is no surviving record of exactly how Grunow's harmonisation theory was practised, using the extended materials on Oramics would mean that incorporating both would be unbalanced. Instead, I approached Oramics the same way as harmonisation theory through a philosophical understanding of how Oramics intended to connect the user to a spiritual understanding though music: the motivation and the influence for creating her theory, not the musical practice itself.

Similarly, Afrodeutsche did not want to listen to what Oram was creating with the machine, as she did not want to copy Oram's work or recreate it but instead to create a version of Oramics that was more intricately linked to her own practice. Again, her motivations for creating the musical composition drove the archival research process in order to create a contemporary practice linked to both historical musicians, in addition to

Afrodeutsche's own. As has already been established with Grunow, it is crucial to identify Oram's current legacy as the archive presents it. This begins with establishing her as a historical figure to whom Oramics can be attributed.

3.1 Oram's biography

Daphne Blake Oram was born in Wiltshire, England, in 1925. From an early age, she was educated in the piano, organ, and music composition. She was also introduced to radio electronics by her brothers. Together, they would transmit music by radio around their home.[8] There is little other evidence for her development at this stage in her life; however, the influences of music and electronics were embedded into her life from an early age.

In 1942, Oram turned down a scholarship from the Royal College of Music in London. Wartime regulations for this institution would have stipulated that Oram must sign an obligation to become a music teacher upon graduation. With no desire to become a "school ma'am", she turned this position down in favour of working at the BBC. Capitalising on the lack of engineers because of the war, she attained a position as a Junior Studio Engineer and music balancer.[9] In this position, she worked with the radio programme *Music in Miniature*[10] to shadow live concerts and simultaneously play recorded versions of the orchestral pieces. This work aimed to ensure that the broadcast could continue if the performance was stopped due to an air raid. These were pre-recorded versions of the concerts, which Oram would have to manage, maintain, and keep in line with the performance as it was going on. *Music in Miniature* was as much of an artistic endeavour for Oram as it was for the featured players: "With no intermediate announcements to stop the flow, the programme enabled me to devise 25 minutes of continuous controlled sound, shaped as if it was a complete composition from beginning to end."[11] The programme was minimal, and it allowed Oram the freedom to highlight music without the interruption of announcements. The program began with strains of *Elizabethan Serenade 8* and a short announcement of the musicians who would play in the episode. It closed with a rereading of the artists' names along with the composers

[8] Daphne Oram Trust n.d.
[9] Cf. Daphne Oram Archive ORAM3/1. For brevity, subsequent citations of material in this archive are given by their reference number alone.
[10] A radio programme that presented non-stop chamber music for half an hour every day. The programme was created with Basil Douglas, the general manager of the English Opera Group (cf. Garnham 1998).
[11] ORAM/3/4.

featured.[12] Oram's work presented the opportunity to combine music more closely with emerging recording processes and electronic means of producing sound. The combination of electronic and live music would stay with her throughout her career.

Oram would continue working with *Music in Miniature* and develop her practice using live and recorded music simultaneously. These early experiences using turntables and mixing sound in the complex acoustics of the Royal Albert Hall inspired Oram to explore the spatial and acoustic aspects of orchestral composition, harnessing the newfound potential for live manipulation of amplified sound in performance.[13] This practice led her to her next project, *Still Point* (1948–1949). *Still Point* was a 33-minute-long composition written for an orchestra, where the soloist played three 78rpm vinyl discs on a turntable with pitch, echo, and tone controls.[14] The soloist[15] would manipulate the output of these discs while accompanied by the orchestra, controlling their speed, altering the tone, and fading between them, creating a "giddy sense of freedom and [an] ever-changing perspective"[16] in the music that was being presented. The idea to work with recorded and live sound was heavily influenced by the work Oram undertook with *Music in Miniature* to combine electronic music with live instruments. The media on the discs consisted of three recordings of the piece to accompany them in various settings. Side A was recorded in a reverberant room, and side B in a room with dry acoustics. Playing with these features presented vastly different tonal qualities to the music that was being played in the background and acted as a way of distorting the accompanying music. *Still Point* was never performed live during her lifetime, as it was rejected by the BBC's programme *Prix Italia* in 1950 because the score did not meet the criteria for submission.

Oram's experimentation with *Still Point* allowed her to better understand the potentials of electro-acoustic composition. Manipulating recorded sound to enhance the music was a development that Oram would continue to work on within her new position as Studio Manager in 1950. Oram continued her work by developing recording manipulation

[12] Old Time Radio Catalogue n.d.
[13] Bulley 2018.
[14] The manipulations present on the turntables (echo, tone, and pitch), as a direct influence on her later practice, are present in the final Oramics machine. I can only speculate that these were the same functions that were available to Oram on the turntables she was using for her broadcast work and were manipulations that she would be familiar with in the editing process for *Music in Miniature*.
[15] Soloist here refers to Oram herself. This was her use of the term to see her manipulation of turntables as the same level of skill as the soloist in a traditional orchestral sense.
[16] Oram 1972, p. 6.

techniques to create music that relied on "no microphone, no artist, no studio – just a composer and a recording machine."[17] This demonstrates that Oram was already thinking about the possibilities of using recorded media in a way that did not rely on instrumentalists recreating scores and allowed the scores to be universal. A musician playing music written by a composer interpretates the piece to suit their own interests, which is different than the composer's original intention. The microphone acts as a way of capturing this interpretation, and the studio works with the false version created by the artist to further manipulate it through the editing process. With the microphone, the artist, and the studio, being removed, the only component left in the process is the composer, which meant that in Oram's idealised vision, the composer is in direct connection with the audience.[18] Oram was striving for a process that enables a composer[19] to directly create works and perform them to a listener.[20] In a report to her managers in 1956, she wrote:

> Once a composer can write without performance limitations, his palette is extended enormously… Rhythms become anything the composer can visualise without them having to be playable. Timbres have no registration; theoretically, any sound, musical or otherwise, is within his grasp.[21]

Here, Oram introduces some core concepts for Oramics. Firstly, describing the limits on performance shows that she was thinking beyond current modes of experiencing sound. Performance, be it in person or recorded, is limited to the ability of the person doing it; it relies on the musician's skills and their interpretation, and it is thus modified from the composer's original intention.[22] Similarly, the instrument can be identified here as a contribution to these limitations, as there is a distinct set of characteristics that are distinctive to each instrument. Recorded media share the same problem, because it still hinges on the performer and the instrument, with the added limitation of the microphone. This means that performance is limiting because both the performer and the instrument

[17] Ibid. p. 6.
[18] Cf. Oram 1972, p. 6.
[19] Oram uses the term composer as musician quite interchangeably.
[20] This is set up as being distinct from a solo performer–composer. For the sake of argument, a solo composer and instrumentalist could achieve this process easily, as they would know exactly how they wanted their instrument to be played in the context of their composition. Oram had a much grander vision for this process, as she was thinking about multiple instruments, or not even instruments at all.
[21] Oram 1972, pp. 6–7.
[22] In *An Individual Note*, she likens this to Schoenberg's term *durchführt*, which she translates as "to mean through". For Oram, the composer has to guide and evolve her material in all its aspects, and the best way to get this across to an audience is to be the person who performs it (Oram 1972, p. 27).

narrow it. It also implies that composition has a type of purity that could not be recreated in any way that Oram had encountered.

Secondly, it is significant here that Oram points to *visualising* rhythm. Contextually, visualising music would involve reading a written score. There is a disconnection in the language here, as she is describing what is a sonic art form in terms of how we see it. Visualising sonic possibilities is a questionable way of describing different options for creating music. This shows that she was already contemplating how the visual could become the primary stimulus for writing music. This part of her description also points to a notion that was a central source of motivation in her practice. Oram always had a fixation on the "cracks between the piano keys",[23] referring to microtonal compositions, which she was writing from an early age. The Western musical system, referred to as "equal temperament",[24] frustrated Oram as it presented 12 notes from an infinite range of frequencies that could be used to compose with. In Oram's ideal here, this system of frequencies is ignored; yet, any frequency can be *seen* by a composer and accessed through Oramics.[25]

Thirdly, Oram points to timbres having no registration. This furthers the first point about the limitations of instruments. Once again, "registration" is an odd term within this statement; however, if this is read as a form of classification, then it implies that instruments can be categorised. Categorising instruments, in this instance, does not refer to grouping them as different families – e.g. woodwind, string, brass, etc. – but instead as predictable sounds. Oram implies here that the sounds produced by instruments are limiting and predictable because they are always played in the same way. Composers, therefore, must follow a set of rules in composition that are dictated when using these instruments. Her solution in this idealised version of composition is that composers would not have to limit themselves to the instruments on offer but instead should create the sound beyond the limits presented by the registration. This is confirmed by the addition that "any sound, musical or otherwise, is within his grasp."[26] An infinite range of

[23] Ibid. p. 26.
[24] Equal temperament, in music, is a tuning system in which the octave is divided into 12 semitones of equal size. Because this enables keyboard instruments to play in all keys with minimal flaws in intonation, equal temperament replaced earlier tuning systems that were based on acoustically pure intervals, that is, intervals that occur naturally in the overtone series (*Encyclopaedia Britannica* 2022a).
[25] This is in direct reference to the oscillators which fascinated her in her early days at the BBC, that show a visual representation of an electric frequency. C.f Oram 1972, p.23.
[26] Oram 1972, p. 6.

possibilities are present because they can work within Oram's mind. The way to achieve this is to open composers up to the possibility of electronic methods of creating sound. This also suggests that human thought is the only limit to this process.

In 1957, Oram convinced her bosses at the BBC to supply her with a single tape recorder. They gave her half of an office at Portland Place, London, known as the Radiophonic Unit, where she was allowed to conduct her experiments. This followed on from a trip to *Radiodiffusion-Télévision Française* (RTF) Studios in Paris, France,[27] where she was given access to the Club d'Essai, the experimental electronic music division of the RTF. Club d'Essai was founded by Pierre Schaeffer in 1942, initially as a centre for the French Resistance to broadcast their propaganda under German occupation.[28] Through Oram's visit, the workshop had been integrated into the operations of RTF as their experimental electro-acoustic department, driven by Schaeffer's original experiments into *musique concrète*. This was a practice of manipulating tape recordings using different filters to alter elements of the recordings, such as pitch, echo, reverb, and tone. The connection to *Still Point* here is notable and undoubtedly affected Oram's thoughts on electronic music composition. Indeed, introducing tape into her practice would be crucial to designing Oramics and thinking about diverse ways to manipulate timbre. Oram experienced freedom with the tape machine. In crediting the process to Valdemar Poulsen, she talks about the potential that magnetic tape brings to musical composition. She writes:

> So the composer had a reusable 'painters' canvas' (the tape). But, also, this 'canvas' has an added dimension – *time*. It has a duration, for it gradually unfolds itself to the listener, unlike the painter's canvas which is viewed 'all at once'. The composer, in painting his sound colours onto his canvas, can gradually build up his composition, taking perhaps ten hours to build one minute of music.[29]

This extract signposts a significant development in Oram's thoughts about the composition of music, which is creating sounds as an artistic process. Before this, she explains the way that magnetic tape is arranged by creating different arrangements of tiny bar magnets within the tape itself. These bar magnets denote all elements of the recorded sound and are a visual representation of the music. Comparing this aspect to a painter's

[27] *Radiodiffusion-Télévision Française*, the French state-owned radio and television broadcasting service from 1949–1964.
[28] Cf. Palombini 1993.
[29] Oram 1972, p. 61.

canvas also shows that she has been thinking about the implications of fine-art practice as a way of composing. The distinction of time being a major factor in this exploration creates a notion that music practice builds on the painting or drawing process, as this extra dimension adds tension and the possibility for emotional development. Her fascination with tape would be a pivotal element to Oramics moving forward and would be the basis for her work until the 1980s.

From 1957, Oram would undertake her experiments within the Radiophonic Unit. She became deeply involved with her tape-machine experiments, staying after hours, and she was known to work late into the night. Oram would create tape recordings, cut them, and process them by looping them, slowing them down, speeding them up, and reversing the sounds. Her first successful composition using this technique accepted into programming would be the incidental music for *Prometheus Unbound* in 1957. This success and the increased demand for electronic sounds led to the BBC agreeing to create her studio, the Radiophonic Workshop.

3.1.1 The Radiophonic Workshop, BBC, 1958

The BBC began to take this work seriously, allowing Oram to create her own studio at Maida Vale. Oram was given free rein to design and create this studio; as she wrote to her parents in October 1958, "it's rather fun having to decide whether I should have four recording machines and three microphones, six filters, eight amplifiers, and an artificial echo machine or whether to reduce these numbers to have a disc-recording machine and four gramophones."[30] This description shows that Oram was attempting to create a multi-track recording studio within the BBC, a dream that was never realised. The BBC decided that instead of providing the Radiophonic Workshop with new equipment, they would capitalise on equipment being removed from the Royal Albert Hall.

Oram was able to acquire more equipment from other sources to realise her desire for the studio and prove the possibilities a multi-track studio could achieve; she would work hours between midnight and four o'clock in the morning to create and compose works of her own devising. After clearing old studios at the BBC, she acquired as many Ferrograph tape recorders as possible (Fig. 8). She placed them next to each other to create a makeshift multi-track capability. During these night-time sessions, she wrote the score

[30] Oram 1972, p. 8.

for the television programme *Amphitryon 38*[31] using a sine-wave oscillator, a tape recorder, and some self-designed filters.[32] This work was the first wholly electronic score in BBC history. Oram's next work was *A Winter's Journey*[33] – a work that the *New Statesman* would compare to Debussy's *Nocturnes*.[34] The space would be considerably successful, despite not having the equipment that Oram had desired.

Figure 8 A 1950s Ferrograph 4A tape recorder. Oram would use several of these machines next to each other to build a multi-track studio within the Radiophonic Workshop in Maida Vale, London (image: Snellings Museum 1974).

The Radiophonic Workshop presented its inaugural piece in 1958, creating an underscore[35] for the poem *Private Dreams and Public Nightmares*[36] by dramatist Frederick Bradnum. For this underscore, Oram and her two assistants, Desmond Briscoe and Norman Bain, used a similar process of manipulating tape to create a dark and brooding accompaniment to the poem. The sounds used included a cowbell, and human voices that were layered, repatched, and filtered so that they were unrecognisable from

[31] Cf. ORAM6/6/3 for a *Radio Times* article that signposts *Amphitryon 38* and its significance in being included in the programme.
[32] Weidenbaum 2011.
[33] ORAM8/9.
[34] Oram 1972, p. 8.
[35] An underscore is a soft soundtrack that accompanies the action in a performance. It is usually designed so that spectators are only indirectly aware of its presence, with the intention to set or indicate the mood of a scene (*Encyclopaedia Britannica* 2022b).
[36] Composed using the process of manipulating tape as described above (cf. ORAM/8/30/001).

their original forms. Donald McWhinnie, who commissioned this piece, described the work in a press release for this show as follows: "Nothing has come out of your loudspeaker before quite like this serious first attempt to find out whether we can convey emotional and intellectual experience through what we call radiophonic effects."[37] Here, the emphasis on the emotional and intellectual experience as being unique to this style of composition begins to align with the idealised vision that Oram set out in her writing in 1956. It was hoped that the electronic sounds would resonate with the audience in the same way that a non-electronic score would. The emotional state could be enhanced through electronic means, or at least this was the intention of the scores that the Radiophonic Workshop aimed to achieve.

In October 1958, Oram was sent by the BBC to the *Journées Internationales de Musique Expérimentale* at the Brussels World's Fair.[38] At this event, electronic composer Edgard Varèse performed *Poème électronique*, an eight-minute-long electronic composition written for the opening of the Phillips Pavilion that housed the event. *Poème électronique* was designed to be played alongside a film and mapped the space of the building, played through hundreds of speakers controlled by rotary telephone dials so that it could be projected up and down the lengths of the walls in the pavilion. The original recording for this piece was made on three monaural tapes, which were then combined into a single 35mm perforated tape to synchronise the audio with the film's visuals.[39] For Oram, this work showed what could be achieved with appropriate funding and support.[40] This event would lead her to become disheartened with the limitations imposed on her by the BBC as an organisation that did not support electronic music, seeing it as secondary to traditional music composition.

Being unhappy at the BBC Music department's continued refusal to push electronic composition into the foreground of their activities, she decided to resign from the BBC. In 1959, less than a year after the Radiophonic Workshop had opened, with new ambitions to create a space where she could practice open-ended musical experimentations independently. She set out her reasoning in her resignation letter as follows: "As you know, I wish to spend my energies in certain fields, and as these fields are not

[37] ORAM/7/3/5.
[38] ORAM/3/3.
[39] Lombardo et al. 2009.
[40] *Poème électronique* was funded by Phillips & Company, who also commissioned the building of the pavilion.

continuously open to me within the corporation, I have now arranged to pursue these activities outside."[41]

3.1.2 Tower Folly and the development of the Oramics Machine after 1959

Working from her studio at Tower Folly in Fairseat, Kent, Oram could conduct the type of research and compositions she had dreamed of while establishing the Radiophonic Workshop. In her studio she used equipment that she had acquired from army surplus shops. A reporter for *The Times* described her studio in 1961: "the room, with a coal fire, is small, with walls festooned with loops of tape like onions, and three superior tape recorders stand side by side on a desk."[42] This studio, like the space that Oram created for her late-night sessions at the BBC, was a multi-track recording facility in which she could conduct her experiments into sound and its manipulation. Her model was based on taking commissions for audio works, allowing her the capital to further her experiments. Oram's commissioned work at this time was based on the manipulation of quarter-inch tape using a technique known as *musique concrète*[43]; this has a particular focus on methods that allow the composer a more direct, physical, embodied, and visual approach to electronic composition. Her notable work from this time pushed the boundaries of sound manipulation into the creation of compositions; she wrote music for theatre, film, and advertisements, including *Rockets in Ursa Major* (1962), a sci-fi comedy written by Fred Hoyle and performed at the Mermaid Theatre in London, the supernatural horror film *The Innocents* (1961), and the short documentary *Snow* (1963).

The piece that perhaps best highlights Oram's talent for sonic manipulation during this time is one she composed for the *Treasures of the Commonwealth* exhibition (1965), *Pulse Persephone*.[44] For *Pulse Persephone*, Oram used various instruments in the score. She created fragments of different recordings to create a main melody line that included sounds of steel pans, drums, and flutes that were played over a bass line saturated with tape echo.[45] Using traditional instruments and manipulating them with different sonic effects to write music was a development that Oram would pioneer as a process. Changing the instruments in this way makes them almost unrecognisable to the listener; the

[41] ORAM/3/1.
[42] Oram 1972, p. 8.
[43] Other important composers working with the same genre were Pierre Schaeffer and Éliane Radigue.
[44] Cf. Oram 2007; *Pulse Persephone* is track 39.
[45] This practice of overlaying melody on drones is a technique that Afrodeutsche would use within the composition of *Eight to Infinite*. This will be explored in a later section.

percussive instruments' elements are familiar, but their manipulation makes them sound like abstract forms present within the composition. The cuts between the different instruments also help to conceal their nature. The steady drum beat mixed with the bass adds a lot of space to the composition, which the choppy melody can play around with as disconcerting stabs of noise. The overall composition leaves the listener to experience the piece with great unease and anxiety, which makes it a compelling emotional response as part of the exhibition. It is a dark composition that profoundly affects the listener, using different ways of presenting a sound that are distinctive to practices using electronic composition for the time.

Another piece worth mentioning is *Four Aspects*, which premiered at London's Queen Elizabeth Hall in 1960.[46] *Four Aspects* presents many different sonic elements to create a rich composition that builds over seven minutes. The quality of the manipulation shows a process of tape looping that was intricate and sophisticated. This type of composition highlights a non-linear process – the music that was created was recorded from the beginning of the piece. However, the process of looping, cutting, and editing the tape meant that the final composition could instead be presented as a developing landscape with no distinguishable beginning, middle, or end. The piece builds and evolves while maintaining the same themes and sounds, which drop in and out of the composition. This again presents a dark ethereal landscape that echoes connotations of a post-apocalyptic future; it brings a level of fear and uncertainty into the piece, in which the general conventions of equal temperament and rhythem have been all but abandoned. Towards the end of the piece, the layers of sound drop away, leaving a slow pulsing wave that eventually fades to nothing at the end, presenting a calmer conclusion to what begins as a more peaceful composition.

These two pieces show that Oram's processes had been developing through experimentation with different sounds. Her practice during this time sat somewhere between the *musique concrète* and *elektronische Musik* styles[47] that were developing in Northern Europe simultaneously. Oram's creation of this way of practising led to a compositional process that was non-linear and outside of time; it showed that it was possible to achieve what she had set out to do in 1956, with the journey between the

[46] Oram 2007, track 16.
[47] Cf. Oram, 1972.

composer and the listener being direct and not having to go through the artist, microphone, and studio. Oram was using a process that took composition away from the conventional uses of instruments as compositional tools and away from composing by writing scores. Instead, she presented a method that used tape as the primary compositional tool. This process would start by listening to the tape, identifying what sounds she wanted and cutting and looping them to create the base of the composition. These tape loops would then be manipulated using different electronic processes (like reverb, echo, tone, and pitch) so that the composition was not limited to the timbres of instruments[48] but could be anything that she desired. The limitations of instruments and the artists that played them were removed in her process, but the microphone and the studio remained. The process lacked a human element that she felt needed to be included, as this method of tape manipulation was based on the electronic possibilities. Adding the studio to an electronic process would inspire her to move on to her next project, the Oramics Machine.

3.2 The Oramics Machine

The rise of electronic instruments around the mid-1960s created an atmosphere among musicians and engineers to push the boundaries of electronics in music. Bob Moog released the first Moog modular voltage-controlled synthesiser on 12 October 1964.[49] This was an instrument that was unique for its time and would act as the starting point for the inclusion of electronic sounds in music of all genres. These instruments were based on using piano keyboards and modular switchboards as the means for sound synthesis, which allowed them to slot into the compositional methods of the time. It was easy to replace any instrument within a composition with a synth, as they were tonally versatile due to their increased abilities to manipulate timbre. Furthermore, using a piano keyboard also meant that they were accessible for musicians to play, as there was a universal interface to engage with. Many musicians of the time were operating these instruments as "glorified organs",[50] using them to replace other instruments to be able to add different sounds into their compositions.

[48] It is worth mentioning that the development of electronic synthesisers was happening at the same time that Oram was practicing at Tower Folly.
[49] MoogMusic.com 2022.
[50] Weidenbaum 2011.

Using these synths to create sine and square waves as electronic sounds did not interest Oram. This is because they were set in equal temperament, which meant they were just another version of a traditional instrument. Oram would write in her notebook, "there is not enough change within the note itself. They are too mathematically pure and calculated."[51] She also compares them to "eating watery porridge, together with ginger snaps, for every meal!"[52] It is clear from these two notions that Oram did not like the capabilities and sounds that were produced from these synths, as they lacked a human element because they were "pure and calculated".

Figure 9 Oram's promotional photo c.1966. Here, she is working on the analogue volume control section. To the left of the image, there are three digital pitch-control tracks and then a vibrato track (ORAM/7/9/013).

To achieve the ideal version of composition, Oram had to look for a mode of practice that operated between this method of synthesis and the *musique concrète* style of composition that she was undertaking at the time. Composing with tape in this way had two massive disadvantages to Oram's desired process. Firstly, pitch and tempo were inconveniently and inextricably linked – the higher the tempo, the higher the pitch for any given recording. Secondly, there was no means to see what sounds were on the tape at any given point. As early as 1957, Oram was theorising about creating a synthesiser that could imbue electronic waveforms with the human qualities missing from her ideal method.

[51] ORAM/9/3/6, 1963.
[52] Oram 1972, p. 28.

The human qualities to which Oram is referring are the action and direction of a person's movement. For other instruments, it is the hands, mouth, and body that control the sounds that they produce, and with Oram's tape-manipulation process, this was not present in the same way. The sound generated was all from the manipulation of the electronic process. Oram was inspired by other synthesisers like the ANS[53] and the Vibraphone: both produced sound by optical processes, which would influence her own use of optical processes to produce sound.[54] Oram's theories used drawn elements to control the sound and the synthesis that was to be played through her instrument, which would be created using freehand drawing. Oram was fascinated by the possibility that this might be able to achieve her goal for music composition, as this instrument would remove the studio from the equation[55] and simultaneously allow the human element to be included in the process for direct composition.

Oram's vision was to create a synthesiser that was based on a novel system of hand-drawing graphic scores that could be read by a series of scanners (Fig. 9).[56] In her book, she describes her process for the machine as follows: "We wish to design this machine-with-humanising-factors so that the composer can instruct it by means of a direct and simple language. He will want to transduce his thoughts as quickly as possible, via a channel which is logical."[57] The process of working with the Oramics Machine creates conditions for Oram's idealised practice to be realised, as the instrument itself replaces the artist, studio, and microphone, and instead produces a state in which the composer can create sound directly for an audience. The Oramics Machine differed from its competitor synthesisers because the sound was created by painting on 35mm film strips rather than using a traditional piano keyboard.[58] These film strips were then fed through

[53] Cf. Smirnov 2013. Russian engineer Yevgeny Murzin, who created the ANS synthesizer, was inspired by Alexander Nikolayevich Scriabin's colour theory. This theory is similar to Grunow's, in that it maps musical notes to colours and emotional responses.

[54] The former on glass discs, the latter on paper; cf. Smirnov 2013. As can be seen from Fig. 9, Oram is working with 35mm photographic film as the medium which the machine reads.

[55] In reference to "no instruments, no studio, no microphones" a studio can be anywhere, but this is in specific refence to this idealised construction which Oram is proposing.

[56] These hand drawings were like those shown in the image above. They look like sound waves as represented on an oscilloscope. An oscilloscope shows an optically generated electronic signal, which, when attached to a speaker, produces vibrations at any desired frequency (Weidenbaum 2011). Oram used these in her early experiments at the BBC to create drones and other sounds. Using these waveforms rather than musical notes as the heart of Oramics meant that the musician is not restricted to the same 12 notes increasing or decreasing in pitch, but instead they could use all possible sonic frequencies that "fell between the piano keys" (Oram 1972).

[57] Oram 1972, p. 97.

[58] Brown and Ferguson 2020; Weidenbaum 2011.

different scanners to convert the drawings into sound waves. The information taken in by the scanners was then manipulated by four different parameters: dynamics (volume), vibrato, reverberation, and timbre, as well as three different pitch filters dictated by another section of the machine. Through this functionality, there was a wide range of different sounds that could be created by the drawn sound; these were dependent on the drawing, the layering of different tapes, and the processing of the tone control. It also presented a way to create compositions in real time, a feature that was distinctive to this method of sound synthesis, as most of the studio is incorporated into the process of the machine itself. The hand-drawn waveforms replace notes on a score, and they can be drawn in many ways. Notably, there were no predetermined sets of note frequencies available, which meant that it abandoned all notions of equal temperament, and all frequencies could be achieved easily.

In addition to this process of removing equal temperament, Oram was also able to create a process that enhanced the composer's individuality through using the machine. In *An Individual Note*, she theorises that the physical body is a collection of sonic waveforms. Exploring a study undertaken by Swiss physicist Johann Balmer, in which he used a spectrographic process to study the optical frequencies emitted by hydrogen, she considers the frequencies at which it resonates as being like a musical scale. She states in this exploration that hydrogen "makes an interesting series of 'undertones'. […] How many musical hydrogen atoms do we have in our bodies?"[59] This suggests that the hydrogen in the human body will react to frequencies, which are then translated as waveforms. Oram takes this exploration further, thinking about other possible waveforms that could exist in the human body. She states:

> We looked at the human being and wondered whether there were thousands upon thousands of oscillations, grouped in various bandwidths within the human frame – wavebands of the chemical, the electrical, the sexual, the mental and the celetal frequencies. It then seemed as if these bands of frequencies could become individualised in the way a musical instrument confirms its individuality – by imposing on them a formant set of resonators. In this way it seems that each human being could have more or less the same basic 'material' to start with, yet from this material he would develop those regions which are truly individual to him. This *developing by formant control*

[59] Oram 1972, p. 28.

> could be taking place independently in each waveband, and the results would build together to form a resultant waveshape.[60]

Here, Oram is referring to the individual as a collection of different sonic wavebands. These wavebands are developed much like a personality, and they are shaped by environment to contribute to a type of musical individuality. These waveforms are a representation of a person's sonic personality, and they relate to the three modes of thinking that Oram outlines throughout *An Individual Note*. A person resonates and responds to different sonic frequencies, which creates a distinctive musical signature for everyone. Being able to respond, compose, and connect to these frequencies was essential to Oram, and it is the reason why her thoughts about a direct compositional process are crucial to Oramics. By removing the other elements of the artist, microphone, and studio, a true representation of an individual's frequencies can be shared with the audience. The Oramics Machine was designed to capture this, and the input of drawing waves relates directly to the frequencies of a person. If a composer using the machine has a grasp of their internal frequencies, then they should engage in a process of presenting this through their use of the machine; they are unknowingly composing themselves.[61] Building this machine would be a project that Oram undertook for most of her career, and this will be explored next.

3.2.1 Building the Oramics Machine

In 1962, Oram managed to obtain a grant of £3,500[62] from the Calouste Gulbenkian Foundation to build a prototype drawn-sound interface over a three-year period. Oram worked closely with her brother, engineer John Oram, for the initial part of the project. Progress was slow in the early days due to the number of commissions that Oram was undertaking at the same time as the machine. By 1964, it became apparent that extra help would be needed, and Oram employed another electronics engineer, Graham Wrench, who would have a significant impact on the project. Wrench was able to create improved electronic circuits to take these concepts into reality, although what precisely the control parameters would be was still very much in flux. By the summer of 1966, with the help

[60] Oram 1972, p. 51.
[61] The process of unknowing comes from a mode of thinking that Oram describes throughout the book as the "celetal"; this is explored later in this chapter.
[62] About £50,000 in today's money.

of a small additional grant from the Gulbenkian Foundation, Oram was able to report that she had a working prototype (Fig. 9). At this point, the machine worked as follows:

> First, the composer would draw a set of four wave patterns on glass slides and insert these into the scanning apparatus. Then a set of codified pitch information would be drawn across three strips of 35mm film (across a total of 12 LDR light sensors). Then as the film moved, the light sensors activated small relays (electronic switches), which in turn controlled a network of resistors and capacitors which eventually controlled the pitch of a master sawtooth oscillator. This sawtooth signal then became the time-base signal for the wave scanners, which worked like oscilloscopes in reverse. The signal repetitively drove bright dots across the X axes of four cathode ray tubes at the frequencies prescribed by the neumes. Then a feedback circuit with another type of light sensor (called a photomultiplier) forced the dots to follow the drawn patterns up and down. The four different timbres were then derived from the Y axes of the cathode ray tubes, outputting electronic waveforms analogous to those drawn by the composer. Having set the melody and approximate timings, the composer would then draw out the dynamics of the piece. Using a further four strips of 35mm film, the composer was able to specify the volume over time of all four different timbres, using one strip of film per timbre – drawing volume graphs. This was important as it meant that the composer could automatically blend and shape the timbre within each musical note – an extremely advanced capability at the time. The composer was then given two more analogue controls, each with their own dedicated film strip. Pitch vibrato allowed a subtle bending of the pitch, and another volume channel applied different amounts of reverberation to the overall timbre mix.[63]

From Oram's description of the process of using the machine, we can see that she had been able to create her ideal compositional method. This description shows a step-by-step version of the compositional process that was undertaken using the machine. The composer, with a variety of controls over the sound that was outputted from the machine, could manipulate, and sculpt their drawn waves to produce sounds that they desired in the process. The constraints of traditional instrumentation and their recording are removed entirely from the process, and the sound qualities that the machine presented were visually produced. The registration of the sounds was distinctive to the machine and beyond the imagination of any composer at the time. During this time, she developed her understanding of the way in which these drawn processes could be used to create different sounds. Through a process of trial and error, Oram created an extensive range of diagrams and charts that showed how she made different sounds through the drawn elements or

[63] ORAM/1/5/23.

through the manipulation of the waves through the machine.[64] The process is profoundly complex and requires a vast knowledge of how to engage with the machine. Oram was engaging with a completely different musical language through the machine, and this had to be learned before it could be used to its full potential.

What can also be seen from this guide is the way that Oram believed she was able to attend to the notions of the individual's inner waveforms. Through engagement with the machine, the individual can sculpt the desired sound so that they can create their own waveforms, firstly through drawing, and secondly through altering the sounds with the different controls on the machine. This means that the input can be changed even if the drawn element is unsuccessful. Through trial and error, a person could create their inner waveforms and manipulate them to respond to their own emotions. These waveforms were not universal; however, given the number of individual waveforms in a person, there would likely be connections that resonated with others. Oram describes this with reference to the arts in general:

> There seems to me to be two, somewhat distinct, roles for the arts to play. We have already mentioned the greatest of these roles – that great art presents us with such a rich and perfectly controlled wavepattern that its intermodulation with our own pattern provides us with new aspects of reality – this intermodulation induces resonances which allow us to step aside from our normal viewpoint and uplift us … we view afresh with enhanced comprehension. The induced resonances must occur in all wavebands – the physical, the mental, and the celetal – for the enhanced comprehension to be fully realised.[65]

Oram's reference to intermodulation here refers of the creation of individual wavebands. For her, great art had the power to do just that, and to help to achieve a state of being in which our own wavebands are so moved by art that we understand on a higher level than what is possible within our own bodies. The machine works directly with waveforms drawn by the user, thus creating an intermodulation of changing and manipulating, through the act of drawing. This leads to the importance in Oram's mind of why her theory of composition was so necessary to create great art. The intermodulation that was possible on the machine created a direct link between compositional practice and great art, and this had the potential to reframe how people interact and view aspects of reality. In this

[64] Cf. ORAM/1/1/013.
[65] Oram 1972, p. 52–53.

exploration, she once again refers to the different types of thinking that are necessary to achieve this. The machine, as already stated, was the tool with which a composer could learn these different types of thinking.

However, Oram's work was reliant on the functionality of the machine. While this machine was revolutionary for the time, it did present an array of problems. Due to the high number of moving components, it proved to be incredibly costly to maintain often needed repairs. It was incredibly large and not at all portable, and it occupied an entire room in her studio at Tower Folly.[66] Oram conceptualised a smaller version, the Mini-Oramics Machine, which she would never realise in her own lifetime.[67] The issue of the size of the machine made it considerably difficult to transport. Struggling to achieve the results that she had intended with the original analogue system, she abandoned the first machine in 1973.

Oram would continue with Mini-Oramics until the early 1980s, using microchips to attempt to recreate the analogue parts of the original. This work was also abandoned in favour of a software version of the machine. Software Oramics[68] would again never be realised within her lifetime. However, her work within the archive includes a 200-page notebook that contained a step-by-step version of the code needed to create Oramics as a digital interface.[69] This version of Oramics was fully realised within her own understanding of how the software would work, but it was also never made during her lifetime. Oram admits her defeat with the machine: "I have 'led it through' and allowed it to evolve … one lifetime is certainly not enough to build it and explore its potential."[70] These three attempts at designing the Oramics process, however, did not mean that Oram was unable to create any compositions with Oramics.

[66] *Sisters with Transistors* 2020.
[67] Dr Tom Richards created a version of the Mini-Oramics machine in 2018, based on the archival notes and diagrams that Oram left behind. This machine was used in the commission for *Eight to Infinite*.
[68] Oram's work on this would, however, be picked up after her death. In 2012, Mick Grierson created a version of Software Oramics that was launched as an app to accompany the exhibition *Oramics to Electronica* (2012).
[69] ORAM/2/003.
[70] Oram 1972, p. 103.

3.2.2 Music created on the Oramics Machine

The original Oramics Machine never took to the stage because of its size and fragility; indeed, it would remain in Tower Folly until Oram abandoned it in 1973. However, the examples of the sound that it produced have not been lost. A complete version of the music that was composed on the Oramics Machine was premiered in 1968, called *Contrasts Essconic*.[71] This work was a combination of using the Oramics Machine with an on-stage live piano. The machine was used to manipulate the piano sounds to be able to create the composition. The original piano part is dark and very percussive in its presentation in this piece, using the lower notes as clanging sounds that reverberate and echo and appear and disappear with no apparent rhythm. The tension that this creates from the top of the composition is full of fear and anxiety, and this is then followed by a long and uncomfortable silence. The piano returns with dropping footstep sounds before the machine first appears in the composition.

The mood changes once the Oramics Machine can be heard in the composition. It plays short swelling sounds in quick succession, which helps to reset the mood of the composition to a feeling that is more inquisitive in nature. This continues for about a minute before the piano's clangs enter again, and the two instruments continue to compete for calm and fear. This can undoubtedly be read as an analogy for the connection that Oram felt with the machine as opposed to the piano as an instrument. The piano acts as the conflict within the piece, being jarring and unpleasant for the listener to connect with. If one thinks back to Oram's original proposition, the piano is quite literally playing the part of all that she has attempted to distance herself from within the composition. The interface is unnatural and has little connection to the human elements that she yearns for within compositional practice. It plays to tropes that are traditionally associated with fear and anxiety within the composition, as jarring and unpleasant sounds to hear, lacking warmth and regularity within this piece.

The Oramics Machine, however, presents a binary within the composition. The sound that it creates is unfamiliar to most listeners, but Oram uses it in a clever way to negate the uncertainty of its sonic qualities. The musical phrases are traditionally like that of a flute, an instrument that is commonly heard in classical pieces as timid, shy, and

[71] *Contrasts Essconic* is track 6 on Oram's album, *Oramics* (Oram 2007).

inquisitive.[72] The fluidity of the notes that it produces evokes a specific reaction from the audience, which links the instrument more to a feeling of innocence. By using the machine in this way, Oram associates its sound with innocence as a concept more familiar to an audience, and this creates a cultural link that the audience can associate with. As well as this, the melody that is being played on the Oramics Machine has much more regularity through the softer sounds that are being played, and this dispels the tension of the overall composition.

This voicing of the machine is also set in contrast to the more atonal piano part. One might expect that the piano would be the instrument to which the audience should have a positive reaction as it is familiar; however, its use in this composition defies the common uses for the instrument producing a full, well-rounded sound. This comment helps to establish what the Oramics Machine can achieve, with its ability to imagine sounds and create emotional effects while also turning established ideas of music on their head. *Contrasts Essconic* highlights a distinctive element of Oram's practice, encapsulating how she was able to fully realise her goal of creating a human–electronic interface that establishes a direct link between the composer and the listener. Oram' ability to rationalise cultural understandings of music comes through within her writing in *An Individual Note*, which would be her next endeavour after the original Oramics Machine.

3.2.3 An Individual Note: Oram's exploration of the philosophy of Oramics

Through examining Oram's book, *An Individual Note*, the reader can understand more about why Oram conceptualised Oramics as a process for musical composition. *An Individual Note* blends theories from philosophy, physics, cognition, and politics, just to name a few of the subjects present within her work. Most research that has been undertaken on Oram has focused on the engineering of the machine and the process of creation that it allows. However, there have been few attempts to construct the meanings underlying the reasons why she undertook the process. As noted earlier, Oram's idealised practices – consisting of no microphone, no artist, and no studio – justified her creation of Oramics and the process of tape manipulation. However, previous research has not investigated why she considered it necessary for these features/elements to be removed from the compositional process. *An Individual Note* is an exploration that supports these

[72] Powell 2008. Cf. Boehm, 1964. which gives a through overview of the use of the flute in music from its prehistoric origins.

omissions from the process; in it, the Oramics Machine becomes an outcome of research into the human elements of electronic composition using an optical process. From Oram's narration, the way in which the machine takes input is explained from the user's perspective as an artistic process rather than an engineering one.

The most well-reported instance of Oram's philosophical exploration comes from Francis Bacon's utopian fantasy, *New Atlantis* (1624).[73] Passages of this text were on the walls of the Radiophonic Workshop at Maida Vale, particularly the description of the "sound houses", where people experimented with "quarter sounds", "diverse tremblings", and "strange and artificiall eccho's [sic]". The vision was a workshop that was free to create a sound that would stimulate and excite by breaking conventions of how music should be composed, a notion that Oram would carry with her into developing the Oramics Machine. She used this vision as a starting point to justify her exploration of other modes of composition that draw on spiritual influences; she began to explore composition in the context of celetal thinking.

3.3 The three orders and the three modes of thinking: combining harmonisation theory with Oramics

The celetal was at the heart of the human understanding of the machine. The user and their engagement are connected to notions of divine influence through reference to the *Homeric Hymn to Demeter*[74] and to the philosophy of Horace. This sets the machine and its use in opposition to other modes of thinking that are present in *An Individual Note*. The three modes of thinking in Oram's theories are physical, mental, and celetal. These three modes can be linked to Grunow's three orders as a process of expanding the human mind through musical stimuli. Connecting the three orders with the different modes of thinking will show the strongest link between Grunow's and Oram's practices. The modes of thinking operate similarly to the three orders in harmonisation theory: as a process that builds from one to the next, with the last step achieving a greater level of understanding that is unlocked by engaging with optical sound practices. Starting with the sensual,

[73] This reference to the utopian space for production is a connection that can also be drawn with the Bauhaus, particularly the early ethos of the school that was set out in the Bauhaus Manifesto in 1919 (cf. Wick 2019).

[74] The translation used to interpret Oram's writings on the *Homeric Hymn to Demeter* comes from Cashford 2003. It is not clear which translation Oram used for her own research.

moving through the mental, to the celetal, this section will portray Oram's processes in relation to Oramics and attempt to connect them to the orders in harmonisation theory.

3.3.1 Physical thinking: consciously understanding the senses

Physical thinking is based on a person's senses. Sensuality indicates the base level for a person's comprehension of the graphic process that was necessary to Oramics, where they understand the basics of how to input sound into the machine. For example, when inputting the pitch onto film, they understand that they need to draw a line. If they want to raise the pitch, then the line will need to go up; to lower it, the line will need to go down. This understanding equates to a tacit mode of the music's creation; the musician is aware of how they need to achieve their desired sound and therefore acts accordingly without the need for actively thinking about the process: they just do it, in the same way that an individual would not have to think about moving individual muscles to walk up a flight of stairs. This becomes a passive physical action once it is a learned and understood process.

Oram states that the sensual in this case is essential; however, it is mechanical. The mechanical function is necessary to operate the machine and is the basic level needed to use it. However, this does not relate to the human element in the process. This step is missing the critical emotional response that is fundamental to the compositional process: the arrangement and the bringing together of different elements within it to make the desired human response to the machine as a compositional practice. Understanding what can be achieved by drawing different lines is essential and acts as a type of grounding for the Oramics process. Learning how to engage with the machine is necessary, but it hardly means that the user is a great composer. This needs to be expanded to allow the machine and the human to create a more enriched compositional and emotive experience.

Oram explores all three modes of thinking in response to Bach's *Matthäus-Passion* (1724).[75] In this exploration, Oram assumes the position of being the audience member responding to a live performance of this piece and describes how it affects the different

[75] Using *Matthäus-Passion* creates a link to the divine through Christianity and the Bible. This piece is considered to be one of the greatest masterpieces of Baroque sacred music, and it can be classified under Oram's "great art".

modes of thinking in relation to the individual wavebands. She starts this exploration by theorising the physical:

> The physical waveband requires that the sound that reaches our ears shall be well produced, of good timbre, accurate pitch and rhythm, that we should not be disturbed by extraneous noises such as a coughing neighbour, that the concert hall has pleasant reverberation qualities, that we are warm and not hungry…[76]

Oram states the conditions required by the audience to engage with the physical mode of thinking. This covers elements that are linked to the body, such as being comfortable and not distracted, and the physical conditions of the room being pleasant. This is almost a meditative state in which the audience is ready to experience the sonic waves that come from the musical stimuli. It is also reliant on the quality of the sound, which is the stimulus, as it needs to be an element which the audience can engage with. This meditative state and the quality of the sound is placed at the heart of this mode of thinking.

Much like in harmonisation theory, the purpose of this mode of thinking is to establish how the sounds can be created with the machine. Understanding the shapes that are needed to produce the sounds in the practice of using the machine. Combining different drawn elements achieves the different sonic variations that the machine is able to produce, and using these shapes in a variety of different combinations allows the user to compose with it. In this way, the user can gain a practical understanding of the machine, from which they can develop their understanding of its potential. This functionality then has to progress to the next mode of thinking to connect the human and machine elements together.

3.3.2 Mental thinking: rationalising the senses

Further to the base motor function that is present in the sensual mode of thinking, the next step in Oramics moves forward to the mental mode of thinking.[77] In the mental mode of thinking, the user of the machine takes from the physical processes and is then able to express the reasoning behind the physical movements in their drawing. They have actively thought about why this raise in pitch was necessary for the composition.[78] By

[76] Oram 1972, p. 53.
[77] Oram 1972.
[78] Ibid.

having active thoughts around the process, the individual can add language to the passive musical understanding, and this then unlocks deeper knowledge of the reasons behind their decisions. Much like the application of language in any realm, it is defined in the sociocultural context in which it is created.

For example, the individual can explain that they wished to add a gradual raise in pitch to build tension before moving to a different motif within the composition; this involves actively understanding the physical thinking and allowing it to have space within its contextual realm. Here, Oram relates this to Horace: "once a thing is conceived in the mind, the words to express it soon present themselves."[79] Through this, she takes the passive action and justifies it by linking it to the construction of an emotional response. This mode of thought is again applied to other forms of composition. There is the action within the music, and the reason it is done; the individual understands to move to the left-hand side of the piano keyboard because it will have the desired effect of being able to create tension in the musical movement before the composition progresses to its next motif. Here, the sensual mode is actively thought about and reasoned through language; this shows the enhanced method of thinking that is necessary for its musical justification. This refines the practice of working with the Oramics Machine because it creates intention in the music.

Considering the mental mode once again in relation to *Matthäus-Passion*, Oram describes the process of moving to it from the physical mode. Moving from the physical condition of the body, the mental also has to be primed to receive sound:

> The mental waveband wishes to be stimulated by Bach's wonderful powers of musical organisation, his masterly control of form, counterpoint, and harmony, his overall sense of architecture, the way in which different performers can re-interpret and yet maintain the balance of structure.[80]

In this part of the exploration, Oram shows the transition from the physical to the mental mode of understanding through the musical stimuli. She refers to elements of the music's composition as points that need to be understood. These are the control of form,

[79] Horace; in Oram 1972, p. 124.
[80] Oram 1972, p. 53. This passage also once again makes mention of the skill of the performer being an issue in listening to music. Here, the performer must be knowledgeable about how the piece is intended to be performed, and they must be true to this presentation.

counterpoint, and harmony. Being able to identify these points as elements present in the mental mode, as there is an active thinking process that identifies and describes these elements in the composition.

Intention and justification are based within the more traditional understanding of composition, a concept that, to Oram, was human; there must be a rationale to the creation process that the mental mode creates. The mental mode, however, is still "human". By this, I mean that it is a conception that is within the human body and the human mind. Linking the physical movement of the body in the drawing process to the mental justification is a practice that is still very much in the human sphere of influence. This is not a negative association, but it links with Grunow's second order: it leaves the external spiritual connection out of the process. The unity of the body and the mind have been achieved, but there is a spiritual connection that is missing from this process. This spiritual connection can only be achieved with the celetal mode.

3.3.3 Celetal thinking: connecting the human to the divine

The physical and the mental are two stages of thinking that require certain conditions to be present in the process of listening and composing music. Moving from these stages to celetal thinking, the distinction comes by not being active in the physical and the mental modes. The celetal requires a level of "unknowing" in which there is a greater spiritual connection to the art form. The celetal is that which cannot be thought about and cannot be described with language, it is a "feeling from the divine".[81] Oram conceived the celetal with reference to Greek mythology. Celetal thinking is a concept that Oram creates in response to the figure of Keleus in the *Homeric Hymn to Demeter*.[82] Keleus can uncover

[81] Oram 1972, p. 162.

[82] Oram 1972. Keleus was the king of Attica in this story, in which he recognises the distress of the disguised goddess Demeter and helps her in her plight to find her lost daughter, Persephone. Persephone has been abducted by Hades and forced to live with him in the underworld, which sends Demeter into a frenzied search for her lost daughter (OCD 2012). In so doing, Demeter neglects her responsibilities as the goddess of harvests and comes into the employ of Keleus as a child's nurse for his son, Demophöon. She nurses the child as if he were an immortal, or indeed her own child, much to the distress of his actual mother, Metanira, who causes the goddess to reveal her true identity. Upon this, Demeter leaves instructions to construct a temple to her at Eleusis; Keleus oversees the construction and ensures that the goddess' instructions are carried out. After a confrontation with Zeus, Persephone is returned to Demeter for the spring and summer months and returned to the underworld in autumn and winter. Keleus' actions in this myth, by providing a purpose for the disguised goddess and through his help with building her a temple at Eleusis, is appointed as a high priest of the Eleusinian mysteries, Demeter's gift to humanity for their involvement in the return of her daughter. Keleus' unknowing actions lead to the return of crops and flowers, and they begin the cycle [continued]

the disguised goddess, and through his encounter with the goddess, he can connect with the Olympian gods and alter the fate of Demeter's daughter Persephone. What stands out about this myth is that Keleus did not know the gravity of his actions; instead, he acted as the divine forces in the myth had willed him to do. This reflects and presents an idea of "unknowing",[83] which Oram indicates is essential to her musical practice.[84] For Oram, this assumes that the thought is free from language in its origin, and language is only there to communicate what the "thing conceives". Applying this sentiment to her sound practice, the connection of the human to the machine is therefore a process of translation; the human mind conceives the sounds, and through the optical process, the machine translates them into the actual sounds.

This is what Oram was trying to achieve with Oramics: a celetal process in which the user of the machine can create sound without having to interoperate with traditional instrumentation, instead using an electronic method that can unlock a natural process of composition. The sounds created by the Oramics Machine are different, they are the *New Atlantis*[85] and a way of helping to understand individuality and the emotional and spiritual connections to the world. On this, she comments:

> We have also considered the human elements which seem to correspond to these stages of sound, music, and electronics. We have emphasised the tremendous importance of individuality and have tried to visualise how individuality can be maintained in the world of machines. We might easily be led to think that, in humanising machines and in emphasising individuality, we are opening up the road which will take us to a panacea. However, the more we consider it the more that we realise that the future still rests with human character and personality. There is no panacea. As we humanise our machines we make them more and more sensitive; they, therefore, are better able to transduce the thoughts of the man who programmes them … but … what of those thoughts? The more the machine is humanised the more subtle a weapon it can become; the more it can brainwash or mentally torture. Through its immediate feedback system, the man who programs it knows exactly what result he is achieving, and can use it to make the greatest possible impression. The greatest impression of good … or of evil. It depends on his thought.[86]

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of the seasons. He manages to restore the balance, in which mortal men can once again farm the land, and in return, they make proper offerings and sacrifices to the gods, which means that the world can once again function as it did before the capture of Persephone (Oram 1972). Cf. Cashford 2003.

[83] Cf. Oram 1972.

[84] Cf. the above quote from Horace.

[85] Cf. Allen 2011; Weidenbaum 2011.

[86] Oram 1972, p. 124.

Oram is wary of the promise of the use of machines as it is not understood fully by the human mind. There is a disconnect between what human comprehension and the machine can do. However, it is this very disconnect that allows Oram's enhanced mode of thinking. By not having the same levels of comprehension that we would have with other instruments and their associated ways of thinking, the celetal allows a space for influence that is higher than ourselves. We cannot fully control the process, allowing for our emotional and celetal state to take over and take control rather than having us guide it. Just as Keleus' actions were not his own but instead guided by the divine, machines can have a similar influence on human creativity.

The Oramics process is guided by graphic representations of sound. Though there are some connections as previously stated, a steep raise in pitch is represented in a sharp upward line. However, there is a plethora of different lines that are all acting at the same time, making it unique in comparison to the single ways of creating sounds on other synthesisers. All eight channels of the machine can be used simultaneously, which leads having more control over the sound produced, while simultaneously not being able to predict the output. The machine gives you more control in the sense that with more parameters there is more chance to sculpt the sound; however, this is also limiting, as there are many aspects of the sound which needs to be considered, and the interface doesn't necessarily allow for trial and error creating an unknowing in the sonic output.

In addition to this, there is a level of unknowing that takes place in the process of using the machine. Playing a particular key on a piano will always produce the same sound; however, drawing on the Oramics Machine will create a different result depending on the rest of the parameters and their alteration. The user experiences the sound in a distinctive way, and writing with the machine becomes a process of trial and error, not one of "knowing". For Oram, the human process of working with the machine was as important as the engineering in the machine, which explains her musings within *An Individual Note* on this theme; she "emphasised the tremendous importance of individuality and … tried to visualise how individuality [could] be maintained in the world of machines."[87] This extract emphasises the importance of the human in the development of electronic composition; considering her earlier writing regarding the pure mathematical coldness of synthesisers, it shows that she wanted her process to maintain its humanity. She achieved

[87] Oram 1972, p. 123.

this by conceptualising her process using the different levels of human thinking to align Oramics with an enhanced spiritual understanding through the compositional process.

In the final part of Oram's discussion of *Matthäus-Passion*, she alludes to the enhanced understanding that comes from the process of moving from the physical, to the mental, to the celetal from the perspective of hearing and connecting to this composition:

> Meanwhile the music is bringing into being its celetal quality – its essence, its spirituality. Only if the physical waveband and the mental waveband are pleasurably resonating will the celetal allow itself to be affected. How often do we hear a performance which fails ever to touch us? For the performers are too involved in their mental and physical wavebands to have any chance of transmitting in the celetal band, and we, for our part, are far too worried … (by thoughts of unpaid bills, or a difficult week ahead, or rheumatism in our left shoulder?) … far too worried to allow our mental and physical wavebands to become acceptor circuits at all. The celetal side will therefore never be present, never be energised, either at transmission or reception, so it is futile to think that on such an occasion there will be any uplift. … [However,] we manage to quiet our brains … and the sheer beauty of sound, the quiet rhythmic detachment of the cello continuo part, the musical phrasing of the oboe player … all these make us relax our muscles, calm our nerves … the inter-modulation of the two patterns (physical and mental) is becoming a meaningful relationship … it is becoming so pleasurable that we can shift the formant so that more, not less, of the signal can reach our consciousness. Now we begin to notice the other facets of the performance which had till then escaped us … it has 'taken hold' of us physically, and now the mental waveband can take over … and so to the celetal.[88]

Once again, Oram describes the process of moving through the different modes of thinking in this passage. What is most crucial to this explanation is the process by which the body needs to be ready to get into the celetal mode. This cannot happen easily, and it requires levels of mental and physical discipline to achieve it. This confirms the mediative state in which the individual arrives at the celetal mode. Meditation is a learned process for which the body must have the correct conditions; similarly, the mind must be aware of what it is receiving for the celetal to activate. The celetal then allows for full connection with the music as the divine inspiration from great art. This connection through the meditative has strong links to the third order in harmonisation theory.[89]

[88] Oram 1972, p. 54.
[89] The third order of harmonisation theory the final stage of Grunow's training, by with the student has achieved balance between their physical body, their mind, and their spirit. This is fully discussed in Sec. 2.2.3.

For Oram, machines are needed to fully understand the human, while the human is also needed to make electronic music. The celetal is the human input that makes this possible, as it connects the human to the machine, but it also channels a spiritual mode that is impossible without the machine. Oram describes this as a process in which art and science can fully integrate into one another:

> The processes and the machines which the scientist and the engineer bring into being can so easily dwarf man's individuality, whereas the music of the great composers serves to enhance man's individuality. Can we, in the future, find some way to nurture the celetal so that it can be transduced into the material worked in new forms … forms which will embody all the greatest attributes of the arts?[90]

In this passage, Oram shows the different effects that science and music have on individuality; the achievements of science can diminish human individuality, whereas music can increase it. This explains why the human was such an essential element to her practice. Having the human control through drawing, the machine's engineering achievements are blended with the creation of the music, and this therefore creates a unity between these two opposite constructs; music and science work together to amplify the human element. Oram goes on to connect this back with the celetal, and she shares her hope that one day we might be able to rationalise this and use it across artistic disciplines. There is a striking connection between this belief and that of Grunow.

3.3.4 Linking Oram's and Grunow's practices

Both Grunow's and Oram's practices attempted to train the body, mind, and spirit using musical stimuli, and cross-disciplinarity was emphasised as being important for both harmonisation theory and Oramics. The individual is at the centre of both of these practices, and both used different optical sound methods to attempt a deeper understanding about the human and the spiritual. This connection makes Oram's practice akin to that of the Bauhaus's early esoteric direction. Echoing these similarities contributes to linking Oram's optical sound practice to this project, and at the same time, her exclusion from the centenary celebratory exhibitions. Grunow's omission from the *Bauhaus Imaginista* can be linked to the lack of materials that have been kept on her work with the Bauhaus. Without the link of Grunow, Oram can be similarly forgotten about, as

[90] Oram 1972, p. 125.

there is not link which can be made to the Bauhaus without a connection to optical sound. However, in Oram's instance, there is vast collection within the BBC's archive. It suggests that both Grunow's and Oram's theories were too far removed from the image which their institutions wanted to present about themselves. For this reason, her inclusion in this project may seem questionable; however, examining the philosophical motivations of Oram's practice reveals deep connections between Oramics and harmonisation theory.

The way in which Oram's materials were engaged with differed from the interaction with Grunow's. In addition to the having much more available material, in English, from her personal archive housed at Goldsmiths University, there also is a growing body of work being undertaken into Oram's legacy, particularly focusing on the machine itself. These resources were considerably useful for understanding Oramics as a compositional practice and understanding the functioning of the machine. However, given the number and variety of sources, there was a wider array of materials available to examine; this would mean that the ways in which Oramics was incorporated into the commission would have to be different. Starting with the archival research, the next section will analyse how Oramics was used in *Eight to Infinite*.

3.4 Oramics in Eight to Infinite

3.4.1 Archival research

While I undertook the archival research into Grunow, I also began a process of looking into Oram's archive, which is housed at Goldsmiths College, University of London. The archive is made up of her personal effects collected from Tower Folly, spanning her entire career, from the BBC until her death in 2003. It is full of varied materials that could aid the compositional process, including diagrams, wavetables, and exploratory writing in which Oram lays out her understanding of the process. At the time, the focus of the research was establishing the connection to the Bauhaus as a way of linking Oramics directly to *Still Undead* and *Bauhaus Imaginista*. The research focus was to understand the lack of visibility for Oram within the BBC for the ground-breaking work that she undertook with the Radiophonic Workshop. It became apparent early in the research that there were two reasons for this.

Firstly, the managers at the BBC saw the Radiophonic Workshop as inferior to its classical counterpart: they believed that it did not create real music, and they never fully appreciated the sonic experiments that they were producing. As one of the BBC managers at the time noted: "Due to the nature of the work, the Radiophonic Workshop had a high turnover of staff, as they believed that working with such materials for a prolonged period of time would cause mental instability."[91] Oram was never going to be able to achieve her idealised composition working in these conditions, and by the same token, the managers were never going to allow her to do so.

Secondly, Oram identified as female in a male-dominated industry. This left her achievements overshadowed by those of her male counterparts. In his book, *The BBC Radiophonic Workshop: The First 25 Years* (1983), which was published by the BBC, Desmond Briscoe claims credit for setting up the workshop. Although his role within the team is worthy of note, he often cites Oram's struggles as his own. This is an exaggerated account of the actual story of how the workshop was established, with Briscoe, initially, having a more technical role and not a managerial one. Further to this account, it is problematic that the BBC published this book themselves, showing that they either supported Briscoe's version of events or they had not carefully checked and verified his account. Oram's mention in his book is brief, and little emphasis is placed upon her importance in the early days of the Workshop.

An Individual Note establishes the connections of the spiritual to Oram's sound practices and draws similar conclusions to music power as Grunow's. With this and the direction of the commission in mind, it became clear that the connections between Grunow and Oram was deeper than the exclusion of their work from their respective institutions and the contemporary exhibitions from which this project sprung. Through optical sound, they were both able to create their own distinctive musical practices that linked the human body to a spiritual state. This was used as a departure point which a curatorial framework could hang, looking at the implications of how their compositional practices worked with the composer as well as the reaction of the audience. The curatorial framework would continue to investigate how these marginalised figures could be reconstructed in a

[91] Porter 1958.

contemporary context; however, working with their compositional practices as an approach was now clear.

3.4.2 Blending Oramics with Afrodeutsche's contemporary practice

Working with the archive materials on Oramics with Afrodeutsche initially began in a similar way as it did with Grunow: I shared materials that I had collected from the archive. She had already read Oram's *An Individual Note* before the commission had begun and had quoted this as a source of inspiration that led her to agreeing to undertake the commission in the first instance. For Afrodeutsche, examination of Oram's archive did not lead to an obvious way in which to compose using her materials. Trying to compose by using instruments other than the Oramics Machine was considerably difficult. As a testament to the individual nature of the machine, it became exceedingly ambitious to translate Oramics into the contemporary practice that Afrodeutsche was used to. In early 2020, I met with Dr Tom Richards, who, during his PhD research, had built a version of the Mini-Oramics Machine. I decided to introduce Richards and Afrodeutsche in the preliminary stages of the commissioning process, and he loaned the machine to Afrodeutsche – for her to be able to use it in the composition.[92]

[92] Richards travelled to Manchester to install the Mini-Oramics Machine in Afrodeutsche's studio, and she was able to use it for a period of three weeks. This happened during one of the lockdowns resulting from the coronavirus pandemic, which meant that there were extra precautions that had to be taken to allow this to happen.

Figure 10 The Mini-Oramics Machine, this detail shows the control panel on the reader part of the machine. On the top the score is fed in through from right to left. The control panel adds additional controls to the panels. Photo by Greg Eden.

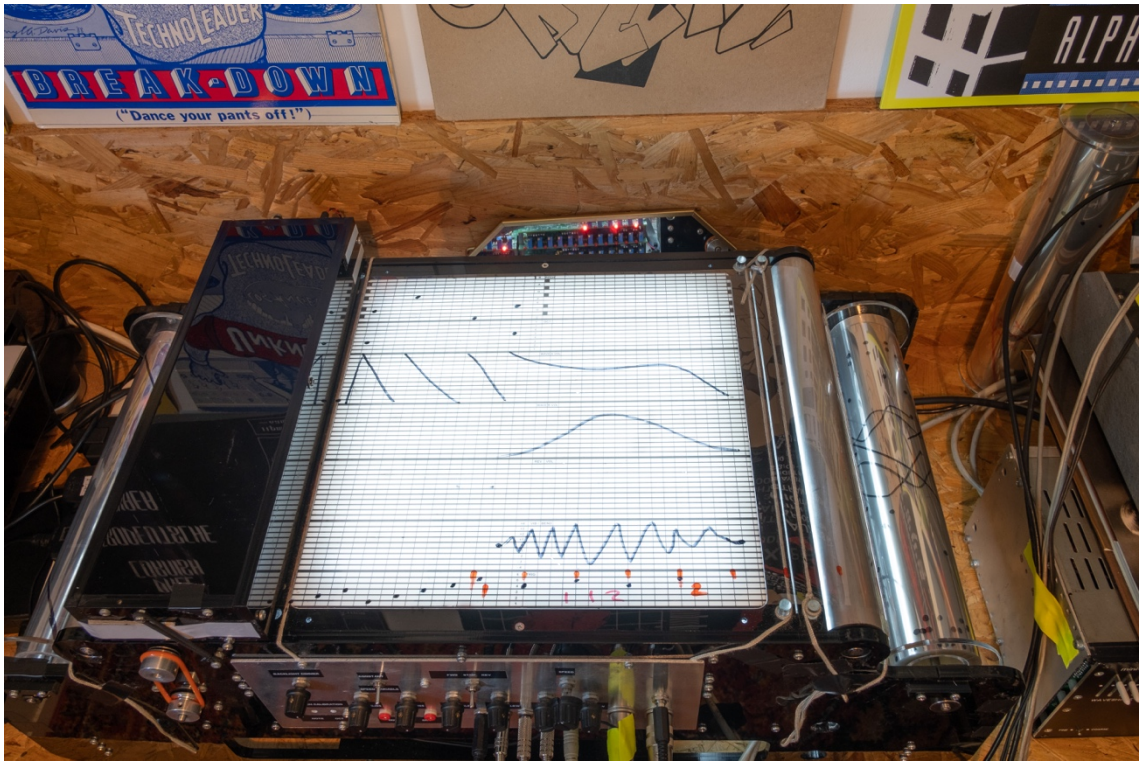

Figure 11 The top of the Mini-Oramics Machine. The black lines are read by the scanners on the left-hand side of the panel. On the right, the acetate reel is visible with more drawn waves. Photo by Greg Eden.

Afrodeutsche's initial idea was to feed three of her own artworks[93] through the machine to see how they were translated into sound. However, the sounds and samples that came from this did not yield the intended outcome. She was trying to create a sonic version of shapes that were too complex for the machine to get a strong reading from.[94] Afrodeutsche then attempted to use these as samples to create "a version of the chaos … and try to manipulate it … and then try to work with that to make an actual score."[95] Inputting these drawings directly into the machine creates information that goes across Multiple parameters. This leads to inconsistent volume: it would completely distort the sound or even cut it out altogether.[96] This made the initial idea of working with her drawings considerably difficult. Afrodeutsche had to change her approach to blend the functioning of the machine with her own compositional style, in addition to using it with harmonisation theory.

Following this, Afrodeutsche then attempted to work with the machine in the way that it was originally intended, as Richards had earlier identified.[97] For Afrodeutsche, this process was limiting, as it was a completely unfamiliar method of composition. Due to the short period of time that she was able to use the machine, it would not have been possible to learn the Oramics process and create a piece that would fulfil the project's brief. Composing in real time was a process that she was not used to, and it did not fit in with her original ideas of how the piece was to be composed.[98] Chopping up the original

[93] At this time, the visual score was not yet decided upon. Afrodeutsche's initial idea once we had decided to work with the Mini-Oramics Machine was to use pencil-drawn visual scores that would make up the movements and shapes to be fed through the machine. However, due to the functionality of the machine, this was not possible. Further analysis of the visual score comes in Chapter 6.

[94] There is a parameterisation, which looks like a Cubase piano roll (cf. Figs. 10 and 11), and there are sections for pitch and octave, and three for volume: volume a, volume b, and reverb volume. Setting up the machine in this way meant that it was not possible to have a spectrographic picture fed through the machine. If an existing drawing is fed to it, this will cross between all of these parameters and not give a coherent depiction of volume, reverb, etc. To obtain more tangible musical constructions, it was better to feed through an "actual" score, drawn on acetate which respects the lines of the parameters.

[95] Afrodeutsche, March 2021 in Appendix II.

[96] Cf. Richards 2018.

[97] This was to create an actual score for the machine to read that followed the parameters set out on the top (cf. Fig. 10: each individual tape loop is a different parameter), as can be seen in Fig. 11. Working in this way ensures that there is a consistent manipulation of the parameters that are being fed through the machine.

[98] With this in mind, the discussion then moved on to whether the machine would be used in the performance of the pieces, as it is possible for the Mini-Oramics Machine to be used as an instrument on which one can compose in real time. If the piece were to be composed in the way presented above, then it would not be possible to layer it and make it a full composition. This was undesirable to Afrodeutsche, as harmony was still an element that she wanted to explore with this piece, and that would be difficult when using Mini-Oramics Machine. Instead, we arranged that both artists would spend time together, so that Tom Richards [continued]

artworks and using parts of their shapes to create the sounds produced different sonic qualities to what she had originally wanted, and it failed to recreate Grunow's emotional responses to the music. To Afrodeutsche, the Oramics process was not freeing, but it instead created constriction as it was a completely individual way of working. Accurately following Oramics was not the best way for her to highlight the machine in this project; therefore, not achieving the desired unity between Oramics, harmonisation theory, and Afrodeutsche's contemporary practice.

Afrodeutsche decided to blend the two styles of working, between the "chaotic" and the score, allowing space for what Oram called "the notes between the piano keys."[99] The "chaotic" versions from the artworks would be manipulated to be read by one parameter at a time. This meant that Afrodeutsche's composition was an edited version of the drawings, and they would be taken segment by segment to create different movements, phrases, and qualities in the sounds that the Mini-Oramics Machine was producing. In this way, the whole artwork would not be fed through at once, instead it would be a collection of notes and musical phrases collated to be arranged later. Afrodeutsche used the Mini-Oramics Machine to build a sample library, or in her words, "a Henstrument".[100] Using this sample library, she constructed harmonic phrases as the building blocks for the movements. By having a range of different notes, she was able to use the sounds of the Mini-Oramics Machine in a way that she was familiar with, and she mapped them using Ableton Live.[101] Using the draw function in Ableton, she could drag and drop these samples into an order that followed her own compositional process, blending her own style with Oramics. The process still used drawings to create the sounds, and the sonic output was still what Oram had envisioned with the machine. However, working with samples was a process that was much more conducive to Afrodeutsche's own work. She was therefore able to connect with the sounds of the machine in a way that she was previously unable to do when using an unfamiliar method.

Once these samples had been collected and then processed and programmed through Ableton, the next step was finding a way to arrange the movements. As mentioned in the

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could teach Afrodeutsche how to use all the different functions of the machine, exploring the full range of possible sounds.

[99] Oram 1972.

[100] Cf. Appendix II.

[101] Ableton Live is a digital audio workstation which allows the user to compose using live instruments, midi instruments, and audio samples. Cf. Ableton 2023.

previous chapter, there were four colours used in each movement, and these were connected to the emotions set out in Grunow's harmonisation theory. These four notes made up the harmonic grounding for each movement, and they were played using the samples collected on the Mini-Oramics Machine. The idea behind this was to test the sonic qualities of the machine to see if it was able to accurately portray the emotional responses that had been intended with harmonisation theory.

As explored with *Contrasts Essconic,* the sonic qualities of the Mini-Oramics Machine are unusual, and Oram's own attempt was to create a connection with an instrument that was familiar to her audience. Afrodeutsche's attempt here sought to do the opposite, as she wanted to use the unique qualities of the sounds to foster a connection to the spiritual and emotional response that both Grunow and Oram were looking for in their compositional practices. For Afrodeutsche, it was essential to have a version of the machine that was as authentic and as unchanged as possible. For this reason, the samples that she used were unedited in the original mix of the compositions.

The structuring of the movements also echoes Oramics through more than just the inclusion of the samples from the machine. Similarly, to Grunow's inclusion in the composition, Afrodeutsche attempted to represent a deeper connection to the modes of thinking that Oram presents in *An Individual Note*. The connection to these modes of thinking works across the three movements. Unlike working with the three orders of harmonisation theory, this was not a linear representation within the composition. Although there is a linear progression that can be seen in the three orders and their development with the machine, this was not the way in which Afrodeutsche used it, and it would therefore be a false reading into the modes of thinking. The time constraints made the journey Oram intended a composer to follow impossible for Afrodeutsche. Instead, the movements were a homage to her thoughts on the three modes of thinking, but they instead follow the three orders. The three orders are arranged to follow the journey of the soul, the body, and finally the spirit, which is different from Grunow's modes of thinking. Grunow's ideas of the soul are more akin to the sensual mode, as the mind is what is used in this mode of thinking as a way of justifying the body. The body links to the mental, as this is the movement of the drawing is linked to the initial movement that comes in harmonisation theory. This leaves the celetal to the spirit. This

connection is the clearest when examining the theories together, as it is the final stage that links the body and the mind to the spiritual.

3.4.3 Examining the three orders with the three modes of thinking

The connections that are present can be applied to the three movements of the composition. The first follows the mental mode of thinking, as the tone of the composition is one that is more exploratory, less certain, and more erratic. The second movement, linked with the sensual, follows on from the first and builds to display qualities that are more thought out and more rationalised. There is a level of confidence that comes with this section of the composition that has taken from the insecurity of the first to come into maturity in the second: the rhythm is tighter, and the melodic parts are more developed. When the composition moves into the third piece, applying the celetal becomes more problematic. This is because of the addition of the piano. Looking back to *Contrasts Essconic*, the piano is the point of contention that acts as the dark and erratic side of the composition. However, in Afrodeutsche's work, the piano behaves traditionally, connecting the unknown sounds of the machine back into traditional Western compositional techniques. This causes a disconnect when linking this part of the composition to the celetal, as it is the unknown that should be more present within this piece; this would be a literal reading of the inclusion of the celetal into this movement. The machine is supposed to connect to the divine, and its presence is therefore the best way to create a literal reference to this part of Oram's thinking.

As mentioned before, the celetal is dependent on the Oramics machine, which makes the inclusion of the piano here an obstacle. This is where it is necessary to examine the process through which Afrodeutsche composed the tracks. The celetal allows for a place in which the body and the mind come together to commune with unknown spiritual forces, as Oram describes with reference to Keleus. The Mini-Oramics Machine was not the correct instrument to connect Afrodeutsche to this mode of thinking. The process, which is outlined above, showed that using the machine in the way in which it was intended was a limiting process for Afrodeutsche. It would make sense that she would need to engage with a method that was familiar to her to achieve the final mental state, which connects to a more spiritual place within the composition. For Oram, electronics were her speciality, and the machine was a culmination of her life's work into a process that allowed her to achieve her ideal state of practice. The piano is viewed by Afrodeutsche

in a similar cultural function to the way in which Oram views in the machine. Being familiar with the piano roll through her engagement with Ableton Live, most of Afrodeutsche's previous composition would have been undertaken using this format. At this point of her compositional practice, it would be plausible for the piano – as the traditional format she was used to – to be the way in which she was able to engage fully with a spiritual connection through music.

In response to this, the actions of the dancer, Martin Thomlinson, can also be an indication of the celetal. Tomlinson's movements in the first and second movements are aggressive and show a level of unease with the body. The body is fighting as a response to the music because it is not trained to be able to work with the music. However, with the third piece in the movement, this is replaced with acceptance and a call for forgiveness, because he has achieved a state of clarity. This state of clarity can be matched to a level of spiritual understanding that has been achieved through the connection to the mellow and warm resonance of the piano in the third piece. The drone played by the Mini-Oramics Machine, which accompanies the piano melody, is like a string-section accompaniment, and this adds a depth from which the melody can build. Through this use of the piano and the Mini-Oramics Machine, the dancer can achieve atonement and resolution because of the heightened spiritual state that he has achieved through the journey he has undergone. So, too, does the final piece in the composition create a connection with the celetal.

Being based in the colour combinations and shapes that would be present in the visual scores is a way of moving from them to the musical component of the process, and this is highly influenced by Oramics as a catalyst. However, this also led to some parts of the final performance that would be points of discussion later in the process. Afrodeutsche was adamant at this stage that she would not be present on the stage, with the Mini-Oramics Machine or even herself at all. This was because she wanted the visual experience of the audience to be simply of Martin Tomlinson and the visual scores. Afrodeutsche wanted to remove herself from the performance and did not want to be a feature in the final performance.[102]

[102] Discussed in Chapter 5.

3.5 Conclusion

In this chapter, I have explored Oram's career in response to Oramics. This process began with looking into her archival material to establish a genealogical perspective on Oramics. The archival research sought to create connections to the dominant canonical version of Oram's history, in addition to linking Oramics to a wider school of thought. The motivation for the archival research was a point of departure to create a parallel canon in which Oram can be taken out of the BBC's institutional history and placed in a space that is free from marginalisation. Once the materials were identified to achieve a parallel canon, I was able to create a space that allowed for her work to be examined in such a way as to create a strong version of her history and Oramics that could be used in the commissioning process. Establishing the theory of Oramics, linking it to the use of the machine as an idealised compositional practice with no artist, no microphone, and no studio. The compositional practice that Oram wanted to create with the Oramics Machine: one that enables the user to connect with their own internal waveforms and to reproduce and manipulate them.

The compositional process allows the user and the listener to connect with the machine in the three modes of thinking. These three modes, with the proper conditioning, can unlock a connection to a spiritual plane, as explored through the *Homeric Hymn to Demeter* and the story of King Keleus. In addition, the three modes and the three orders of harmonisation theory were linked as a way of combining Oramics with Grunow's work. These parts were then taken forward into the commission with Afrodeutsche.

Afrodeutsche's engagement with the recreated Mini-Oramics Machine was then explored. Through a process of trial and error, Afrodeutsche was able to create her own method of composing using the machine. The way the machine was used was not as Oram had intended, as this was unfamiliar to Afrodeutsche, and not conducive to her own contemporary practice. Instead, by creating a sample library and building her own software version of the machine, Afrodeutsche was able to find a way to blend Oramics with her own compositional practice. These samples were used as the prominent instrument in the commission. Using the samples from the Mini-Oramics Machine as the notes used with Grunow's harmonisation theory, Afrodeutsche created a compositional process that combined these two historical theories with her own practice. The result was all twelve notes in harmonisation theory being represented with sounds from the Mini-

Oramics Machine. Splitting the composition into three movements, with four notes making up each movement, the complete range of sounds from the Mini-Oramics Machine was present across the whole piece.

With Grunow's and Oram's theories now established, the next chapter will look to create a deeper understanding of why this presentation was important for creating the parallel canon. Starting with exploring the theoretical model of parallel canonisation, it will look to critically evaluate the composition as a whole, in addition to the dance performance. This will be used as the marker to evaluate how successful this project was in establishing a parallel canon for Grunow and Oram.

CHAPTER 4:
Parallel canonisation as curatorial methodology for *Eight to Infinite*

Eight to Infinite was set up in collaboration with Nottingham Contemporary as a subsidiary of their part in the global Bauhaus centenary celebrations – *Bauhaus Imaginista*. *Eight to Infinite* is the collaboration between me (as research curator) and Afrodeutsche (as composer and curatorial collaborator), who chose to include Martin Tomlinson (as the choreographer and dancer).[1] The title is in reference to the development of the use of atonal notes in western musical composition, from diatonic scales to the use of notes between the keys.[2] *Eight to Infinite* was supposed to take place as part of the exhibition public programme for *Still Undead* at Nottingham Contemporary.[3] *Still Undead* aimed to act as a "collage of performance, music and graphic design, which invokes the spirit of Bauhaus parties and theatre. The exhibition title, *Still Undead*, is borrowed from a 1982 song by the British goth-rock band Bauhaus, suggesting that these spirits linger on."[4] Inclusion of *Eight to Infinite* in the programme of *Still Undead* was the starting point for further research and visibility of Gertrud Grunow and Daphne Oram, while it also attempts to locate them in the broader Bauhaus legacy.

One of the critical factors that shaped *Eight to Infinite* was the positionality in which it was incorporated into the *Still Undead* exhibition and its public programme. The project's practice-led output took the form of a live event undertaken in collaboration with the Public Programmes and Research team (now Live Programmes) at Nottingham Contemporary. The live event was a method of presenting a reconstructed version of Grunow's and Oram's respective theories, to a live audience. The commissioned work

[1] Unfortunately, the marketing at Nottingham Contemporary for the event as the final output of the research project misnamed this as "Performance: Afrodeutsche". This contributed to confusion to the audience as there they were expecting a performance from Afrodeutsche solely for this event. Cf. Nottingham Contemporary 2021.
[2] Oram 1972.
[3] As stated in the introduction, this was delayed because of the outbreak of the coronavirus pandemic and its resulting lockdowns. These issues are also addressed later in this chapter.
[4] Nottingham Contemporary 2022.

that was presented at the live event were created by looking at the negative space that they occupy within the archives, developing a novel compositional method.

Working from the perspective of the exhibition's global outlook and the specific chapter of its programme in Nottingham, the practical component of this study shaped its theoretical framework. Beginning with establishing the gaps in the *Bauhaus Imaginista* and *Still Undead* projects: the exploration of Grunow as a forgotten Bauhaus master and the wish to include Oram in the *Still Undead* exhibition,[5] showed that both Grunow and Oram were marginalised in the celebration of the Bauhaus centenary. Working with both Grunow and Oram as starting points, the project aimed to make an original contribution to the public programme that would accompany the show *Still Undead*; the understudied, marginalised legacies of Grunow and Oram had the potential to enrich the exhibition's focus and framework. The resulting event was delayed because of the coronavirus pandemic, and finally took place on 7 October 2021.

Taking the Bauhaus as a point of departure, the contribution of *Eight to Infinite* was to explore Grunow and Oram as "ghosts"[6] for practices that were forgotten. Both these figures can be considered theorists in music practice. One of their theories' most vital connections is the facilitation of "optical sound" as artistic practice. I am referring to the notions set out in two supplementary texts that have been a critical driving force in my archival research: Nebel-Heitmeyer's *Die Grunow-Lehre* (1967) and Daphne Oram's *An Individual Note* (first published in 1972, reprinted in 2001). In these critical references, both Grunow and Oram aim to explore how music could resonate with an idea of spirituality through an embodied practice. In short, both believed there was a social function to music that could be used as a process to connect more deeply with the world around us. The transcendental constructions in their theories contribute to a broader social application of optical sound as a process for contemporary musicians.

To understand how this social function affected those using these materials, a commission would create work based on their historical materials. By commissioning an artist to create novel responses with their theories at heart it would create a way of understanding how harmonisation theory and Oramics could influence contemporary practice. The

[5] Oramics was considered as a potential inclusion in the main exhibition for *Still Undead*, however, did not make it into the final show.
[6] Cf. Gordon 2008 and Otto 2019.

commissioning process would inform a renewed understanding of how Grunow's and Oram's versions of optical sound could influence the contemporary sphere by further examining their practices' influences on the musicians who used them. Grunow's and Oram's imaginations of embodied sonic arts and their pursuit of alternative forms of relationality in art significantly inform this project's curatorial framework.

The archive materials contain traces of Grunow's and Oram's practices that have been brought forward into the contemporary sphere through research and composition. This contributes to the broader discussion and curatorial focus of the *Bauhaus Imaginista* and *Still Undead* projects and contributes to a revised perception of both Grunow and Oram as historical music theorists. Here, it is essential to note that there is a shift in focus: the commission is not an addition to the global exhibitions, but forms research focusing on the archive materials as potential compositional tools. This is the primary research focus of the practical curatorial project – a contemporary version of Grunow and Oram through music and performance. While it utilises contextual connections from the Bauhaus' centenary, the commission does not look to further that history or to be a marginal project in the wake of the larger *Bauhaus Imaginista*. The aim is to revisit Grunow and Oram as individuals with unique practices and marginalised legacies and to repair them through practice-led research this requires an informed curatorial approach. Bringing forward these marginal legacies is the strategy that has been employed in this practical component.

Several theoretical processes and curatorial strategies were examined to understand the best practice for undertaking this type of project. In this examination, three key conceptual frameworks contributed to the project's engagement with the Bauhaus and its alternative legacies on genealogy: revisionism, anti-canonisation, and minor histories. Examination and triangulation of revisionism, anti-canonisation, and minor histories as frameworks were evident in other curatorial practices I encountered during the research phase of this project. These three ways of practising – notwithstanding their own merits and uses – fall short of revising marginalised figures which is a fundamental aim to this research. This process led me to establish my own form of revisionism as the primary research driver of the practice, called "parallel canonisation". Here, I will explore how this parallel canonisation was implemented; starting with the *Bauhaus Imaginista* and *Still Undead* as catalysts for the research. In addition, other external factors that shaped this practice will be considered, such as the impact of the coronavirus pandemic on events and exhibition

practice in museums. I will start by exploring the scholarship on practice-as-research in sonic arts and locating the notions of Grunow's and Oram's socially engaged sound practices within this literature.

4.1 Socially engaged sound practices

Scholarship and practice research in socially engaged sound practices are developing rapidly, with emerging structures and discourses interrogating the aesthetics, ethics, and politics of collaborative, participatory, and otherwise socially engaged approaches to sonic arts. Increasingly, various robust methodologies are becoming available to sound practitioners; these range from the politics of expanded and distributed listening[7] to the ethics of sonically networked organisational thinking[8] and collaborative compositional aesthetics.[9] What interests me here is the action of listening as a tool for participation. Voegelin's "ethics of participation" through sound and listening proposes to harness the "ephemeral mobility and generative nature of sound … to different political possibilities."[10] Voegelin's study reports on understanding how collective experiences of music can be used as a tool for providing deepened experiences of artworks, and it uses this as a socio-political tool to achieve greater harmony with different ideals and perspectives.

The study of "the social" in music is a broad and diverse field that entails numerous developments and debates in music studies and ethnomusicology through historical and contemporary frameworks. These are enhanced by different lines of disciplinary and sub-disciplinary discourse embedded in various fields, including the social sciences. While some of these discourses place music as a predominantly – or even entirely – abstract art form, it can also be argued that most musical practices are, at least in part, inherently informed by social constructions. This also applies to any participation in the dissemination of music and sound, including the act of listening. Christopher Small's concept of "musicking" is an often-cited foundational concept in this regard.[11] He describes the action of music as fundamentally social and illustrates how those who do not produce or perform music in a traditional sense are still considered participants in the

[7] Voegelin 2019 and Gallagher 2017.
[8] Schroeder and Rebelo 2017.
[9] Rennie 2014, 2015, 2020 and Koutsomichalis 2018.
[10] Voegelin 2019, p. 37.
[11] Small 1998.

act of "doing music". Correspondingly, Simon Frith asserts that music "constructs our sense of identity through the direct experiences it offers of the body, time, and sociability."[12] Musicologist and anthropologist Georgina Born has conceptualised "social aesthetics" to describe the impact of the social on our understanding of musical and sonic encounters – mainly (though not exclusively) through improvisation – to analyse the variety of "ways that music, and the aesthetic experiences that it engenders, mediate and are mediated by social processes."[13]

While the social processes of music creation have been well researched, this doctoral study does not prioritise a focus on the social functions of collaborative practice; it questions how the historical negotiations of the archive materials are embedded within the final presentation of the composition and performance through the project's curatorial frame. As already stated, the contributions of Grunow and Oram are to be brought into a contemporary sphere through this project. Focusing on drawing contextual links outside the dominant canonical version of their histories will create a curatorial site to examine their theories outside of their status as marginalised figures, and therefore mitigate furthering instances of marginalising them. In practice, the contemporary use of their archival materials is based in a curatorial strategy which engages with hegemonic paradigms of art history by producing performative genealogies.

4.1.1 Foucault and genealogy

The main aim of this project was always to establish Grunow and Oram as musicians who had unique theories on music creation; *Eight to Infinite* would have to adhere to this celebration of them as unique theorists and musicians.[14] Aside from the design of the music and the archival research, the event would need to engage with them as pioneers for unique optical sound compositional practices. Through engaging with their respective limited archives, materials were gathered and collated to piece together a process that could be used to engage with a contemporary artist. *Eight to Infinite's* aim is to establish a revised curatorial narrative for Grunow and Oram in light of their status as historically marginalised figures.

[12] Frith 1996, p. 124.
[13] Born et al. 2017, p. 13.
[14] Appendix IV shows a visual version of these constellations in relation to this research.

This question of reclaiming historically marginalised figures in contemporary settings of production resonates with Foucault's notion of genealogy. As noted in the previous chapters, Grunow and Oram have been marginalised by their institutional histories, which leaves them "without history", and the contexts of their practice were kept apart from the dominant version of the Bauhaus and BBC's legacies. In this sense, re-locating optical sound as a parallel legacy would mean that a genealogical approach could facilitate the inclusion of marginalised figures and operate without a single point of origin or a single vector of historical trajectory. For Foucault, genealogy is a notion that fights against ideas of Western modernism and its assumption of a single point of origin from which history develops. Foucault's critical focus is on modernity's teleological assumption that history moves upward or forward. In contrast, he argues that the genealogist finds no such origins, as origins are often fabricated. What the genealogist finds instead as they explore is randomness, piecemeal fabrications, dissension, disparity, passion, hatred, competition, and "details and accidents"[15]; "petty malice", the minute deviations – or conversely, the complete reversals – the errors, the false appraisals, and the faulty calculations[16] are mixed with devotion to truth, precise methods, and scientific discussions. In other words, Foucault does not deny that reason is part of history, but it is only one player amid a much broader case on the dramaturgy of modernity.

This project is informed by an ethos of practice that neither searches for origins to Grunow's and Oram's work nor to reveal a linear development of their practices. The aim is not to trace optical sound as a framework that starts with one theory and then leads to the next. Instead, drawing on Foucauldian genealogy, the aim is to show the contradictory and plural past that created the work: Gronow and Oram's theories are to be examined and brought forward as a *polylogue.*[17] This ensures that unique elements in their practices are displayed through a celebratory curatorial methodology that seeks to re-establish both composers and bring them back into view through a programme of curatorial disruptions. These disruptions place Grunow and Oram into the view of an audience amending their canonical place. The contradictory and plural nature of this exploration of optical sound should then follow notions of pluralism within the event site by being explored as a

[15] Foucault 1990, p. 373.
[16] Ibid. p. 374.
[17] Cf. Reilly 2018.

polylogue, in which multiple voices are present within the creation (or production) of this optical sound.

There are different curatorial strategies that could be implemented to facilitate such a plurality. This project combines modes of revisionism, anti-canonisation, and minor histories to showcase the underrepresented legacies of Grunow and Oram in a contemporary setting through a genealogical approach. Although each of the three curatorial modes have their own strengths and weaknesses, this project operates through a combined framework that triangulates these modes of curation. I will now explore the project's engagement with each individual mode through the field study that was undertaken during the course of the research.

4.2 Revisionism as curatorial practice: the case of Anni Albers at Tate Modern (October 2018–January 2019)

Curatorial revisionism is one of the most popular counter-hegemonic strategies in contemporary settings of the gallery and museum practice. Individuals are reclaimed from history, through which the canon itself is rewritten. The principal aim of revisionism is to include those who had hitherto been refused, forgotten, or hidden; it is the act of looking back with "fresh eyes", rediscovering what the canon conceals and suppresses.[18] This is one way of demonstrating the radically contingent nature of the formation of the canon – its historical, economic, institutional, ideological, and discursive coordinates – and the systematic exclusions based on nation, race, gender, and style.

In the art historical and curatorial research, one of the principal aims of revisionism is to showcase the importance of particular aesthetic or artistic trends that have been marginalised because of the artists' positionalities, which are often shaped by their background, affiliations, and identities. This is an active move to break cycles of recreating problematic constructions within accepted canonical representations by challenging them, aiming instead to include *others* within them. The two extreme positions maintain the following: that aesthetic quality is entirely a product of situated, partial perspectives (and hence there can be no universal aesthetic); or that the sociology of art has no implications for questions of aesthetic judgment, which transcend the

[18] Reilly 2018.

contingencies of the production of art.[19] Both of these extremes include the sociocultural class of the artist or movement as part of the aesthetic quality in the artwork. For the revisionist position, removing this sociocultural assessment from the aesthetic judgement is essential. The more advantageous position would be to acknowledge the situated nature of aesthetic evaluation while deferring to the relatively autonomous discourses of aesthetics, which mobilise their languages of assessment (style, technique, originality, composition) in making judgments about works of art.[20]

There are two main approaches to revisionist practice: to emphasise the extra-aesthetic factors (social, institutional, and ideological) that have participated in the construction of a particular curatorial practice; or to celebrate, reclaim, or revisit a broader art trend/movement that has been undertaken in the past by others who seek to make visible those figures not present in dominant canons. This project emphasises the music created through the commission to celebrate Grunow and Oram as figures outside of the representation of their institutions. The backdrop of *Bauhaus Imaginista* and *Still Undead* is used to further their practice and to place them into the contemporary sphere. Having links to these exhibitions through *Eight to Infinite* goes some way towards attempting to write them back into the histories[21] from which they have been excluded, providing a deeper, more contextual understanding of critical issues regarding inequality and identity politics. Creating a place within the histories of institutions and mainstream discourses to aid audiences in understanding these visual cultures from a different perspective offers a broader, more comprehensive, and inclusive view of art history.

The problem of revisionism nevertheless assumes the white, masculinist, Western canon as its centre and accepts its hierarchy as a given. A fundamental binary is retained within revisionist strategies, meaning "the other" will always remain subordinate. Indeed, it is fallacious to attempt to establish a chronological divide, not least because – as some scholars have argued – "styles" and "periods" are themselves ultimately arbitrary constructions,[22] and setting them in opposition to a more extensive construction that is

[19] Wolff 2003.
[20] Wolff 1993.
[21] The link to *Bauhaus Imaginista* and *Still Undead* is only present through the inclusion in *Eight to Infinite*. As established in the previous chapters, Grunow and Oram are further marginalised by exclusion form the major exhibitions. *Eight to Infinite*, due to its positionality with the major exhibitions, does include them back into this history, however, pragmatically as an event it is too far removed from the original projects to qualify as a revisionist project.
[22] Gilmore 2000; cf. Jordanova 2000.

built by these same ideas is a futile effort. The same impulse has caused some scholars and art-world professionals to think more critically about the canon and its exclusions, and to turn their attention (and open their gallery and museum spaces) to marginalised or "minor" artists, obliging them to acknowledge the open-endedness of this move. In other words, once canon-formation's institutional and political basis is acknowledged, the social construction of high- versus low-brow, art versus popular culture, can hardly be denied. The diagram bellow (Fig. 12) shows this trajectory, and the way in which revisionism interacts with the historical materials.

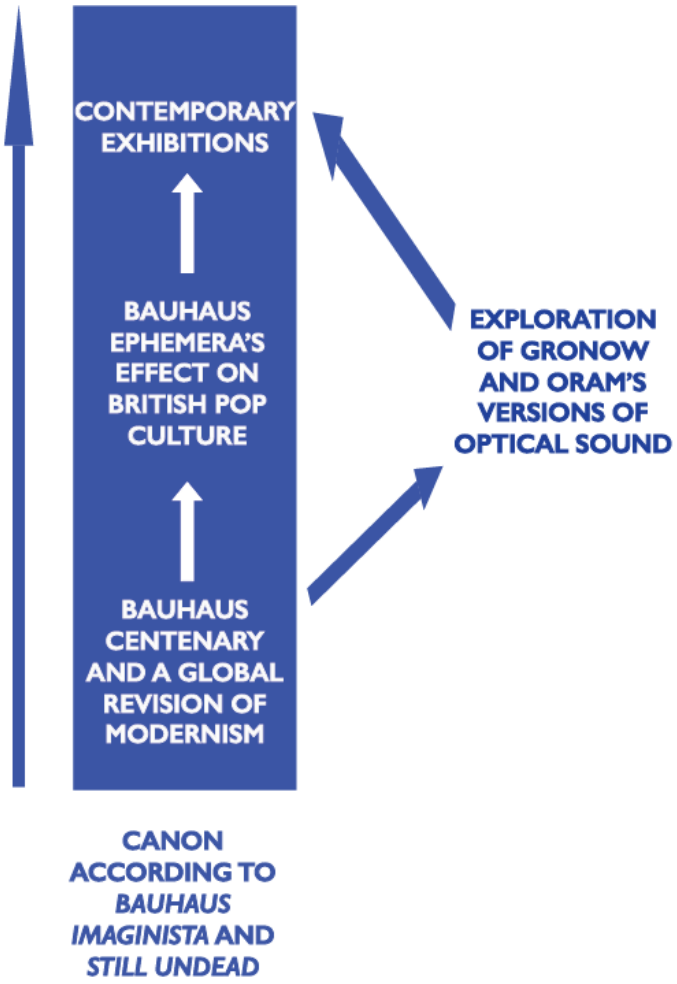

Figure 12 Diagram which illustrates the historical trajectory of the canonical version from the Bauhaus as historical source to the contemporary exhibition. Each stage in the blue is important as a historical marker of each Grunow, Oram, and Afrodeutsche's musical context. Revisionism takes from the source material, examines materials with a different lens, and places it back into the original canonical version of the history.

Within the field of critical musicology, the scholar Stefano Castelvecchi has pointed out that language makes all the difference here; composers once considered "minor" or low-brow become "marginalised". Making these composers minor associates all the negative

linguistic implications of marginalisation with these figures. As he says, "we all despise marginalisation—don't we?"[23] The assumption is that the constructed canonical binary stands for a reason, and a revisionist practice will reproduce or reconsolidate these binary structures. Revisionism seeks to create a version of an artist's history that can be "put back" into the canon, which ultimately works to further its grounding as a tool for white male oppression of other artists. An example of this can be found in the recent Anni Albers exhibition at Tate Modern, London, 2019. The exhibition text states:

> As a female student at the radical Bauhaus art school, Albers was discouraged from taking up certain classes. She enrolled in the weaving workshop and made textiles her key form of expression. She inspired and was inspired by her artist contemporaries, among them her teacher, Paul Klee, and her husband, Josef Albers.[24]

The exploration within the exhibition presented a massive selection of Albers' works, which showcased the breadth of her career from the Bauhaus to Black Mountain College and her architectural fabrics. This placed her at the forefront and the centre of innovation springing from the Bauhaus' radical pedagogy. However, the above quote stands out because it honours (and does not critique) the exclusion of female students from other workshops at the school.[25] Like many of the descriptions of the female Bauhaus students, there is an emphasis placed on the male members of the school being the reason for their success, here, Paul Klee and Josef Albers. However, the understanding of Albers' importance as an artist could be brought forward without this inference. Setting up the exhibition in this way to showcase the exchange between Albers and the male figures contributes to the notion of the white, masculinist, centrist view of the traditional history of the Bauhaus. In a way, the inspiration comes from the male, not the female. While contextual development helps further an audience's understanding of a figure, it can sometimes have a harmful effect. In the above example, the Bauhaus' representation of female students has always been problematic, placing them in particular fields by excluding them from others. Linking Anni Albers to these male figures follows the same rhetoric. The statement celebrates Anni Albers as a weaver, even though she was excluded

[23] Castelvecchi 2000, p. 118.
[24] Tate Online 2022.
[25] The Weaving workshop was also named the "women's workshop" by several of the Bauhaus masters, cf. Baumhoff 2001, Müller 2009, Wrangler 1969.

from joining the architecture workshop, to which she was only able to achieve after leaving the school.[26]

Though the position of revisionism goes a long way to celebrating the achievements of Albers, what remains is that the notion of her "greatness" is attributed to the Bauhaus' systematic exclusion. The approach to examining her work with "fresh eyes" here also perpetuates the traditional canonical representation, in which the context of gender inequality embedded in the institution is ignored. While there is an argument to be made that she would not have been able to rise to such achievements without this act of exclusion, the show's logic of inclusive revisionism continues to leave the male-centred representation unchallenged. This example is one way in which a revisionist narrative can fall short of being a practice that repairs the canonical representation of marginalised figures. I would thus argue that there needs to be a more robust response to how Grunow's and Oram's representations in *Eight to Infinite* should work against conventional revisionist frameworks. This examination comes from understanding anti-canonisation as an alternative strategy for this project.

4.3 **Anti-canonisation as event practice: the case of *Das Totale Tanz Theater* (2018)**

In a similar way to revisionism, anti-canonisation aims to retell a forgotten narrative outside the canonical representation of art history. Anti-canonisation is a term which is coined in cultural theorists, Stefan Nowotny, and reconceptualised by Simon Sheikh's 2019 curatorial work, *Exhibitions and Research, An Uneasy Alliance.*[27] Sheikh's curatorial understanding of anti-canonisation is based in the strategy of *disruption*. In a curatorial project, disruption aims to create exhibitions that do not contribute to the art's historical canon but instead create a narrative that exists outside of it: its meaning/importance/knowledge are not bound to the canon.[28] It can never be free from the canon, but the anti-canonistic position is set in direct opposition to the centrist position by contesting its representation of an artist[29] or a movement. In essence, curating an exhibition and its materials in anti-canonisation – much like in revisionism – is to work

[26] Baumhoff 2001 and Müller 2009.
[27] Published in the volume *Curatorial Challenges*.
[28] Sheikh 2020.
[29] Although this can also span to examine other aspects of an artist, including other political characteristics, not just their artistic output.

with a historical figure, group, or movement to present a curatorial understanding that is different from the traditional one.

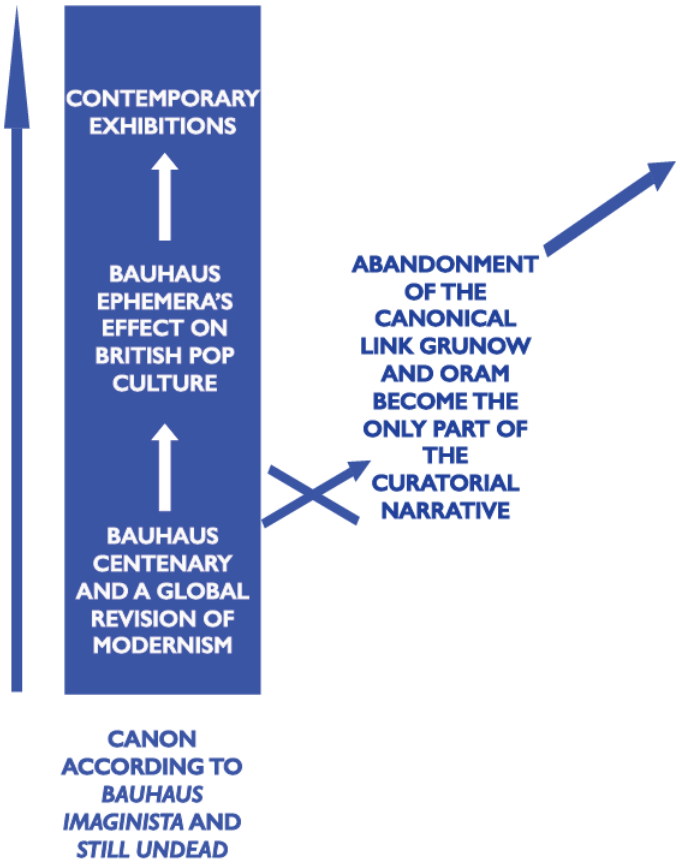

Figure 13 This diagram relates once again to the canonical trajectory of the Bauhaus Imaginista exhibitions. In this example, however, it illustrated the journey which anti-canonistic practice would have taken. The historical materials are removed from their historical context, and then taken in their own direction and links to the canonical version are severed.

Anti-canonisation differs from revisionism because it attempts to reject the dominant canonical representation, and an anti-canonistic exhibition will disrupt the traditional canonical version to achieve this goal. Illustrated in the diagram above (Fig.13), this approach assumed the belief is that the traditional canonical representation is inherently problematic, and that to try and further it would be counter to the exhibition's aims, as there is no governing body that has control over it. Instead, with an anti-canonistic approach, the curatorial aim is to create exhibition sites without the previous canonical context of the displayed artefacts to influence the presentation of the material. For example, a figure marginalised or condemned by the institutional and historical context with which they are associated can now occupy a place that is free from the organisational

and political problems that led to their exclusion in the first place.[30] The audience can then engage not with the marginalised figure's scandals but with the artistic output created during their career. In this way, the focus becomes not on the figure, but the movement, the artworks, or the practice, establishing a place in which these outputs can be viewed free from the hegemonic script of the canon.

What this mode of curatorial practice prioritises is the context(s) of production. Without a contextual grounding for these works, the audience will not be able to attach significance to the artefacts, and they will be unable to engage with the anti-canonical representation contesting the canon's hegemony.[31]

An example can be seen in the opening ceremony of the Bauhaus Centenary celebrations. The installation titled *Das Totale Tanz Theater*[32] was a newly commissioned virtual-reality (VR) 360-degree video by Diana Schniedermeier and Maya Puig.[33]. This commission was set up as a way of representing Oskar Schlemmer's *Triadisches Ballett*,[34] examining how contemporary media could play with this iconic performance piece from the early Bauhaus. It does this in two ways: the first is to explore the place in which the dance performance takes place; the second is by changing the way in which the audience engages with it. The original *Triadisches Ballett* would have been a performance on a stage in a theatre that was attended by a large group of audience members. *Das Totale Tanz Theater* is instead presented via individual participants. Engagement with this piece is guided by a single animated dancer, and the camera follows this dancer through an industrial setting; this is set in direct opposition to the original, in which the performance relies on the interplay between the dancers and their costumes.

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[30] Reilly 2018.

[31] Another example which is not directly related to the Bauhaus centenary celebrations of this comes from a talk at Bonington Gallery, Nottingham. This talk featured writer Leone Ross, who spoke about her work and commented: "I have a responsibility as an author to clarity; I think I also have a responsibility to universality, and then that is it. I do not see white, middle-class men walking around seeking to overexplain themselves and their context because they assume (through no real fault of their own because of the way that the world is set up) that they are the default, and you will understand – and so I'm going to proceed in that exact same way." (*Reading: This One Sky Day* by Leone Ross 2022). The sentiment here is that there should not be a need to contextualise other cultural happenings for the sake of pandering to a white audience, as there is little consideration from them to do the same for the global majority. This can be linked to anti-canonistic curatorial thought and its social constructivism because there is a resistance to putting things in boxes.

[32] The full video for this piece can be found at https://vimeo.com/309086030.

[33] 100 Years of Bauhaus 2018.

[34] Cf. Bauhaus Kooperation Online (2023) and The Grand Tour of Modernism Online (2023).

Das Totale Tanz Theater presents an anti-canonistic way of representing the original performance through the idea of changing the audience's engagement with the piece from a role of a passive viewer to that of an active participant. The focus becomes on the interplay between yourself and the animated character, not on the interplay between the characters. The importance of the interplay in the original *Triadisches Ballett* is a representation of the early Bauhaus' utopic ethos[35] of form and colour; by taking this away in *Das Totale Tanz Theater*, its main significance in relation to its traditional canonical representation is removed. This is an example of an anti-canonising practice within the centenary celebrations. The anti-canonistic practice is rejecting the traditional form of representation and highlighting it in a different physical form. This not only puts it in juxtaposition with the canonical version, but it also places the rest of the objects into the same setting; it directly challenges them through this association, and it therefore distances their understanding from the traditional canonical version. This installation was part of a larger exhibition on display at the *Akademie der Künste*. In the same room were students working to recreate the costumes used with the *Triadisches Ballett*, which, while using modern materials, were still significantly close to the originals. In addition, as part of the same public programme, the *Triadisches Ballett* was performed. Both of these pieces were recreations of the original artefacts in a modern setting, whereas *Das Totale Tanz Theater* pushed the limits of what could be done with the performance rather than simply recreating it.

In the same way, anti-canonistic thought does not have to appeal to the traditional canon for information on how to categorise work.[36] Anti-canonising strategies are linked to ideas on distraction and disruption, and these are vital elements of anti-canonisation. Disruption is an active challenge to social norms in which the primary way of thinking is taken away and replaced with an alternative. Disruption takes a renewed focus and uses it to further the alternative by placing it at the heart of the curatorial output. In the example of *Das Totale Tanz Theater*, this is not only achieved through the engagement with the performer, but also in the setting itself. The setting is a massive open tower with a central

[35] Pointing once again to Gropius's Bauhaus Manifesto (cf. Wick 2019).

[36] Events like *Bollox* at the Deaf Institute in Manchester are also set up in this way (Time Out 2022). This is a celebration for the queer community in the city, set up as a safe space so that they can express themselves in such a way that they feel comfortable in the context. While operating as a safe space, this space is also one of active resistance to social norms of gender and sexuality; it is akin to a direct resistance against a larger constructed version of history. These examples differ in their approach to the more significant social construction, which allows them to create alternative models for their spaces.

column, and floating mesh platforms transport the performers and the audience around the physical site. Using the potential of the VR medium creates a presentation that disrupts audiences' engagement with the traditional piece. Viewing the *Triadisches Ballett* as an audience member, the stage acts as a barrier to the performers; the performers are in their own world, which the audience is viewing from the comfort of their own seats. In *Das Totale Tanz Theater*, the audience becomes what is being viewed, as the performers are using the participant as the central point around which they are performing. The audience becomes the theoretical object of focus, disrupting not only the traditional way in which dance is performed, but also directly disrupting the *Triadisches Ballett* in its presentation.

Sheikh's article, *Exhibitions and Research, An Uneasy Alliance* (2020), proposes the strategy of *Curatorial Distraction* – a project that aims to display a version of history or art through a "created understanding" influenced by the curator. Through distraction, the exhibition site becomes the site of research, in which the audience *creates* their contextual understanding rather than relying on the context set by a curator. It is not focused on presenting a prescribed knowledge but instead on being led away from contextual understandings of the subject to acknowledge a different perspective rather than reproducing what is considered relevant. Through distraction, the exhibition site itself becomes a place of research, not a place in which to disseminate research.[37] As a method, distraction encourages the audience's attention to move away from the original canonical representation, creating a place for the artefacts to exist in a different context. This may manifest itself in a current contextual movement – e.g. a feminist retelling of an artist or a group of artists – or the viewer's own experience; the point is that the curator can draw connections to the artefacts and distract from the traditional representation that has been viewed within the canon. Distraction as a mode of curatorial practice then contributes to a disruption of dominant canonical narratives by creating alternative contexts.

While distraction can be a useful tool to disrupt canonical representations through anti-canonisation, it does not present a fully rounded method for this practice. Contexts are important for understanding materials and movements; without allusion to the context, it is easy to lose the reasons why particular movements, theories, or practices are important. It is a romantic notion that these works can exist as their own entities. Nonetheless, this can cause problems with connection to the situated historical context, and it can be

[37] Bjerregaard 2020.

difficult for audience members to engage with them fully. Abandoning the context entirely, as is the goal of the anti-canonisation, leads to confusion. This confusion means that an anti-canonising site could leave Grunow and Oram as marginalised, without a grounding in their historical context. Having only the anti-canonical version as a reminder of their legacy, leaves them detached from a tangible context which their theories can be analysed within history. In this instance, untangling them from their institutional histories would detract from celebrating them, as each had such a vital role in shaping their respective institutions. Negotiating their materials should therefore maintain their importance in their context while also challenging the previous representation and allowing for them to have their own place outside of it. This is where minor histories as an alternative curatorial mode could make a meaningful intervention.

4.4 Minor histories as a potential curatorial practice: the case of *Queens of the Electronic Underground* (2019)

Like revisionism and anti-canonistic theories, establishing a minor history aims to uncover the work of a marginalised figure or movement. The critical difference, however, is the positionality of the figure/movement to the dominant canon. The concept of a minor history resonates with "minor science" or "minor literature" conceptualised by Gilles Deleuze and Felix Guattari (1980). Deleuze and Guattari do not see *major* and *minor* as opposites; one is not greater or inferior to the other. Instead, the notion of *major* refers to a place in which other phenomena are measured – an ideal or a standard that arises out of concrete phenomena. The major is never entirely coincident with any manifestations from which it is derived or to which it is applied. The major and minor parts of history do not refer to a categorical system; instead, the "minor" (or "minoritised") party wishes to overthrow the hierarchy with a different form of power that serves differently by replacing a pre-existing system.[38]

History works according to temporally changing constants that can extract authorship, movement, period, style, genre, medium, discipline, and so on. It retains only those variable and heterogeneous historical developments that it can appropriate into major categories, and it tells of minor figures and developments with such constants. All the rest turns into a set of ancillary names and facts without impact; it renders them as "context", or it simply represses or ignores them. This articulation of minor histories is influenced

[38] Deleuze and Guattari 1980.

by Brandon Joseph's *Beyond the Dream Syndicate* (2011), in which he details the work of minimalist musician Tony Conrad in relation to his other works and those of his peers. The exploration of the minor in this text positions these works as non-opposing parts, not incorporating them back into the other parts of his history. Instead, they exist in their own setting, with a contextual understanding coming from the other histories. In other words, the work Joseph examines is celebrated as distinctive and that has influenced other histories.[39]

A minor history does not rise out of its discursive context in such a manner as to pose or narrate such categorical standards; it is immanently related to the archive, and it is extractable only incompletely and with difficulty. It relates to Foucauldian genealogy and the author-function that is "partially at the expense of themes and concepts that an author places in his work… [which] could also reveal how discourse is articulated based on these relationships."[40] Therefore, it does not proceed from point to point in clearly articulated relations of development or opposition. Nor is it concerned primarily with adding artists to movements, making great authors out of them, or posing them as aesthetic models to be followed. Nevertheless, it eschews any attempt to take on a major role or function, a minor history, or a history of "minor" figures. A minor history does not lack relation to major categories, historical transformations, movements, or individuals; it always addresses such categories. However, it works as a "parasite" in relation to the major.[41] A minor history should not be confused with a history of isolated developments, the idiolects of a naïve artist, or a practice of a sort of *art brut*. Neither is a minor history devoted to those artists that strive for self-containment; they are linked and incorporated into the movements in which they are contextually based.

Minor figures remain known; they do not pass entirely out of the historical record. This is illustrated in the diagram bellow (Fig. 14). However, their trajectory through history takes a different direction from that of "major" artists. A minor history represents a different sort of development, which impacts or passes by each categorical point; each acknowledged grouping, as Deleuze and Guattari state, "does not go from one point to another but runs *between points* in a different direction that renders them indiscernible."[42]

[39] Joseph 2011.
[40] Foucault 1969a, p. 137; 1977, p. 139.
[41] Joseph 2011.
[42] Deleuze and Guattari 1980, p. 298.

For this reason, if a minor artist is unable to maintain a sustained position within the major category, then their historical representation often works as the unruly and indistinct mob, misguided or underdeveloped practitioners; described by Deleuze and Guattari as members of "'transitional and limitrophe' movements, inhabitants of aesthetic 'zones of indiscernibility'."[43] Appearing at the fringes of major movements or styles, the minor's relation to the major is one of deterritorialization, opening these categories up to heterological connections and interactions. These fringes or margins, however, are sometimes found at the very centre of major categories or movements; a minor figure may find themselves becoming essential to a major movement without, however, being fully contained.[44]

Minor histories open the categories to their outside, onto a field of historical contingencies and events that are never homogeneous and always political. A minor history, in its de-territorializing relation to the major histories, does not dissolve them into a setting where all developments are equal or equivalent. Minor histories are not a weak version of cultural history, material culture, or visual culture in which everything is equally worthy of attention or in which mere generality is how relations are made. The construction is one in which there is a development of a minor as a unique entity, one which does not seek the same level of prestige as the major, but instead generates its own site in which it can develop. Against extreme antinomies and homogeneous levelling, a minor history poses a field of continual differentiation: specific networks and connections. Like each minor language, each minor history delimits "a properly dialectical zone of variation" against a major history's extraction of constants.[45] They are linearly oppositional: the role of a minor history is to engage in the process of deterritorialization that constitutes and extends the territory itself.[46] As Deleuze and Guattari argues, "the figure to which we are referring is continuous variation, as an amplitude that continually oversteps the representative threshold of the majoritarian standard, by excess or default."[47]

[43] Ibid. p. 101. It is important to point out that this concept was originally used by Malmberg (1964). In this text, this reference comes with Malmberg's conception of Minor Languages, which is used as the basis for Deleuze and Guattari's minor sciences and histories.
[44] Joseph 2011.
[45] Deleuze and Guattari 1980, p. 101.
[46] Ibid. pp. 369 and 372.
[47] Ibid. p. 106.

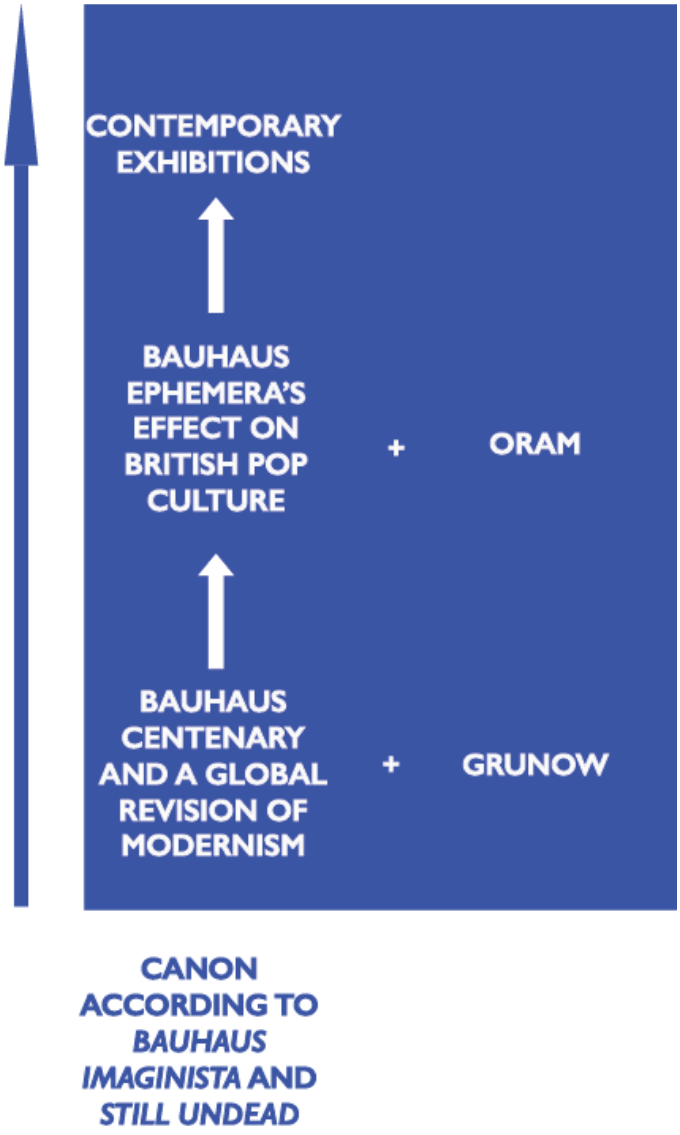

Figure 14 This diagram shows the connections of Grunow and Oram in a minor histories model. Differing from the other two diagrams, Grunow and Oram remain as part of the canonical representations as they are within the blue space. They are removed but accepted as part of the curatorial narrative.

An example of this in a curatorial context would be the *Queens of the Electronic Underground* (*QotEU*)[48] event in 2019, which was part of the *Manchester International Festival* (MIF). *QotEU*, which was curated by DJ Mary Anne Hobbs, showcased some of the best female contemporary electronic music composers worldwide. The line-up hosted as part of MIF took a standard "gig" format. Each artist was given an equal allotment of time to perform their music, and there was no hierarchy to the line-up as there was no billed headliner. Instead, the event ended with a late-night DJ set from Afrodeutsche. The line-up included Klara Lewis, Katie Gately, Aïsha Devi, Holly Herndon, Jlin, and

[48] Cf. Factory International 2019.

Afrodeutsche, and each of these artists performed their own original works. The music that was played comes under the umbrella of "electronic music", but the varieties of the production and the different ways in which each artist used technology are worth noting. What was striking about this event was the different styles present within the genre from this section of artists, which ranged from more traditional pop/rock structures to full surrealist soundscapes created by more experimental compositions. There was no information regarding the event's importance, why it was being programmed, or why these artists were essential to presenting a feminine narrative within the electronic music scene. The setting was simply created. What also deserves attention here is the event's showcasing of unique compositional styles, with all the artists creating work with traditional and non-traditional elements.

QotEU, as curatorial practice, could be considered *a performance of minor history*. The event's prominent and unique feature was that all performers were women working in a male-dominated field. Significantly, it left out any mention of female marginalisation or male dominance in the industry. As mentioned, the audience was free to engage with the performance and to have an extended encounter with each artist. Through this presentation, there was a narrative of female electronic artists working within the industry and, through their innovations, presenting a minor version of the major electronic music scene. Producing a way of facilitating a minor version of electronic music (by still relating to the major), the event aimed to provide "an immersive journey into the future of electronic music."[49]

Echoing Joseph's articulation of the minor history, this construction is minor. It aims to replace the major because it is more radical and forward-thinking, and it aims to capture the audience through the power of the event. As an event, it worked to present a grouping of artists that were able to challenge the major history of the genre. Here, the minor unapologetically presented its context with an abandonment of the major genre, subsequently replacing it with the minor. The contextual links come from the audience's understanding of the genre; those who participated would have been aware of the music, be it this selection of artists or the genre as a whole. In contrast to the anti-canonisation approach, constructing minor histories has no negotiation with the major. Instead, it takes the relevant parts of the major to contextualise the work presented, and it then abandons

[49] MIF 2022.

the major's constructions to explore them in a different setting. Minor histories can contribute a different way of understanding reframing marginalised figures, as a way of articulating the uniqueness of Grunow' and Oram's theories through the commission, while maintaining contextual grounding for both. Minor histories do not have to attempt to fit back into the main canonical versions that already exist or should resist and oppose them. However, minor history - as a method or curatorial mode – is not without its problems.

4.4.1 Problems with minor history as a curatorial practice

While minor history seems to be the most appropriate for this study, it is still not a perfect representation of what the project aims to achieve. The language around this type of articulation needs to be addressed. Setting Grunow and Oram as "minor" figures implies a diminished version of their history, theories, and importance. This leaves the project open to the same scrutiny present in their institutional contexts – i.e. they were marginalised and remain marginalised from a minoritizing representation. Joseph articulates this as a positive construction; however, this creates a level of passive acceptance of the marginalisation that has taken place and ignores ideas of resistance to the primary canonical representation. To use their terms against them, a "parasite" must still feed from the host to which it is attached, and while this is necessary from a contextual standpoint, it does little to critique, question, or trouble the major. Grunow and Oram would remain marginalised despite the alternate presentation of their work. The concern here is that the "minor" furthers this marginalisation and moves them further away from the institutions that placed them there in the first place. Minor histories should challenge the hegemony of major histories by interrupting their power to reproduce the major–minor dichotomy.

Trying to create a minor history for Grunow and Oram through this project would mean there is a "most appropriate" retelling of their work. It leaves the problems of revisionism's relationship to the dominant canonical representation and anti-canonisation's lack of context through the event site. Here, Grunow and Oram are positioned outside of the dominant canon, and the setting is used to explore how they practised, influenced by their respective contexts, without having to adhere to them. This leaves the artist and the audience with a setting in which they can place Grunow and Oram in their contexts and explore their unique practices unhindered by the dominant

representations. This theoretical framework resonates with this project's curatorial standpoint; however, there is an issue regarding how to practise a minor history.

Unlike the curatorial implementation of anti-canonisation and revisionism, there is no current writing on how to practise a minor history curatorially. The closest work available is on revisionist and anti-canonistic practice, with the critical difference being the positionality of the dominant canon. There is then an issue as to how to contextually frame the event to meet the criteria of establishing a celebratory version of historical events. While revisionism intends to contribute, repair, and fold the minor back into the canon, anti-canonisation seeks to retell and oppose. They both share practical applications of how to re-invent the minor. Creating a *parallel canonical representation* to showcase Grunow's and Oram's work will come from using parts of these approaches through a triangulation of the three methods.

4.5 Using a rhizomatic framework in the curatorial practice

The inclination was to achieve a curatorial mode that was reminiscent of a minor history – to create a parallel celebratory canon – that draws from the context of the dominant understandings of both Grunow and Oram as a means of creating a different way of looking at their historical work that moves away from the discrimination of the major. With the problems which have been highlighted in implementing minor histories as a curatorial method, there needs to be a way of combining the useful parts of minor history with the practical considerations which can be found with curatorial revisionism and anti-canonisation. Deleuze and Guattari offer a way of combining these three different theories, taking the necessary parts of curatorial revisionism and anti-canonisation, and combining them to minor histories, as a rhizomatic[50] process which is a product of elements of all three. Using a rhizomatic framework it would mean Grunow and Oram would be understood on their own terms, using the contemporary contexts of *Bauhaus Imaginista*, *Still Undead*, and the work of the two artists, Afrodeutsche, and Martin

[50] "Rhizomatic" comes from Deleuze and Guattari. In *A Thousand Plateaus*, they use the terms "rhizome" and "rhizomatic" (from Ancient Greek ῥίζωμα, rhízōma, "mass of roots") to describe theory and research that allows for multiple, non-hierarchical entry and exit points in data representation and interpretation. Deleuze and Guattari 1980.

Tomlinson. In this project, contextual links to the major exhibition[51] are present while offering an examination of these marginalised figures.

Commissioning as a curatorial practice fits with this, as it creates a renewed interpretation, a way of understanding the current and historical materials. It aligns with the notion of taking from the dominant to contextualise a celebratory retelling and establish a separate from contemporary practice. Simultaneously, this also contributes to retelling as a revisionist approach by applying the historical understanding in a contemporary sphere to create a more significant presence for Grunow and Oram. This allows for a critique of the major historical representation of both figures by creating a celebratory version that challenges conceived notions of both institutional histories. It thus brings Grunow and Oram into the centre of their own legacy, rather than keeping them within the history of the Bauhaus or the BBC.

This celebratory setting also works as a disruption, as it challenges the current readings by critiquing the institutional "forgetting" of both Grunow and Oram. By this, I mean that both are remembered in name only, and their work is minoritized and not explored fully. Commissioning allows for a deeper exploration of their work to offer a bigger picture of how it can contribute to different ways of understanding composition that are ignored in the institutional histories. With this in mind, this project aspired to go some way to "repair" the representations of both Grunow and Oram. Retelling their story should help give a broader understanding to a wider audience about how their work is relevant in a contemporary context. Understanding how this can work in a contemporary setting, there needs to be an exploration of current event practice, as it has been changed through the impact of the coronavirus pandemic.

4.5.1 Exhibition and event sites as sites of research

It is worth remembering that there is a vast difference between the exhibition and event sites. Exhibition sites can have a large number of materials and artefacts that are on display for the audiences to engage with for a designated period of time. Events are much shorter, and the way in which participants engage with them are over a much smaller

[51] Linking the *Bauhaus Imaginista* and *Still Undead* to the dominant historical canon on the Bauhaus and its legacy, as the contributing factor that marginalised Grunow and Oram in the first place. This is a representation of the major in Deleuze and Guattari 1980, as well as in Joseph 2011.

period of time.[52] With the rhizomatic framework favouring a celebratory history for Grunow and Oram, the project emphasises conveying their materials as a polylogue.

Here, polylogue refers to a multiplicity of voices, such as the voices (or stakeholders) contributing to the exhibition site in a curatorial context. An exhibition can have multiple curators' angles guiding with different agendas are integrated into the exhibition's content and framework. In this instance, different voices are present within the event: the two artists, me as the curator, and the historical voices of Grunow and Oram, all of whom factor into the event and its presentation. Polylogue favours the exhibition site; there is a greater amount of material with which the audience can engage, but many voices are also presented simultaneously. Furthermore, the time in which they can engage with materials is much longer and does not usually fit a prescribed schedule. Other elements, such as digital and online tools, further the exhibition materials as another strategy to expand the reach of the exhibition outside of its physical venue. Adding all of these elements together creates a full picture, in which polylogue can be easily presented through the plethora of materials. Despite the addition of digital and online tools, the exhibition site still relies heavily on the physical, which is the meeting point for all the ideas and dialogues that are presented in the curatorial output.

However, for *Eight to Infinite*, the impact of the pandemic cannot go without mention here. In the past decade, the exhibition and event sites have been blurring, occurring as "encounters". Exhibition sites have included performances in the physical setting, or performative elements have been presented alongside exhibited artefacts.[53] This shift was already taking place before the closure of public venues in 2020, in which it was reasonably common that events would be part of the main programme of the exhibition. This blurring meant that performances were being used as tools to expand this notion of polylogue. Other voices from artists and researchers could then sit alongside the main exhibition site to build a broader understanding of the research. Due to the lockdowns that were imposed as a result of the global Covid-19 pandemic, performative digital elements became normal practice as the physical venues closed. The digital often became the focal point of the works. Previously, museum and gallery practices had been

[52] This greatly depends on the person who is participating. For the sake of this argument, the intention is to examine the role of the curator and the output of their work, and how this can be altered. Audience engagement is an element of this study; however, the role of the curator is what is being commented on here.
[53] Cf. Wood 2022.

seemingly resistant to digital processes,[54] however, this shifted due to the closure of physical venues, and many institutions embraced the possibility of delivering programmes online as a means to maintain a connection with their audience.

One of the best examples of this shift during the lockdowns is the Institute for Contemporary Arts (ICA) in London, which released a daily programme on its website.[55] Their curated content provided its subscribers with a service through which they could still engage with artworks online, connecting them with the institution and offering a platform for artists struggling with the problems of the pandemic to exhibit their work. This action became more common with arts organisations using digital platforms as the display methods, becoming a deeply integrated part of their output, one which was possible outside the physical venue. When physical venues opened after the lockdown restrictions were lifted, many institutions like the ICA favoured maintaining an online programme of events alongside their physical exhibition and event offerings. The online is now more than a supplementary resource; it is one that complements the physical venue. Combining physical and online outputs creates more possibilities for how audiences engage with curated presentations. There is greater access to institutions, as audience members can engage anywhere around the globe, and artists can similarly contribute from anywhere, removing the barrier of distance.

Another example of an institution creating an effective hybrid platform for the display of events was the *Louder Than Words Festival* (LTWF).[56] In 2020, the LTWF moved to a completely online model of live-streaming, and it chose to blend into a hybrid model of physical events and talks for the festival in 2021. This model meant that they could capitalise on a broader audience, using the infrastructure they had built during the 2020 festival. LTWF presented talks in the physical venue with a live audience that were also available to a global audience, and there was also the capacity to connect to artists worldwide, streaming these talks to both physical and digital audiences. This led to a massive increase in audience numbers, as the limitations of the physical venue was

[54] Lynch 2013.
[55] The example from the ICA here does not directly relate to the Bauhaus Centenary. However, their digital content was explored in relation to how to deliver an online curatorial programme. For this reason, I have included them in the discussion as they effectively utilised digital practices for their own means during the lockdowns.
[56] Similarly to the ICA, there is no connection with LTWF and the Bauhaus centenary. Their inclusion in this discussion was the development of the hybrid model after lockdown restrictions had been lifted. The hybrid model was another crucial research focus during this time, and the model which was used for *Eight to Infinite* implemented a lot of the same components as LTWF.

removed.[57] However, the type of engagement that the festival received online should be scrutinised.

As in the physical exhibition, online participants can act as passive bystanders to the materials that are being presented. When not caught in the collective display of face-to-face engagement with the artists and contributors, the audience can have limited interaction with what they are viewing. This can be due to both the limitation of the platform as well as the limitations of split attention while online. While audience numbers were higher, this does not necessarily mean that the audience was engaged as much as they would be in the physical venue; this was seen from the volume of questions that were asked by the physical audience as opposed to the online audience.

What is clear from the examples of the ICA and the *LTWF* is that even though the mode of the display has shifted to a broader audience, this does not guarantee a wider engagement. The focus is on the subject matter; it needs to be compelling enough to engage the audience to participate in the encounter, exhibition, or event, online or otherwise. The phenomenon is not unique to events and exhibition practice; however, the change is worth noting in relation to the effects once lockdown restrictions were lifted. The negotiation of the online and physical platforms in which one presents a curatorial project demonstrated a shift in the practice, and this needed to be addressed in the discussion of this project.

4.6 Parallel canonisation in the exhibition and events setting

The purpose of the site of parallel canonisation is to present a different understanding and knowledge of artefacts in the participant's focus. To create a parallel canon for *Eight to Infinite*, the audience will have to contextualise the work from a place of new knowledge; they make their interpretation – guided by the curator's influence that is a different telling of the already established version of historical events.[58] The goal is to present an interpretation that places the focal point on the artist while establishing lineage within a contextual canon in which the audience can categorise their understanding of the work being considered. A renewed interpretation of a movement dictates making it more diverse or trying to show the complete representation of what was left out of the previous

[57] In addition to other parts of organising curatorial events, such as transportation and accommodation.
[58] Vest Hansen et al. 2020.

historical (re)presentations. *Eight to Infinite* has the same curatorial goal for the representation of Grunow and Oram, to understand more about their theories, in a short time frame. Conveying the same depth of knowledge about the two figures is the main challenge of creating an event in which performance is the main medium to display their complex theories and histories through interpretation versions of their archival materials. The diagram bellow (Fig. 15) shows how each part of the historical contexts was taken and built up to remove and challenge the canonical versions from the *Bauhuas Imaginista*.

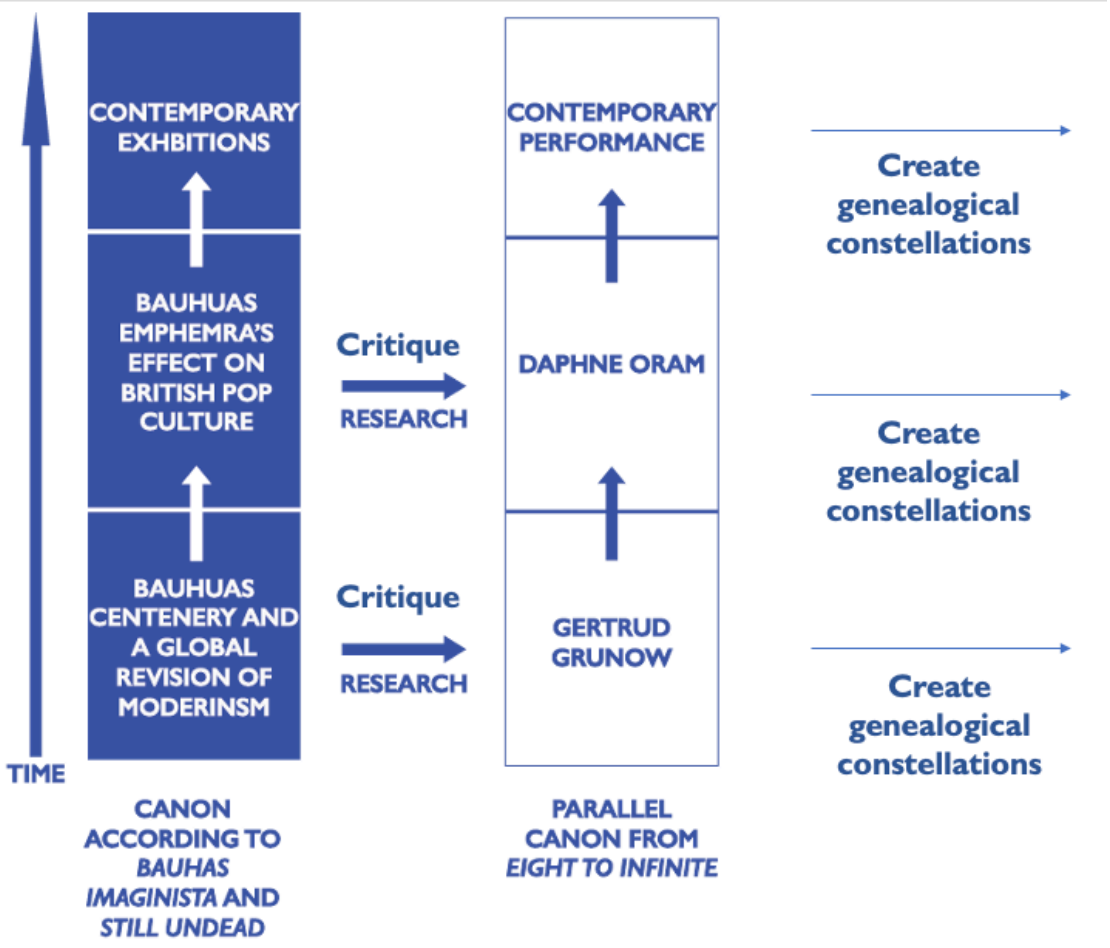

Figure 15 This diagram shows the relationship of the parallel canon to the canonical version of the Bauhaus Imaginista. The parallel cannon borrows contextual links from the main canon, but critiques it at the same time, and research other potential genealogical constellations from other sources. This results in an alternative end result which is free from the canonical representation, and therefore breaks the cycle of marginalisation.

Interpretation of the event is considerably reliant on the understanding and engagement of the audience – if they cannot establish their contextual links outside of the performance, the parallel canon cannot be created. With this said, there is still supporting material in the event site, be that marketing materials, other works by the performers, Q&A sessions, posters, or other informative tools that aid in the process of contextualisation. However,

the short duration of the event posed a problem, as there might be too much to understand during the performance, and this could lead to confusion in audience reception. Engagement in the material is brief and would be much more favoured in the exhibition site. Given the importance of retelling Grunow and Oram as marginalised figures, there is a strong possibility that the crucial connections made through the performance could be misinterpreted, depending on the individual's experience with that particular art form. In other words, the interpretation that comes with performance is already aligned more with understanding contexts, be it traditional historical representations or a completely different angle. The canonical representation is not necessarily challenged, as it can still be the basis for some audience engagement – an audience member may have a strong understanding of Bauhaus' representation of Grunow, for example.

Curatorial disruption is to be used as a tool within parallel canonisation. Therefore, there must be other elements that contribute to the broader curatorial framework to provide enough grounding as a stable base for exploring this topic. As discussed earlier, creating links to the pre-existing "major" is one possibility that contradicts the purposes of disruption, meaning that another method should be used to gain from the canon without contributing directly to it. As a response to *Still Undead,* this research adds a level of separation not only from the "major" version of the history of Bauhaus but also from the main Bauhaus centenary project. This is achieved through exploring elements that were not included in the major exhibition programme and creating links outside of the institution's archival history. The influence of the leading institutional history of the Bauhaus is diluted by the event being part of the same series, without direct claims to being part of it. This was furthered by the delay caused by the pandemic, with the event taking place at Nottingham Contemporary nearly two years after the *Still Undead* exhibition. Despite this separation, there would need to be further negotiation within the curatorial practice to fully realise the goal of creating a parallel canon.

4.6.1 Eight to Infinite and the curatorial: the Bauhaus Imaginista project and the coronavirus pandemic

From a curatorial perspective, *Eight to Infinite* should be approached in the same way as any other project; it should start with a point on departure.[59] The point of departure was

[59] Martinon 2013.

set as understanding Grunow's and Oram's practices through the commission using the event site as a site of research. The initial project intended to incorporate a series of research events, creating a large body of data to form a revisionist narrative. This would align with *Still Undead* and the more comprehensive global project *Bauhaus Imaginista* to provide a significant contemporary revisionist backdrop. This included talks with academics researching optical sound, as well as a taught element that would showcase a group of students practising music based on Grunow's and Oram's theories to share the processes undertaken in understanding Grunow's and Oram's practices in contemporary composition. These parts would all contribute to the discussion on creating the parallel canon of both figures. However, due to the delays caused by the pandemic, *Still Undead* and the associated programme became a site of research instead. This action helped to hone the understanding of how Grunow and Oram could further the messages portrayed within the exhibition's ethos and outputs. In other words, rather than being a site to create this parallel canon, *Still Undead* became a site to examine how other projects handled revisionism with a similar outlook of uncovering links to more contemporary practices that were taking place in the UK.

Due to the concerns of spreading the virus, physical venues were closed, leaving no opportunity to present complementary events with the commissioned work. The commission was continued, even with the challenges posed by the pandemic. I was able to use other means of connection and conversation with the artist, despite the limitation of not being able to meet in a physical venue. As a result, *Eight to Infinite* became the main object of research, as it could be tangible and completed despite the other limiting factors at play. With fewer events as part of the project, creating a revisionist approach would have been difficult. In presenting Grunow's and Oram's materials with few points of encounter, there was the potential for the revisionist practice to fall short of including them back into their institutional contexts. Including a Q&A after the performance was intended to create a contextual understanding and to provide knowledge of the artistic process.

Without the contextual backing of the other events, an anti-canonistic strategy would have been similarly difficult: there would be no immediate point of reference for it to oppose.[60]

[60] Mainly from the impact of the pandemic, which caused a two-year delay in the delivery of the events output of the research.

Ultimately, the goal of the research was always to celebrate Grunow and Oram, their contributions to optical sound as a compositional[61] tool, and the commission intended to be able to explore how their theories can be used in contemporary practice. In untangling them from the display of the practice, the result would have been disingenuous, and this practice would have been continuing the cycle that has led to them becoming marginalised. Similarly, relying on a revisionist strategy would have limited the artists' work. In imposing the task of repairing Grunow's and Oram's histories, there would have been a tighter set of rules and requirements put into the design of the piece. As their representation would then be shaped entirely by a guiding set of principles imposed by the curator, there would be a risk of creating a "cultural prisonhouse"[62] in which the curatorial underpinning of the project constrains the work of the artist. This would be an ingenuine representation of not only the artists' work but also Grunow's and Oram's, as it would come from one source and one interpretation of the materials.

Their importance remained the critical factor to represent in the commission, and this was as crucial as the work of the contemporary artists, Afrodeutsche and Martin Tomlinson. These contemporary artists were, in a sense, acting as translators of Grunow's and Oram's theories. Afrodeutsche and Tomlinson could use their contemporary practices to contextualise Grunow' and Oram's historical work so the audience could draw their meaning from what they were engaging with. The Q&A session gave an opportunity to further this contemporary contextualisation with the journey that led to the artwork and its creation, in which Grunow and Oram could be explicitly spoken about in their context, as well as with respect to their nuanced influences in the different parts of the commissioned performance. This would then help tie them back into the historical canon, giving them an understanding that critiques the canon for their exclusion and adds an alternative legacy that springs from a greater understanding of their work.

Ultimately, the context of the *Bauhaus Imaginista* in which this project was created was to revise the history of modernism starting at the Bauhaus, exploring other avenues of modernism, providing a contextual underpinning that could further the understanding of

[61] Grunow was not a composer, and harmonisation theory was not a compositional practice, however, in this project it was imagined and repurposed to put the colours and emotions at the heart of the composition. This is explored in Chapter 5.
[62] Richter 2013. Cf. Smithson 2003.

the marginalised works through a familiar historical representation, as well as through a celebration of what has passed. This can be seen from the publication of the exhibition:

> from the outset, '*Bauhaus Imaginista*' grasps the Bauhaus as part of a modern era that drew its impulses and ideas from transcultural exchanges and encounters. Consequently, their international research and exhibition project does not portray the international impact of the Bauhaus a century after its founding as a narrative of the transfer of ideas from Germany into the world, nor does it take the iconic Bauhaus as its starting point. Instead, it begins with four areas of research, lines of enquiry with which to explore the legacy of the Bauhaus from the perspective of today's challenges.[63]

This research attempted to have the same goal, looking at a part of this history that remained marginalised, even within the broader context of the centenary celebrations. Having established that Grunow and Oram were omitted from the *Bauhaus Imaginista*, it meant that they were potential sources of different understanding with could contribute to the wider *Bauhaus Imaginista* project. Indeed, the *Bauhaus Imaginista* examined sound practices without any further research into Grunow as a practitioner of sound from the original school.

For *Eight to Infinite*, I attempted to create a parallel canon in which Grunow's and Oram's work could be explored. Deriving from revisionist, anti-canonistic, and minor historical practices, I aimed to create a site in which the audience could interpret Grunow's and Oram's positionality in relation to the Bauhaus canon. Having this understanding, the site created would also present a polylogue in response to their theories. This polylogue would act as the point of departure for the event and the parallel canon. Within the events site, the temporal should become less of a problem, as there is enough of a contextual underpinning to allow for a similar level of engagement as seen in the exhibition site. Simultaneously, it is not as important to have a controlling curatorial voice to orient the audience to a specific perspective. A celebratory history suits events as a polylogue to show a full range of approaches to the historical materials. The celebratory history is enhanced with every version and understanding, creating a varied representation in conjunction with the major understanding as a celebration of their work.

[63] von Osten and Watson 2019, p. 9.

4.6.2 Creating a parallel canon for Eight to Infinite

Creating a parallel canon relating to Grunow and Oram in this project is challenging. Though they attempt to achieve the same result, as revisionism, anti-canonisation, and minor histories are vastly different in their ideological standpoints. However, in the negotiation of any curatorial project, the starting point, as curatorial scholar Jean-Paul Martinon (2013) describes, is "the disruptive act of drawing a line".[64] This line starts with the archival research in which Grunow's and Oram's practices and theories were uncovered. The small number of archival materials on Grunow and Oram meant that the act of drawing the curatorial line would not be quite enough to best display, showcase, or celebrate their work, and a different approach would need to be taken. For a revisionist position, there is a reliance on creating the links to the historical relevance of the two figures, be it in their institutional histories or the spheres of influence within their historical representations. This is explored in Elizabeth Otto's process in her book, *Haunted Bauhaus* (2019). Here, the "negative space" between the available materials is examined to create the other side of the history to match them together and give some links to what has already been established in the histories of the Bauhaus and the BBC.[65] Where the traces of these spheres of influence were able to be collected, analysed, and assembled into a curatorial argument that would be able to thicken the line of enquiry.

Establishing where Grunow and Oram can be seen in the negative archival setting has been ignored within the *Bauhaus Imaginista*. This can be seen in the exhibition catalogue of *Still Undead*. The *Gegenstand* – Kurt Schwerdtferger's *Reflective Light Play* – is described as follows: "Schwerdtfeger created an innovative audio-visual environment outside of the curriculum."[66] This statement implies that there was no inspiration for this piece other than the parties for which it was used. In fact, when Schwerdtfeger developed this artwork, its connection to lights, colour, movement, and music had been influenced by Grunow's classes. Whether this is a deliberate exclusion or based on a lack of evidence, it perpetuates her marginalisation outside the institution. The lack of evidence is plausible, but the link to Grunow should not be ignored.

[64] Martinon, 2013 p. 30.
[65] Cf. Gordon, 2008.
[66] von Osten and Watson 2019, p. 244.

What came from this enquiry was still incomplete and did not provide a sufficient body of materials that could be displayed in a way that would establish a celebratory history. There was a lack of firm evidence around Grunow, despite illusions of influence within the student body of the Bauhaus and the early masters. The connections were not strong enough to make claims of her influence on Kandinsky, Klee, or Itten, despite the similarities of their theories. Similarly, there is no record of the students Grunow taught crediting her as an influential figure – on the contrary, evidence suggests that the school's students actively distanced themselves from her because of her work. As further contextual marginalisation, Grunow also does not appear in the *Bauhaus Imaginista* apart from in passing reference.

4.6.3 Problems with the negative space

Examining the negative space did not yield sufficient materials to create a full curatorial enquiry. Not including Grunow directly in the *Bauhaus Imaginista* programme also meant that her work created a gap that could be explored in this project. For Oram, there was the same separation from the institutional histories. Her presence as a key founding figure in the BBC Radiophonic Workshop was almost immediately glossed over after her departure. Some others have challenged the legitimacy of what she achieved throughout her career, claiming her achievements as their own. For example, Graham Wrench and Desmond Briscoe, respectively claim credit for the Radiophonic Workshop and the skilled engineering that went into the first Oramics machine, which diminished Oram's work.[67]

The insights gained from the archival research presented many similarities between the two figures' theories. Both are concerned with optical versions of creating music, presenting out-of-body experiences associated with music practices. Developing this connection through the optical processes of sound creation would further the genealogical argument in both of their practices – by establishing a varied constellation for this type of composition. The term "optical sound" was coined to describe combining harmonisation theory and Oramics with contemporary composition, and this was then used as the basis of the project. Looking at the composer's experience when engaging with the historical

[67] Weidenbaum 2001 and Mileham 2011.

materials and evaluating the process of combining historical practices with contemporary work would be a critical element in the research for *Eight to Infinite*.

4.6.4 Key historical sources in establishing optical sound

With this in mind, I turned to two sources that could be traced back to each figure to form a point of departure for the curatorial project. This started with the translation of Nebel-Heitmeyer's text to attempt to create a working model for how harmonisation theory worked from a second-hand account of Grunow's story. Grunow's work, which spanned a 50-year career as a teacher and musician, was lost and destroyed shortly before her death. Nebel-Heitmeyer's *Die Grunow-Lehre* (1969) was the closest reference to the first-hand source that explored harmonisation theory. From this, there is a clear picture of harmonisation theory and its practical application. However, there is little understanding of its conception and development, or why Grunow created it, as seen in Chapter 2. As a basis for retelling her work, *Die Grunow-Lehre* bore a solid connection to the already presented history of Grunow. She was a music teacher who used harmonisation theory to make recommendations on the pathways students were to follow during their time at the Bauhaus, because harmonisation theory meant she could determine how the student's creativity aligned with the world around them. This line of enquiry showed a tangible link to the already established "major" being presented to the school, which could be altered to celebrate her and her work. Grunow's work then used a theoretical method regarding how music could be constructed, using optical sound as a basis.

With Oram, establishing a similar mode of enquiry was necessary to fulfil a balanced representation of the two within this project. Oram's work, *An Individual Note* (1972), was the primary source for deciphering optical sound from Oramics. Not only was this source written in her own words, but it also shared many similarities in the characteristics of Nebel-Heitmeyer's presentation of harmonisation theory, looking more at the connection that Oramics had to the world outside of composing and music theory. Developing this connection between the two artists would be crucial to the curatorial research undertaken in this project. By examining both of their compositional and theoretical applications, optical sound would be established with Grunow and Oram in mind. Aligning their theories created a version of optical sound based on a connection of the body to the music created, and a connection between the artist and their surrounding environment. This exploration of optical sound was then passed on to the artists involved

in this project. Then, with optical sound as the basis for creating a composition with a current practitioner, these materials would be used in conjunction with contemporary musical tools. This would create the composition that would be displayed in the final curatorial output.

4.6.5 Presenting Grunow and Oram as celebratory history

Textual accounts of Nebel-Heitmeyer's and Oram's own writings led to the establishment of a setting for the two theories to be examined outside of the institutional canonical representations. This setting explores their work as a process for creating music based on a version of optical sound, which presents this practice of making music. Their work had been taken from the traditional context in which they were situated. It brought it to a site free from interpretation to showcase a potential for their work to be critically examined through a curatorial project. With the limited source information available through the archive study, the question arose of how to best showcase these limited materials.

Given the parameters set out in the initial project proposal, it had already been agreed that my connection to Nottingham Contemporary as the partner in the research project was to be through the Live Programmes team, which meant that events were favoured as the method of display. As previously mentioned, engaging with performance was the most appropriate method for exploring the materials related to Grunow and Oram. This, as noted, brought into question the theoretical connections within the project. A bending and grafting[68] process was implemented to make the theories work for the project rather than leading the composition process.

4.6.6 Commissioning as a disruptive act for a parallel canon

The aim was to celebrate Grunow and Oram through these events, to show that there was a challenging context in which they were situated. The purpose of this was to argue that they were necessary parts of their respective institutional histories. Challenging how they were currently being represented was at the forefront of what was to be achieved, placing this project in line with a form of revisionism practised through what Reilly conceptualises as "curatorial activism" (2018).

[68] In the discussion and composition process that was undertaken between me and Afrodeutsche, this was a majority of the points made. This is discussed further in Chapter 6. Cf. Appendix II.

In her book *Curatorial Activism*, Reilly (2018) sets out a manifesto for how to make changes within curatorial practice that critiques the decades of postcolonial, feminist, anti-racist, and queer activism and theorising as not breaking through into the practice of the art world. She argues that "[the art world] continues to exclude 'other' artists – those who are women, of colour, and LGBTQ. Discrimination against these artists invades every aspect of the art world, from gallery representation, auction-price differentials, and press coverage to inclusion in permanent collections and solo exhibition programmes."[69] Her study focuses on the commercial art sector, in which this project is not involved; however, Reilly's statement here is worth examining regardless of this positionality. The public- and private-funded art worlds do share some similarities, and Nottingham Contemporary, is still not exempt from Reilly's critique.

Nottingham Contemporary's programme has showcased a rate of 73% working with non-male curators since 2018, and this shows that they are consciously working against the sentiments within Reilly's explorations. That said, the Director is still a white cis-gendered male,[70] as is the case with most publicly funded arts institutions in the UK. Having a white cis-gendered male at the top of the organisation could be seen as problematic, despite a higher percentage of non-male practitioners being involved. This statistic also maps a change in the wider public and private sectors. However, while Reilly's study is not necessarily so prevalent at this stage, Nottingham Contemporary is not alone in seeking more diversity within its programming. Particularly within the wake of the pandemic and the rise in online programming also came greater access to those who would not have necessarily accessed the physical venues.

This period from 2020-21 also included events such as the death of George Floyd;[71] globally, many institutions across all sectors looked at the representation of politically marginalised groups and examined how to best change their practices to implement change. These events have highlighted that the representation of Reilly is now dated; she presents relevant information about some of the failings of revisionism, which is no

[69] Reilly 2018, p. 2.
[70] This statistic comes from the Arts Council England Equality and Diversity report. Arts Council England 2022 and 2021. The most recent report claims to not have sufficient data on the issue, however, the report from the previous year reports 42% female leadership, 17% LGBT, and 11% from a Global Majority background. In addition to this, while writing this thesis, the directorship of Nottingham Contemporary did change. The new director in post identifies as female.
[71] Aratani 2022.

longer being passively ignored within contemporary museum practice.[72] Reilly's work sets out many of the problems faced by other representations within art practice more widely but also critiques how curatorial practice is helping to perpetuate this practice. Revisionist practices have not gone far enough to end the systemic issues that are woven within the structures, language, and logic of how curating is practised. In its aims, revisionism still sets out to contribute to these structures; at its heart, it displays an activist outlook, but in practice helps perpetuate the structure as a whole. The dominant art historical canon represents a type of hegemonic practice that should be challenged. Through revisionist practice alone, this remains unchallenged; instead, it continues to perpetuate many of the political structures that marginalise the figures that are trying to be reclaimed. There is still a degree of privilege within revisionist structures, as it is the curator who decides who gets to be "rediscovered". This cycle perpetuates systems of exclusion, which ultimately leave marginalised figures as marginalised figures.

Male voices have claimed ownership over Grunow and Oram; this is present through the work of the early Bauhaus masters and the directors and engineers at the BBC. Now, with this project, I ran the risk of unintentionally doing the same thing. I identify as male, and negotiating Grunow and Oram as marginalised could be interpreted as my curatorial voice overpowering their work and their histories, whether or not the intention is to create a site for their work to be displayed. The way in which I undertook this practice was to be carefully negotiated. The inclusion of Grunow and Oram was an easily identifiable aim, both because they had been left out of the *Bauhaus Imaginista* show and because of the similarity of their theories. What I then needed to be aware of was finding ways to examine and represent their theories without furthering the cycle of marginalisation.

4.6.7 Disruption in the construction of a parallel canon

Ensuring that the events in this project highlighted Grunow and Oram, the examination then turned back to the display of the materials. Having identified the two primary sources discussing both Grunow and Oram, it became evident that performance was the necessary route to follow in this project. The importance of the body in both their practices[73] should be represented through the commissioned work created. Commissioning an artist to create work based on the materials would help to negate many of the issues that have been

[72] Mencarelli and Pulh 2006.
[73] For Grunow, the movement of the body, and for Oram, the act of drawing.

discussed about authority. Through the commissioning process, ownership over the event's output is overseen by the artist, not the curator. The curator puts the project together and facilitates the event, but the work presented remains in the hands of the artist involved. This contributes two points to the process: firstly, the artist's voice is prioritised, giving capacity for other contextual links to be made outside the curator's voice; secondly, the curatorial angle becomes concerned with best presenting the artwork, not guiding the commission.

With this first point, the process of displaying the artwork/artefacts is described by Reilly as a "counter hegemonic" process.[74] If completed effectively, this will present to the audience a variety of different angles from which they can engage with the materials. This notion is described as "an interplay of voices, a kind of creative 'barbarism' that would disrupt the monological, colonising, centrist drivers of 'civilisation' – beyond an act of survival, but also a way of perpetual regeneration."[75]

How does this notion of polylogue sit with this project's practical component? Commissioning in event-making is not new, and it has been practised as a method that still valorises the actions of the curator: commissioning delegates the task of addressing the archive material on top of the curatorial model of inquiry that was already taking place. As a way of conducting research through curating and thinking about how the curating can work as a vehicle for the thinking – the focus still rests on the curator's skills in carrying out the project, which can place too much focus on the curatorial focus being pressed forward from their own interests. This means that the approach in this project would have to be conscious of these notions and actively operate the logistical parts of curating with the risks of curatorial ownership (or dominance) in mind.

This would be challenging, given that there was a level of ownership that I had to claim to make my curatorial input fulfil the criteria of a PhD thesis. In essence, I would still have to maintain a level of authority that met the demands of the research contributing to new knowledge; this is argued through not only the project's theoretical approach to re-invent Grunow and Oram (by combining revisionism, anti-canonisation, and minor

[74] Her exploration of this considers this process as a version of "Relational Studies: Exhibition as a Polylogue". She argues that if we re-conceive history as dialogic rather than synchronic, in which works of art and artefacts work in dialogue with each other rather than trying to establish a binary or a hierarchy, the different voices work in connection with one another.
[75] Reilly 2018, p. 13.

history) but also through how the curatorial framework is implemented. The focus goes beyond a description of the theories and practices of the two and transcends the additive approach that comes with many commissioning projects, with a move to collapse the centre–periphery binary. Essentially post-modern (in its counter-hegemonic approach to the legacy of the Bauhaus as a beacon of modernist art), the commissioning process is textual, dialogic, and "scholarly".

4.6.8 Polylogue in event practice

Maintaining the curator's voice within a polylogue is a challenge that this project would have to overcome. The balance between (i) ensuring that the celebratory elements of the practice were at the heart of the event and (ii) creating a collaborative scope for the commissioned artists' interpretations to inform the curatorial practice would have to be carefully negotiated. This is where *interpretation through translation* comes into play. In his 2020 work on curatorial challenges in contemporary exhibition-making, Simon Sheikh conceptualises "exhibition as translation". Exhibition as translation is "letting the research be powerfully affected by a foreign tongue; with the exhibition as a medium, the curatorial challenge then is to distract to point to other discarded objects, connections, and ideas in what has become the authorised version of history."[76] Curating is not necessarily an activity aiming for an exhibition as an end product; it may be practised by bringing people, objects, and places together in different formats. These distractions from traditional representation promise that the museum can produce a particular kind of research that may place it at the "cutting edge" of research.

In this project's practice, commissioning Afrodeutsche located translation within the interpretation of the artist's work. In this instance, the archival materials are presented in such a way as to convey a parallel canon; this is then shared with the artist, who creates their own adaptation according to the elements of the archive that interest them. This process was undertaken twice: the archival materials were translated by one artist (Afrodeutsche), and the resulting artwork was translated by the second (Tomlinson) and presented alongside the first artist's work. This method of display ensured that both artists' voices were present during the performance. Also, within the presentation of the performance, my own voice as the project curator was evident, thus creating a polylogue

[76] Sheikh 2020, p. 105.

between me, Afrodeutsche, and Tomlinson. All three voices were translations of the original archival material that were shown simultaneously for the audience to interact with. The polylogue presented in the final event also spanned the initial research, the artists' interpretations, and the audience's responses after engaging with the event. The connection with the archive materials has been manipulated so much that they would be presented to a live audience in a way that was very different from the original intentions of Grunow and Oram. What instead stands is a notion of dissonance, in which the audience can participate through interpreting the work of Afrodeutsche and Tomlinson.

4.6.9 "Passing the baton" into creating dissonance through commission

Exploring how the artists engage with the archive materials is a process that was initially coined as "passing the baton."[77] "Passing the baton" refers to how I collected the archive materials as the curator and researcher before they were passed on to the first artist, Afrodeutsche. She could then manipulate them to create her meaning and work from this, passing her version on to the next artist, Martin Tomlinson. He could then have his influence on the materials that were shared with him, which would then be the final step. These different iterations were then collated to form the final event. However, the metaphor of "passing the baton" could not fully represent this process, as there was a significant change from the original written archive material to the event's final presentation. This instead became a collaborative curatorial exercise in which no baton was passed: it was distorted and manipulated. The artists, therefore, had a part in shaping the curatorial output of the project's final event, because of how they engaged with and changed the materials that were given to them in the commission.

Arriola provides further nuance by maintaining a distinction between "collective curating as the shared responsibility of selecting, confronting, and putting into dialogue a series of artworks and curatorial visions" as opposed to "setting up a collaborative endeavour of shared authorship uttered as a single voice."[78] This notion for the work done in this project is clear, in that the other voices became as important as the initial departure point. The materials I passed on were not easily recognisable from the project's end result, and this was a result of the process undertaken during the commission. The baton itself thus

[77] This comes from an audience question during the Q&A after the performance. This can be viewed through the research catalogue entry.
[78] Arriola 2009/2010, p. 26.

changes from one hand to the next, and in the end, it becomes disruptive. This led to the coining of the phrase "passing the dissonance", which will be explored later in the chapter. The reason for considering this here is because of its links to the practical framework of the project –as a social experimental collaborative effort, the revisionist line drawn at the beginning is brought into question.

This "passing of the dissonance", as practice, is akin to anti-canonising sentiment through its nature of disruption. In passing and changing the original material, it leaves the connection to the original materials unclear as they have been altered. This helps to create distance between the canonical representation and the parallel canon, as the materials are all but unrecognisable. The collaborative practice disengages contextual reliance on Afrodeutsche's and Tomlinson's artistic interpretations as the connection to the original archival material. In the event, a group decision guided the presentation, showing a collective understanding of how to best showcase the materials presented to the audience. Mabaso (2016), speaking of collaborative practice in general, says that "collaboration positions individualistic practice as a problem of cultural from – its use-values – brings the category of art face to face with its most cherished expectations and ideals – individual authorship and autonomy – and addresses the basis of art's relationship to democracy, the art world, and capitalist relations of production."[79] No one specific voice was supposed to stand out from this event, and the outputs should be seen as a cohesive whole.

Once this articulation was made and the process of "passing the dissonance" was completed, the challenge was to find a way to sculpt the audience's perception of the work presented. With the intention of a revisionist practice, the goal is to repair the canon to give place and meaning to the two figures so that they can contribute to the canonical version with a renewed understanding of how they were influential to the institutions in which they were involved. What is missing from the performance is the direct link to the archive materials. Ideally, the archive materials would need to be presented in the setting up of a parallel canon, as they provide a strong contextual foundation upon which the performance can rest.[80] The archive materials were presented through the musical element of the event, as these constituted the basis of the composition. Through this, they will be traceable and should showcase themselves because of the unique nature of the

[79] Mabaso 2016 p. 2.
[80] The connection to the archive as the source material is present in this thesis through Chapters 2 and 3. However, taking the event as a standalone performance, this connection is less clear.

composition. They are present, even if the audience is unable to identify particular components as respectively belonging to Grunow, Oram, or Afrodeutsche.

Determining these nuances that relate to the different composers is not strictly necessary. Materials like the event point to the initial aims and direct the audience to the figures and their importance in the project.[81] The Q&A event sought to allow discussion between all voices in the project and showcase the inner workings of its process, including the archive materials as the primary influence in designing how the music was composed and its influence on the dance. In effect, the disruptive act that has taken place during the commission is then unpicked and put back into the revisionist framework. In theory, this process would be able to showcase that there has been a triangulation of revisionist, anti-canonisation and minor histories at work within the curatorial practice. With the shortfalls already discussed above, none of these practices provides a complete method for this project. Instead, combining these methods leaves the best site for the artists to create this polylogue.

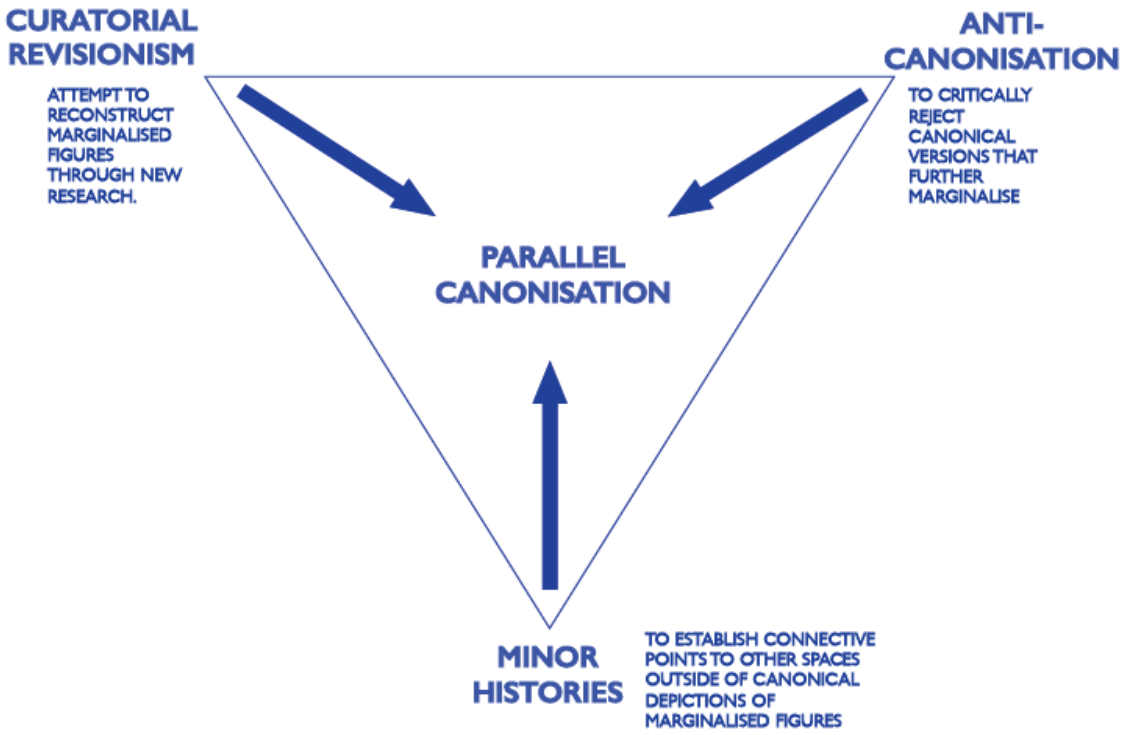

Figure 16 A diagram which illustrates the three main curatorial theories which were researched and altered to understand and create parallel canonisation.

[81] This leaves much to be desired, as the audience may not read the programme or may be unable to see the connection between the process and the figures when they engage with the project's performative elements.

Dissonance is passed through the interpretation of the archive material; there is also a level of dissonance created through the curatorial practice. Starting with a revisionist standpoint that influences how the archive materials are read to create the artwork presented, the work disrupts the message when passing from the curator to the artists. The output of the curatorial angle is then having to process the novel, disturbed, and disrupted, version and integrating it back into a parallel canon. The original disruptive line drawn through the curatorial act has not become thickened, but rather altered and changed in direction. With this distortion, the ties to the original subject matter become much more challenging to view. This creates an alternative way of presenting history as opposed to its "major" versions. It has changed so much that the links are no longer clear, and presenting these as a polylogue creates a stronger base for the parallel canon to be established: not as a marginalised history being told, but as a re-interpretation of historical materials presented through contemporary work.

The events sought to showcase work akin to genealogy as presented above as a polylogue. This shows that there is not a straightforward linear progression that goes from Grunow to Oram and then to the practice undertaken in this study; instead, there is a dialogue present with both figures, their historical representation, and the representation performed by the commissioned work and the accompanying live event. The complexities of Grunow's and Oram's and source materials – but also the complexities around contemporary representation of them – will be addressed and showcased through this doctoral project as a whole. In this way, the audience should be able to continue to understand where Grunow and Oram have been left out and where their influence did in fact lie, highlighting their practice as an alternative way to conceptualise and create music. Guided by the practices that Grunow and Oram were undertaking, this should help to breathe life into them and inspire others to think about how they can use the work of these figures in their practices. Being included in the broader centenary project of *Bauhaus Imaginista*, this representation should have a significant reach outside of the local audience who would be able to view the event.

4.7 Conclusion

With parallel canonisation as a theoretical model established through the work of this project, what needs to be evaluated next is its success as a curatorial method. The points that this section has covered establish what was necessary to conceptualise the parallel

canonisation, and the method that was undertaken to reach this. Combining - in critically evaluating – revisionism, anti-canonisation, and minor histories was a process of triangulation to achieve a rhizomatic method with the best elements of all three practices. Applying this to *Eight to Infinite* was then achieved through the work with the two artists involved in the project. To gauge the success of the creation of the parallel canon, both artworks need to be examined. This will come with the analysis of the event itself, in which Martin Tomlinson's contribution was present. This will be followed by a compositional analysis to help to identify the extent to which the archival materials were also present within the music. These points should help to understand how parallel canonisation as a theoretical model could be translated into a methodology of curatorial practice.

CHAPTER 5:

The performance of Eight to Infinite as an exercise in creating curatorial disruption though the "passing of dissonance"

Before this discussion, the reader is encouraged to view the video recording of the performance that was given by Afrodeutsche and Martin Tomlinson by following this link: *https://www.researchcatalogue.net/shared/1ad377245960da12e521458fac937379*. This is the reference point for this discussion, particularly the performance given by Tomlinson, which will be critically analysed.

In this chapter, I aim to critically evaluate the collaborative work between me and the artist, Afrodeutsche, including the final performance on 7 October 2021. This will begin with the collaborative work undertaken between me, Afrodeutsche, and Martin Tomlinson, and the involvement of other practitioners and researchers who helped bring the performance into its final presentation. This will then be followed by a critical reflection on the performance itself, with the music as the primary research output of this project. These will be assessed based on their ability to achieve the objective of creating a parallel canon with which to examine Grunow and Oram as theorists of optical sound. As already stated, the commission that took place was primarily between me as the curator and Afrodeutsche as the primary artist. The work centres around using the archive materials as a basis for creating music based on a combination of Grunow's and Oram's compositional styles, using their materials to create this work. Having established the key elements of Grunow's and Oram's theories, the aim is to use this to create a parallel canon from the archive materials as a way of removing them from the dominant canonical version of their histories held by their respective institutions.

With the establishment of parallel canonisation as a rhizomatic curatorial method, what remains is to evaluate the practical component of this project in line with particular attention to parallel canonisation. This analysis will outline how both artists –

Afrodeutsche and Martin Tomlinson – engaged in creating their respective artistic responses that were displayed at *Eight to Infinite*[1] on 7 October 2021. For the two artists, this was the culmination of a process that will be referred to as the "passing of dissonance", which will be described later in this chapter.[2] The performance was a culmination of 10 months' work between me and Afrodeutsche, working with Grunow's and Oram's theories, as described in the previous chapters. Starting with the commission between me and Afrodeutsche, this chapter will discuss how Martin Tomlinson was recruited into this project, along with the use of "passing of dissonance" as a means for curatorial disruption. Tomlinson's choreographed dance performance will also be examined in detail. His dance piece was the main disruptive act of the whole project; the process therefore requires special attention to examine the impact that it had on the final event itself.

If performance is fundamentally the act of showing and projecting a temporary reality, its immediacy in its contextual frame must be understood.[3] In the context of working with archival sources on music, this becomes a challenging undertaking. What Afrodeutsche was keen to explore through the composition is the notion of dance within Grunow's work; however, neither of us is a dancer or choreographer, which meant that we would need to collaborate with a dancer/choreographer to explore this part of the archival work. Afrodeutsche approached Tomlinson to get involved in the project,[4] with the original intention of not sharing the final composition with him before the day of the performance. The purpose of not allowing him to listen to the composition was to encourage him to respond to the piece as if he were one of Grunow's students, as a way of evaluating the universality which Grunow claimed for harmonisation theory. If Tomlinson's movements matched those that Heitmeyer was referencing in *Die Grunow-Lehre*, then this would help further the idea of the parallel canon because it would give recorded proof that Grunow's theory was universal, as claimed within the archival materials.

However, we made the decision that Tomlinson should have some time to engage with the composition; his previous collaborations had always allowed him to listen and to

[1] Nottingham Contemporary 2021.
[2] As well as in the previous chapter, Sec. 4.6.9.
[3] Wood 2022.
[4] The pair have been good friends for many years and had been wanting to collaborate on a project for some time. He was her first suggestion for people to work with in this capacity, and I agreed that he would be a great asset to this project, which is further explored later in this chapter.

choreograph before the performance. In addition, it made more sense to give him room to create an individual response to the contemporary reading of the archival materials from Afrodeutsche. Specifically, this mean that Tomlinson, unlike Afrodeutsche, was not given access to the archival materials at all; instead, his engagement with the project was only through the final musical composition.

The aim of this was to create a linear progression and passing of knowledge that would comply with the project's curatorial framework shaped by a three-step process. First, I would examine the work in the archive and build a version of both Grunow's and Oram's compositional practices – which created the notion of optical sound – as a combination of their theories to form a contemporary understanding of both figures, removing them from the canonical versions of their histories.[5] Second, this information would be passed on to Afrodeutsche,[6] who would use this compositional method to create the commissioned music; this would be based on the archival findings, and it would be combined with her own style and influences to create a contemporary response, and a renewed understanding of both Grunow's and Oram's legacy. In addition, this would also further the idea of removing the two figures from the traditional canon. Finally, once this was completed, Tomlinson would only work with the composition to create a response to it in a different medium. This would once again give him space to form his own reactions based on his influences, creating a second contemporary response, which would be completely removed from the traditional canonical version of their theories. This is not to say that Grunow and Oram were removed from his process, but that their influence was disguised within the composition from which it originally came. This then became the strategy of the "passing of dissonance", in which one practitioner would create an interpretation of the latter stage and pass it on to the next: from researcher to composer, from composer to choreographer.[7]

[5] With this comes the choice to narrow down the available resources so as to match the number of materials on both theorists. As Grunow's archival footprint is much smaller than Oram's, I made the decision to select similar sources from Oram as those that were available from Grunow. Heitmeyer's (1967) text was the focal point for understanding Grunow's work, and Steckner (2002) was used to supplement it. Similarly, Oram's *An Individual Note* (1972) was used as the basis for understanding Oramics, and the archive at Goldsmiths was used to supplement this understanding.

[6] As stated in the previous chapters, there was a selection process to the materials which meant there was a balanced amount for both Grunow and Oram. See note 5 above, and cf. Chapters 2, 3, and 4.

[7] Or curator, to musician, to dancer, as we all *performed* our part on the night of *Eight to Infinite.* The former denotes the emphasis on the creators of each step, while the latter is the performer, visible to the public's gaze.

Starting with this collaboration between myself and the contemporary artists, this chapter will explore how the curatorial decisions implemented a multi-modal method that is informed by revisionism, anti-canonisation, and minor histories to create the ground for the parallel canon. Beginning with the commission brief, it will examine the steps that were undertaken to shape the final event presentation. After this discussion, there will be a critical analysis of (i) how the performance met the demands of this process, (ii) how it shaped the parallel canon, and (iii) what this means for the continuation of this research after the event.

5.1 Commissioning as a method for parallel canonisation

Understanding the process through which the commission was created is essential to evaluating its success as an exercise in creating a parallel canon. Starting with the original project brief, the curatorial goal was to create a final performance that would contribute to removing Grunow and Oram from the canon. This would be achieved by building a contemporary framework based on a genealogical constellation of different influences of through a parallel canon means that the event could sustain its own context away from the Bauhaus centenary celebrations.[8]

The brief given to Afrodeutsche as the commissioning artist was to combine the archive materials with her own compositional practice to create a contemporary version of harmonisation theory and Oramics; by combining the historical materials with current digital compositional tools. This composition could take whatever form she chose, with the one constraint being that it had to be under 14 minutes long.[9] Other than this, it was her prerogative to take the piece in any direction she felt necessary to respond to the archive materials. The materials shared from the archives were text- and image-based, and they were collected during the initial research phase.[10] These materials were primarily related to the histories of both figures, including their relationships to their institutions and the treatment they received within them, as well as materials about their practice. The latter were key to establishing a genealogical version of optical sound as a broader

[8] With reference to the two major exhibitions, *Bauhaus Imaginista* and *Still Undead*, as the primary research exhibitions for this study.
[9] Because of funding constraints, this was the maximum length of the composition that would allow the commission to remain in line with Musicians' Union rates.
[10] The original intention was to visit the archives together and establish sections that Afrodeutsche wanted to include in her composition. However, due to the coronavirus lockdowns, this was not possible because the archives were closed during this time. Instead, we had to work with the materials that I had collected in the initial stages of the project before the commission had been finalised.

practice based on using colour (as in Grunow's practice) and drawings and shapes (as in Oram's). These were shared online in a catalogue of collated materials from the archive and other sources.

Once the archival materials had been shared with Afrodeutsche, we were to engage in a collaboration that would then be undertaken before the event (including regular meetings in which she would have the opportunity to share her thoughts on the materials as she was encountering them) to attempt to create a version of harmonisation theory and Oramics that was in her own language to create a musical response to Grunow's and Oram's theories. The musical response to the archive materials was the final part of the commission to be created. The first task is to gather materials and research to shape the compositional "language",[11] that worked with Afrodeutsche's own style, and the historical materials. The second was to create a bank of sounds and samples used in the final composition. Finally, this bank is used to build the pieces using the language that came from the research process. These three steps outline the collaboration that was stated in the project brief. I was open to suggestions for the live performance and how the composition-supporting process was to develop, with the emphasis on Afrodeutsche's response to the archive leading to how the event would take its final form. This also describes the first part of "passing the dissonance."[12] What followed would be a collaborative process in which the event would take place and we would find ways to include other artists, practitioners, and researchers into the process to create this event as a polylogue.

5.1.1 Creating the collaborative curatorial process

A level of collaborative practice was essential to the process of creating the parallel canon. Much has been written on the curator's role as the "taste maker", being the primary influence in the presentation of the curatorial project. This discussion can be traced back to Irit Rogoff's discussions in Jean-Paul Martinon's 2013 work, *The Curatorial – A Philosophy for Curating*. In this text, Rogoff established the distinction between curating and the curatorial, in which the former is the practical execution of setting up and delivering an exhibition/event, whereas the latter acts more as the rationale and the reason

[11] This was discussed in one of the initial meetings, which can be found in Appendix II and relates to the work that Afrodeutsche has done on other commissions, primarily for film scores.
[12] Explored later in the chapter in Sec. 5.2.

that a particular project is important, and its intended outcome. In this, the curator has "control" over what is included and excluded, and the overall direction of how the curatorial is to be established; in a successful curatorial project, the audience's reaction will line up with this exploration. This was initially very much the nature of my role in this project; however, with the decision to take steps to create collaboratively with both of the artists, the control I had as a curator was one that was lessened. This helped to contribute to the creation of a polylogue through this process by making other points of connection that were linked to Afrodeutsche's and Tomlinson's influences on research. It was a part of the final event, one which came through during the Q&A; however, it did not drive the commissioning process or the final outcome of the two works that were displayed. It created the polylogue in addition to adding to the genealogical framework in which parallel canonisation was established.

While my role was still very much embedded in this process, there was a series of active steps that I took to give more room and interpretation to the importance of the archive materials and the work of the artists in the project. This was so that it was not my voice alone which was taking this project forward, but a polylogue of all participants involved. This came from a strategy to blend the roles of artists and curators – in which the artist influences the curatorial process, and the curator influences the artistic process – to become collaborators, rather than working within a hierarchical relation in which curators manage artists.[13] Curators have quite clearly adapted the procedures of artistic self-organisation and transformed these into hierarchical constructions. What was attempted here was for "artists" and "curators" to no longer be extended functions that can be distinguished in every case; both are cultural producers in signifying processes.[14]

The collaborative work between me and Afrodeutsche is formulated as a four-part process. Firstly, the archive materials that I had collected were shared with her, and she was given time to process and create her narratives on both figures to draw out her interest in their respective theories. Secondly, we explored her points of interest in more detail through discussion, and we sought the direction in which she wanted to take the composition in a way that would put her work into the centre of what happened, which would result in further research if needed. Thirdly, we worked with an outside artist and

[13] Smithson 2003.
[14] Crawshay-Hall 2020.

practitioner, Tom Richards, who recreated the Mini-Oramics Machine. The fourth part was the designing of the compositional process leading to *Eight to Infinite*. This process was based on regular dialogue and openness from both voices to create a practice over which we could both have ownership. Ultimately, we would not have a fixed perspective on the archive materials, but one that was influenced by contradictory and messy understandings of how to practise and exhibit this contemporary version of optical sound.

These four steps portray the collaborative process undertaken for ten months, during which we met regularly to discuss the composition process and analyse the archive materials. The references to these meetings in this chapter are from recordings using platforms such as Microsoft Teams and Zoom. These meetings were initially supposed to take place in person; however, we could not meet in person because of the pandemic and the subsequent lockdowns. This did have the additional benefit that I was able to record the video and audio of the meetings, which the transcripts can be found in Appendix II. I revisited all of these meetings and mapped the decision-making process in light of the final performance and piece of music to pinpoint where decisions were made and developed from the conversations between the two of us. This process is explored and framed by the four steps of the process, which displays how we worked collaboratively to produce the work showcased in the final performance in October 2021. The commission became the second step in establishing the parallel canon. Taking Grunow's and Oram's materials out of the context in which they were originally used, thickening the line of curatorial enquiry,[15] and creating a level for the parallel canon in which the two could be celebrated for their compositional styles, not their historical associations with their respective institutional narratives. This borrows from an anti-canonistic method, which invests in distractions away from the traditional canonical narrative. Additionally, there are other elements of revisionist, anti-canonistic, and minor history practices that influenced the event's creation and design. These will be examined in the next section to understand how this created a site for parallel canonisation.

[15] Cf. Martinon 2013.

5.1.2 Evaluating the commissioning process and the influences of revisionism, anti-canonisation, and minor history

As mentioned, the first step in the process was to understand how the archival materials could be used. Our discussion began by giving context to what I hoped this doctoral study would achieve. The discussion included an initial look into the archive materials and their significance, and how to best present them and work with them in a way that would resonate with Afrodeutsche's way of composing music. This step was essential for establishing the genealogical constellation which establishes the main influential points that harmonisation theory and Oramics within the composition. Borrowing from revisionist practice, the purpose of this part of the process was to establish how harmonisation theory and Oramics operate as compositional practices and to understand how to use them in contemporary compositional practice. For this, the materials were examined, and features were identified to find a way in which Afrodeutsche could practise with these materials. The most important of these were the inclusion of colour-coded notes to explore harmonisation theory and using the Mini-Oramics Machine to include Oramics in the process. The purpose of this was to examine both of these compositional theories with "fresh eyes."[16] Bringing their work into a contemporary setting would need to include a strong link to the historical meanings of what they were attempting to achieve within their original contexts.

Starting with the revisionist practices, the parts of harmonisation theory and Oramics that needed to be used to create the compositional process were established.[17] What happened from this point mirrored the steps of establishing a minor history, described in the chapter three. The parts of minor history that were taken forward brought the stories of Grunow and Oram outside of the contexts of the institutions that had acted as gatekeepers to them. From the perspective of curatorial practice, this came from taking the materials out of the context of the major exhibition projects that were supposed to be representing their histories. As already mentioned, neither Grunow nor Oram were represented in *Bauhaus*

[16] Reilly 2018.

[17] As already mentioned in the chapters on Grunow and Oram, these were the inclusion of three sets of four colour–note combinations to create three movements. Each of these movements then further responded to parts of harmonisation theory and Oramics by being taken as a response to a part of the process (the three orders in harmonisation theory, and the three modes of thinking in Oramics). The notes were also played with samples from the Mini-Oramics Machine.

Imaginista or *Still Undead*, and they were actively excluded from them.[18] Being in a position in which I was unable to work directly with these exhibitions, this removal was organic in the research process. With this said, I was invited to host a talk and workshop as part of *Still Undead* in November 2019. *Sonic Bauhaus* was part of the public programme which explored music practices that were linked to the Bauhaus, particularly concerned with its influence in British pop culture. This talk introduced Grunow and Oram as pioneers of optical sound practices, and how their lineage could be traced towards contemporary practices of electronic music. The outlook of this talk was to be strictly revisionist, by which their histories were examined in such a way to celebrate their contributions to sonic practices and to include them back into a traditional canonical narrative.[19] Establishing the event outside of the programme that accompanied these projects meant that they had already been removed from a context where "major histories" of the Bauhaus were at play. To further remove *Eight to Infinite* from the major centenary celebrations, other elements would need to be considered to make the separation more distinctive. This is where the anti-canonistic practice was used to further establish the distinction.

To extend the division from the major canon, there needed to be a strong message from the event to create distance. Borrowing from anti-canonistic practice, distraction and disruption were the main methods that were used to establish this separation from the main exhibition projects. The delay caused by the pandemic had already created a temporal separation from the main canonical representation of Grunow; however, there needed to be a distinctive element to *Eight to Infinite* to separate it completely. The commission worked to create music, which already removed Grunow and Oram from their contexts into a contemporary sphere. The inclusion of a dancer to interoperate with this would also help to add a distractive element, which created a place away from the musical representation that was being advertised for the performance. On its own, this was not enough to create an anti-canonistic disruption or distraction; therefore, the way in which the dancer was used curatorially would need to be properly negotiated.

[18] As stated in Chapters 2 and 3, they were both excluded from these exhibitions. Though Oram does not have a link to the Bauhaus directly, and the major marginalisation comes from the BBC history, she was excluded from the Nottingham Contemporary chapter *Still Undead*.
[19] Cf. Nottingham Contemporary 2019.

For this reason, Tomlinson's interpretation would be limited to only having the composition to work with, not the original archival materials. This would mean that his performance would be limited, as it would only be a response to the composition; he would not have the backing of the archival material to make it align with this representation. In addition, I was not in communication with Tomlinson about the work that he would be creating for the live element of this show,[20] which meant that my direct involvement with his performance piece was removed from the process, helping to lessen my authority as curator. Indeed, my only involvement with Tomlinson was to facilitate his contribution to the live event, which would be essential to this research.

When considering the impact of the live performance on creating a parallel canon, it is necessary to link this back to Foucauldian genealogy. Rejecting single points of origin for knowledge production or artistic practice, Foucauldian genealogy asserts a myriad of different influences that contribute to art and any mode of knowledge production.[21] Live performance lends itself to making Foucault's theoretical assumption a curatorial reality. In the words of curator Catharine Wood:

> The attitude of 'performance' – in fact, a refusal of segregation of objects and actions that is a recent, largely Western, phenomenon in world art history – thrusts the artwork back into ritual, and into life again. As the art world grapples with globalism and attempts to formulate new cultural narratives and network patterns, the canon is fundamentally in question. It is not possible, with this wider perspective, to understand a universalist understanding of the artwork's origin and meaning.[22]

Wood's words speak directly to the principles of creating a parallel canon. Performance practice in a contemporary context is a rejection of praising a single origin for artistic movements and theories, because it is collaborative. It is instead a way of embracing multiple ideas and constructs that come with an artistic practice. So far, I have used the archival sources to create a historical narrative that (i) attempts to construct Grunow and Oram as theorists with multiple points of interest and (ii) explores the intersection between their practices. This process was done to create a genealogical study of their work, highlighting that harmonisation theory and Oramics are not products of the

[20] The only interaction that I had with Tomlinson was through Afrodeutsche, and this was related to logistical matters such as organising travel and accommodation for the event at Nottingham Contemporary.
[21] Cf. Foucault 1980.
[22] Wood 2022, p. 228.

Bauhaus[23] or the BBC; instead, they are products of their lifelong careers that were influenced by an ever-growing complex network of ideas and developments of practice. Wood's argument here is that in contemporary practice, performance as ritual actively rejects the idea of a single origin, and it instead creates multiple points of origin from which the performance draws.

The performative elements are based in ideas of a total artwork, which inherently crosses disciplinary boundaries.[24] This helps further the notion of Grunow's and Oram's historical theories, undertaken through the research, however, achieves this in a separate way. The live performance here contributes to creating a "ritual" around celebrating Grunow and Oram; it challenges their canonical representation while simultaneously working with the performers to highlight their own varied practices as constellation points outside of the historical constructions. The construction of such constellation points creates a polylogue between historical sources, contemporary artists, their practices, and the practices outside of the historical canon that influenced them before their exposure to the historical sources.[25] In addition, a live performance was a fundamental part of the project from a more logistical perspective, to allow for a live audience to engage with the artists interpretation of Grunow and Oram, in addition to providing a place for artists to present their work to an audience.

The live element was an essential part of this research for three main reasons. Firstly, because of the coronavirus pandemic, opportunities to perform live were taken away from many artists during this time. From a curatorial standpoint, providing a live space as an opportunity for the artists to do this once again, as the restrictions had been eased to allow for live performance. Secondly, the funding that had been secured for the project had live elements factored in, which meant there was budget available to be able to pay both artists

[23] To contrast this, Wood's definition of performance is based on the idea of "total works of art", or *Gesamtkunstwerk*, a nineteenth-century German term referring to the spectacle of a performance that synthesises multiple art forms into one unified work. This notion can have a constellation point in the Bauhaus theatre workshop under Oskar Schlemmer, amongst others, such as Andy Warhol's multimedia happenings, or that of the folk spectacles in Nazi propaganda films – all linked by a "pseudo-organic totality" that would create a utopian feeling of spiritual purification for those in attendance. Wood's definition of performance links to this idea of the artistic aesthetic totality of the *Gesamtkunstwerk* as a form of modern-day ritual which developed through artistic practice. Cf. Brown and Dissanayake 2018, and Smith 2007.

[24] Cf. Smith 2007 and Brown and Dissanayake 2018.

[25] The live performance was also essential to this project from a logistical point of view as a way of testing the proposed curatorial method. This was a preferable to only theorising about the potentials for Parallel Canonisation as a method, rather to enact it as an tangible curatorial method.

for a performance. This meant that I would also be fulfilling the funding obligations and complying with fair pay guidelines as set out by both Arts Council England and the Performing Rights Society Foundation.[26] Finally, there was an emphasis on using the event model as a way of testing the theoretical motivation for parallel canonisation as a way of evaluating its potential in a practical environment. These three points also opened the potential for the collaboration to extend to designing curatorial output as well as the composition. In the same way that I could influence the material that went into the composition, Afrodeutsche could also have her own influence on the event's design and presentation. This helped further break down notions of the curator having overall control of the presentation of the artist's work, and it allowed room for the polylogue to develop. With multiple voices now concerned in the curatorial output, the composition itself developed the polylogue so that both the artistic offering and the event site were made in collaboration. Development concerning the composition and the event site was undertaken between Afrodeutsche and myself. The connection and addition of Tomlinson's contribution was completed in isolation from this process. The reasoning behind this was that his contribution could be removed from the main discussion, creating a different set of genealogical constellation points that could be included in the wider discussion. His input contributes to the polylogue in a way that is not influenced by the driving force from the other voices in the project, which Afrodeutsche was keen on exhibiting in the final presentation.

5.1.3 Contributions to the parallel canonisation

The process outlined above meant that there were multiple voices going forward into the event site. My voice was shown through the event design, the initial subject materials, and the organisation, which were being more directly revealed during the Q&A portion of the event. Afrodeutsche's voice was shown primarily through the composition,[27] and she also influenced the event design and inclusion of Tomlinson. Finally, Tomlinson's contribution was a combination of both his response to the commissioned piece of work and his personal, politically informed, response. As the three practitioners, our artistic voices and ideas on the archival materials, the composition, and the dance piece were all shown in conjunction with each other at the event at Nottingham Contemporary. Using

[26] Cf. Arts Council England 2018 and Musicians' Union 2020.
[27] The composition was also influenced by me and Tom Richards as researchers who had insights into both historical composers.

this presentation as polylogue, the idea was to create a place that the parallel canon of Grunow and Oram occupies.[28]

These contributions to music practice and curatorial understandings of the commissioning process were present in the discussions until the end of the research, following the live event. Afrodeutsche used her influence to contribute to this project's practical and theoretical applications. Her influence shaped my understanding of the archive materials and shifted the curatorial framework examined in this project. The kind of revisionism present in the project was ultimately different from what I originally aimed for. This was achieved through two creators whose practices inherently established a parallel canon because there was a large shift in the understanding of both theories, creating an alternative site to examine the materials.

Having Afrodeutsche guide the process allowed for a level of ownership that would not have been possible if I had given more of a strict brief for the project; the result of this was a better base for the performance to happen in. This refers to not having a strict set of rules to follow for the performance to take place, leaving room for the artists to engage with the brief in their own ways rather than fulfilling my ideas. This created a stronger polylogue, because Afrodeutsche's voice within the project was more pronounced and nuanced rather than being a representation of my voice. The process was described in the Q&A segment of the performance as "passing the baton" from one to the next; however, this does not reflect the process as effectively as it could: as the "baton" was passed from one hand to the next, it became increasingly distorted from the original. This is why I have chosen to refer to this as the "passing of dissonance".

5.2 Passing of dissonance

What can be seen most presently from Tomlinson's movement is the lack of the connection to the importance of Grunow and Oram's theories. While Afrodeutsche undertook a meticulous process to gather an understanding of the archival materials, the same process was not undertaken by Martin Tomlinson. There were a few reasons why the presentation of Tomlinson's interpretation was not as sufficiently linked to the same notions of the historical figures as Afrodeutsche's composition was. Firstly, the intention was to create disruption from the anti-canonistic practice. Showing the two pieces

[28] The success of this is going to be analysed later in this chapter, and in Chapter 6.

together represented a multi-disciplinary reading of the archival materials alongside as objects that were not as intricately linked to them, therefore creating a disrupted version of what was on display. A disrupted presentation would create distance from the canonical versions of Grunow's and Oram's legacies through the contemporary pieces. Presenting *Eight to Infinite* as a polylogue of two pieces that worked together would highlight the artist's work as influenced by Grunow and Oram; however, neither signposted to the canonical versions of Grunow's or Oram's histories. The presentation at *Eight to Infinite* instead showed the last step of the "passing of dissonance" – passing the composition over to the choreographer to create a dance piece. Neither I nor Afrodeutsche had viewed this piece before the event, and we experienced it at the same time as the audience did. This was a purposeful part of the process of dissonance, allowing the freedom for each practitioner to have their original response to what they were creating.

Freedom from influence was essential when establishing the ideas that revolved around creating a parallel canon. As mentioned previously, a concern was that my voice could be overpowering, as the traditional role of the curator is to oversee and shape the event's outcome.[29] Having multiple voices leads to the creation of more responses to Grunow and Oram than just those of the curators. This idea is discussed by Wood, who states that the presentation of one's individuality is a marker of authenticity that attempts to peel the subject away from socially constructed habits and scripts.[30] Wood's argument is important in this project, as the responses that were presented were authentic to the artists as individuals and practitioners. This presentation, while giving the artists creative freedom, did lead to some discrepancies that were hard to rectify when analysing the performance in relation to the initially intended outcomes of this project. Nonetheless, it achieved many of the key objectives regarding how to create a parallel canon in a curatorial context.

Dissonance was achieved through using artistic authenticity, and explored before looking specifically at the performance as the final practical output in this research. Creating this notion of dissonance, particularly "passing the dissonance" from one voice in the project to the next, shows the handing over of one version of the original ideas and materials to the next, to the next, until the performance takes place. At this point, the final product is

[29] Cf. Reilly 2018 and Richter 2013.
[30] Wood 2022.

examined and placed back into an attempt to decipher the original understanding of the preceding process. Going through and understanding the process step by step is the most effective way to establish the process and to understand how it led towards the creation of a parallel canon for Grunow and Oram.

5.2.1 Mapping the dissonance

To understand the differing points of this process, it is essential to keep Foucauldian genealogy in mind. Considering this project's final output as a constellation of different and sometimes conflicting origins, the obvious way to understand this is historical, as has been emphasised in earlier chapters. This is due to the revisionist approach undertaken in the initial stages of the project. As the method developed, revisionism was questioned, and it became clear that a novel method was needed. By examining this process as a linear constellation, an understanding of the "passing of dissonance" can be established, which moves from the traditional canonical version of Grunow and Oram to the parallel canonical representation. The diagram below (Fig. 17) charts this process through dissonance: one practitioner researched the part of the process which came before them, and then created their own response with the influence of the previous interpretation, moving from the archival study, to the performance of *Eight to Infinite*. This diagram also signposts the practitioners who manipulated and created the different parts of the process. It also portrays the constellation of voices that influenced the final event.

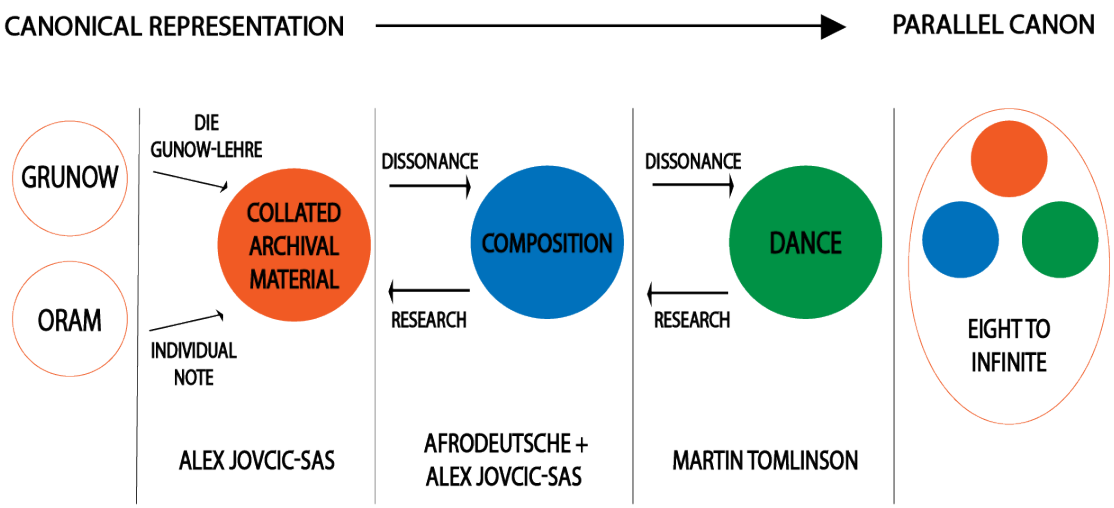

Figure 17 Diagram showing the journey of passing dissonance from one practitioner to the next, from the canonical version to the parallel canonical version. Created by the author.

The canonical representation starts the process, as the source material, and the jumping off point by which the parallel canon gets its links. Grunow's voice, however, is not directly present in this project – no source material can be directly attributed to her, only the voice of Heitmeyer acts as the first interpreter of her work. The inference here is that Heitmeyer's work – though historically close – omits much of the work that Grunow completed after the Bauhaus, in addition to Heitmeyer's first-hand account of harmonisation theory. *Die Grunow-Lehre* is fundamental as a constellation point in this process, as it is the first stage of manipulation of harmonisation theory and provides a layer of dissonance within the initial archival material. Heitmeyer's work is accurate to the work that she and Grunow completed. However, her influence emerges towards the end of Bauhaus, in which Grunow had already developed her ideas before Heitmeyer. In contrast, *An Individual Note* is a direct expression of Oram's voice in her own writing, and the secondary reading of her materials starts with my encounter with her archival materials.[31]

In the first stage of dissonance, the archival sources, *Die Grunow-Lehre* (Heitmeyer) and *An Individual Note* (Oram), were analysed and interpreted by me. Through compiling these materials, a version of Grunow and Oram biographies was created. This process celebrated their work as genealogical constellations, which constituted the first step in not only revising their historical positions but also their status within the traditional canonical representations. By rejecting the marginalised status within their institutional histories and, instead, highlighting the influences outside the institutional versions. This mapped their respective compositional practices and tried to identify how they might be used in a contemporary context. The process of collation and interpretation had acted as a curatorial input that frames and mobilises Grunow's and Oram's archival material for the process of dissonance, creating the base for their parallel canon. Here, my engagement with archives established a context that allowed Afrodeutsche and Tomlinson to draw on Grunow's and Oram's institutional histories but was not to solely reliant on them.

Once the revised context was established through the initial archival study, it became clear that there needed to be further curatorial intervention. This intervention was to

[31] There was already a process of reinterpretation in the archive materials before my involvement with them. Oram's influences are easier to pin down because the main source of this project was her writing on the discussion of Oramics in her own words. However, like Heitmeyer's interpretation of harmonisation theory, Oramics had some of its own recreation from Tom Richards' influence, which came later in the process.

further the revisionist practice undertaken during the archival research and create an event site that could be used to display Grunow and Oram. The event was set up through commissioning as a process of creating work that was based on the archival study. The commission was based on the connection of both figures as pioneers of the optical process that connected to spiritual components as theories of composing music that was distinctive to Grunow and Oram. Creating an extra dissonant level of separation away from the canonical versions of their histories. The collated archival materials were passed on to Afrodeutsche, and they were interpreted by her to create a compositional practice that was based in optical sound.

Afrodeutsche's process then became the same as mine – she had to apply her lens to how the materials were interpreted that responded to her motivations and compositional context. This added her own constellation of influences into the process, but it also added dissonance to the final representation; it took the written archival materials and made them into sounds. The final part of this process created the full composition, which was a blend of the revised version of Grunow's and Oram's compositional practices and Afrodeutsche's influences and compositional practices. In addition, Tom Richards' Mini-Oramics Machine was introduced at this stage, which added an alternative interpretation of the archival materials in the form of a physical version of Oramics. Richards' contribution was key to the project's incorporation of Oramics in this compositional process, i.e. having a workable machine that could be used to create final composition.

Importantly, most of the composition was undertaken without my presence in the process. The composition itself was created two months before the final event, and it was created by Afrodeutsche alone.[32] Until this point, we had discussed the materials at length, in addition to creating the compositional process that she was to use. I wanted to distance myself from the actual composition so that my influences would be limited. This created a dissonance between the original materials, my understanding of them, and the other interpretations. Rather than finding archive materials that worked with her compositional process and understanding, Afrodeutsche had to bend what was available to her to fit in with her intentions for the composition. This is the first part of the evidence of dissonance

[32] By this, I am referring to the fact that I was not directly involved with the composition – I had no say in how the music, the score, or the movements were composed. The collaboration which happened between the two of us was the selection and the analysis of the archival materials, in addition to setting up the event, and the key points that wanted to be brought forward into the composition.

that can be justified in this project, and it adds a different layer of interpretation to the original collected material.

5.2.2 The dance performance and the final stage of passing dissonance

For the last step in the process of creating work for the live event, Tomlinson's engagement was vastly different from both mine and Afrodeutsche's. Tomlinson had no exposure to either the original archive materials or the collated version that I put together. This was so that he would be able to create a piece that was influenced solely by his own thoughts and feelings about the music as the only object of interpretation. This is the biggest step of dissonance in this process, as all direct inference to Grunow and Oram is lost. The intention for this within the creation of the parallel canon was to synthesise a part of the event's presentation that would be the creation of a piece that was not tied to the historical versions of Grunow and Oram at all. Instead, Tomlinson's piece was created from a response to the archival materials, not the archival materials themselves. In this way, the work is completely removed from the intent to revise Grunow and Oram as marginalised figures, which disrupts the historical focus of the project. Tomlinson's contribution to the event was a contemporary interpretation, of a contemporary piece of music that was based on the archival interpretation.

With Tomlinson's input, the live event's link to Grunow and Oram became messy and contradictory, which disrupted the traditional idea of representing marginalised figures. My voice as the curator and the voices of the artists were, however, all represented through this process, and they each had the autonomy as practitioners who created them. This is a messy representation, in which the roots of the event are not clearly signposted. What deserves a critical assessment here is the live event becoming a *chaotic whole* that focuses on these two contemporary artists, their responses to the archive materials, and each other. This shows a genealogical constellation because it does not attempt to pinpoint moments in time, or hierarchy of artworks, but instead a whole artwork that moves through the different responses and the "passing of dissonance"; it rather seeks to present them all as a single polylogue. The audience then encounters an event that is temporally short and abrasive, yet it does show a representation of the parallel canon.

Through the event's documentation, different understandings are presented about Grunow and Oram, none of which chimes with the primary canonical representation of

their legacies. Every part presented through the "passing of dissonance" is novel and seeks to achieve a different meaning within the performance. Examining the different elements of the event against its aims of creating a parallel canon (with the audience in mind) is crucial to evaluating the success of this project. As Tomlinson's piece was the furthest removed from the archival sources, it seems a good place to start with when thinking about the audience's reaction to the event.

Tomlinson's contribution to in Eight to Infinite's performance was the part of the event which was the most removed from the traditional canonical version of Grunow's and Oram's histories. Therefore, it is understandable that his performance was disjointed from the rest of *Eight to Infinite*'s presentation. Tomlinson's involvement in the project, as previously mentioned, was arranged with Afrodeutsche. They had wanted to work together for some time, however, before this commission they were unable to find a suitable way to align their interests.[33] Their connection before *Eight to Infinite*, while meaning that both artists were able to work together very well, did limit the curatorial voice for the last stage of the project. The brief I had passed on to Afrodeutsche was not passed on to Tomlinson; there was little to no negotiation in which Grunow's or Oram's importance had been explicitly mentioned to Tomlinson before his involvement.

Tomlinson's voice in the performance was overpowering, and the audience feedback reflected this (Appendix III). The concern was that the marketing and supplementary materials had focused on Afrodeutsche's work, with many of the audience expecting a performance of her music. Instead, there was concern that Martin's involvement took away from and overshadowed the performance that Afrodeutsche delivered, and the movement he brought overpowered the music. For members of the audience who were present at the event, Afrodeutsche was off to the side of the stage, and visible, but not prominent. Indeed, the video focuses on his involvement. He is shouting and challenging the audience to "fight me", which can also be seen in the movement in which he raises his fists in a combative stance. While this can be seen as problematic from a revisionist standpoint, it does contribute to the creation of parallel canonisation. It is a representation of a male voice which is competing with a female voice. As already discussed in detail, Grunow and Oram had been overshadowed in their canonical representation by the male

[33] This can be seen in the Q&A portion after the performance, where they talk about their relationship as well as Afrodeutsche's intentions when working with Tomlinson.

figures that were associated with their respective institutions. The attempt was to not have my voice, as the male voice overpowering either Grunow or Oram, or Afrodeutsche's, however, in doing so it meant there were no confines for Tomlinson either. Tomlinson's performance is intense, and captures the visual space as a counterpart to voice. Tomlinson's performance speaks of a different marginalisation with focus on attributes that are more masculine, which is a problem for the initial curatorial aim. Though his performance is one which looks to address issues related with queer identity within a masculine environment, it still has the potential to overshadow that of the female voices which are trying to be represented in *Eight to Infinite.* If the "passing of dissonance" and polylogue are two of the critical features of the presentation of this event, then Tomlinson's involvement complements the process, by adding in an additional voice to the polylogue. Tomlinson's voice comes from his own context, which creates a differing perspective on the interpretation of Grunow's and Oram's legacies. Tomlinson's interpretation adds another layer of discourse on top of the music, and therefore, another lens by which Grunow's and Oram's legacies can be analysed. However, his involvement in *Eight to Infinite* does show one of the major limitations of passing dissonance as a method.

5.3 Performance analysis

The main driving idea behind the performance was that it should be a visual experience representing a contemporary understanding of Grunow's and Oram's compositional practices. The agreed format of the performance was to have the three visual scores on display as part of the live performance.[34] The intention was that the audience would be able to see the pieces, listen to the music as their translations, and then interpret them with the dancer. In this way, the entire process could be present in the performance space.[35] Three forms of the same work were experienced simultaneously; all three works displayed presented the polylogue of the different voices, as outlined above. The way in which the performance took place needed to meet the criteria of the project's theoretical framework, which was the actual test of the viability of applying a parallel canonising process in a curatorial context. For this reason, it is necessary to critique how the

[34] The visual scores are analysed in Chapter 6.
[35] Richter 2013.

performance happened, reflecting on how it was planned, how it was executed, and how it was received by the audience.

Afrodeutsche had originally wanted to not be present in the performance. Instead, she preferred all the visual focus to be on the visual scores and the dancer's interpretation. She wanted to perform from the back of the audience and only come out at the end for the Q&A section. This would put her more in the role of curator than artist, as it is the idea of the unseen hand that is controlling the event's presentation rather than being involved as part of the performative element of the process.[36] I disagreed with this, as I thought it would be better if she were also present on the stage as a visual representation of the music being played.[37] In this way, there could be a dialogue between her as the musician and artist, and Tomlinson as the dancer. This would feed back into the ideas of Grunow's work and add in the tactile element of having to programme the music live. The purpose of this was to rediscover how the person is key to the music, as it was driven by her emotional and spiritual understanding of what she was writing –she could also convey through her performance. It also alluded to the process of what was seen during the setting up of the event. Afrodeutsche and Tomlinson were in communication regarding creating the dance, and having her as part of the visual stimulus on stage meant that she would also be part of the embodied practice that Grunow and Oram had sought for in their theories. A compromise was reached whereby she would be at the side of the stage during the performance.

Another compromise was the inclusion of the visual scores.[38] Originally, the intention was to have the visual scores on display in the performance space; however, due to their large scale, this was not possible.[39] Digitally projecting them was considered, however, this would cut the performance space in half. Afrodeutsche wanted Tomlinson to have as much room as possible to perform, and she did not think that displaying the visual scores was as important as displaying his interpretation. His contribution to *Eight to Infinite* was therefore the most prominent part, showing a completely different interpretation from the

[36] Ibid.
[37] Cf. Mabaso 2016.
[38] See Figs. 18, 19, and 20, in Chapter 6.
[39] They were A1 standard size; however, they were framed, and Afrodeutsche was coming on the train by herself. With her musical equipment as well, she decided to leave these behind. We explored the possibility of projecting a digital version into the space, using the projector at Nottingham Contemporary. However, the screen would have taken up much of the performance space, which we all agreed not to do.

project's original intentions, and creating uncertainty particularly when considering the aim of creating a parallel canon for Grunow and Oram.

5.3.1 Martin Tomlinson's voice

Tomlinson was presented with a version of the archive materials that had already gone through several stages of alteration. The work he received was the audio for the completed tracks.[40] This was passed to him three weeks before the performance date. Throughout this period, he was given time to listen, respond, and choreograph his version of the music. This was presented for the first time to Afrodeutsche and me, alongside the audience, at the event. This continued the process whereby the material was examined in isolation, without the influence of the other practitioners involved. Tomlinson's influences came from a different place to Afrodeutsche's or my own. Being a queer-identifying man who was heavily involved in the punk scene in the period 2003–2012; his band, *Selfish Cunt*, was also known for its distinctive sound, as well as Tomlinson's on- and off-stage antics and aggression.[41] The persona of Tomlinson as the lead singer of his band can be seen clearly in how he performed at *Eight to Infinite*; his energy and anger were very much in line with the previous presentation outlined.[42] Understanding the ways in which Tomlinson conducted himself on stage in his earlier performances gives an insight into the type of presentation that he was to bring to this event. However, his motivation was missing from the explanation as to why he performs in this way. Punk involves a level of aggression fostered in an environment of protest and rebellion,[43] which the performances of *Selfish Cunt* display.

After the event, Tomlinson undertook an exit interview[44] that was insightful to better understand how he processed the music and responded to it. The genre of Afrodeutsche's composition differs from the punk scene, as discussed in the next section, so why is the performance so similar? While it is consistent with his usual performance style, his response has a more considered choreographed narrative. His performance style is very much based on movement as a response to music. Tomlinson's ideas on movement are different to Grunow's in this aspect; however, similarities can be observed. Despite not

[40] To listen to the composition without the video, please follow the Research Catalogue link given at the beginning of this chapter.
[41] NME 2005; Nunn 2004; Petridis 2004; Time Out 2012.
[42] Ibid.
[43] Reddington 2018.
[44] See Appendix II.

having access to her archive material, he created a piece with characteristics that are not unsimilar to her version of how movement should respond to music.[45] During the Q&A after the performance, Tomlinson commented on his response:

> For me [movement is] the only reason that I make music so I can move to it. You know, movement is, like I said, the beginning and the end, and it is everything. Furthermore, I, as a performer … there is such a wide palette of how you can move, but I think you are always looking to be challenged to go into other areas because sometimes in music it can feel quite dry.[46]

This signifies another connection to the notion of spirituality, as seen in Grunow's practice. Tomlinson's belief that music exists to be moved to, as a way of interpreting the importance of music and its creation. This links very closely to Grunow's ideas on music, in the way that it connects to a better understanding of the mental state of being that the emotional stimuli of music can evoke. Their two ideas share similarities relating to how music informs movement, focusing on enhancing the artform through understanding the emotional point of view. Where they differ is in the nuances of the emotional responses.

In Grunow's theory, each note and key represent a different range of emotions, which can be categorised through movement. Four notes were used in each of the movements within Afrodeutsche's composition to build the music within them. Four emotional groups were chosen because of their colour compositions in the physical scores. Interpreting these individual emotions within Tomlinson's movements is complex, and because of the lack of interaction between Tomlinson and the archive materials, he was unaware of these connections. His response creates his own interpretation through performance of the three individual movements in the piece. Rather than attaching the movement to all twelve emotions in the piece, as Grunow would have done, he chose three sections that showed an emotional journey presenting his response to the music. As with the connections to harmonisation theory and Oramics, the next sections will analyse Tomlinson's physical movement by each musical movement to assess how he creates his version of "dissonance" within his performance.

[45] This will be explored later in this chapter.
[46] For the whole video of the Q&A, please follow the research catalogue link. This has been edited to remove the verbal stumbles.

5.3.2 Tomlinson's Response to the first musical movement

For the first movement, Tomlinson is dressed in a black suit and tie. When the lights go up, he is pressed against the back wall, while the drones rise in the music. As the drumbeat enters, Tomlinson moves as if caught in a strong wind, holding him in place, while also struggling with the confines of his own body. It is as if he is trying to break free from his body, the wind, and the clothes he is trapped in; the music remains constant, representing these constraints.[47] Struggling in these confines, Tomlinson is trying to fight being encased by his physical being. As the music begins to layer and develop, he finds that he can focus on his struggle and leave the wind behind; he can take off and loosen his clothes as the beat falls away. Tomlinson is now centrally located, his suit loosened, and he looks to the audience for the first time as his movement matches the less jarring parts of the composition.

The idea of being trapped and wanting to escape can be seen quite vividly in this first movement. The gestures of falling over and tripping up show a level of uncertainty evident in the introduction of this piece. The first piece is the longest and has the notes G, G♯, B♭, and D. These represent the following colour/emotion combinations, red: patience, feminine love, devotion, power, and inner wealth; grey: pain, mourning, suffering, grumbling; brown: anxiety, fear, horror, defiance; and finally, blue: readiness, calm, joyousness. There is a solid connection to the representations of pain, suffering, defiance, power, and readiness, which are all emotional responses in this piece to the colours used by Grunow. What can be seen in Tomlinson's performance is the embodiment of many of the emotional responses. Starting as fully clothed, he is struggling with the confines of the suit he is wearing. The suit can be seen as a metaphor for the societal norms over how a man should act while also being a sort of prison. Tomlinson attempts to stay in this prison – to fit with how society wants him to be[48] – while simultaneously trying to break free from it. He hesitates in his readiness to break free by remaining within the suit's confines.

[47] Fig. 18.
[48] Cf. Connell 2003.

Figure 18 This image is from the first movement, and it shows Tomlinson looking compressed and visibly in distress. He is still being outwardly aggressive to his situation, as can be seen by his clenched left fist. Photograph: Greg Eden.

What Tomlinson's movements present resonates with Oram's mental mode. Similarly, to the suit, the wind fights against him; his power against it is lacking, causing him to suffer, but he remains defiant against it. Tearing off his clothes indicates the defiance that runs through all these emotional responses; he is taking power against his situation and rejecting the societal pressure that is being placed upon him. He is shedding the suit along with the feelings of suffering, fear, and calm, which can also be interpreted as a rationalising process. Tomlinson has conceived in his mind that he wants to break away and fight the world around him, and he has now rationalised these thoughts through his movement. He takes the mantle of a character or a figure who wants to fight the world, with confidence and assurance akin to that of a straight white man. This reference is to gender as a structure in social practice, informed by Raewyn Connell's *Masculinities* (2005). Connell defines "hegemonic masculinity" as a social construction of gender, by which the male indicates an axis of power that reveals itself in the confidence of a person who is unfettered by subjection of gender classification and therefore acts with superiority and aggression. Unintentionally, Tomlinson has created a version of harmonisation theory and Oramics that reflects similar constructs to his own narrative, which complements it.

Indeed, his intention was to present somebody who is "a bit of a bastard,"[49] but this can also be applied to notions within the historical materials.

In the exit interview between Tomlinson and me after the event, Tomlinson considers the influence of this section as a form of closure regarding the impact of his father on his mental health.[50] He tried to represent his father through this movement as a man who was an alcoholic and who could break free through drinking and fight the world. The representation shows the journey in which he is trying to understand the motivations of this figure by representing him as somebody who embodies suffering, pain, defiance, power, and readiness to break out into the rationalised aggression of the world around him. This representation speaks to his previous performance and the emotional resonance that he was interpreting from what the music gave him, which carries on into the second movement.

5.3.3 Tomlinson's response to the second musical movement

As the music transitions into the second movement, there is much more freedom and confidence within Tomlinson's movements, which becomes more calculated and confident. Having rationalised into anger, he has moved from an internal fight against his constraints to an external fight with the world around him. His physical stance directly challenges the audience, and there is a newfound assurance in his movements, which are less jarring and more fluid. His movement in the music has become much more fast-paced, repetitive, and upbeat. In this way, the performer frees himself from the clothes that he was wearing: the jacket, shirt, tie, and shoes. This is a bold and confident act, meaning he is laid bare, presenting his half-naked form as if he were an animal baring his chest in a territorial dispute. He now owns the physical space, and his fight against the wind is over.

Tomlinson's movements become less strained and flow more easily, which contrasts directly with the music, as this is less reliant on the drones and is more staccato and punching. At this point, the performer can focus all his attention on a display of the power inside him, combining more flowing movements into the aggression, which is now directed at the audience. As the piece becomes more fluid, he becomes more convulsive,

[49] From the Q&A, see research catalogue entry.
[50] See Appendix II.

and the movements become erratic again. Forcing himself to the back wall, the fight that was once present has all but disappeared, and the performer is back to fighting with his own body, and he uses the wall for support; it looks as if he has lost himself and is trying to find meaning once again. As the music begins to fade, Tomlinson renews himself, as if the music were what was keeping him captive, and he attempts to face the audience once again. After several attempts, the performer is repeatedly forced to the floor. Moreover, with the music all but gone, he is defiant once again and attempts to find his strength; with a few outbursts, he becomes resigned to a more passive and defensive mood as the music fades into the next movement.

Figure 19 In this image from the second movement, Tomlinson is presenting a wide stance and an open body. His facial expression displays a maniacal confidence, while his right hand is slowly bringing his fist forward into the direction of the audience. Photograph: by the author.

What stands out most prominently is the change from the mental to the physical mode in this part of the performance. Tomlinson, through his change into fluid aggression, displays elements of Oram's physical mode by presenting a version of the dancer's persona that allows the body to channel his initial conflict outward through his movement. This initial defiance changes as the music transitions into the piece's second movement. As the music becomes more erratic, so does the movement, and the external fight now takes place with the performer's surroundings. Thinking about the comments regarding his father's influence, there is a definite continuation from the first movement. The

internal struggle embodied within the person becomes more external; however, it is directed not inward but "to his own shadow."[51]

The notes in this movement are E, E♭, A, and F, which relate to different emotional responses from the first set. In relation to Grunow's colours, these represent green/blue: confidence, upscale constitution; red/violet: youthful and physical condition, carefree, longing, yearning; blue/violet: religious feeling, faith, humility, loyalty, and resignation; green: manly love, spiritual confidence, and determination. The elements present in the dance accompanying the second movement are reminiscent of the dance accompanying the first. With the second set of emotions, a more confident feeling is linked to more positive emotions. At the same time, these movements are still aggressive, and they are a full rejection of socially constructed reason, blaming the audience for the struggle against the wind in the first movement. The colour blue/violet stands out in this representation as a poignant point for Tomlinson's performance here. His notions of faith, humility, and loyalty are not conventional; certainly, it can be seen that there is nothing in this section of the performance that is presenting these feelings. However, these emotions should not be linked here to the religious connotations of faith and humility, but instead to faith in *the self*.

Tomlinson's persona is still fighting himself, but he has moved from the internal struggle to the external shadow, so the loyalty is linked to the physical form, not the exterior. He shows a constitution of acceptance of his being as worthy of fighting for, and the confidence to stand up to his own shadow as an inaccurate presentation of his understanding of himself. This defiance against the shadow is more linked with the red/violet side of the composition, which embodies youthful physical acting out against part of himself. By challenging the audience, Tomlinson is rebelling against the authority of what is around him, albeit the audience or the shadow itself. The performance still speaks to the conception of the arrogant white male figure, as the nuances of this performance are not as defined as it is in the first movement. As the music in this movement begins to fade away, so does this arrogance, which is all but removed by the time the physical mode becomes a starting point for the celetal mode.

[51] Cf. Appendix II and the Q&A on the research catalogue.

5.3.4 Tomlinson's response to the third musical movement

The third movement in the musical composition introduces the piano, creating a more traditional and sombre tone. Tomlinson reflects this, and he becomes considerably less aggressive than before and begins to display a desire to receive forgiveness for his initial aggression. Starting the movement, he is still in a stance like a boxer, with his fists raised around his chest, staring directly into the centre of the audience. As the musical movement begins to develop, this confidence begins to waver, as he struggles to maintain his stance. His aggression leaves him through cries and screams, and he falls to the floor and curls up. The tension is held in his facial expression and his neck; as he tries to release it through the rest of his body, he is forced back, losing control of one leg while the other struggles to find purchase until he falls backwards. This fight is given up as he begins to ask for forgiveness, the control of his body is restored, and he is back, shouting "I am a man" to the audience, with a sort of rationale that is less defiant and confident than in the previous pieces. The display is intended to provoke the audience to feel pity and show us that his fight is still his driving force. As the sound of the electronic swells comes through the sultry piano chords, the dissonance is visible to the performer and the music, and he begins to look through his hands into the audience. He continues to lose his struggle and accepts his state of being. As the piece draws to a close, the performer struggles to the floor and takes up a foetal position in which he is now quiet, calm, and motionless.

The most notable change comes with the piece's third movement, as the aggressive persona is defeated and replaced with a notion of regret and reconciliation with the entities Tomlinson tried to fight earlier. He comes back to the fight he had previously been having with the wind, which has now broken him. His refusal to acknowledge it during the second movement does not mean that it disappears and, in his words, "you cannot fight the wind, it will keep going no matter how hard you try, and it will only break you down the longer it persists".[52] The wind as a symbol here places a limit on the human form: for all its emotions, it will succumb to the natural environment one way or another. From this reading, we can see that the dancer's persona has finally achieved the aim of both harmonisation theory and Oramics: balance with the outside world and the physical body through movement and music.

[52] Appendix III

Figure 20 In this photograph, Tomlinson can be seen carrying his tension with the situation that he has created through his previous aggression. The significance of his hand positioning is that he is gesturing to his heart as a being who is not perfect, as he is only a man. Photograph: Greg Eden.

Achieving balance through the music is present within the third order of harmonisation theory, on which the third musical movement is based. The notes for this section are C, C♯, F♯, and B, which represent the colours white (trust, purity, innocence), terracotta (youthful aggression, heroic, stoic, simplicity), silver (patience, expectation, equanimity), and yellow (justice, prudence, self-confidence, envy). These colours reflect the movement very effectively. There are displays that can be linked to prudence, such as the newfound trust that Tomlinson portrays in his interaction with the audience, trusting that they will forgive him for his past transgressions as the aggressive male figure. Remorse is prevalently visible, but with the admission of being just a man, he maintains the innocence that he was unaware of how his actions would affect them. In addition, he stoically stands by his actions, not realising that the wind would break him in such a way. This indicates an enhanced level of understanding of his movements; it shows that he owns his movements and their emotional implications.

This is also indicative of Oram's celetal mode of thinking, with an understanding of the physical and mental modes; he develops past base levels of understanding what he is doing and how he is rationalising it, to a deeper realisation about the self. The first and the second pieces show his development of "fighting the wind" as a physical response to

the music, in which he is able to rationalise his own movement through the aggression which he presents, only to be left unable to stand. His journey has been achieved and resolved in such a way that was directed by the musical stimuli. The primary influence for this change in the performance is the piano, with which Tomlinson could identify in his own cultural understanding of the piece. He describes it as a redemption for the performer, who is now asking for forgiveness from those towards whom he had previously been aggressive. From the interview, such a resolution did not occur with his father, who died without redeeming himself in the same way that the performer was able to. There is a level of closure that the performer encounters, which comes with the feelings of tranquillity, relating to the colour white; a journey has been undertaken to achieve the "pure goal" – i.e. white in harmonisation theory. The youthful fighting spirit is maintained, in addition to a level of acceptance for the journey that has progressed up until now.

5.4 Critique of the performance and conclusion

When thinking about the journey of Tomlinson through the performance, from inner conflict to external conflict, to regret and redemption, there is still a lot to be addressed about how this can be related to the theoretical framework of parallel canonisation. The influence of Grunow can be inferred, as mentioned above, but in terms of drawing the contextual links to her, this was not a conscious effort from Tomlinson. Similarly, relating his movement and emotions to the modes of thinking in Oramics can indicate that there is some universality through which the music was able to convey the messages of both theorists. It was a stark and provocative performance that stole the focus from the outlying message of the event in terms of its initial goal.[53]

There are two potential ways to critique this performance with this in mind: the first is that the performance being overshadowed by the dance is a failure of the curator. Without having the authorial voice over the creation of the dance as well as the musical composition, it left the parallel canon to be overshadowed. The second, to see the dance performance, and its intention, as a different exercise that acts as a test to the outlook of the curatorial framework by allowing novel perspectives from artists to encounter part of

[53] Although, as mentioned, the staging of the event on the day was arranged so that he would have the majority of the space, with Afrodeutsche to the side of the room out of the direct line of sight of the audience. There is a point to be made here that there is always a bias for visual stimuli as opposed to sound.

the process and see how it can contribute to the wider critique of the presentation from the canonical narrative. With Tomlinson's performance, there is a lot to be said about a potential hijacking of the event, pushing it to the presentation of an "angry straight white man" rather than the focus on marginalised female figures. However, Grunow and Oram are also missing from the dance's presentation. There was a distinct choice to leave the context of this performance vague. Grunow's and Oram's names were mentioned only in the marketing materials[54] in which they are stated as influences. For the presentation of this event, there had already been a process of "passing the dissonance" from the archive materials to the commissioned works that were presented. Making the performance have a strong link to the archive materials would be challenging because as they had already been altered in the prosses of "passing of dissonance" and therefore drawing a connection between them would require a lot of explanation.

In terms of the overarching goal of presenting this event as a polylogue for the purposes of establishing a parallel canon, the event itself was successful. Both artists had room to present their work without too much influence from the curator's overpowering voice shadowing the performance. This would not have been present at all if it were not for the Q&A section, in which the issues of representation and marginalisation were more openly spoken about in response to the event and the performances given. With that said, despite the links that can be drawn through Tomlinson's performance to harmonisation theory and Oramics, it was a show of male ego – representative of what Tomlinson is known for – and that contribution adds to the parallel canon in a way that was unforeseen by me as the curator of this project. Through the process of "passing dissonance", there is a version of the initial research within the performance, but without interpretation, the dominance of the male voice is the lasting effect on the audience's perception.[55] For the purposes of the parallel canon, it does create a different understanding and perspective on the historical materials.

Where the event was successful is in the creation and showcasing of the commissioned work that responded to reviving Grunow's and Oram's practices using contemporary methods, as well as a second commissioned work in response to the first. In addition, the process limited the overarching control of the curatorial voice in this presentation. The

[54] Nottingham Contemporary 2021.
[55] See Appendix III.

dominance of Tomlinson's performance is provocative, and far removed from the initial goal of celebrating female composers; however, what it does achieve is the display of masculinity from the perspective of a queer performer challenging the socially constructed notions of how they should act to be more masculine. Through this, it does create a different genealogical constellation point, a polylogue, through which Grunow's and Oram's theories can be analysed. In addition, it allowed a presentation that was based in movement, allowing for a further examination of harmonisation theory. These points make Tomlinson's contribution necessary for the process of creating a parallel canon. While his performance created distraction from the main canonical narrative, it was still created in response to the composition. Because of the process of the "passing of dissonance", the composition provides deeper contextual links to create a place that celebrates Grunow and Oram as composers.

CHAPTER 6:
Tracing Grunow's and Oram's influences in the commissioned work by Afrodeutsche

Eight to Infinite presented the commissioned composition and dance to a live and online audience. *Eight to Infinite*'s live element was the final part of the commissioning process which aimed to present the two pieces created by Afrodeutsche and Martin Tomlinson to a live audience, and to see how much Grunow and Oram were visible as a result. Afrodeutsche's piece as explored in the last chapter was the first point at which a contemporary artist encountered and responded to the archive materials. It was the second step within this project of "passing dissonance": the curatorial process of disrupting the traditional canonical representation of the two historical composers, Grunow and Oram. The traditional canonical representation was challenged, as this was one in which they were both marginalised and presented as products of the institutions for which they worked.

This process of "passing dissonance" through commissioning new responses to their musical theories and practices, under the umbrella of optical sound, would challenge the traditional canonical versions of their histories by presenting work that celebrated and contributed to renewed versions of their practices through the final event. The musical piece created through the commission and the process used to make it can be considered as an inherently revisionist practice, regardless of its final presentation through the live event. As the project's core aim is to implement a parallel canon – by showcasing Grunow's and Oram's works outside of their traditional representations through the commission of this new work – there has to be a musicological analysis of the piece of music produced. This comes in addition to the analysis of the performance delivered by both contemporary artists.

The musical composition was created over a period of ten months through a collaborative process between Afrodeutsche and me. Through regular meetings, we discussed the process of unpacking the archive materials, creating the visual scores, and composing the

final piece. In addition, the commissioning process included the collaboration between Afrodeutsche and Tom Richards. They worked together for several weeks for Afrodeutsche to learn how to use the Mini-Oramics Machine in a way that would complement not only the parameters of the commission but also reviewing Afrodeutsche's practice as a composer of electronic music. What comes from these interactions with other voices is a tracing of the individual involvements of Grunow and Oram in the composition process, as experienced through listening to the final output of Afrodeutsche's work.

The commissioned piece of music is a product of collective work. While Afrodeutsche was the primary composer, archive materials of Grunow and Oram, and the input from me and Tom Richards shaped the direction of the composition. The process then turned into a polylogue of multiple influencing voices, which makes additional constellation points as a genealogical process. Analysing the piece therefore presents a larger number of contributions than Tomlinson's piece; as Tomlinson's was created in isolation. The composition in a sense presents a polylogue within a polylogue. It creates even more distance from the starting point, in that it needs to be reconstituted and unpacked to present the work as a genealogical constellation that creates dissonance in a more subtle way.

The composition shows elements that can be ascribed to Grunow and Oram, but also to Afrodeutsche, Richards,[1] and me. To understand the contributions of this multiplicity of voices embedded in the commissioned work, one needs to pay attention to the nonlinear process facilitated by the project's curatorial revisionism.[2] The final composition does not represent only the historical materials, the artist's work, the work of the researchers, or a smooth translation of the historical material into a contemporary research practice and then a commissioned art piece. Instead, it is a collective and multi-layered work that borrows from all of these sources. The final musical output is then an experiment combining different practices, i.e. harmonisation theory with Oramics, as explored through the compositional tools of contemporary electronic music, using text-based materials to create work for the curatorial project. In other words, the commission uses

[1] Richards' own PhD research was on Oramics from the engineering perspective of creating the Mini-Oramics Machine using blueprints left in Oram's archive. From these, he created the machine itself and wrote a thesis on its historical development and the challenges that he encountered in its creation; this thesis creates his own adaptation of Oramics with particular use of the Mini-Oramics Machine.
[2] Cf. Chapter 4 for the curatorial method which was created for this research.

the historical processes as the primary motivation, alongside the composer's influence. It therefore contributes to retelling and repairing both figures' work to create a parallel canon.

This analysis will trace the constellation points in the musical output and locate it within and beyond the curatorial context in which the project operates. The analysis in this chapter will examine where the different voices in the compositional polylogue are present, tracing Grunow, Oram, and Afrodeutsche through the composition. In the same way that the negative space in the archive materials was examined to better understand harmonisation theory and Oramics, this chapter will examine their visibility within the composition. It seeks to examine what musical tools and techniques Afrodeutsche has employed to present Grunow's and Oram's theories, as well as her own influence and those of the others who were involved in the project. This will unpack the different influences that were used and placed together within the composition, and it will present an ambiguous constellation of sources and inspirations for the way in which the overall composition works as a piece of revisionist practice.

Music is obviously an important departure point for this project, and the musical output from Afrodeutsche needs to be paid special attention. As the culmination of the process of reproducing archival materials through composition, her contribution to the "passing of dissonance" needs to be examined through a process that best fits the context in which it was produced. For this reason, employing traditional musicological approach[3] to examining the composition would not be the most appropriate way to establish the genealogical constellation of the piece. Instead, it should be examined by looking into what is different, what is unusual, and what is new. This would be a more effective way of establishing which voice in the polylogue is most prominent in particular elements and moments within the composition itself. Identifying which voice influenced particular compositional choices will help signpost these constellation points through the whole piece.

The process will start with a brief review of the literature relating to how to identify historical voices through the musical output. This looks to identify unknown elements of

[3] By this I mean applying music theory to analyse the piece. Instead looking to analyse the piece against the theories established from Grunow and Oram seems more fruitful for a curatorial study.

composition, which are framed as difference and ambiguity.[4] Examining the musical elements related to Afrodeutsche, Grunow, and Oram will establish how successful the process of parallel canonisation was within the commission. This is the idea of creating a place away from marginalised understandings of particular music practices, and it fits with the research into Grunow and Oram. These in turn become a way of creating and mapping the genealogical constellation within this composition, which is backed up with examining the "living" elements of the musical practice.

6.1 Ambiguity as constellation points in the composition

Ambiguity stems from understanding the connotations of "difference", and it is an idea that is present in the work of the musicologist Ruth A. Solie, namely *Musicology and Difference* (1995). In this work, Solie argues that there is a politics of difference and inequality – through the identity categories of gender, sexuality, class, race, and their protected characteristics – that shapes the meanings of music as a cultural practice. According to Solie, there is no universality in how music and composition are practised, received, or critiqued. Solie's main argument invests in how to trace elements to reclaim the work of particular artists and composers who have been under-researched and critiqued because of their marginal status. As they are minor historical figures, tracing Grunow's and Oram's work is difficult due to the lack of source materials; however, through the commissioning process, these materials have been positioned so that they will have their own space within this part of the project. This creates key moments and ideas by which Grunow's and Oram's authority can be described. By tracing this authority throughout the commissioned piece, the revisionist outlook of this project becomes evident. The curatorial output can now be understood as achieving its revisionist aim, that is, to gain a new understanding of Grunow and Oram by using harmonisation theory and Oramics in a contemporary composition.

[4] As polylogue is a curatorial practice and theory, it makes sense to establish connective points that help to resonate with this notion within the musicology presented here. Difference and ambiguity share many of the same points as curatorial disruption and distraction. Difference, like distraction, is a way of establishing uncertainty within the piece, as it is a play on the sociocultural understanding of why Western music is created in a certain way based on political characteristics. There is an identification system in place that establishes how elements of the musicology are related to particular groups of people and particular thinking. Difference aims to celebrate the marginalised characteristics, while ambiguity rejects this classification system, much like disruption; it does not ascribe these characteristics to particular influences but instead celebrates and showcases them not linked to sociocultural categories. This musicology is prominently used in queer music studies as a way of creating a space for these elements to be examined and not rejected.

More recently, musicologist Gavin Lee (2018) challenged this argument of difference as an ontological model of investigating music. Lee argues against these essentialist notions, and he suggests that difference stereotypes the output of the music in that it creates problematic readings of the wider social functions and contexts of terms used for analysis. Lee proposes an alternative concept for analysis: ambiguity. In Lee's *Rethinking Difference in Gender, Sexuality, and Popular Music: Theory and Politics of Ambiguity*, ambiguity takes the positive elements of difference and avoids essentialism.[5] The issue is that essentialism works with the same categorisation systems that subjugate and marginalise, creating an economy of difference in which some are superior while others are inferior. The differential economies of identity do not fully reflect the complexities of queer and counter-hegemonic music practices. When analysing a music practice that has only recently been uncovered and redeveloped, ambiguity becomes a more fruitful way of understanding how Grunow's and Oram's practices have influenced this composition. As their compositional practices have never been adopted into traditional Western composition, if the parallel canon is to be established, then they must be examined in a way that does not acknowledge this; their work is exploratory and unknown in this context.

As this work is an experiment, it cannot be compared to any culturally similar work; it therefore needs to be understood in its own space. This space is unknown, as it is the first time these two composers have been explored in this way and then combined with a contemporary artist's work (Afrodeutsche). As such, the composition breaks many of the social conventions in musical practice. For difference to be the primary conceptualisation, an application of social language can be applied to understand how individual theories figure in this composition rather than considering it as a whole. In *Queering the Pitch: The New Gay and Lesbian Musicology,* Phillip Brett (2006) criticises the practice of ethnomusicology for its inherent elitism. The dominant paradigm of ethnomusicology has always been that the superior composer surveys for the benefit of the inferior. A genuinely cultural perspective replaces the fetishization of the great composer and the masterworks of historical musicology. However, the love of transcription and the glorification of fieldwork often make ethnomusicology as positivistic as historical musicology. Furthermore, the frequent recourse to jargon is a sign of the desire for mysticism and

[5] This idea of ambiguity resonates with Judith Butler's (2004) conceptualisation of the "body without definition", highlighting that there is no oppositional economy of difference, and thus no binary. This conceptualisation is important when understanding how not to attribute characteristics to the composition.

abstraction. For the purposes of this study, a lot of these elements have been removed and replaced with other tools for analysis, and this is an attempt to remove the hierarchy of the researcher and the researched. Grunow and Oram lack historical grounding, as they were marginalised by their respective institutions. They have no contextual framework to provide a body of work that can be called upon; due to their status as ghostly figures, there is little to no critique of their works or their theories. The elements of harmonisation theory and Oramics in this case, is created by the new commission, and it should be analysed through a lens of ambiguity.

The composition then needs to be viewed as contextually complex. Many different voices within the composition, from different movements and periods, provide an understanding of how the two historical figures' practices can be used and how Afrodeutsche engaged with the materials. On top of this, there is also her contextual understanding of music practice that is present within the composition. Therefore, there is a myriad of different influences that have shaped this process, leading to an ambiguous set of techniques and practices that cannot be defined. To obtain respective understandings of all three musicians, their work must be examined separately to glean a complete understanding of the polylogue present in the composition.

Understanding the different voices of the polylogue becomes an exercise of analysing the "invisible" parts of the composition, which can be made visible by reflection on the source archival material and referencing it with Afrodeutsche's other works. The "invisible" is a construction which musicologist Brandon LaBelle sets out in his book *Sonic Agency* (2018), which stipulates that sound is an invisible movement. The eye cannot detect the physical movement of soundwaves, which makes it invisible. It creates a relationship to understanding sound as an invisible practice, which – in the context of creating visibility for Grunow and Oram through parallel canonisation – means their visibility within the polylogue must be carefully negotiated. It is a *process of extrapolation* that was undertaken to identify elements of harmonisation theory and Oramics to be used in the composition which will be examined closely in this chapter.

Much like in Foucauldian genealogy, there is no clear linear progression from one musician to the next that has shaped the composition of this piece of music. The piece instead uses parts of all three musicians' work, employing different methods that are contradictory, messy, and ambiguous. This is because of the sporadic nature of the archive

materials and the compositional styles that Afrodeutsche employs. There is an understanding that does not rely on differences such as genre, instrumentation, or even the production of the work to analyse it effectively. Instead, the space is created for multiple different intermingling techniques to be present within the piece and allow them to contribute to the analysis.

6.2 Foucauldian ideas of genealogy through the "living" elements in the composition

To carry out a musicological analysis of the piece and understand the levels of ambiguity, I will focus on the elements of the "living"[6] within the composition. Establishing the "living" elements that relate to Afrodeutsche, Grunow, and Oram will create a greater understanding of how each practitioner's work is shown within the musical composition. Similar to the archival research, the commission identifies Grunow's and Oram's theories through the negative space within the archive.[7] However, it aims to achieve the opposite outcome by looking for what is actually present within the music, and it creates a "living space". The metaphor also implies a method for analysing the music as a whole, as coined by Simon Emmerson (2007) in *Living Electronic Music*. In this book, Emmerson describes the process of the "living" within the composition of electronic music as a way of understanding on a human level how the technology can be perceived and why we respond to it the same way that we respond to "mechanical" music.[8] Emmerson's musicological analysis focuses on the musical experience as a performance product. Using this process, the ambiguous parts of all three musical practitioners can be identified as constellation points for the composition.

Electronic music bears the possibility to extend and embrace all possible spaces and places, personal and public. This simple observation also means that more and more music is being made and listened to without any recourse to mechanical production beyond the vibrating loudspeaker cone. Most music now heard appears to present little evidence of "living" presence. The reference here is to the way sound is perceived by the

[6] Emmerson 2007.
[7] Otto 2019.
[8] Here, "mechanical" refers to music that is created using traditional instruments. For Emmerson, the mechanical relates to how traditional instruments' physical makeup contributes to harmony and tonality. The same process is achieved with electronic music through analysis of the living. Given the research into Grunow's and Oram's practices, this process established how the mechanical is translated into the electronic composition.

audience; there is a lack of the human element because the sounds are electronic, and the way in which they are engaged with is often through electronic means – through loudspeakers or headphones rather than from instruments directly.[9]

Emmerson uses this distinction by looking at the relationship between the telephone, the microphone, and the loudspeaker to examine how music is received. He traces this history through various scholarly ideas on "ethnomusicology". Jean-Jacques Nattiez (1990), a scholar from a different tradition of semiotics, refers to the "total musical fact" within which questions once confined to musicology and musical aesthetics can no longer be separated from a wider net of ethnomusicology, social sciences, psychology, and history. Writers such as Christopher Small (1998) ask further ethnographic questions about the very nature of music (from many genres) and its role in "culture". Moreover, ecological and evolutionary sciences have recently sought to encapsulate all these within the much longer-term development of human capacities. This has led, firstly, to reframing our response systems as "negotiations" between our surroundings and our biological disposition[10] or even into more existential questions such as, "how did all this come about?" or, "why is this the way it is?"[11]

Furthermore, some of these writers seek a revolution in the approach to where "the human being" (to be precise, the human mind) is situated; we are no longer "an observer of the world" out there but a participant in a complex web of relations that define what it is to "live and perceive" – to which I will add "and to make music."[12] How we listen and how we engage with the sound is key to gaining an understanding of where the composer is present in a musical composition; their influence affects how we engage with particular pieces, and the composer's guiding hand leads us through them. In this example, due to the fragmented nature of Grunow's and Oram's musical practices, analysing their methods alone is not possible when creating a piece for an audience. Instead, pinpointing where and how their work is used in conjunction with Afrodeutsche's compositional style creates a complex myriad of influences, which need to be signposted. Pointing to the individual elements of each musician's distinctive style will help to understand how the

[9] Historically, this comes from a desire to take spaces where there is not supposed to be music and fill them with it. With the increase in recorded music, there is an increasing disconnect from the human within the consumption – the way in which we listen to and engage with music. The human is replaced by the electronic, and mechanical instruments have been removed from the music through the composition.
[10] Gibson 1979 and Windsor 2000.
[11] Cross 1999, 2003.
[12] Ingold 2000.

audience engaged with it as a new composition. This will go some way to highlighting elements of both harmonisation theory and Oramics that were unclear from the written materials in the archive. To separate this, Afrodeutsche's work, and influences must first be examined.[13]

In this sense, there is not a distinct guiding discipline but a web of sociocultural and contextual understandings that can be found in how we listen to and engage with music. Finding the "living" then becomes about establishing how the artists and musicians are motivated in the contexts in which they are working to understand the piece. The purpose is to create visibly in what is an "invisible" practice.[14] In the context of this collaboration, different strands of knowledge from each voice in the piece must be examined. There are not just the voices of Grunow or Oram to consider, but also the overarching guiding voice, Afrodeutsche, as the human "living" elements that decided to make the piece the way they did. This involves identifying the ambiguous turn to the way Afrodeutsche was practising and composing – not only through knowing, understanding, and conceptualising how to work with the archive material (primarily through *not* knowing how Grunow and Oram's practice worked), but also Grunow and Oram's influences on how the music was to be created. For this reason, identifying the separate voices in the commissioned piece of music can be found by looking through Afrodeutsche's use of different techniques and how this relates to, complements, and challenges harmonisation theory and Oramics. This examination will lead to a better understanding of how the composition works to create a parallel canon.

6.3 Compositional analysis

As with the previous chapter, at this stage, I invite you to listen to the composition in isolation from the dance performance with Martin Tomlinson. You can do this by following this link: *https://www.researchcatalogue.net/view/998689/998690*, and selecting "Music and Visual Scores" under the "CONTENTS" menu. This gives you the

[13] As can be seen in the previous chapters, a connection was made into how harmonisation theory and Oramics have directly influenced the musical practice. This is through the connection of the three movements of the composition with Grunow's three orders and Oram's modes of thinking as the base representation of how their theories were presented within the musical works.
[14] LaBelle 2018.

option to hear individual movements of the composition underneath each of the visual scores.

Listening to Afrodeutsche's previous body of work[15] provides insights into how she composed before engaging with Grunow's and Oram's materials. When identifying the living elements of her practice, elements of Grunow's and Oram's work are evident; however, ultimately, the piece remains within Afrodeutsche's own style. There are strong connections between this piece and her previous works. Elements of the composition, such as the drum patterns[16] in the first two movements and the use of drone notes,[17] are consistent with her back catalogue. These, in particular, are closely linked to the genres she explores in her music, such as house, techno, and electronic dance music (EDM). The drums are the percussive presence in the first and second movements, and these clearly show her style.

The drum patterns and the drones are fundamental "living" elements ascribed to her that are present within Afrodeutsche's composition. Neither Grunow nor Oram worked with percussive parts in harmonisation theory or Oramics, making it a distinctive feature of Afrodeutsche's compositional practice. In addition, looking for the elements that are akin to the genres listed above will help to identify moments of ambiguity within the composition as a whole. These moments are ambiguous because they have been influenced by the historical materials and do not belong solely to either the contemporary or historical practice. Their conception may be in line with the contemporary practice; however, their execution was influenced by the historical components. Looking to each movement in the composition, these moments will be attributed to each musician's respective influence within the piece. The previous chapters focused on the overarching thematic ideas presented from each historical theory. This section will establish how the musical motifs, as "living" elements, can inform the genealogical constellation in the composition, as a process of creating a polylogue within it.

[15] I have referenced these other pieces from www.bandcamp.com, as an open source to be able to listen to Afrodeutsche's other music. These have been individually referenced later on in this chapter, in relation to elements of the composition for *Eight to Infinite*.
[16] In Afrodeutsche's track, *Work It* (Smith-Rolla 2020a), the way in which the drums are programmed shows the same characteristics as the first movement; they start simply and become more complex towards the middle of the piece before dropping out completely.
[17] *The Beginning* and *WTFWTFWTF* (Smith Rolla 2020b,c) use drones throughout as a base for other harmonic motifs, giving different melodic parts a reference.

Figure 21 Afrodeutsche and Martin Tomlinson at Eight to Infinite. This image shows that Afrodeutsche was playing the piece live, using the software "Ableton Live" controlled using a MIDI keyboard and a sample pad. Photograph: by the author.

The commissioned piece is structured as eleven minutes of music that is split into three successive movements, which are roughly four, four, and three minutes in length, respectively, each displaying notes of Grunow's chromatic scale. Each movement comprises four notes that are the basis for the movement: the first has the notes G, G♯, B♭, and D; the second, E, E♭, A, and F; and the third, C, C♯, F♯, and B. There are other notes present in each piece, however, these were the ones which were used as the basis.[18] This was a limiting step to ensure that there was representation of all of the notes in the chromatic scale, and this can be used to establish at least one link to every emotion portrayed in harmonisation theory. It was designed to allow a full spectrum of emotional responses to the pieces, despite their short length. This system also ensures that all of the emotional responses of Grunow's colour wheel are present within the composition as a whole. To blend the notes present in the three movements with Oramics, they were recorded as samples from the Mini-Oramics Machine while it was on loan to

[18] See Appendix II.

Afrodeutsche.[19] This attention to harmonisation theory and Oramics ensures a firm grounding in both theories.

Grunow's emotions and colours are present throughout the entire length of the compositions, and they are played by the sounds that Oram's machine created. Layers of these samples keep the listener's attention and focus by providing a rich harmonic "wall of sound".[20] In the first two movements of the piece, the harmony pulls the listener in, clashing with the rhythmic elements and presenting a smooth and grounded place for them to rest within the composition. Nevertheless, the individual parts of this harmony are all created from the samples of the Oramics machine.[21] They are mainly unedited, meaning that they accurately represent the machine and its sonic qualities. This becomes a bit more challenging to listen to in the final movement of the piece, in which the piano is added as the only traditional instrument in the whole mix.[22] Grunow and Oram's work is thus present within the whole composition, and it is used to unique effect as a result of Afrodeutsche's influence. The commissioned piece has the Oramics machine, piano, drum samples, glitches, and risers. The latter few are staple elements of EDM, techno, and house, and they are featured regularly in Afrodeutsche's work. This approach to arranging is another indication of Afrodeutsche's influence in the piece, as it did not form part of the historical compositional processes. Once it was established how harmonsiation theory and Oramics wer to be used, the next step was to visualise how the compositions could be formed into a score, retaining core aspects of Grunow's and Oram's theories.

6.3.1 The visual scores

The first part of the compositional process was to create scores as the basis for the music. Each of these scores is a representation of the colours and shapes that would underpin each musical arrangement. These were created by Afrodeutsche as a way of organising

[19] As mentioned, the engagement with the Oramics machine was challenging for Afrodeutsche. She found the process of learning the new instrument to be counterintuitive and different from what she was used to and what she knew. Cf. Appendix II.
[20] Joseph 2011.
[21] Unfortunately, documentation of Afrodeutsche using the Mini-Oramics Machine was corrupted and was unable to be restored.
[22] The piano comes with its own set of cultural understandings, which can be seen in the feedback from Martin Tomlinson and the audience. Tomlinson's reading of the piano shows a sense of clarity; after the fight and the aggression that he displays in the first two movements of the piece, the piano grounds his motion by presenting movements of acceptance and forgiveness; these ask the audience to accept the flaws that the character has previously displayed through the remorse shown in the now sunken figure. This is because of the piano – as it languidly rises and falls in pitch and does not adhere to the bar's strong beats, so too does the dancer lose the momentum to fight.

her understanding of harmonisation theory and Oramics into a format useful for composition. The visual scores were created using coloured cards to form collages; this allowed Afrodeutsche to move the shapes around, arranging them in a way that could be translated into the musical composition.

Figure 22 These three images are the final versions of the scores; from left to right, they are ascribed to the first to third movements in the composition, respectively. They have been digitally recreated by the author due to the poor quality of these photographs; however, it is important to see them in their original form in this exploration. Artwork: Afrodeutsche, Coloured Card, 23.4 x 33.1 inches (A2). Photographs: Greg Eden.

These scores show Afrodeutsche's translation and interpretation process and do not recreate either theory. The most important aspect of these, which points to Afrodeutsche's manipulation of the historical materials, is the novel use of different colours from those used in harmonisation theory. The use of the colour black,[23] in addition to different shades of the same colour, reflects Afrodeutsche's influence in their creation. Their inclusion suggests that she has deliberately rejected some notions of harmonisation theory through this act and included her own variations to suit her own practice.

Coding with colour is a usual feature of Afrodeutsche's compositional process.[24] Previously, this has been used to code the different parts of the arrangement; the drums, the bass, the synths, etc. would have their own corresponding colours, and these would be moved around according to how she wanted them to fit together. Similarly, with these scores, the process was replicated with the cards, with each shape and colour identifying

[23] The use of black could be an allegory for the overwhelming sense of melancholy that Afrodeutsche states that she has in her own work. This can be seen from the Q&A portion of the event, during which she spoke about her musical style more generally. Black is not a colour which appears in harmonisation theory.
[24] This can be seen in Appendix II and the Q&A.

how the corresponding movement would flow and fit together. Analysis of these scores helps to identify Afrodeutsche's "living" practice within each of the pieces, which responds to her understanding of how harmonisation theory can be used as a compositional tool. However, these scores also show an early version of how Afrodeutsche intended to use Oramics for this composition.[25]

The original intention for the visual scores was to feed them directly into the Mini-Oramics Machine. This was so that the score as a whole could be used to create a base for each movement, which could then be added too with more nuanced musical articulations. The output from these scores, as mentioned previously, would be chaotic, and it would cross multiple parameters in the machine, using it in a way it was not designed to be used. The intention was to blend the two working styles, between the "chaotic" and the score, allowing for what Oram called "the notes between the piano keys."[26] However, the original intended use for the visual scores was abandoned, because it did not create the results that were intended. Ultimately, the "chaotic" versions of the artworks would instead be manipulated to be read by one parameter at a time. This meant that Afrodeutsche's composing of the piece would be an edited version of the drawings, and she would take them segment by segment to create different movements, phrases, and qualities in the sound the Mini-Oramics Machine was producing. In this way, the whole artwork would not be fed through at once. Instead, it would be a collection of different parts collated to be arranged later.

Using the visual score to present the composition, instead of the basis for the input into the machine, did not have the effect that Afrodeutsche had originally desired. If the piece were to be composed as presented above, it would be impossible to layer and make it a complete composition. This was not attractive to Afrodeutsche, as harmony was still what she wanted to explore with this piece, which would be difficult when using the Mini-Oramics Machine. Instead, we arranged for Tom Richards to teach her how to use all the different functions of the machine, exploring its full range of possible sounds. Afterwards, Afrodeutsche would keep the machine to build a sample library, and these samples were used to construct harmonic phrases as the building blocks for the movements. These samples were arranged, altered, and moved around like the pieces of card in the visual

[25] Cf. Appendix II.
[26] Oram 1972.

score. This process allowed for greater freedom of expression within the composition and meant that Afrodeutsche could respond to the historical materials using a practice that was familiar to her. The process of creating the visual scores allowed her to blend her work with the historical materials in a way that movementd her practice, which also worked as a means for her to practise both theories in a contemporary setting. Looking through each of the movements in the composition will thus help to further establish the nuances of the direction she took for each movement and examine the ambiguous parts of the composition with clarity of influence.

6.3.2 The first movement

The first movement in the composition starts with an increase in the volume of samples layered from the Mini-Oramics Machine. These fit together to play a chord, and the attack of this first chord is reminiscent of a horn, similar to one on a ship. A loud and long division of noise engages the listeners' ears, directing them to pay attention to the piece. The connotations of the horn are a "call to arms": it calls the audience to pay attention and get involved with the music as it is being presented to them. Through the cultural association created by using this harmonic technique, the positive notions of traditional Western music theory can be seen in the way that Afrodeutsche uses harmonisation theory. In this conventional way, a "call to arms" has a positive connotation, bringing in feelings of pride and camaraderie and the fear of battle that is laced in with the sense of an impending fight. A mixture of emotional responses will have been culturally navigated to present the same emotional response.[27] This is achieved through the use of drones in the melodic backing of the piece, an element that is present throughout the first movement.

As noted, drones can be seen throughout Afrodeutsche's back catalogue of work. These play an essential function in the compositions as a whole because they offer a base on top of which the harmonic structures can be layered. Thinking about the association of *legato* notes in Carr et al.'s (2023) study of the emotional responses to melody, these drones act to carry melody: they add space to the piece. By this, I mean that there is a constant sound being played within them, and the listener always has a place in which the music can hold

[27] Cf. Carr et al. (2023), whose study looked into the response of participants to *legato* vs. *staccato* notes in melodies. The emotional responses to the longer notes were found to be more cohesive and indicated calmer emotions.

their attention. What then happens with this is that the other notes from the work's melodic sections always work with or against a backdrop, which creates a more extensive textural output. There is always a harmonic correlation between the notes of the melody, the chords, and the drone.

In this first movement, the drone is a chord that sustains itself throughout, creating space. The melody that is played in this movement is a series of sustained notes, which have a slow attack and quick decay, and uneven lengths. When they change, it is jarring for the listener; because of the slow attack, changing the note in the melody means that the harmonic richness against the drone falls away until the note reaches its full volume. Depending on the relationship to this drone, there will always be a sonic distance that carries the listener through the music. The composition created through this project similarly presents drones.[28] By creating this space within the music, this idea of richness in the harmonic output is present; even if the melodies are thin, they are always working with the drone to create a fullness in its output. As a whole, the drones and the melody line act to create a wall of sound, which creates a moody yet mellow atmosphere. offsetting this is the use of drums in this movement.

The drums[29] present offbeat kick and snare samples, which are then repeated at the end of the bar at four times the speed, creating a feeling of anticipation towards the end. The feeling the listener gets from this is that the music is about to reach a climax, which is accompanied by risers[30] in the melodic backing, leaving the listener with further anticipation. The drums enter after the drone has had a chance to establish itself, and they act differently to the melodic parts in this first movement. The beat builds for the first minute of the piece and then becomes a consistent two-bar repeat,[31] with a bass drum playing on the beat and claps and glitches playing alternating patterns on the second beat of the bar. There are variations to this pattern, involving the inclusion of more of the same

[28] In *The Middle Middle* (Smith-Rolla 2020d), Afrodeutsche uses a similar technique to create this space. The drone is played as a very low-pitched bass, similar to an 808. An 808 is a bass sound which is created using a sample from a Roland TR-808 drum machine, which is then altered to create a low and aggressive bass sound, and this has become a staple feature in many genres of music. In this piece, the melody is much more rapidly evolving, but the sense of space is much larger because of the harmonic backing of the drone.
[29] The drums on this composition are not acoustic drums: they are a collection of drum samples, including a bass drum sound, a series of high-pitched glitch sounds with the qualities of bells, and a heavily edited electronic clap sound.
[30] A riser is a colloquial term used in electronic music production which refers to a sound which rises in pitch, volume, modulation, or equalization.
[31] This matches a progression that is used in *Day Turner* (Smith-Rolla 2020e), in which the drums build for the beginning of the track and then become steady over a two-bar repeated pattern.

glitches and claps. At the end, the volume of the drum pattern decreases before having a short reprise and then continuing into the second movement. The melodic drones disappear after a slow decay, and the drums then move to the centre of the listeners' attention.

Figure 23 The visual score for the first movement, digitally recreated by the author. This shows prominently angular and harsh shapes, with white bars presented against more muted colours as a background.

Looking at the visual score for this part of the composition (Fig. 23), these elements can be interpreted through the shapes.[32] The large triangles just off centre are the two notes of the drone that are present throughout the composition. These lie underneath the white lines, which cut the canvas horizontally, indicating the interjection of the melodic drones.

[32] This is a subjective reading with the knowledge ow what Afrodeutsche was trying to achieve when creating the composition.

These work in such a way to cut through the triangular shapes, but they also add movement to the image. The rectangular blocks in the very back of the piece are the visual representation of the drum parts, which show the development of the drums, starting from the bottom. The bottom section goes from the grey to the black, which continues into the middle block, before it goes into red at the top, which has elements of the grey and black within it. This shows the progression of the drum pattern, from its early build up to the addition of the embellishments and into the final, more uniform section. In addition, the top block pushes out of the top of the canvas, which indicates that it is moving through into the next part of the composition.

This first piece presents two key elements that are distinctive to Afrodeutsche's practice: melodic parts over a drone and the development of a strong rhythm and percussive sounds from sampled instruments. These are the major "living" influences that she brings into the composition. Both appear in different uses in the second and third movements, but they respond differently to the makeup of the composition, as influenced by the historical practices that guided the process.[33] Looking then at how this develops into the second piece uncovers more about Afrodeutsche's "living" elements within this composition.

6.3.3 The second movement

The second movement starts by blending in from the first movement as the drone of the melody and chord fades out. The drums remain the same for the first few bars, playing just the kick and snare samples, and they slowly begin to build, with extra embellishments added over the course of the next few bars. About a minute into the movement, a saw-tooth wave is introduced with a slow attack and fast decay, which adds an atmosphere of uncertainty. This is repeated at varying points until the end of the movement. Tension builds to the middle of the movement, which then displays more upbeat drum patterns that carry and complement the glitches, which are sporadic. This contrasts with the background drones played from the Mini-Oramics Machine samples, which are uneven in length and move at unusual points so that they do not fall on the beats of the bar. This music causes chaos and confusion, because the beat is not behaving to drive the melodic parts but is instead acting of its own accord and includes decorative runs in places that are not expected, i.e. not on the solid beats or in repeated sections. The melody from the

[33] A direct analysis of the influence of the historical processes will be presented later in this chapter.

chord progression also does not move in usual phrases and instead comes at odd places in the bar. Towards the end, the melodic rhythm continues to have its swelling movements.

The drum part continues to build throughout, taking more of a central focus than the more sporadic drone parts. It develops continuously through the movement, adding and dropping sounds and glitches until the last 30 seconds of the piece, when it drops off in volume and decreases in tempo, with just kick and snare samples being played. In this, the drums act as a vehicle to move the listener on to the next piece, showing a rise and fall throughout the movement, which delivers us into the final section, where there is no guiding rhythm from percussive sounds; this instead comes from the involvement of the piano.

Figure 24 The visual score for the second movement, digitally recreated by the author. This presents fewer shapes than the first score, and they are more dynamic than those in the third score; these are offset by a solid black background.

The second movement, as shown by its visual score (Fig. 20), is much more dynamic than the first. The whole canvas is framed by a black rectangle at the back, which adds an element of starkness in comparison to the other scores. Black is not a colour that appears in harmonisation theory, so its addition to all three pieces is introduced by Afrodeutsche. Its omission from harmonisation theory means that, in this context, it creates an air of uncertainty, which is reflected throughout this movement. The harmonic drone triangles are still large parts of the composition, but against the black background, they stand out less than in the previous score. The red rectangles are a continuation of the drum pattern, which is represented breaking through the last score.

The most unusual shape is the white curve in the middle: it is distinctive to this score, and there are no other instances of this shape in any of the other parts. This shape indicates crossing from one part of the composition as a whole into the next, much like the representation of the drum parts in the first score breaking through the top of the canvas. Similarly, this shape shows a movement from the top to the bottom, linking the first movement to the second. The yellow triangle at the bottom presents the continuation of a similar movement within the drones and the chordal part of the piece, which, as it fades away at the beginning of the track, is then picked up by the white curve. This shape represents the drums as a sustained movement that shows development over the course of the progression, but it keeps a sustained level of energy until it drops off at the end of the movement. It also shows the bridge between the chordal drones of both triangles, taking us out of the black background representing the uncertainty into the red rectangle, which, as the movement fades, comes into more clarity for the third movement. The atmosphere in the third movement is gentler and more familiar to the listener because of the instrumentation used.

6.3.4 The third movement

The play on tension is released as we go into the third movement because the repeated faster section is dropped, and we are left with a normal tempo as the risers fade in volume. This leaves great tension and anxiety, as the listener must accept that the *climax* we were expecting will not come. Instead, the *diminuendo* that we are left with plays into the gentle yet uncertain piano, which begins the third movement and ends the piece. This represents how the music and its composition display many of the qualities for which Afrodeutsche's work is known. An easy comparison would be that she is responding to this piece as if she were a DJ: the skill of the DJ is to respond to the audience and select and mix the songs to keep the audience's attention and play songs that they will respond to by dancing. This skill that she employs here by establishing the atmosphere for the next movement by creating tension between elements of the composition, such as the drums and melodic parts.

At the end of the second movement, the drums and drones fade into six seconds of silence before the third and final movement begins. There are no drums in this section; they are replaced by the introduction of the other traditional instrument in the composition, the piano. Taking the percussive position within the mix in the third movement, the piano

allows the melody to also carry the rhythm, which is semi-structured and lethargic. With these two parts of the movement reconciled, the display of the emotional states is reflected as a more serene and calm expression.

The use of the piano also adds a level of familiarity to the listener as an instrument traditionally associated with a full harmonic richness, i.e. the ability to be percussive, a backing instrument, and a lead instrument. It is the first familiar sound we encounter, and with this resolution comes the end of the piece, where the tension has been released into a dreamy soundscape. Cleverly, the end is on a C♯ moving to C, which shows a movement from IX–I, and the octave is added in by a synthesiser, which leaves a feeling of resolution not being achieved by the main melody. The journey thus starts in a confusing and chaotic place and, moving through the movements, it builds tension to the final resolution of the third movement, which still leaves an unfinished question at its end.

Afrodeutsche using the Mini-Oramics Machine alongside the piano can be seen as a powerful tool; the piano has entered the electronic/optical and changed the nature of the audience's interaction with the composition that has existed up until this point. Emphasising the Mini-Oramics Machine as the two notes that finish the three movements shows the importance of the sounds from the machine. They are much more *staccato* than those in previous uses in the composition, and this is now combined with their presence above the piano. The interruption in the final cadence takes a dominant place in the piece. In a way, the electronic and the unknown have fought with the other composition pieces – be it the chaotic drum sounds or the use of other instrumentation and cultural signifiers. The Mini-Oramics Machine is here to end the piece, and it does so in a distinctive way.

In addition to the sense of calm and serenity that the piano brings, the use of the samples from the Mini-Oramics Machine adds to this emotional state. Like the other two movements, the Mini-Oramics Machine is playing drones in the background of the piano, which is carrying the melody and imitating a percussive presence in the track. The drone enters after a few bars, and it starts as a low-level underlying presence with qualities that resemble white noise.[34] The emulated white noise remains until the last few bars of the movement, adding a layer of depth into the composition. On top of the white noise, the

[34] White noise is analogous to white light, in that it covers all frequencies (Encyclopaedia Britannica 2023). Its effect is calming and often unnoticed; however, its presence is always there. Using it here adds depth to the composition.

Mini-Oramics Machine adds a second layer, which begins 40 seconds into the movement. These samples replicate sonic qualities that are more closely linked to bowed strings.[35] The sonic qualities of these samples is to reinforce this feeling of calm in the listener,[36] and this creates a backing to which the piano can respond. Unlike the other two movements, these parts move on regular points in the bar, which creates a structure that is more regular. This also echoes the same understanding of the relationship between the piano and the Oramics Machine in Oram's composition, *Contrasts Essconic*,[37] in which the Oramics Machine is the traditionally regular instrument, whereas the piano is much more disjointed. This adds to the piano's dissonant movement in the piece and creates a stable backing for it to work with.

The final use of the sample is to add a second layer of bowed-string drones. These final moments, however, are much more aggressive in their presentation. They are brought in with a quick attack and increase in volume significantly for the first 20 seconds they are present. This almost acts to completely overshadow the piano in the second half of the movement; however, it is still present under this drone. This drone moves regularly with the second level of backing, and while it has more abrasive sonic qualities, it is still much less aggressive than in the previous movements. This final drone decays slowly with the other two layers of the Mini-Oramics Machine, leaving the final piano notes before the movement draws to a close.

[35] Afrodeutsche had talked about the sonic qualities of the cello as being an instrument she wanted to explore within this composition. The cello's frequency range, tone, and timbre is similar to that of a human voice, and it therefore has the ability to elicit the same emotional responses. This part of the composition is her attempt to include this as a musical element, using the Mini-Oramics Machine to emulate the sound.
[36] According to the study of Carr et al. (2023), using legato notes results in these responses, and they are present in this movement of the composition.
[37] This is track 6 on Oram's album, *Oramics* (see https://daphneoram.bandcamp.com/album/Oramics).

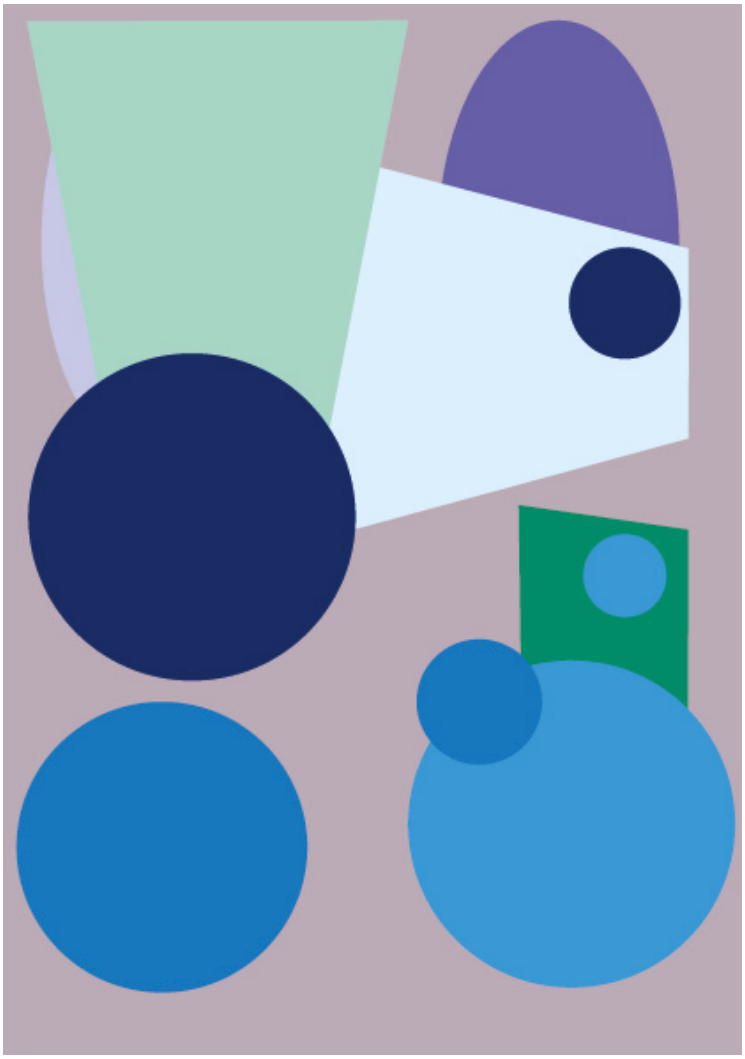

Figure 25 The visual score for the third movement, digitally recreated by the author. This shows predominantly circular shapes on a lighter background.

The movements of the different melodic parts in this piece are highlighted through the visual score. Once again, reading from the bottom of the canvas, the blue circles at the bottom represent the movement in the piano, and these are floating against the pinkish background. They are gentle shapes, and they complement the colour against which they are set. As the piano begins to build, the other smaller blue circles are still rather whimsical and unobtrusive, particularly against the harsher shapes in the previous two scores. The introduction of the Mini-Oramics Machine into the piece is represented by the trapezoidal shapes, which overlap to create the more harmonic drones and have the ovals protruding from behind them. These have stronger colours against the background, though as cooler colours, they are still complementary. The black circles indicate the dissonance that comes from the final notes, as the only stark parts of the composition. They take the focus in the score, as they do in the movement of the piece.

6.3.5 The composition as a whole

Going through each movement, this analysis shows a range of places where Afrodeutsche has used her own compositional tools to create the piece as a whole. This starts with her use of drones and percussion as features distinctive to her practice to elicit the emotional responses she wanted from the audience and from Martin Tomlinson.[38] This message was aimed directly at these two participants in the project as a way of presenting her own ideas of the contemporary functionality of both of the historical theories. As representations of Grunow's three orders and Oram's modes of thinking, each piece operates to reflect the theories in such a way that the dancer could respond to them. Her work, through the visual scores and the music, sought to reflect rather than emulate either theory, and this has been described through her "living" elements in this analysis. This helps with understanding and categorising some of the ambiguous points of the composition and ascribing influences to the elements that have not already been covered in the previous chapters. The thematic understandings of the way in which the pieces were composed to respond to the different parts of harmonisation theory and Oramics are not, however, the only points in which Grunow and Oram are represented. Understanding how the musical motifs contribute to other "living" elements concerning the historical musicians helps to create a greater understanding of their practices and furthers the parallel canonisation process.

6.3.6 Grunow's "living" elements in the composition

Afrodeutsche's interest in harmonisation theory was concerned with harmony and attempting to use colours as a combination of emotional triggers for the composition. During the period when we were discussing the archival sources, Afrodeutsche outlined that the solid use of harmonies was important to her previous practice. Harmony, through the relationship of one note to another, was the main examination point of harmonisation theory; Afrodeutsche attempted to combine the emotions into a language that embodied harmony between the notes to translate the emotions into practice. As mentioned, this was a way of testing the universality of harmonisation theory: taking the word *harmonisation* and testing its viability as a process of harmonisation with the body, the

[38] This was discussed in the previous chapter; the dancer's journey reaches a point where he is asking for forgiveness from the audience after previously being aggressive.

mind, and the spiritual, Afrodeutsche wanted to create harmony with emotion as a compositional tool.

The main influences of harmonisation theory come from the way in which the individual movements were structured so that they included combinations of all twelve notes, colours, and emotions. As mentioned above, three combinations of four notes/colours were chosen to be most prominent in each movement. This selection allowed for all of the notes in Grunow's harmonisation theory to be responded to in each piece. In this way, all of the colours represented in the first movement in the composition have significance. The colours described in this first piece are: red (patience, feminine love, devotion, power, inner wealth); grey (pain, mourning, suffering, grumbling); brown (anxiety, fear, horror, defiance); and blue (readiness, calm, joyousness). As discussed, the horn sound, as a "call to arms", covers many of these emotional responses: power, pain, mourning, suffering, anxiety, fear, horror, readiness, and calm are all connotations of battle, and show a flawed representation of war, having a full spectrum of positive and negative feelings towards one subject. Presenting this not only shows that there is merit to Grunow's colours and emotions but also, through the music, that there can be a strong cultural connection to human emotion through cultural mapping.

The visual scores, however, do not present the same colours as those to which the notes are responding, despite the careful selection of notes. It would make sense for the scores to limit themselves in the same way as the composition did, given that these were the basis from which the music was to be composed. This was a creative choice by Afrodeutsche, as with her previous compositions, colour coding was a key part of her practice. The way in which she coded the parts was different from the classifications that Grunow placed upon the colours, meaning that there was a disconnect between their practices. Her reasoning for using the coloured card was so that she could arrange and rearrange the pieces, and the limit of having four colours would mean that she was unable to create the variety in the composition that she wanted. For these reasons, she chose to create the visual scores without the same limitations that she imposed on herself for the music.

This was a deliberate exclusion from harmonisation theory, one that was possible because of the other places where harmonisation theory was present in the composition. The place

where this is most prominent is in the use of the piano in the third movement. The piano[39] was Grunow's main instrument, and it was used as the basis for instructing her students, creating the musical stimuli to which they would respond. The inclusion of the piano in the third movement creates this link to her practice, particularly in its influence to help to ground the composition after the more chaotic movements that precede it.

The third visual score also reflects colours that are linked to spiritual connotations and tranquillity.[40] Thinking about the thematic construction of the third order with this movement, the piano directly points to this final stage of the process as being part of harmonisation theory. The clarity and the calm that come from connection to the spiritual place that is the aim of harmonisation theory are ushered in by Grunow's instrument. These elements are combined to create Afrodeutsche's version of harmonisation theory as a compositional practice that complements her own. These "living" elements from Grunow highlight the ambiguousness of her practice – not as an exact representation, but as more of an homage to harmonisation theory. Oram similarly has representation through her instrument in Afrodeutsche's piece, which comes through the whole piece.

6.3.7 Oram's "living" elements in the composition

Working with the Mini-Oramics Machine was the main avenue for exploring Oramics through the composition. Creating a sample library from sounds created by the machine informed Afrodeutsche's practice throughout the compositional process. As stated, these were used predominantly as the drones that were present in every piece. Rejecting the use of the Mini-Oramics Machine in the live performance was a choice made so that Afrodeutsche could use recorded samples as a means for her to create her own way of using the machine in a format that was familiar to her.[41] For the performance, she controlled these using a MIDI keyboard and sample pad to play the sounds live.

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[39] Feedback regarding the piano from the audience displayed unease at its place within the piece, stating that "it interrupted from the electronic, and it did not belong with the rest of the piece" (Appendix III). However, for the process as described, the inclusion was a necessary point for exploring harmonisation theory.

[40] This is present in the green, green/blue, and blue, which are all included in the score.

[41] These samples, as previously mentioned, are present throughout the whole movement and carry through as the backing and the melodic lead throughout the piece. What this means for understanding Afrodeutsche's influence in the living elements of the commissioned piece is that despite the traditional uses of the machine, she has done that is unique and goes against the training Tom Richards gave her. Afrodeutsche found a way to use the Mini-Oramics Machine that she understood, and she could then get to [continued]

The way in which the samples from the Mini-Oramics Machine behave changes throughout the piece. At the end of the second movement, the long drones that are present throughout the first and second movements stop for the first time in a *diminuendo.* The piano is then the first instrument to enter the movement, and this is unaccompanied for a few bars before the drones from the Mini-Oramics Machine reappear in the mix. The quality of these drones, as the backing to the piano, is less abrasive[42] than in the previous examples. This starts with a single drone, which then layers gradually so that these drones become more like swells that rise and fall with the piano's melody. These swells are dissonant at first with the piano's melody, but as they build, they act almost as a choral arrangement that accompanies the piano, forming a guide for the notes of the melody as it progresses.

After reaching a climax in the last 30 seconds of the arrangement, the Mini-Oramics Machine fades as the piece continues. It is reintroduced in the last two notes of the movement and replaces the piano as the main melodic instrument. The last two notes present an interrupted cadence that does not give a sense of ending. This intervention is in stark contrast to the rest of this movement; after having so much space for this part of the composition, these last two notes are quieter and unsure of themselves. This contrasts very effectively with the piano's place within the movement, which, through most of it, has a steady underpinning rhythmic note that plays almost continuously. In the last two notes, the Mini-Oramics Machines' continuity is broken, and it is no longer the "call to arms" we hear in the first movement but is instead diminished and unclear. The journey of the composition concludes in a place of uncertainty which contasts its beginning.

What can instead be seen from these techniques is a reinvented and revised way of using the Oramics machine. Understanding that its functionality was not accessible for Afrodeutsche to engage with in a meaningful way, she created her own way of engaging with the machine: a way in which she could create her own work from it. Here, the "living" elements of Oram are heard within the sounds that the Oramics machine had produced. However, they are played in such a way that Afrodeutsche was able to create, mould, and manipulate her understanding of them. This then contributed to the ideas of

grips with it. It was not the intended use, but it then also contributed to her use of colour as a compositional tool, in which she used colour codes to create her arrangements. It would have been difficult for her to do had she used the Mini-Oramics Machine in the way that was intended.

[42] In the first and second movements, the drones from the Mini-Oramics have a "dirty" quality to them, which stems from an increase in distortion and gain on these samples.

the guiding arrangement, as the Oramics machine was not to be the only instrument that was present within the composition. This also allowed her to layer, add in other instruments, and create the piece as distinctly her own.

The inclusion of the machine is the predominant way in which Oram's "living" elements are present in the whole composition, despite its altered use. Its prominence in the composition as a whole showcases the unique sound that Oram created with her machine. The technique is effective because of the blend of these two contracted cultural conventions. Considering the unique nature of the sound produced by the Mini-Oramics Machine, there is little that sounds similar to it in contemporary composition. The closest comparison would be the minimalist use of sine-wave generators or electronic sounds representing many of the sound effects in science-fiction programmes and films. The way in which Afrodeutsche used the samples from the Mini-Oramics Machine is not how it was intended to be used, and the way that she edited the samples was unique to this composition. Combining the machine's sound with her ideas on harmonisation theory, Afrodeutsche was able to contribute to the parallel canonisation which the project aimed to facilitate. By using the harmonisation theory with the Mini-Oramics machine, the piece created a renewed understanding on how both theories could be used in contemporary practice.

6.4 The composition's contribution to a parallel canon

The identification of the "living" elements of Grunow, Oram, and Afrodeutsche help to create the ambiguous picture of the composition as a whole. The techniques employed work against a traditional understanding of Western music composition because of the differing theories that were used as basis for the piece. Applying these as constellation points creates a genealogical understanding that builds a greater insight into how the composition and the process of its creation contributed to the curatorial aim of the project. It is clear from the analysis that the piece was created its own polylogue. Grunow, Oram, and Afrodeutsche are all present as musicians with different techniques that were used throughout the compositional process. In addition, Tom Richards and I had some control over the process through our understandings of the source materials and the discussion that took place with Afrodeutsche during the writing process. This presents the multi-layered range of influences that went into creating the composition. As a starting point for creating a parallel canon – as it creates "dissonance" from the first level of

interpretation from the archival materials – the differences of all of the dissonant contributors to the parallel canon remove historical agency from the canonical representations of Grunow and Oram.

Neither harmonisation theory nor Oramics are strictly compositional methods, which meant that Afrodeutsche's interpretation of how to mould them as such aids their removal from their canonical affiliations. Through her analysis of the archival materials, Afrodeutsche created her own way of presenting both theories as compositional departure points. Starting with the theoretical responses to both, working with the three orders and the three modes of thinking created a compositional narrative based in the historical materials. This influenced the musical movements and the journey on which she would take the audience using the pieces. Linking the orders and the modes of thinking also established the shared parts of Grunow's and Oram's theories, moving to the body, to the mind, to the spiritual/celetal. Each movement of the piece was able to respond to these ideas within their writing, and categorising these influential moments within their theories helps to create a renewed understanding of the purposes of both theories. This allowed for a deeper examination into the connections of the music to the body, mind, and spirit – often overlooked when examining Grunow and Oram. Using these points as the basis for each movement in the composition creates its own harmony of intention: to explore how each created their theory to tune the connection of the body to the spiritual.

Starting with the visual scores as a method for composition created a contemporary practice that helped to remove Grunow and Oram from their traditional canonical representations. Working with both of their theories and her own compositional methods, Afrodeutsche was able to create a visual method for composing this piece that triangulated harmonisation theory with Oramics and her contemporary practice. Creating a system that understands the importance of shape and colour as visual stimuli for music production (based in the historical materials) creates a new interpretation of harmonisation theory and Oramics, as well as presenting Afrodeutsche's practice. This contributes to the parallel canon by adding distance from the historical writings' versions of how they worked with music. In addition, harmonisation theory was actively altered in the visual scores, as Afrodeutsche chose to create them with more colour variations. It also comes in the form of choosing to use samples from the Mini-Oramics Machine rather than

directly using the machine itself. Both these points were conscious choices to manipulate the historical theories in a way that worked best with Afrodeutsche's practice.

This set of tools and methodological processes could be followed to combine elements of all three practices.[43] Creating the composition from this set of samples allowed a clear direction for Afrodeutsche to take from the archival practices and present them through the piece. She describes this process as "setting a set of strict rules" to be able to navigate an "open world of composition."[44] These rules were that she could only use four notes per composition, and these notes were to be played from the samples she collected with the Mini-Oramics Machine. Using only these samples and only these four notes was limiting enough to ensure an even distribution of importance on all three compositional practices in place for this composition. The steps also ensured that each of the twelve colours and emotions were represented, and their inclusions are shaped with sounds from Oramics.

6.5 Conclusion

Afrodeutsche's composition incorporated and developed elements of both harmonisation theory and Oramics with her own style embedded within their exploration in this piece. The composition contributed to the creation of a parallel canon. Negotiating the historical theories from the limited source materials was a difficult process, considering the breadth of material that was available to Afrodeutsche. There was no direct version that gave instruction for either historical theory; as such, there was no obvious way to engage with these materials. Instead, there was freedom for Afrodeutsche to extrapolate her own meaning for the composition. This is outlined through the thematic understanding in the previous chapters and through examination of the "living" elements that come through from all three practitioners. This analysis helps to highlight the ambiguous parts of the composition by ascribing them to their origins and examining how they work together. In this composition, there is a myriad of voices presented in a form of polylogue. For this reason, the goal of using this as a first step to create distance from the canonical version of Grunow's and Oram's histories is effective, as it is an interpretation – not a recreation – of their work. This contribution also highlights how harmonisation theory and Oramics could be used as contemporary compositional tools. As the rest of the curatorial output

[43] Grunow, Oram, and Afrodeutsche's methods.
[44] Appendix II.

was based on this part of the process, it is the departure point for parallel canonisation as curatorial mode: it removes Grunow and Oram from their canonical presentation and creates a space for other work, like that of Martin Tomlinson, to be created from it. The composition as a whole explores both harmonisation theory and Oramics, but it seeks to eliminate the problematic processes of marginalisation, that are present in the canon.

CHAPTER 7:
Conclusions: Evaluation of *Eight to Infinite* as a parallel canon for Grunow and Oram

Having analysed the commissions artistic output in the previous chapters, I will now critically reflect on the success of the project's curatorial aim to create a parallel canon centred around Grunow and Oram. In the previous sections, the emphasis has been on the validity of both artistic outputs as elements for creating a parallel canon, whereas now they will be explored in conjecture with the archival study and the theoretical exploration of the parallel canon. The methods used to establish this have been varied in introducing disruption to the traditional canonical representation, through the archival research and the written thesis, presenting the process of "passing of dissonance", and then displaying the final event, *Eight to Infinite*, as a curatorial polylogue. These elements are essential to the process of creating a parallel canon, and they provide the basis for a Foucauldian genealogical constellation that contributes contextual links to a broader definition of the art-historical canon; however, while they fit into the methodological aim of the curatorial output, the validity of this method as a whole needs to be questioned.

Through this concluding section, I aim to analyse the curatorial output of this research by asking the following questions. Firstly, within the written component of the thesis, how viable is the process of extrapolation of archival materials, into a version of a legacy which can then be translated into departure point of a curatorial project. Secondly, what are the limits of curatorial authority and horizontal collaborations in the context of commissioning and revising marginalised figures? Thirdly, does a curatorial polylogue run the risk of turning into cacophony that obscures the curatorial objectives? Finally, can "passing of dissonance" be remodelled to assert a different curatorial discourse but still comply with the principles of parallel canonisation? These four questions will be reflected on in relation to *Eight to Infinite*'*s* curatorial framework, with scrutiny applied to the core objective of giving visibility to Grunow and Oram in the context of their exclusion from *Bauhaus Imaginista* and *Still Undead*.

The archival research undertaken established a written biography for both Grunow and Oram. The significance of these two pieces of historical research should not be understated, as they are the first retelling of both harmonisation theory and Oramics as potential contemporary compositional practices. These two pieces in Chapter 2 and 3 of this thesis create a full picture of both Grunow and Oram through understanding their contributions to optical sound. Through examining their careers to establish a full biographical version of their histories in line with other theorists which influenced them, the archival study was able to create a departure point for the parallel canon, which existed outside of the dominant canonical version of Grunow and Oram's history, held by the institutions which represented them.

Commissioning Afrodeutsche and the contribution of Martin Tomlinson for *Eight to Infinite* allowed for fresh perspectives on the archival materials related to Grunow and Oram. Working with new interpretations of their legacies was a challenging conception. Reclaiming marginalised figures in a parallel canon proved more problematic than was previously considered. Ultimately, this process did not have the desired effect of creating a renewed visibility, nor a wider understanding of the compositional potential for harmonisation theory and Oramics. In fact, they remained obscured by the two contemporary artworks that, it was hoped, would highlight their significance as musical theorists. This was a result of the process of the "passing of dissonance" and disruption, which created an event that was too far removed from the original intention aiming at a greater visibility for Grunow and Oram in light of the major centenary exhibitions and their celebratory discourse on the Bauhaus (and its "major histories"). As the main objective of the research and its practical component was to test the validity of parallel canonisation as a method to revise marginalised figures, it is necessary to alter certain parts of the process to achieve this. This assessment will be aligned with the four questions outlined above as a way of evaluating the curatorial viability of parallel canonisation.

In Chapters 2 and 3, I established historical accounts of Grunow and Oram and their respective theories. In the entirety of this doctoral study, their inclusion provides grounding for the works of the two contemporary artists as a linear presentation from Grunow through to *Eight to Infinite*. This, in itself, can be seen as a parallel canon that runs alongside the *Bauhaus Imaginista* project, borrowing its contextual links and

establishing a different presentation of parts of the Bauhaus legacy with a specific focus on sound practices from the school. These chapters establish that harmonisation theory and Oramics are not products of their respective institutional legacies, but they are instead the product of a myriad of outside influences, However, this is not visible in terms of *Eight to Infinite*, when viewed as a standalone event. The contextual links are disconnected because of the delay in staging this event after the centenary celebrations (due to the pandemic) and the lack of information and explanation given to the audience before the event itself. This lack of contextualisation is a product of limiting the overarching curatorial voice in the design of the rhizomatic method presented in Chapter 4.

7.1 The limits of curatorial authority and horizontal collaborations in the parallel canonisation process

As explored within Chapter 4, in creating the parallel canon, I attempted to limit the authority of the curator. This was done to create a space in which the two contemporary artists, Afrodeutsche and Martin Tomlinson, were able to present their work as translations of harmonisation theory and Oramics. Limiting the curatorial voice would, in theory, mean that the commissioned artists were able to control their output within the curated output. In practice, however, this contributed to the issue of breaking the contextual links to Grunow and Oram. While both artistic representations were products of an analysis of the initial archive materials, in *Eight to Infinite*, they lacked a direct comparison to the materials upon which they were based. A potential intervention could have been with the physical staging of the event, to create a better representation for Grunow and Oram within the event.

In terms of Afrodeutsche's performance, not having the physical Mini-Oramics Machine[1] at the live event had the effect of disconnecting the sonic output the audience heard to a synthesised electronic sound. If the audience had been able to see the machine being used in a live setting, they could have observed the live process of creating sounds with Oram's distinctive synthesiser method. Similarly, if Tomlinson had been dancing within the colour wheel from the third order of harmonisation theory,[2] then this would have given the audience a chance to see his dance alongside a visualisation of Grunow's theory.

[1] Figs. 10 and 11.
[2] Fig. 4.

These are two examples of how the artists' presentation could have been better curated to establish a physical contextualisation to harmonisation theory and Oramics. By limiting the curatorial voice, I was not able to implement these considerations into the event design and staging. Neither of these examples would have limited the voice of either artist in the ways described in relation to curatorial revisionism,[3] but they would have greatly aided in providing elements of the historical practices for the audience to engage with.

By limiting the curatorial voice to this extent in *Eight to Infinite*, the aim of the event became less about a product of art-historical research and more about the presentation of the two artists' work. The role of the "passive curator" in this instance was unproductive in terms of fully achieving the desired aim of the event. Minor adjustments could have been made to this to allow space for the artists' voices while ensuring that the event was able to achieve its curatorial aim. Creating encounters with the historical materials would have been a way to ensure the same strength of the artists' voices while creating contextual links back to Grunow and Oram. These suggestions could have then been directly discussed within the Q&A section after the performance. Instead, the archival materials themselves were discussed as abstract entities, and it would have been difficult for the audience to engage with them. Having reference points to the historical sources as actual tangible elements of the event design would have reinforced the creation of the parallel canon by providing direct links to Grunow's and Oram's legacies. This could have been done in such a way as to not diminish the artists' voices; rather to complement it, while ensuring that the curatorial voice was directly underscoring the audience to the event's intention.

Eight to Infinite, however, was not the sole methodological approach employed for the parallel canon. While it represented the most prominently accessible aspect of the research, it allowed ample room for interpretation owing to the nature of the exhibited artwork and the intricate subject matter addressed. Attaining a nuanced comprehension of Grunow and Oram, harmonisation theory, and Oramics solely through this medium proves unattainable. Establishing a connection between *Eight to Infinite* and the archival study presented in this thesis offers a more solid understanding of the historical component that lies at the core of this research. More efforts could have been made to

[3] Cf. Sec. 4.3.

supplement the live event with historical materials. Nevertheless, given the rhizomatic aim of the project, placing them together was not essential in the event space.

7.2 Polylogue becoming a cacophony that obscures the core curatorial objectives

In addition to the archival sources operating as abstract constructions within the polylogue, the artists' voices in *Eight to Infinite* also presented work that was an abstraction of the initial curatorial aims. In Chapter 4, I outlined the possibilities for polylogue within the curatorial framework as an addition to the genealogical construction that the curatorial practice hoped to present. Liberating the artists from the curatorial voice meant there was distinct freedom for both Afrodeutsche and Tomlinson to create their own interpretations of Grunow and Oram. The quality of the work that they presented benefited from this, as they were able to practise in ways with which they were comfortable to explore the historical sources in ways that complemented their own styles. They could create their own translations of the historical materials unfettered by curatorial constraints, as explored in Chapters 5 and 6, and these are directly and indirectly interwoven with harmonisation theory and Oramics. As artefacts, they can be interpreted as products influenced by Grunow and Oram. As a polylogue, the two work together as a collaborative effort and were presented as such, with both artists being on stage together, performing their pieces.

Creating a polylogue in the way which was done for *Eight to Infinite* runs the risk of instead being presented as "cacophony". As an event practice, polylogue assumes that there is an equal division of space given to each voice. I have already highlighted that the curatorial voice was limited within this presentation, which, by association, meant that Grunow's and Oram's voices were also affected negatively. The obvious example of this, in terms of the physical space, was the proportions of the stage that were occupied by each artist. As examined in Chapter 5, the majority of the stage was occupied by Tomlinson. Indeed, the dance he presented meant that this was necessary. However, it could have been staged differently so that there was a bigger presence from Afrodeutsche.

For example, having Afrodeutsche presented centrally, and less set back from the audience, would have meant that, physically, her presence would have been more visible. In addition, it would have forced Tomlinson to work around her, creating more of a dialogue between the two. In doing this, the presentation would have been less skewed to

his interpretation alone. The dominance of Tomlinson's presentation overshadowed the other voices of *Eight to Infinite* – not just with his movement, but also sonically. By shouting and challenging the audience, he also broke into their audio experience, which was supposed to be occupied by Afrodeutsche. This meant that the polylogue was not of an equal distribution of "voices", even among the performing artists. Tomlinson's work, as the last step in the process of "passing dissonance", was the interpretation furthest removed from the initial archival research; by eclipsing the event, it further disassociated from the original curatorial aim. Altering the process of "passing dissonance" may have yielded a result that was more in line with the curatorial goal of creating a parallel canon.

7.3 Potential ways of remodelling the "passing of dissonance" that assert a different curatorial discourse complying with the principles of parallel canonisation

As stated in Chapter 5,[4] the model for "passing of dissonance" was based on anti-canonisation as a curatorial method; it is an adaptation of curatorial distraction that creates a process in which the archival materials are analysed and shaped by one artist before being passed onto the next. As a process for establishing artistic voices, it worked well, as both Afrodeutsche and Tomlinson were able to interpret what they had been handed and create artworks that were conducive to their own styles. Having this level of ownership created two authentic pieces that have their own aesthetic qualities distinctive to each artist. Along with the identified issue of a lack of engagement with the source material that was presented to the audience, this suggests that the negotiation of "passing of dissonance" as a process is not conducive to revising marginalised figures; it therefore presents a shortcoming in the creation of a parallel canon.

The handover between me and Afrodeutsche was the part of this process that was the most productive. Through the collaborative process, the discussion of how best to include the three movements as representations of harmonisation theory and Oramics meant that these materials were the driving force behind the composition. In Chapters 2 and 3, I explored how the theoretical consideration of Grunow's three orders and Oram's three modes of thinking was essential to the design of the composition. Exploring each of these three elements within each movement was a driving force in the composition, and their

[4] Fig. 17.

legacy can be seen with reference to the historical materials. Further to this, within Chapter 6, there were other routes that ensured that elements of Grunow's and Oram's practices were embedded within the musical elements of the composition, in addition to the theoretical representation of harmonisation theory and Oramics. It is worth noting here that the collaboration with Afrodeutsche allowed more time to extrapolate information which she was able to directly work with. Extrapolation from the archival sources allowed for more connection to the original material than the next step in the process.

Afrodeutsche's choice to include Tomlinson meant the time, connection, and care to examine the archival materials was removed from the process of passing of dissonance. It meant that the extrapolation process came instead from being presented with the influences within the music – again, as abstract constructions. Much of the considerations about elements of the musical practice – and the theoretical responses that were fundamental to the compositional process – were now left as assumptions. Much like not having connections to Grunow and Oram in the event itself, the focus became more on the interpretation of the interpretation. Through Tomlinson's interpretation of Afrodeutsche's composition, the connection to harmonisation theory and Oramics became distorted so that it was no longer recognisable without previous knowledge of the archival sources. The aim of the parallel canon – being to retell their legacy through this process – was unsuccessful, as Tomlinson's interpretation became too far removed from the original source material. Furthermore, once again, it leaves Grunow and Oram overshadowed by a male figure through the presentation and exploration of male fragility, not of female pioneers of sonic practices. The process of "passing dissonance" contributed to this unfortunate oversight in the creation of the parallel canon.

The process of the "passing of dissonance", therefore, needs to be adapted to ensure that the reclamation of marginalised figures is still at the heart of the commissioning process. One way in which this could have been ensured for *Eight to Infinite* would have been to establish a stronger curatorial voice within the final stage of the "passing of dissonance". For example, if there had been a stronger intervention from me as the curator to present Grunow and Oram alongside Afrodeutsche's composition, this would have meant that Tomlinson could have considered their theories within his own interpretation. This would then have removed the abstract references to harmonisation theory and Oramics within

the composition, making them tangible and connecting them to the historical contexts of which they were part. Locating Tomlinson's output within both the composition and the archive materials should have produced a more effectively choreographed interpretation that aided in the process of mending the legacies of Grunow and Oram instead of overshadowing them once again.

7.4 Conclusion

Creating a parallel canon based on the rhizomatic curatorial theories in this research thus leaves room for improvement. This written thesis explores this process fully, starting with a complete retelling of Grunow and Oram as pioneers of optical sound practices. Exploring their archival materials and bringing them into a contemporary sphere has created revised accounts of their lives and work outside of their controlling institutional histories; it has explored the philosophical motivations for their optical practices and created contextual links outside of their institutional backgrounds. This was achieved by creating a genealogical constellation to connect them to other theorists who influenced the development of harmonisation theory and Oramics. Having established this constellation – and having created a version of their legacy to explore through the work of contemporary artists – the project's curatorial framework was based on using other approaches to select the necessary path to ensure the best way of retelling their legacy through a commission.

For the commission, a process was devised to allow the artists' freedom to explore Grunow's and Oram's legacies with renewed encounters of who they were. This process sought to create a breakaway parallel canon for both figures through the commissioned work of Afrodeutsche and Tomlinson; it also sought to present their work as a polylogue to an audience in the hope that it would also convey a renewed interest in Grunow and Oram. Working with Afrodeutsche was a collaborative effort, while working with Tomlinson was not. In this way, the goal of creating a polylogue was successfully achieved, but the result diminished the voice of the curator; this meant that Grunow and Oram were not sufficiently visible in the final live event. Having a stronger curatorial voice in the process of the "passing of dissonance" would have allowed for a stronger connection to Grunow and Oram throughout the commissioning process and allowed their narrative threads to be presented to the audience as tangible versions of a renewed legacy, not as abstract influences. In addition, the relative passivity of curatorial voice allowed

one artist to have more of a presence in the final event than the other; this, in the context of reviving marginalised figures, instead presented a male-dominated narrative. Through not wanting to have an overarching presence, I limited my voice as the curator, and this allowed another voice to take control of the event. It was therefore necessary to include the Q&A session after the event to allow the space for the other voices to take ownership of these parts of the event which were not so present in the artistic interpretation.

If the curatorial authority is balanced with the artists during the commission, the "passing of dissonance", and the final event or exhibition design, then there is a strong possibility for it to achieve what it aspires to achieve: to revise marginalised figures in a way that removes their legacy from a dominant institutional canon, and to allow contemporary artists to respond to historical practitioners while contributing to their enhanced visibility. The balance must be struck correctly between allowing artists the freedom to create authentic responses to the historical materials and retaining the notion that they are the centre of the curatorial output. If this message can still be presented to the audience through the process of "passing dissonance", then the visibility of the marginalised figures will be carried through the different stages of interpretation. As for Grunow and Oram, I hope that the versions of their legacies that are contained within this thesis will influence others to explore their sonic practices.

Bibliography

100 years of Bauhaus (2018) *100 Years of Bauhaus | Das Totale Tanz Theater*. Akademie der Künste, Berlin. Available at: https://www.adk.de/en/programme/?we_objectID=58924 [Accessed 16 January 2023].

Ableton, 2023. *About us* [online]. Available at: https://www.ableton.com/en/about/ [Accessed 4 April 2023].

Allen, J. L. (2011) "The Sounds Of New Atlantis: Daphne Oram, Radiophonics and the Drawn Sound Technique", *The Wire*, Available at: https://www.thewire.co.uk/in-writing/themire/20781/the-wire-salon-reading-list_the-sounds-of-new-atlantis_daphne-oram_radiophonics-and-the-dr

Aratani, L., 2022. George Floyd killing: what sparked the protests – and what has been the response? *The Guardian* [online], 29 May. Available at: https://www.theguardian.com/us-news/2020/may/29/george-floyd-killing-protests-police-brutality [Accessed 18 July 2022].

Arriola, M. 2009/2010. Towards a ghostly agency: a few speculations on collaborative and collective curating. *Manifesta Journal: Journal of Contemporary Curatorship*, 8, 21–31.

Arts Council England 2018. *Arts Council National Lottery project grants: fair pay*. Arts Council England. Available at: https://www.artscouncil.org.uk/sites/default/files/download-file/ACNLPG_Fair_pay_0.pdf [Accessed 27 January 2023].

Arts Council England 2022. *Equality, Diversity and Inclusion – A Data Report, 2020-21.* Arts Council England. Available at: https://www.artscouncil.org.uk/equality-diversity-and-inclusion-data-report-2020-2021 [Accessed 29 June 2023].

Arts Council England 2021. Equality Diversity and the Creative Case – A Data Report 2019-20. Arts Council Engalnd. Available at: https://www.artscouncil.org.uk/sites/default/files/download-file/Equality_Diversity_and_the_Creative_Case_A_Data_Report__201920.pdf [Accessed 29 June 2023]

Bauhaus Kooperation, 2020. *Classes by Gertrud Grunow: harmonisation theory* [online]. Available at: https://www.bauhauskooperation.com/knowledge/the-bauhaus/training/curriculum/classes-by-gertrud-grunow/ [Accessed 6 November 2020].

Bauhaus Kooperation. 2019. *Mysticism and Mazdaznan*. [online]. Available at: https://www.bauhauskooperation.com/kooperation/project-archive/magazine/discover-the-bauhaus/mysticism-and-mazdaznan/ [Accessed 30 March 2023].

Bauhaus Kooperation Online 2023. Stagecraft. *Bauhaus Kooperation* [online] Available at: https://www.bauhauskooperation.com/knowledge/the-bauhaus/training/workshops/stagecraft/ [Accessed 18 January 2023].

Baumhoff, A. 2001. *The Gendered World of Bauhaus: the Politics of Power at the Weimar Republic's Premier Art Institute*. Frankfurt: Peter Lang.

BBC Radio 6 Music. 2023. *The People's Party with Afrodeutsche*, BBC Radio 6 Music [online]. Available at: https://www.bbc.co.uk/programmes/m0011g3g [Accessed 22 May 2023].

Birchall, M., and Sack, P., 2014. Editorial. In: *After the turn: art education beyond the museum*. OnCurating.org 24 (December), 3–7. Available at: https://www.on-curating.org/issue-24-reader/editorial-129.html [Accessed 16 February 2023].

Bjerregaard, P., 2020. Exhibitions as research, curator as distraction. In: Vest Hansen, M., Folke Henningsen, A., and Gregersen, A., eds. *Curatorial challenges: interdisciplinary perspectives on contemporary curating*. Oxon: Routledge, pp. 108–119.

Boehm T. 1964. *The Flute and Flute-Playing in Acoustical, Technical, and Artistic Aspects*. Dayton C. Miller (trans.). New York: Dover Publications.

Born, G., Lewis, E., and Straw, W., eds., 2017. *Improvisation and social aesthetics*. Durham, NC: Duke University Press.

Brett, P., 2006. Musicality, essentialism, and the closet. In: P. Brett, E. Wood, and G.C. Thomas, eds. *Queering the pitch: the new gay and lesbian musicology*. 2nd ed. Oxon: Routledge, pp. 21–38.

Brown, A.R., and Ferguson, J.R., 2020. Beat Machine: embracing the creative limitations and opportunities of low-cost computers. *Leonardo Music Journal*, 30, 8–13. DOI: 10.1162/lmj_a_01087

Brown, S., and Dissanayake, E., 2018. The synthesis of the arts: from ceremonial ritual to "total work of art". *Frontiers in Sociology*, 3, 9. DOI: 10.3389/fsoc.2018.00009

Bulley, J., 2018. *'Still Point' (2016–2021) by Daphne Oram with Shiva Feshareki* [online]. Available at: https://www.jamesbulley.com/still-point [Accessed 10 November 2022].

Burchert, L., 2018. *Gertrud Grunow, (1870–1944): Leben, Werk und Wirken am Bauhaus und darüber hinaus*. Berlin: Humboldt-Universität zu Berlin. DOI: 10.18452/19512.

Burchert, L., 2019a. The spiritual enhancement of the body: Johannes Itten, Gertrud Grunow, and Mazdaznan at the early Bauhaus. In: Otto, E., and Roessler, P., eds. *Bauhaus bodies: gender, sexuality, and body culture in modernism's legendary art school*. London: Bloomsbury (in preparation for printing).

Burchert, L., 2019b. *Gertrud Grunow's theory of harmonization* [online]. Available at: https://www.bauhaus-imaginista.org/articles/3895/gertrud-grunow-s-theory-of-harmonization [Accessed 2 November 2020].

Burtt, B. *et al.* 2023. *Kyma Sound Design Environment*, Kyma [online]. Available at: https://kyma.symbolicsound.com/kyma-sound-design-environment/ [Accessed 22 May 2023].

Butler, J., 2004. *Undoing gender*. London: Routledge.

Butt, G. 2022. *No Machos or Pop Stars: When the Leeds Art Experiment went Punk*. London: Duke University Press.

Carr, N.R., Olsen, K.N., and Thompson, W.F., 2023. The perceptual and emotional consequences of articulation in music. *Music Perception*, 40 (3), 202–219. DOI: 10.1525/mp.2023.40.3.202

Cashford, J. 2003. *The Homeric Hymns.* London: Penguin.

Castelvecchi, S., 2000. Statement. In: Greer, D., ed. *Musicology and sister disciplines: past, present, future*. Oxford: Oxford University Press, p. 188.

Connell, R.W., 2005. *Masculinities.* 2nd edition. London: Polity.

Crawshay-Hall, J., 2020. Collaborative curating: Democratising inclusion. *de arte*, 56, 4–28. DOI: 10.1080/00043389.2020.1815951

Cross, I., 2003. Music as a biocultural phenomenon. *Annals of the New York Academy of Sciences*, 999, 106–111. DOI: 10.1196/annals.1284.010

Cross, L., 1999. Reunion: John Cage, Marcel Duchamp, electronic music and chess. *Leonardo Music Journal* 9, 35–42. DOI: 10.1162/096112199750316785

Daphne Oram Archive. Goldsmiths Special Collections and Archives, University of London. Available at: https://www.daphneoram.org/oramarchive/ [Accessed 10 December 2022].

ORAM/1/1/013. *Notes and ideas for a drawn sound technique and automated recording mechanism by Daphne Oram*, n.d.

ORAM/1/5/023. *Notes on the Oramics system*, 1971.

ORAM/2/003. *A4 200 page pad containing step by step details of Daphne Oram's mapping of Oramics into Computer Code in Basic*, 1987–1988.

ORAM/3/1. *BBC employment papers*, 1943–1959.

ORAM/3/3. *1958 Brussels Expo*, 1958.

ORAM/3/4. *Music in Miniature and Third Programme*, 1943–1958.

ORAM/7/3/005. *Daphne Oram at work in the Radiophonics workshops Maida Vale*, 1958.

ORAM/7/9/013. *Daphne Oram drawing timbres on the Oramics machine*, n.d.

ORAM/8/30/001. Tape details for 'Private Dreams and Public Nightmares', n.d.

ORAM/9/3/006. *Daphne's Red 'Silvine' Notebook*, n.d.

Daphne Oram Trust, n.d. *Daphne Oram – a brief biography*. Available at: https://www.daphneoram.org/aboutoram/ [Accessed 9 November 2022].

Decca. 2022. *Afrodeutsche: Artists*, Decca Publishing [online]. Available at: https://www.deccapublishing.com/roster/afrodeutsche/ [Accessed 22 May 2023].

Deleuze, G., and Guattari, F., 1980. *A thousand plateaus: capitalism and schizophrenia*. London: Bloomsbury Academic. [Translated by Brian Massumi.]

Diederichs, E., 1920. Subconsciousness and form. *The act. Monthly for the future of German culture* 2, May 1920, pp. 126–137.

Emmerson, S., 2007. *Living electronic music*. Aldershot: Ashgate Publishing.

Encyclopaedia Britannica, 2022a. *Bel canto* [online]. Available at: https://www.britannica.com/art/bel-canto [Accessed 26 October 2022].

Encyclopaedia Britannica, 2022a. *Equal temperament* [online] Available at: https://www.britannica.com/art/equal-temperament [Accessed 10 November 2022].

Encyclopaedia Britannica, 2022b. *Hermann von Helmholtz* [online]. Available at: https://www.britannica.com/biography/Hermann-von-Helmholtz [Accessed 26 October 2022].

Encyclopaedia Britannica, 2022b. *Motion-picture technology* [online]. Available at: https://www.britannica.com/technology/motion-picture-technology [Accessed 11 November 2022].

Encyclopaedia Britannica, 2022c. *Solfège* [online]. Available at: https://www.britannica.com/art/solfege [Accessed 26 October 2022].

Encyclopaedia Britannica, 2023. *White noise* [online]. Available at: https://www.britannica.com/art/white-noise-music [Accessed 15 March 2023].

Factory International, 2019. *Queens of the Electronic Underground*, MIF t/a Factory International [online]. https://factoryinternational.org/whats-on/queens-of-the-electronic-underground/ [Accessed 7 April 2023].

Fielding, R. (1967). "A Technological History of Motion Pictures and Television", in *The Journal of the Society of Motion Pictures and Television.* University of California Press. p. 179

Firth, S. 1996. "Music and Identity," in *Questions of Cultural Identity,* ed. Stewart Hall and Paul u Guy, London: Sage. pp. 116–124

Foucault, M., 1969a. *L'archéologie du savoir*. Paris: Gallimard. [Translated: A. M. Sheridan Smith. *The archaeology of knowledge*. London: Routledge, 2002].

Foucault, M., 1969b. *What is an Author?*

Foucault, M., 1977. *Nietzsche, la genealogía, la historia*.

Foucault, M., 1990. *The history of sexuality: an introduction*. United Kingdom: Vintage Books.

Gallagher, S., 2017. *Enactivist interventions: rethinking the mind*. Oxford: Oxford University Press.

Garnham, M., 1998. *As I saw it: Basil Douglas, Benjamin Britten, and the English Opera Group 1955–1957*. London: St. George's Publications.

Gibson, P. J., 1979. The Vivaldi aerial. In: *9th European Microwave Conference, Brighton, UK*. Institute of Electrical & Electronics Engineers (IEEE), pp. 101–105. DOI: 10.1109/EUMA.1979.332681

Gilmore, J., 2000. *The life of a style: beginnings and endings in the narrative history of art*. Ithaca, NY: Cornell University Press.

Gordon, A.F., 2008. *Ghostly matters: haunting and the sociological imagination*. 2nd ed. Minneapolis: University of Minnesota Press.

Gordon, A.F., 2008. *Ghostly matters: haunting and the sociological imagination*. Minneapolis, MN: University of Minnesota Press.

Grunow, G., 1920. Report to the Kurhaus› Waldesheim ‹Düsseldorf-Grafenheim. In: Radrizzani 2004, pp. 70–76 [12-page typescript that was unpublished during his lifetime, edited and printed].

Grunow, G., 1923. The construction of the living form through color, form, tone. In: Exh. Cat. State Bauhaus Weimar 1919 to 1923, ed. v. Karl Nierendorf, Weimar 1923, pp. 20–23 [Radrizzani 2004, pp. 77–81].

Grunow, G., 1936b. Farbformen, *Art and Youth*, August 1936b, pp. 179–180 [Radrizzani 2004, pp. 90–92].

Grunow, G., 1936c. »Psyche«. In: Radrizzani 2004, pp. 92–93 [unprinted and incomplete in Hildegard Heitmeyer's handwriting, 5 pages, copy of an essay by Gertrud Grunow from 1936].

Grunow, G., 1937a. A new conception of the essence of colour in its psychological-physical effect on the entire organism. In: Radrizzani 2004, pp. 94–96 [unprinted typescript of five pages from the possession of Hildegard Heitmeyer with handwritten additions by Gertrud Grunow around 1937a].

Grunow, G., 1937b. Colors and sounding sound and statics. In: Radrizzani 2004, pp. 97–98 [unprinted typescript with three pages with handwritten additions by Gertrud Grunow from the possession of Hildegard Heitmeyer, probably created around 1937 = unsecured].

Grunow, G., 1937c. »Ein neue Farbkreis«. In: Radrizzani 2004, pp. 99–103 [unprinted typescript of 8 pages with handwritten additions by Gertrud Grunow from the possession of Hildegard Heitmeyer, probably created around 1937 = unsecured].

Grunow, G., 1938. »Von der Farbe im Runden«. In: *Kunst und Jugend*, February 1938, pp. 36–37, 26 August 2018 [Radrizzani 2004, pp. 104–106].

Grunow, G., 1967. Own records. In: *Bildnerische Erbildung. Die Zweimonatsschrift* 3, 1967, pp. 17–23 [= reprint of the articles published between 1935 and 1938 in *Kunst und Jugend*].

Heitmeyer, H., 1967. *Die Grunow-Lehre: eine Erziehung der Sinne durch Ton und Farbe*. Ratingen: A Henn Verlag.

Hofmann, W., 1969. Studies in art theory of the 20th century. *Journal for Art History*, 18 (1955), 155.

Ingold, T., 2000. *The perception of the environment: essays on livelihood, dwelling and skill*. London: Psychology Press.

Itten, J., 1974. *The art of color: the subjective experience and objective rationale of color*. New York: John Wiley & Sons.

Jaques-Dalcroze, E., 1930. *Eurhythmics: art and education*. London: Chatto & Windus.

Jordanova, L., 2000. Periodisation. In: *Her history in practice*. New York: Oxford University Press, pp. 114–140.

Joseph, B.W., 2011. *Beyond the dream syndicate: Tony Conrad and the arts after Cage*. New York: Zone Books.

Jung, C., 1927. Woman in Europe. In *Collected works*, vol. 10, paragraph 255; reprinted in *Aspects of the Feminine*, Princeton University Press, 1982, p. 65,

Kandinsky, W., 1912. *Concerning the spiritual in art*. Trans. M.T.H. Sadler. Dover Publications Inc.

LaBelle, B. 2018. *Sonic Agency: Sound and Emergent forms of Resistance.* London: Goldsmiths Press.

Lee, G., 2018. Rethinking difference in gender, sexuality, and popular music: theory and politics of ambiguity. Taylor and Francis.

Lind, M., 2010. *The curatorial*. New York: Sternberg Press.

Lombardo, V., Valle, A., Fitch, J., Tazelaar, K., Weinzierl, S., and Borczyk, W., 2009. A virtual-reality reconstruction of *Poème électronique* based on philological research. *Computer Music Journal* 33 (2), 24–47.

Lynch, B., 2013. Through the looking glass: changing social relations in the museum. In: Anderson, G., ed. *Museums and the paradox of change*. Hoboken, NJ: MIT Press.

Mabaso, N., 2016. Editorial. In: *In this context: collaborations & biennials*. OnCurating.org 32 (October), 2–7. Available at: https://www.on-curating.org/issue-32.html [Accessed 16 February 2023].

Malmberg, B. 1964. *New Trends in Linguistics: An orientation.* Spain: Lund.

Manchester International Festival, 2022. *Queens of the electronic underground* [online]. Available at: https://mif.co.uk/whats-on/queens-of-the-electronic-underground/ [Accessed 19 July 2022].

Martinon, J.P., 2013. *The curatorial – a philosophy of curating*. London: Bloomsbury.

Mencarelli, R. and Pulh, M. (2006) 'Positioning the Supply of Live Performance: Innovative Managerial Practices Relating to the Interaction of Spectator, Performance and Venue', *International Journal of Arts Management*, 8(3), pp. 19–29.

Mileham, R., 2011. Oramics to electronica. *Engineering & Technology*, 6 (11), 68–70. DOI: 10.1049/et.2011.1122

MoogMusic.com, 2022. *The early years of the Moog Synthesizer* [online]. Available at: https://www.moogmusic.com/news/early-years-moog-synthesizer [Accessed 18 November 2022].

Müller, U., 2009. *Bauhaus women: art, handicraft, design*. Paris: Flammarion.

Musicians' Union, 2020. *Rates of pay & fees for live musicians* [online]. Available at: https://musiciansunion.org.uk/working-performing/gigs-and-live-performances/live-engagement-rates-of-pay [Accessed 9 April 2020].

Nattiez, J.J., 1990. *Music and discourse: toward a semiology of music*. Princeton, NJ: Princeton University Press.

NME, 2005. Selfish Cunt: Whitechapel Rhythm Factory. *NME* [online], 12 September. Available at: https://www.nme.com/reviews/reviews-nme-7397-307675 [Accessed 2 September 2022].

Nottingham Contemporary, 2019. *Sonic Bauhaus: Gertrud Grunow and Daphne Oram* [online]. Available at: https://www.nottinghamcontemporary.org/whats-on/the-study-sessions-sonic-bauhaus-3/ [Accessed 30 January 2023].

Nottingham Contemporary, 2021. *Performance: Afrodeutsche* [online]. Available at: https://www.nottinghamcontemporary.org/whats-on/performance-afrodeutsche/ [Accessed 2 September 2022].

Nottingham Contemporary, 2022. *Still undead: popular culture in Britain beyond the Bauhaus* [online]. Available at: https://www.nottinghamcontemporary.org/whats-on/undead-pop-culture-in-britain-beyond-the-bauhaus/ [Accessed 19 July 2022].

Nunn, A., 2004. Doherty and Selfish C*nt in Buckingham brawl... *Drowned in Sound* via web.archive.org [online], 15 July. Available at: https://web.archive.org/web/20061019063104/http://www.drownedinsound.com/articles/9959.html [Accessed 2 September 2022].

O'Neill, P., 2009/2010. Beyond group practice. *Manifesta Journal: Journal of Contemporary Curatorship*, 8, 37–45.

O'Neill, P., 2012. *The culture of curating and the curating of culture*. London: MIT.

Old Time Radio Catalogue, n.d. *Music in miniature*. Available at: https://www.otrcat.com/p/music-in-miniature [Accessed 9 November 2022].

Oram, D., 1972. *An individual note of music, sound and electronics.* London: Galliard Ltd.

Oram, D., 2007. *Oramics by Daphne Oram* [online]. Available at: https://daphneoram.bandcamp.com/album/oramics [Accessed 16 November 2022].

Otto, E., 2019. *Haunted Bauhaus: Occult Spirituality, Gender, Fluidity, Queer Identities, and Radical Politics,* London: The MIT Press.

Oxford Classical Dictionary, 4th ed., 2012. Oxford and New York: Oxford University Press.

Palombini, C., 1993. Machine Songs V: Pierre Schaeffer: from research into noises to experimental music. *Computer Music Journal*, 17 (3), 14–19. DOI: 10.2307/3680939

Peltonen, T., 2019. Transcendence, consciousness and order: towards a philosophical spirituality of organization in the footsteps of Plato and Eric Voegelin. *Philosophy of Management*, 18 (3), 231–247.

Petridis, A., 2004. Selfish Cunt, Rhythm Factory, London. *The Guardian* [online], 25 March. Available at: https://www.theguardian.com/music/2004/mar/25/popandrock [Accessed 2 September 2022].

Porter, E.W.S. 1958. Manning of the Radiophonic workshop, Letter from the desk of the Assistant Head of Programming. BBC Written Archive Centre.

Powell, A. 2008. Vivaldi's flutes. Early Music 36 (1), 120–122. DOI: 10.1093/em/cam131

Primary, 2022. *Membership* [online]. Available at: https://www.weareprimary.org/membership [Accessed 9 August 2022].

Radrizzani, R., 2004. *The Grunow teaching: the moving power of sound and color*. Wilhelmshaven: Florian Noetzel Verlag.

Radrizzani, R., 2009. *Gertrud Grunow's theory of harmonization. Master at the Bauhaus 1919–1924* [online]. A film by and with René Radrizzani. Available at: https://www.gertrud-grunow.de/film-kunst-forschung/film/dokumentarfilme [Accessed 22 September 2018].

Reading: this one sky day by Leone Ross, 2022. [YouTube] Bonington Gallery, 24 June. Available at: https://www.youtube.com/watch?v=9t2ymgMQ6c8andt=685s [Accessed 21 July 2022].

Reddington, H.L. (2018) "Détournement and female punk bands of the 1970s", in *Rethinking Difference in Gender, Sexuality, and Popular Music: Theory of Politics of Ambiguity*. Oxon: Routledge.

Reilly, M., 2018. *Curatorial activism: towards an ethics of curating*. London: Thomas and Hudson.

Rennie, T., 2014. Socio-Sonic: an ethnographic methodology for electroacoustic composition. *Organised Sound*, 19 (2), 117–124.

Richards, T. 2018. *Oramics: Precedents, Technology and Influence: Daphne Oram (1925-*

Richter, D., 2013. Artists and curators as authors – competitors, collaborators, or team-workers? In: Birchall, M., ed. *On artistic and curatorial authorship*. *OnCurating.org*, 19 (June), 43–57. Available at: http://www.on-curating.org/issue-19.html#.XGAC888zbBI [Accessed 07 October 2022].

S1 Artspace, 2022. *Construction house* [online]. Available at: https://www.s1artspace.org/programme/construction-house/ [Accessed 8 August 2022].

Schreyer, L., 1956. *Erinnerungen an Sturm und Bauhaus*. München: Albert Langen-Georg Müller.

Schroeder, F., and Rebelo, P., 2017. Distributed sounding art: practices in distributing sound. In: *The Routledge companion to sounding art*. London: Routledge, pp. 439–450.

Science Museum Group, 2021. *Oramics to electronica* [online]. Available at: https://www.sciencemuseumgroup.org.uk/project/oramics-to-electronica/ [Accessed 1 July 2021].

Secretcitytravel, 2014. *Berlin secret travel: Künstlerhaus St. Lukas, an extraordinary architectural treasure in the heart of west Berlin* [online]. Available at: http://www.secretcitytravel.com/berlin-march-2014/berlin-historic-artist-house-garden.shtml [Accessed 8 November 2022].

Sikah, S. 2020. Curating and Research an Uneasy Alliance, in Vest Hansen, M., Folke Henningsen, A., and Gregersen, A., eds. *Curatorial challenges: interdisciplinary perspectives on contemporary curating*. Oxon: Routledge p. 97-107.

Sisters with Transistors, 2020. [Film]. Rovner, L. Rough Trade.

Small, C. 1998. *Musicking: The meaning of Performing and Listening.* Connecticut: Wesleyan University Press.

Smirnov, A., 2013. 7. Graphical Sound: The ANS Synthesizer. In: *Sound in Z – Experiments in sound and electronic music in early 20th century Russia*. London: Koenig Books. pp. 175–236.

Smith-Rolla, H., 2020a. *Work it* [online]. Available at: https://afrodeutsche.bandcamp.com/track/work-it [Accessed 6 March 2023].

Smith-Rolla, H., 2020b. *The beginning* [online]. Available at: https://afrodeutsche.bandcamp.com/track/the-beginning [Accessed 6 March 2023].

Smith-Rolla, H., 2020c. *WTFWTFWTF* [online]. Available at: https://afrodeutsche.bandcamp.com/track/wtfwtfwtf [Accessed 6 March 2023].

Smith-Rolla, H., 2020d *The middle middle* [online]. Available at: https://afrodeutsche.bandcamp.com/track/the-middle-middle [Accessed 9 March 2023].

Smith-Rolla, H., 2020e. *Day tuner* [online]. Available at: https://afrodeutsche.bandcamp.com/track/day-tuner [Accessed 9 March 2023].

Smith-Rolla, H. 2020f. *Spectrum,* Spitfire Audio [online]. Available at: https://www.spitfireaudio.com/virtual-instruments/henrietta-smith-rolla-spectrum [Accessed 22 May 2023].

Smith, M.W., 2007. *The total work of art: from Bayreuth to cyberspace*. New York: Routledge.

Smithson, R., 2003. Kulturbeschränkung, Katalog der documenta 5, Kassel, 1972. Quoted here in Kunst/Theorie im 20. Jahrhundert, Hg. Harrison, Wood, Ostfildern Ruit, p. 1167.

Snellings Museum, 1974 *Ferrograph Series 4A reel to reel tape recorder* [online]. Available at: https://www.snellingsmuseum.co.uk/artefact/audio/ferrograph-series-4a-reel-to-reel-tape-recorder [Accessed 11 November 2022].

Solie, R.A., 1995. *Musicology and difference: gender and sexuality in music scholarship*. London: University of California Press.

Sørensen, T.F., 2016. A precarious construct: The commission as a curatorial mode of inquiry. *The Nordic Journal of Aesthetics*, 52, 79–98.

Steckner, C., 2002. Der Gleichgewichtskreis: ein Bauhausdokument/Gertrud Grunow. Hrsg. von Achim Preiß. – Weimar: VDG, 2001. – 170 S.: Ill.

Steckner, C., 2002. *Gertrud Grunow (1870–1944): ein Biographie Dokumenten*, Weimar: VDG, 2002. - 170 S. : Ill.

Tate Online, 2022. *Tate Modern exhibition: Anni Albers* [online]. Available at: https://www.tate.org.uk/whats-on/tate-modern/anni-albers [Accessed 19 July 2022].

The Grand Tour of Modernism Online 2023. Ballet á La Bauhaus. *The Grand Tour of Modernism* [online] Available at: https://www.grandtourofmodernism.com/look-at-the-media/ballet-a-la-bauhaus/ [Accessed January 18, 2023].

Time Out, 2012. Selfish Cunt. *Time Out* [online], 11 October. Available at: https://www.timeout.com/london/music/selfish-cunt [Accessed 2 September 2022].

Time Out, 2022. Bollox | LGBTQ+ in Manchester [online] 14 October 2014. *Time Out*. Available at: https://www.timeout.com/manchester/lgbt/bollox [Accessed 21 July 2022].

Vest Hansen, M., Folke Henningsen, A., and Gregersen, A. 2020. *Curatorial challenges: interdisciplinary perspectives on contemporary curating*. Oxon: Routledge

Voegelin, S., 2019. Writing sonic fictions: literature as a portal into the possibility of art research. In: *Artistic research and literature*, Leiden, The Netherlands: Brill. Available at: https://doi.org/10.30965/9783846763339_010 [Accessed 12 July 2022]

Volkshaus Jena, 2022. *Volkshaus Jena* [online]. Available at: https://www.volkshaus-jena.de [Accessed 8 November 2022].

von Osten, M., and Watson, G., 2019. *Bauhaus imaginista: a school in the world*. London: Thames and Hudson.

Wagner, C., 2009. *Esoterik am Bauhaus: Eine Revision der Moderne?* Regensburg: Verlag Schnell & Steiner.

Wahl, V., and Ackermann, U., eds., 2001. *Die Meisterratsprotokolle des Staatlichen Bauhauses Weimer 1919 bis 1925*. Böhlaus Nachfolger.

Walser Smith, H., 2011. *The Oxford Handbook of Modern German History*, Oxford: Oxford University Press.

Weidenbaum, M., 2011. Music: Pioneers of sound. *Nature* 469, 296–297. DOI: 10.1038/469296a

Whitford, F., 1993. *Das Bauhaus: Selbstzeugnisse von Meinstern und Studenten*. München: Deutsche Verlags-Anstalt.

Wick, R.K., 2019. *Three preliminary courses: Itten, Moholy-Nagy, Albers* [online]. Available at: https://www.bauhaus-imaginista.org/articles/5176/three-preliminary-courses-itten-moholy-nagy-albers [Accessed 28 October 2022].

Windsor, W.L., 2000. Through and around the acousmatic: the interpretation of electroacoustic sounds. In S. Emmerson, ed. *Music, electronic media and culture*. London: Ashgate, pp. 7–33.

Wingler, H.M. (1969) *The Bauhaus: Weimar, Dessau, Berlin, Chicago*. Chicago: MIT Press.

Wolff, J., 1993. *Aesthetics and the sociology of art*. 2nd ed. Ann Arbor: University of Michigan Press.

Wolff, J., 2003. Afterword modernism, realism, revisionism. In: *AngloModern: painting and modernity in Britain and the United States*. Ithaca, NY: Cornell University Press, pp. 159–168.

Wood, C., 2022. *Performance in contemporary art*. London: Tate Publishing

APPENDIX I:

Transitions from Grunow's Archive

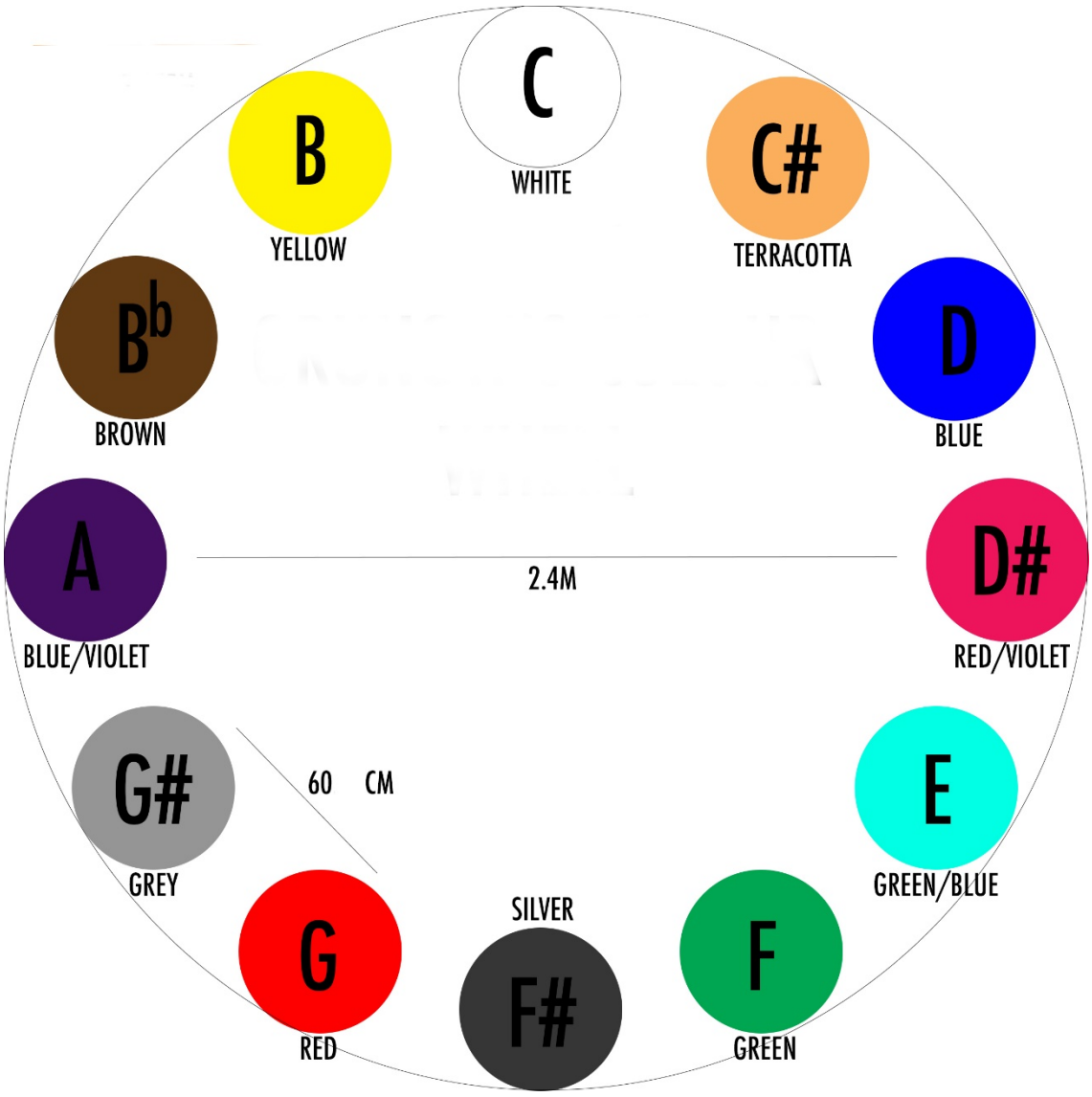
Heitmeyer's (1969) and Steckner's (2002) texts were translated for this study from German into English. They provide the source material which a genealogical constellation can be created, to map Grunow's influences, and better understand the workings of harmonisation theory. In this appendix, I have added selections from these translations from both of these texts, which support the arguments made in Chapter 2 about Grunow's Biographical information. The translations were done by me and Anamarija Jovčić.

Both texts can be found in their original form via these links:

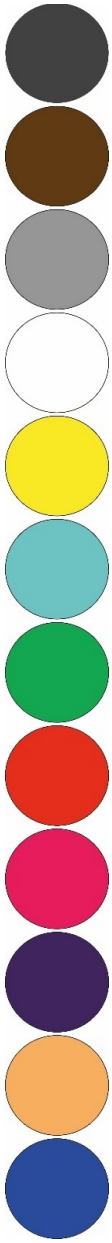
Heitmeyer:
https://drive.google.com/file/d/1X96TeoPkXqVbdu_IBhrVnnIdlJ7LNmr8/view?usp=share_link

Steckner:
https://drive.google.com/file/d/144qcqq3xAF95avJULHRgP7IJMF9ELm84/view?usp=share_link

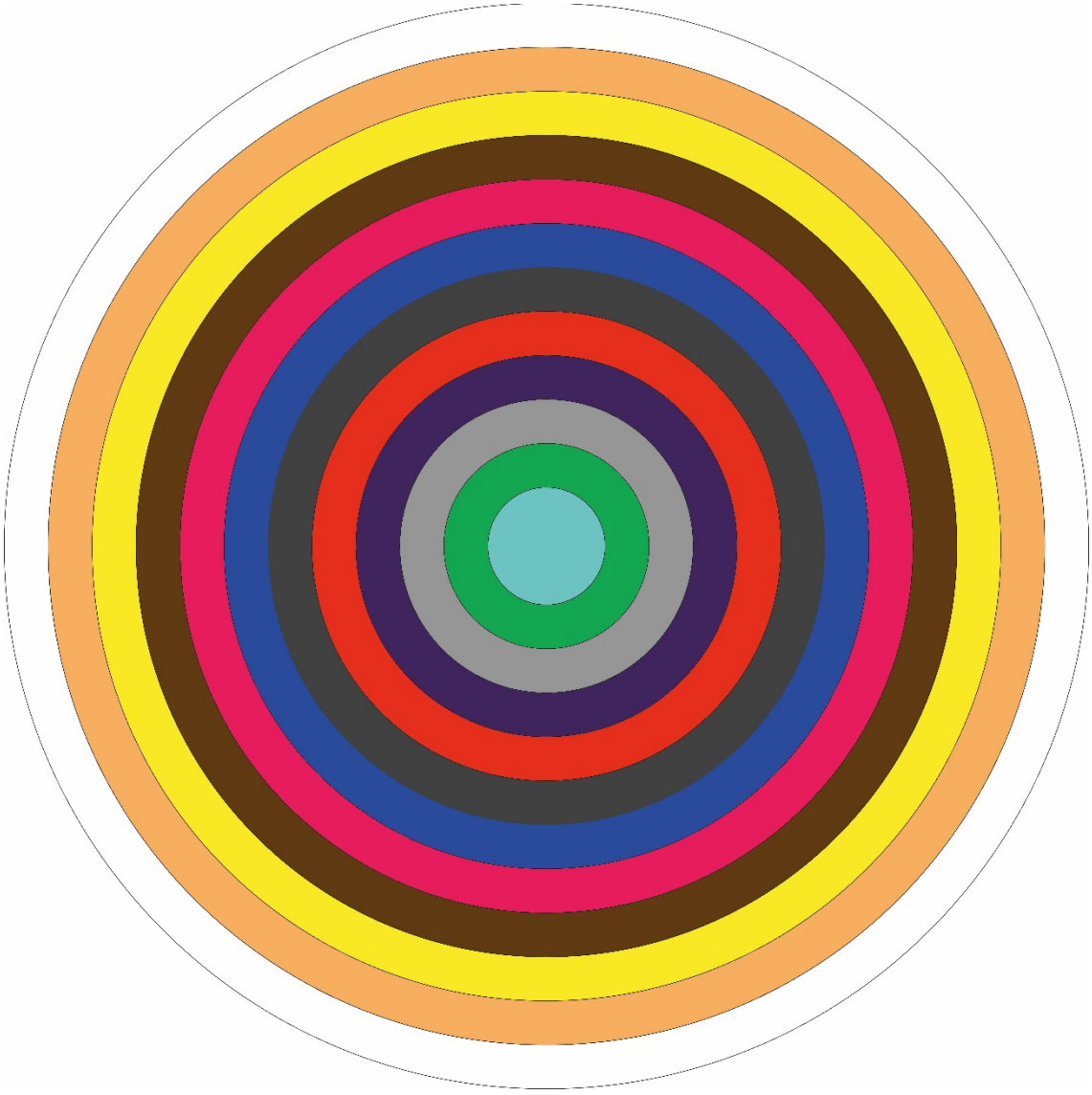
AI.1 Graphic representations



The first order, adapted from Heitmeyer 1969.



The second order, adapted from Radrizzani 2004.



The third order, adapted from Radrizzani 2004.

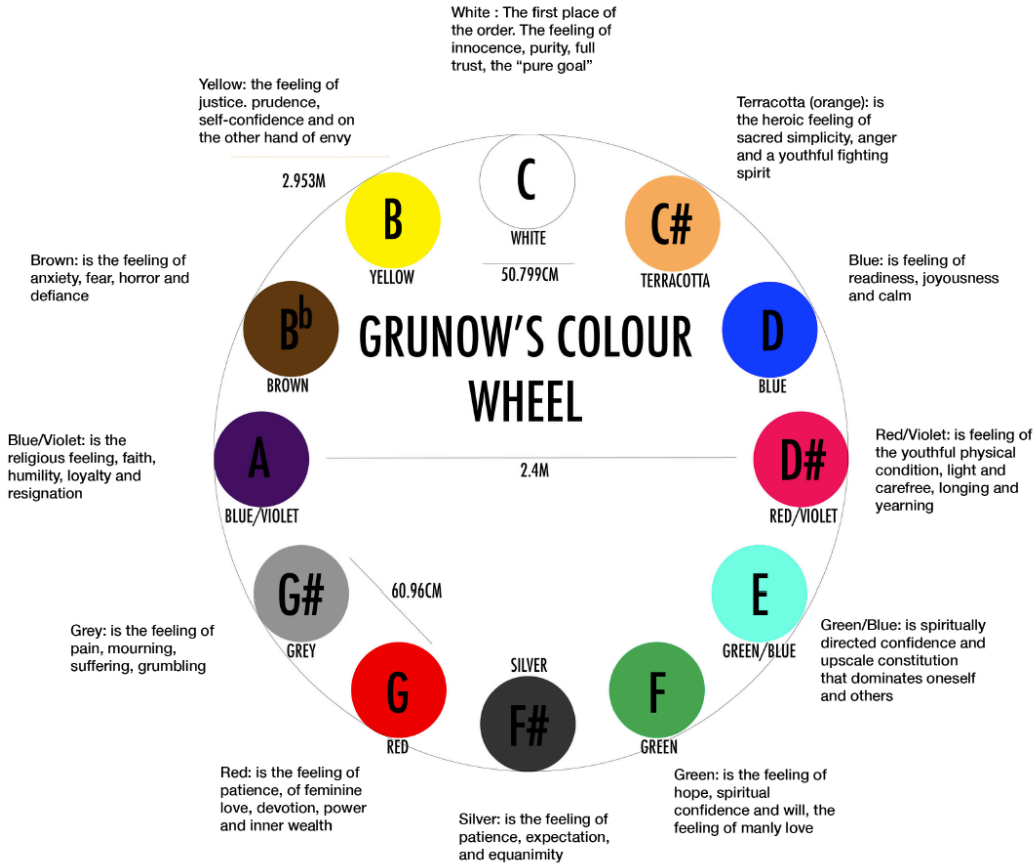


Diagram of the colours, notes, and their emotional responses, adapted from Heitmeyer 1969.

AI.2 Written excerpts

AI.2.1 Remscheider Zeitung, vol. 61, no. 271, 2 October 1908. In Steckner 2002

Grunow's writing on Eurythmics:

> What is the essence of Dalcroze's method? The master divides the method into two parts, which he treats in turn: 1) rhythmic-gymnastic training. 2) the solfège. The former is the basis of the whole method, and it is unique in its approach. It is of eminent interest to those who are to learn music and their teachers. Rhythmic education develops the whole human being, every organ of it. We live in a time of reforms: new methods are struggling to gain acceptance in piano playing, singing, and school singing. However, the modern techniques devised by eminent musicians only address those who are already advanced and who already have some musical knowledge … [Dalcroze] regulates the child's movement through rhythm, seeking to create harmony by cultivating the spirit through physical education. Dalcroze's method puts the muscles at the service of the will and trains the nerve centres … Dalcroze showed how the rhythmic-gymnastic method is now practised in a series of demonstrations; there is no space to go into detail here. Rhythmic marching and arm and leg movements following the beat are the beginning,

> and then rhythmic breathing exercises are added. The child is taught attention, obedience, and willpower, and the system proves to be a general educational tool for the youth.

she goes on to talk about the process of movement that is characteristic of eurhythmics:

> For each note, Dalcroze's method has a foot mark; one arm movement for each time signature; the pauses are expressed by the absolute stillness. Training in proper breathing is of health value; it is beneficial in developing the voice for speaking and singing. Body balance exercises and muscle strengthening activities follow. These aim for concentration and clarity of mind, and everything resolves in harmony and beauty; the beautiful line, i.e., grace, is striven for; it is an aesthetic education of man in the most beautiful sense, an education in the Greek ideal of beauty. This makes dance lessons superfluous; the children only need to learn ballroom dancing later. The method is not at all strenuous, not even for children; they know the movements with pleasure and evident joy. Most exercises are accompanied by music. Solfège is ear training through singing; students are taught to give an account of every note sung or played; they are practised in hitting the tones, etc.

AI.2.2 Remscheider Zeitung, vol. 62, no. 194, 18 July 1909. In Steckner 2002

She reported on this public presentation in the *Remscheider Zeitung* after the event, describing what she was able to highlight:

> The demonstration lasted about two and a half hours, taking the form of a lesson. The children's classes presented the first part, giving examples of performing by ear and understanding different time signatures, the same and changing ones, and those with varying note values. There was a gradual increase in the difficulty of the exercises, up to the exceedingly difficult syncopation. Dynamic gradations from fortissimo to pianissimo were also demonstrated in their rhythmic movements. One hand presents 2/4, the other hand 4/4, while the feet express fortissimo, and their hands represent pianissimo. Following this exercise, there was a small pantomime,[1] where the children started with their eyes closed, kneeling, and they began to rise over the course of the performance. This showed that the young performers were still in sharpest rhythmic sensitivity, even after 36 bars. The individual children's performances did not show inconsiderable differences, despite their differing musical talent. One could see from all the participants the joy in the abilities they had acquired and the conviction that they were dealing with precious educational moments. In any case, quick grasping and conversion into willed activity have an extremely favourable effect on the development of mental powers. It strengthens the ability to think and promotes mobility of the limbs. Rhythm and harmony of the movements are

[1] Note on translation: here, "pantomime" refers to an unrehearsed presentation. The original is *die Pantomime*, of which "pantomime" is the closest translation, which I decided to keep.

> striven for with the best success; thereby, grace is achieved. For the child, awakening the rhythmic feeling means awakening dormant abilities and strengthening the musical instinct, which is further awakened by the child's independent cooperation. By the continued exertion, rhythmic gymnastics supports and strengthens the muscles, giving children the will and the ability to perform and vary any activity at a definite time. Herein lies the high educational value of the method.

AI.2.3 M. Daubresse, Die rhythmische Gymnastik, Rheinische Musik- und Theater-Zeitung, vol. 12, 1911, pp. 133–151. In Steckner 2002

Grunow wrote an article in the *Rheinische Musik- und Theater-Zeitung*, in which she outlined the development from eurhythmics with a focus on solfège and atonal singing as the starting point for the physical exercises of the student. This article shows her feelings about the new methodology and her reasoning for moving away from eurhythmics.

> When Jaques-Dalcroze appears in demonstrations with his students, the audience is as amazed as they are delighted. Amazed at the ability to see different time signatures performed with legs, arms, and head simultaneously, and delighted at the gracefulness of the gestures and pantomimes that are presented at the end. Of the other sections of the lesson, the only thing that arouses interest and deserves recognition is the translation of heard rhythms into sculpture, especially when dynamics and tempo are added. The effect on the spectators is entirely superficial, meaning the pedagogy remains misunderstood. And the musicians? It is true that people no longer dare to relegate rhythmic gymnastics to the realm of gymnastics, as was the case in the beginning. However, many musicians and artists still cling too firmly to the belief that education in eurhythmics is only for the less gifted musicians or stage artists … It would undoubtedly be just as encouraging as it would be interesting for artists of different genres to spread the theory of rhythm by writing about their experiences. Then the accusation would fall that Jaques-Dalcroze hoped and believed too much. Perhaps Dalcroze, who possesses only human powers, would be prevented from going too far in his progress, from forgetting that his system can only give form. By that, I mean his way in the performing field. I want to emphasise this because the performance relates to the stage singer, and for whom the teaching in this respect may only be used to the extent that it is based on the musical elements and harmony and rhythm between gesture and vocal organs. In pure pantomime, Dalcroze's stagecraft can be entirely accepted in one direction, absolutely in the lyrical. I reserve the right to comment on these things.

This process would develop the solfège part of the process and focus more heavily on the process of the voice and its movement in response to music.

> It is clear from the previous lines that rhythm cannot be understood as meaning beat. As far as singing is concerned, it has been known since Tosi[2] and earlier, so-called "singing" is an expression of the soul, the authentic "beautiful singing". It is necessary to know the physiology of the respiratory system and larynx organs, especially muscular sensations. The explanations should be a causerie to stimulate; their purpose is not voice training. I want to avoid all information about intonation and singing as much as possible. Instead, I would like to emphasise the mechanical tone indication in so-called singing, which unfortunately is the case with the usual quick studies in striving for an extensive repertoire. It is all too common this notion is explored with a student in a brief time. Of course, without sustained practice this cannot achieve a reconciliation with rhythm, nor the attention to specific individual organs; the complete inner and outer human being belongs in perfect balance to perfect rhythm. Any rhythmic study for singing, such as speaking exercises, should not be rushed. On the contrary, this would mean that an individual's education would become an enemy of the entire body, an enemy of perfect balance. Like many other paths, this may lead to the final goal, but it has no advantage.

This would incorporate notions of bel canto although more developed; there is a more profound development of the individual notes that can be achieved with the voice.

> The old masters demand healthy, supple organs, a good voice, and musical talent (singing is music, music is singing!). If a singer possessed these qualities, they began to train the voice, the breath, and the muscles. Starting from the middle register, the student spreads the voice to the top and bottom, gradually connecting the tones in rich alternation in terms of duration, height, and intensity. They taught themselves to "sing" in a controlled, slow study and a favourable climate. That connection, the legato of the individual gradually increasing tones that leads to a shorter or longer line that is music, is the primary element of rhythm. Every sign of a muscle not moving in rhythm disturbed the musical ear (music also with the primary element rhythm in the Helmholtzian[3] sense), and the teachings of the ancients were built on this, physiologically more or less or not at all conscious, empirical as one likes to say.

[2] Referring to Pier Francesco Tosi (1646–1727). *Opinioni di Cantori antichi e moderni*, 1723, German by J.F. Agricola, 1757; ders., *La Scuola di Canto dell'Epoca d'oro*, Naples, 1904.

[3] Referring to the German physicist and philosopher, Hermann Von Helmholtz. Grunow references his work here from his text, *On the Sensation of Tone as a Physiological Basis for the Theory of Music*, 1863, in which Helmholtz tried to trace sensations through the sensory nerves and anatomical structures to the brain in the hope of better understanding the complete mechanisms of sensation (Encyclopaedia Britannica 2022b).

AI.2.4 Gerhard Tischer, Rheinische Musik- und Theater-Zeitung, vol. 13, 1912, 20 January 1912; advertisement on p. 13 and information on p. 42. In Steckner 2002

In 1912, Grunow led a recital with her students that was reported on in the local newspaper, the *Rheinische Musik- und Theater-Zeitung*, by Gerhard Tischer.

> Miss Grunow always arouses artistic interest as a sound artist who is known far beyond the borders of our town and who is successfully striving to educate singers of the good old Italian school who are also up to the demands of modern art. Suppose you sum up the overall result of the evening. In that case, you can say in principle:
> There was not a single voice among them that sounded overstrained; the vowel formation was apparent in all of them.
> Their pitch was definite.
> Their breathing was correct.
> What does "right" mean in singing anyway? First, it was natural! Every note should and must sound so that the listener has the pleasant feeling of being effortless when producing the sound.

However, within this article, we can see a crucial difference from eurhythmics – the inclusion of colour in the presentation.

> At that time, the first findings about the symbol forms triggered by the phenomena had already led Gertrud Grunow to the understandable question of colour forms. These only arose when the inner tones of the means of expression received special attention. First, blue was shown as a circle, red as a square, and yellow as a triangle (with the point facing upwards).

AI.2.5 Rheinische Musik- und Theater-Zeitung, vol. 10, 1909, pp. 448–449. In Steckner 2002

Grunow's ideas would then move to triangulate these three parts (movement, sound, and colour) under the notion of balance.

> Education exerts a clarifying effect on the inner human being. It can free one from the compulsion and stiffness that every mechanical thing produces. Every beautiful tone is a delicate balance of the inner and the loose movement in the outer human being; everyone can gradually be found through the process and thereby make music, allowing the naturalness, and personality in the singing, will arise again.

AI.2.6 Wilhelm Rotzler and Anneliese Itten (eds.). Johannes Itten, Zurich 1972, p. 67f. In Steckner 2002

1919, leading to correspondence between him and Grunow. In Itten's letter to Hauler on 5 November 1919, he states:

> A few weeks ago, a certain Fraulein Grunow came to see me from Berlin. She wanted to lecture at the Bauhaus about the education of people through eyes and ears. I was very sceptical. After much deliberation, I encouraged my students to take a course with her. I go to her and find some things excellent; although her theories are not completely correct, I cannot judge anything. She says: "Sound and colour trigger movements in people, namely in particular centres, for particular tones and colours." In this way, she found a system of matching tones and colours utilising the consequences of movement. Try to let a tone be struck in yourself and then concentrate on this one tone, to let the whole body vibrate so that the body finally enters a characteristic form of movement that is different for each tone. The movement and the body's position are correct when it sounds most uninhibited and fullest. A person's vibratory capacity is significantly increased. The lady has good judgment, but I think there is a lot wrong with what she is doing, and I will tease her to see the findings.

AI.2.7 Die Tat, March 1920, pp. 929–932

In the spring of 1920, Grunow gave a course for children in the Kurhaus Waldesheim in Düsseldorf-Grafenberg, on which Heitmeyer commented:

> Whether we realise it or not, every movement in its vast sum of qualities is associated with "noise" in its imperfection. Noise is an imperfect sound, and the more perfect the movement, the more precise, purer, and rounded, the more the noise will form into a tone. The most direct measure of a complete movement of the tonus (living moving body) would be a tone, a sound. Every movement is in one direction. Just as the organic movement in plant life follows the light that penetrates it, and just as all created creatures are subject to this law of following the light, the direction and form of human movement evolve according to the influence of the light phenomenon affecting the body and imagination. All colours dwell in pure light; they represent its degrees. Every sound has its colour, which depends on the order of the overtones; these are the "other" tones that fit into the whole in a specific order, depending on the direction of the lights, the tone of the colour, and the forms themselves. The 12 tones C–B correspond to the 12 colours in light: blue, red, and yellow; the colours combine and are blue–violet, red–violet, green, green–blue, orange, white, silver, grey, and brown. The tremendous primary order, which is only indicated here in its beginnings, is identical to the rhythm of life. It underlies the rhythm on which life is built. Through this order, the harmony resides in the rhythm, which is made up of the right good proportions. As a

result, this intrinsically rhythmic nature of the movement has a harmonising, uplifting, and invigorating effect. This harmony in rhythm is harmony in its primary form, and it consists in the unity of tone and colour that I have been destined to discover.

AI.2.8 Eugen Diederichs, Subconsciousness and Form, The Act, vol. 12, no. 2, May 1920, pp. 136–137. In Steckner 2002

This idea of the natural order was reported by Diederichs, who attended a group lesson at the Bauhaus in April 1920.

> Soul life is being moved according to cosmic laws, which is why it does not live in a chaotic jumble but forms itself into order through rhythm. Only out of order does the spirit develop the richness of forms. In the beginning was not the word, the logos,[4] but the procreative impulse of eros. Now that the one-sided dominance of the intellect is beginning to falter, we can see the generative powers of ecstasy again. How do we gain ecstasy? By turning off our mind and balancing it in intense internal concentration, our ability to respond to the rhythm of sensual impressions increases. If we give this space, we begin to flow and then naturally crystallise. Anyone watching the young artists during a practice session of Gertrud Grunow at the Bauhaus in Weimar will experience in traditional forms what the mystery cults of the ancient Greeks brought, namely: the unconscious becoming tangibly visible […].[5]

AI.2.9 Schreyer 1956, p. 187

Lothar Schreyer, first master of the Bauhaus theatre workshop, explored this notion further, and described Grunow as the following:

> She, who was already approaching old age, struck us as one of the great men of knowledge of antiquity. The spiritual connections came from her inner clairvoyance of colour, shape, and tone as they build up the living to evoke shape. And she had recognised the harmonisation exercises and elaborated, through which these connections are awakened in every human being or can be restored. So, she brought people inwardly and outwardly "to balance". […] Gertrud Grunow was not only actually a *healing* person, but she also guided the practitioners in the exercises to clear recognition of the creative form to which they corresponded. […] I know that neither the pre-apprenticeship nor the main teaching would have been successfully carried

[4] "Logos" here is relating to the Ancient Greek Philosophical understanding, i.e. reason, logic, and discourse. The later use of eros in this text also relates to its philosophical use as depicting a life energy. This interpretation leads to the inference that there is a connection to a more ancient and primordial understanding of light and sounds and the senses. This can also be read in terms of the Jungian architypes of masculine and feminine (cf. Jung 1927), which attaches Grunow once again to more psychic and spiritual understandings of her theory.

[5] *Eugen Diederichs, Subconsciousness and Form, The Act, vol. 12, no. 2, May 1920, pp. 136–137.*

> out without Gertrud Grunow, and the Bauhaus would not have accomplished its creative work without her.

AI.2.10 Diederichs, E., 1920. Subconsciousness and form. The act. Monthly for the future of German culture 2, May 1920, pp. 126–137

As well as the horizontal movement, various gaits in the leg movements, and the position of the student's arms and gripping movements were present in the observations of these second-order exercises.[6]

> A young girl is standing there, thrusting arm by the arm in the air as if to hand bricks to the building, while her feet slurp across the floor in a dance rhythm. […] As a spectator, one is quite astonished by the expressive sign language of the girls' hands, this longing search in the accompanying body rhythm.

AI.2.11 Heitmeyer, H., 1967. Die Grunow-Lehre: eine Erziehung der Sinne durch Ton und Farbe. Ratingen: A Henn Verlag

Heitmeyer explores this by inferring the practice outside of the one-to-one session, and instead into students' day-to-day practices.

To achieve a balance between the spiritual and the physical, a harnessing and erection of the senses, the soul, the body, and the mind must be tuned together. The collaboration of the three elements leads to cognition, oversight, and appreciation. In a healthy individual, the three orders are constantly in use, it is only a question of which is more emphasised at any given time. There is a lively interchange amongst the orders.

AI.2.12 Gropius in a circular to the form masters of 13 March 1923, in Whitford 1993, p. 139

Gropius had complained about Itten's preliminary course:

> The consequence of the previous system (Itten's preliminary course) that we have adopted has shown that the individuals, when they are accepted after the preliminary course, are overloaded with fermenting thoughts and consequently weakened self-discipline. They now enter the workshop and are expected to participate in hard manual work, for which they are not prepared. The result is perplexity, which makes them unable to carry out the manual

[6] Radrizzani 2004, p. 53f.

work simply, steadily, and in an orderly fashion. Every stroke of the hammer becomes a philosophy, and the work itself gets stuck in a cycle.

AI.3 List of sources

Diederichs, E., 1920. Subconsciousness and form. *The act. Monthly for the future of German culture* 2, May 1920, pp. 126–137.

Grunow, G., 1920. Report to the Kurhaus› Waldesheim ‹Düsseldorf-Grafenheim. In: Radrizzani 2004, pp. 70–76 [12-page typescript that was unpublished during his lifetime, edited and printed].

Grunow, G., 1923. The construction of the living form through color, form, tone. In: Exh. Cat. State Bauhaus Weimar 1919 to 1923, ed. v. Karl Nierendorf, Weimar 1923, pp. 20–23 [Radrizzani 2004, pp. 77–81].

Grunow, G., 1936b. Farbformen, *Art and Youth*, August 1936b, pp. 179–180 [Radrizzani 2004, pp. 90–92].

Grunow, G., 1936c. »Psyche«. In: Radrizzani 2004, pp. 92–93 [unprinted and incomplete in Hildegard Heitmeyer's handwriting, 5 pages, copy of an essay by Gertrud Grunow from 1936].

Grunow, G., 1937a. A new conception of the essence of colour in its psychological-physical effect on the entire organism. In: Radrizzani 2004, pp. 94–96 [unprinted typescript of 5 pages from the possession of Hildegard Heitmeyer with handwritten additions by Gertrud Grunow around 1937a].

Grunow, G., 1937b. Colors and sounding sound and statics. In: Radrizzani 2004, pp. 97–98 [unprinted typescript with 3 pages with handwritten additions by Gertrud Grunow from the possession of Hildegard Heitmeyer, probably created around 1937 = unsecured].

Grunow, G., 1937c. »Ein neue Farbkreis«. In: Radrizzani 2004, pp. 99–103 [unprinted typescript of 8 pages with handwritten additions by Gertrud Grunow from the possession of Hildegard Heitmeyer, probably created around 1937 = unsecured].

Grunow, G., 1938. »Von der Farbe im Runden«. In: *Kunst und Jugend*, February 1938, pp. 36–37, 26 August 2018 [Radrizzani 2004, pp. 104–106].

Grunow, G., 1967. Own records. In: *Bildnerische Erbildung. Die Zweimonatsschrift* 3, 1967, pp. 17–23 [= reprint of the articles published between 1935 and 1938 in *Kunst und Jugend*].

Heitmeyer, H., 1967. *Die Grunow-Lehre: eine Erziehung der Sinne durch Ton und Farbe*. Ratingen: A Henn Verlag.

Radrizzani, R., 2004. *The Grunow teaching: the moving power of sound and color*. Wilhelmshaven: Florian Noetzel Verlag.

Radrizzani, R., 2009. *Gertrud Grunow's theory of harmonization. Master at the Bauhaus 1919–1924* [online]. A film by and with René Radrizzani. Available at: https://www.gertrud-grunow.de/film-kunst-forschung/film/dokumentarfilme [Accessed 22 September 2018].

Schreyer, L., 1956. *Erinnerungen an Sturm und Bauhaus*. München: Albert Langen-Georg Müller.

APPENDIX II:
Meeting notes with Afrodeutsche, Tom Richards, and Martin Tomlinson.

In this Appendix, I have compiled evidence to support the main thesis discussion which comes from the meetings between myself, Afrodeutsche, Tom Richards, and Martin Tomlinson. These have been edited to the necessary information which supports the arguments of the thesis.

AII.1 Meeting with Afrodeutsche, Greg Eden, and Alex Jovcic-Sas. 16 December 2020, online

AJS gave a background to the context of the project, and how it fits in with the rest of the NC programme.

AD: With what has been going on this year (Covid +lockdowns) there has been a move away from the experimental part of the music that Hen was usually doing and there was the opportunity to break forward and work on more experimental/exploratory.

AJS: The use of Grunow and Oram's (referred to as G+O's from this point onwards) work as a catalyst, to inform contemporary and digital practices as a basis for the project..

AD: What am I looking for with it, what is key, and the response, collection of materials form the Bauhaus/BBC collating my own thoughts around them. Get to know them and get more comfortable with how they have shaped their own practice around optical sound. Reflecting on G+O's work, their theories, and to keep me updated, collaborative work in how we work together on this and how we can provide new materials which highlight to the progress in the project.

Thinking about the language of the frequencies of sound, cymatics. (Look into this) a visual representation of hertz as a representation of the standardised way of pitching. And this is the beginning of the collaborative part Hen will look into what research she needs

doing, post looking through the archive material and then will ask me to go further with it in a way that will cater to her interests: researcher for hire?

Found sounds: Bauhaus Archive obsession, Manchester Central archive sound library, and there's a way of thinking of frequencies as an alphabet as a way of categorising the sounds as that.

Introduction to the way in which Grunow was forgotten. Response was around the language and the way that him. AJS to look at the lineage of G+O and how it has influenced other contemporary composters/theorists (look back at the Rene Randzali stuff)

AD: Harmonics – important, when the harmonics are right, then the work is right, and this way is how I am able to marry the two ways of the hertz, the colours and the harmonics of the orchestral instrument, is the way that these can be placed together. Response is the individual notes to the colours as a way of coding from them, and then use 12 tone music in order to look at the way of centring yourself through the music

Talks with other musicians about how they talk about the 'compositional landscape'. As a way of working to look at how they might be able to use that as a lens to translate, and the way in which music she makes is layered, and that is akin to the landscape paintings.

AJS: mentioned Bauhaus: Kandinsky, Klee, and Itten as a way of looking as colour as chords.

Share the archive – look through and allow her to look through and wrestle with it, in a way as to which to identify where she wants to dig deeper and to let me help her with that.

AII.2 Meeting with Afrodeutsche, Greg Eden, and Alex Jovcic-Sas. 19 February 2021, online

AJS: What do you want to look at and how have you found the materials so far?

AD: A lot to read through, couldn't get through all of it, watching of the talk and that was the best way in which to deal with things. Come up with a set of practices in order to structure the pieces and how to keep it together.

The chromatic scale. 12 notes, and the 12 tribes of Israel. The beginning of man. Give the name of a tribe to the name of a note. Colour and visual, and the way that she uses the visuals to the colours and how they relate to the emotion

Itten's wheel, and how they relate to the ways in which the colours work with each other. Grunow's doesn't work like that but there is definitely. Colour is just a note, but the way in which they then work to

Rules of attaching notes to a colour, it's her theory, and then it becomes subjective, what emotions had she given to the colour, and the way in which she says and how that relates to the person individually.

AJS: The patterns that came from the copious experimentations there is a loss of the subjectivities, and the physical reactions somewhat become universal in a way which is loses this subjectivity. Because the work is lost there is once again a way in which the subjective nature can be presented once again through the translation and through the interpretation of what she was doing, using her story as a basis, and not as an absolute right or wrong answer.

AD: This work being lost, and having to create it again, with a seed planted with her, the seed was planted just at the right time, with all of this going on at the moment, nobody has had to consider their own existence in this way. There is a turn to all of these different types of therapies, without things like religion, and we look into it as a humanistic way, we are having to consider the human, the cosmic, science, we really have to delve into these things on a personal level. Starting with her theories and practices, as a starting point, and translating it for our time, and making it go through these things.

Add an element of human to this. Suggest having a dancer, improvising to three movements, each movement is a piece music, which has been made form a piece of art that has been created. This comes from colours and shapes that have been selected, and that will become the musical score, or at least the inspiration for the musical piece. Create

4 chords, of which they are three notes form the chromatic scale, named each of the note as one of the tribes of Israel. The tribes were not balanced, and their interactions were very different and unexpected, how the land was divided still effects how the world moves today. How we react to certain colours, and how we react to certain sounds. Much in the same way that these tribes have influenced the way that we look into our social states and emotional responses to situations. If thee music then coveys an emotional connection to the dancer, get a natural reaction to the theories, we won't know what these pieces will do, if they will do anything, focus on the reaction, not the rehearsed thing, natural and emotive.

Wanted to use some more traditional elements in the pieces, including using voice, looking into different harmonics including the cello, and the playing around orchestral pitch, used all over the world except for in Berlin, changed by 443hz, orchestral is 445, standard is 440, humans resonate at 5hz. If those things make a human move? (As in emote, or emote through movement)

Recognising the spiritual moment with Grunow, biblical sense, it is a weapon, and a way of connecting with God, and it is something which is God given, and the spiritual element to music which is literal powerful force, will move your atoms, and a tool which can be used to do so. Everybody listening to things in their own way, mattering is subjective, there are so many elements, and the artist is the creator and you need to move away from it, in order to make go through other ears, other ways of processing the music in order to let it develop past what you can do yourself? (Make it more pop in a way if other people can influence it)

Two parts to music, the sound and the emotive part, the melody and the pace, when you combine those two, there is a universal language which is created then for people to engage with it. The emotive, does not work without the technical, the mastering engineer, if the brain goes towards the technical, then the artist needs to have the emotive really present. And this is the hope with the dancer in order to receive the information form the music, with no prior information, and maybe with a visual element.

AJS: I have had a conversation with Tom Richards. Want to include working with him on this project so that Oram's materials and the machine can be added into the heart of

the song writing process. Not to eliminate the stuff which Oram is bringing to the table. Talk about Mini Oramics.

Work around using the machine, and this is the basis for her own use of the machine, and the way that she can use the machine and use it in the piece or not.

Creating a 12-note scale in which can be used as the basis of the composition.

Reading a lot of harmony, cello and mini Oramics can be really good. Recording of the sessions.

The dancer is a sign of the times, and it is really good timing to be doing something like this, boutique live performance in which there is 30 physical audience members, and there will be a Q&A. date still tbc, June/July time.

Standalone performance, AD doing a speech, doing a lead up to it, with different academics, and with different angles on optical sound, which Hen can engage with it. Henrietta says no, insular process, happy to meet with Tom, but others would be too much. And there is a way to cross pollinate with their work coming through me and making me have their ideas and influences, and then from there the influence is coming through.

Decision for an introduction of me and Tom in which will happen very soon afterward this meeting.

End of April for the core structure, and the core of the theory and the notation and mapping. And the actual movements, will have to be recorded in a different way – create the language and then use that and go from there.

Dancer in mind? Few options, the Clarke tour, and a choreographer in the same to, in place of war? Attached to MIF as AiR. Not certain, suggestion of Matthais Spirlling.

Modern Classical is electronic music, and she always uses classical to make a statement, on the timelessness of the work which is done in classical.

Tom Gunnersbrooke, Metaharmonies, set up a meeting.

AII.3 Meeting with Afrodeutsche, Tom Richards, and Alex Jovcic-Sas, 17 March 2021

Logistics, and what is going to happen, and how the collaboration is going to work.

TR: come up to Manchester, have a day to use the machine and to go through some training and to be around using the period just to have a look through. Otherwise, then there can be an idea of sending scores in order to feed those through the machine.

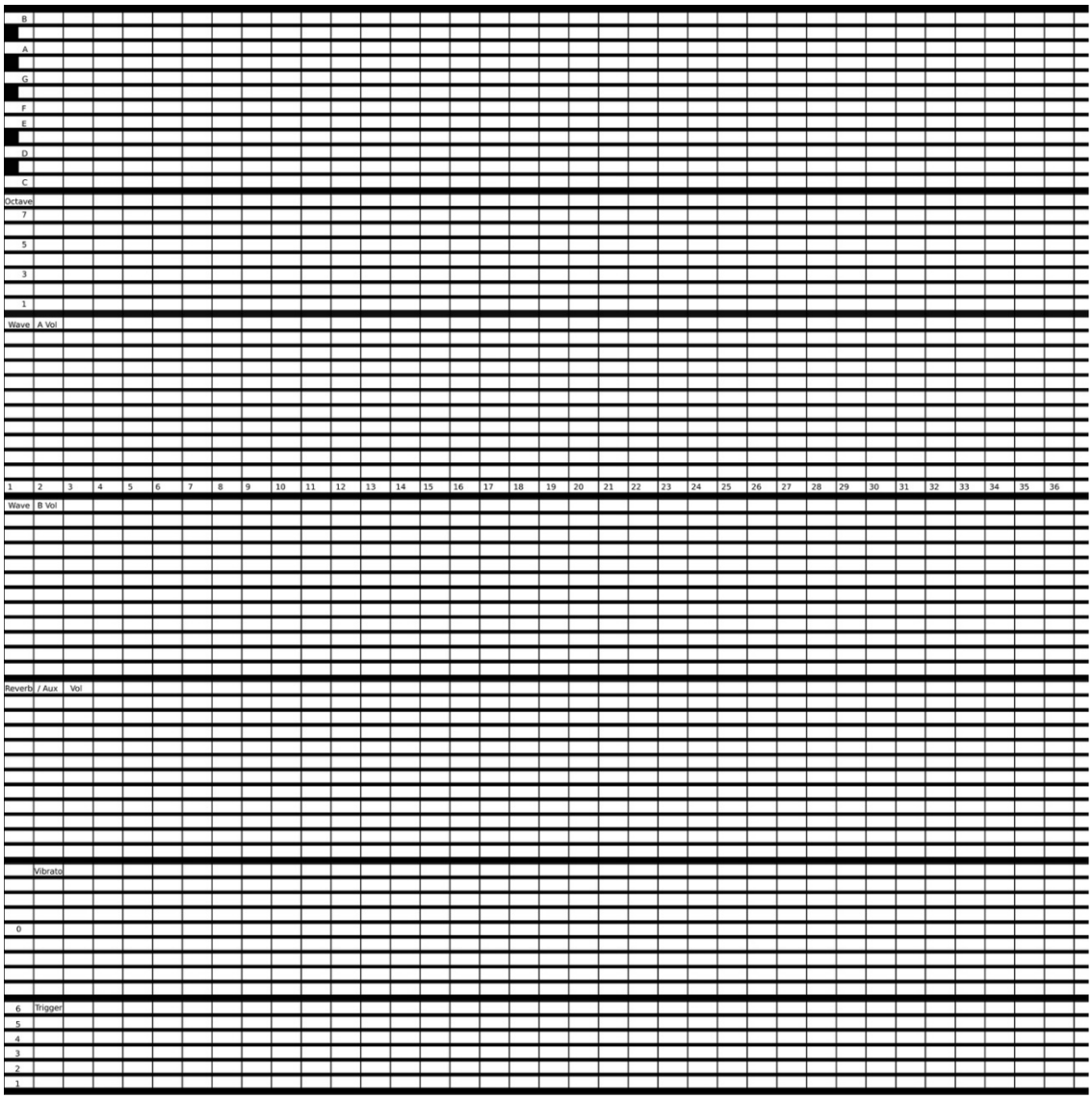
AD: 3 movements, based off of drawings, of which there were some displayed in the meeting, (and hopefully those were there in the stuff which is sent through) which are then played for a dancer to improvise in with.

TR: people often what to put graphics through the machine, and then they usually come through as really squeaky sounds which are not very pleasant. It is better to be an actual score, and there is the possibility to make some samples with it. There is a parameterisation, which looks like a Cubase Piano roll, and there is a section which is pitch, octave, 3 for volume, Volume a, Volume b, and reverb Volume, it's not spectrographic. Graphic drawings will go through all these different sections.

AD: this was my styling, and try to get a version of the chaos, and try to manipulate it and then try to work with that to make an actual score. To make a representation of the drawings, and then edit and refine those until they become something which is useable and workable as a piece of music. Because that will guide her work.

TR: Pitch and volume is more like a graph, with two lines, it is going to be jumping between the two. Single lines will work and will follow them truly. All parameters are linked so there will be no pitch with no dynamics. With the synth element there is many different ways to change what is being fed through the machine, for example the drawing could be translated to be read by the machine, and then that could be altered depending on how the synth part is set up (Tom then goes into a demonstration of how the parameters can be changed with the various knobs and sliders.) (12.23)

AD: Is there a schematic of the front panel? No, but there is a photo, so that she can have a look at the parameters. Send over the parameter sheet, and then have a look at the synth part as well so that we can discuss how it is used. Found here:



AD I Am excited about making an actual score within these parameters.

TR Film with Frances Scott, this is the most recent example of what has been done with the Mini-Oramics, Wendy Carlos/Beethoven stuff in there. There are two recordings on top of those. The machine is monophonic, so in order to get any harmony you would need to use several different recordings of it in order to have different layers.

AD wants to work with different layers of harmony, and a lot of the work that she has done recently has been using vocal layers, (12-13 layers) in order to create pattern and shapes and repeat, and this would be the way to use the machine

TR mark out a tempo with a red marker, in order to use it as a framework, which can them mean that the work can be overlayer later (make sure the tempos match up post recording.)

Drawn part (AD curious about notion) Top part is one octave, c-b with the black notes, the white channels are where you mark that. Pitch is drawn as dots, as a sequence, marks in the octave, shapes will do through all of the pitches, and if you want to have a clean pitch, it is better to do them as dots. But nothing will come through without that dynamic markers also being put in.

AD this is very like midi, and this is the language that I understand very well, and there are like cello/string pieces, which can be put into the machine

TR any monophonic score, or even a midi score can be put into this machine and can be used as the basis for the composition. The disappearing is when it is read. Things are not read the same forward and backward.

Trigger is how they can use this part to sync the machine up with drum triggers, in which can be controlled on the score, this was not part of the machine, but it helps with those who are rhythm-based composers. These are six drum tracks that come out as pulses. Euro rack level pulses. Can be used to do other things like tun on lightbulbs.

AD Writing in tempo, is there a global clock, or is it visual, or digital.

The score is attached onto the lightbox on the top, and the tempo is written in the trigger, and this is the best way to link this up with something external. Not as precise as a computer needs to be a tick in order to.

Writing something in strings, with no tempo, and then adding some piano, and it was chaos

There is a ¼ inch jack, which has A, B, and Reverb, but also a minijack which takes out all three parts individuals. Mix, A, B and Reverb.

A/B waveform, vibrato works like a mod wheel on a keyboard, can be a pitch bend of vibrato. (This is how my brain works) DO You can't see the music on tape, and you need to have a musician to interpret it, she just wanted to be able to have the music be played by the machine in the purest tape form.

AD: how I have learnt other people's pieces of music, is by colour coding each finger, so that can be translated onto the keyboard, as an alternative way to using the notation. In awe of the pieces. Overload of all of the information.

Send over a midi file, or just a doodle, and TR can send it over.

Jump into the writing, and then send stuff over just to get an idea. Wants to write on it herself and have an idea about it.

TR spend a day/day and a half just to go through the syntax of the machine, and then go from there. And then go for it. Look at the film to get an idea, best bit is the last 3 minutes.

AD Print off the score and have a play around. But send the original drawing just to have an idea of what it does sound like. (Plays some squeaky sounds form a workshop. Which is parameterised) Doing just a doodle that goes across the parameters, it is quite squeaky, but it is something which is workable.

AD Want to do both, some chaotic, to have both, and something which is fun.

Is it going to be a performance with the machine, but this means that there can't be a polyphonic piece, with the way the machine works

AD Hadn't seen herself as being involved, the dancer would be the piece, the dancer would be the translation of the work. Saw the visual element that was the graphics that was created, and this could be used with the MiniO. Because of the pandemic. You are connected with who is in front of you. Need for a couple of weeks, which needs to be done daily, and there is a lot which needs to be figured out.

Come up to Manchester, being in the studio environment, for the recording/safety (pan) Happy to lend the machine, which would be easier at home, and every time it moves it needs to be recalibrated.

Doesn't want to have it at home, because she is worried about how the machine as well as its wellbeing? Maybe transcribing stuff, as a way of making sure that it is

The machine is insured, and it is ok to have it. Happy to have it in the studio.

Want musicians to use it, especially female musicians, as a forward-looking thing in order to give it some current cultural significant.

Changes the way in which they work. Going to be bringing it, 2 days somewhere in order to have it calibrated, and then leave it for a couple of weeks, and then pick it up at another point.

Have a think through and then reconvene in a day or two. In order to organise the dates. Bring it to Manchester, and set it up, and leave it. Talk about the dimensions of the machine, and how it is physically going to fit into the studio space.

AII.4 Meeting with Afrodeutsche, Greg Eden, and Alex Jovcic-Sas. 23 April 2021, online

AJS: how was working with Tom Richards

AD: Wasn't what expected: stunning beautiful piece of kit, ran out of time. Tom went through everything that he possibly could with the machine, and how even to fix it. Set up in the studio, and what was done instead was a collecting exercise that got together all

of the possible sounds form the machine and made it into a “Henstrument”. Every wavetable, in every note, in ever note in high and low octaves, so that there were enough variants on each sound, and the plan then is to drop that into a sampler on Ableton and use it like a normal midi plugin would be like. Using the patterns and shapes, into the chromatic scale, and it is very time consuming.

So much time figuring out what you can do it, is so that there is more functionality. Which means that there is a lot which can be done with it, and the more time that you spend with it meant that there was more possibility. For example, the addition of the drum pattern part.

The drum sequencer was there as well, and it added a layer of, which took away from learning how to use the machine. Sonically it was not something which she would want to work with, it was something that was reminiscent of Raymond Scott, a very 80s synth. The way that the timbre works it was very difficult to keep time with it, and through playing with it having to draw, and it would be something that would need to have a lot more practice with, which is not something that could be done at this phase of the project.

Socially though, the machine is something which I think that I have managed to capture with the sampler. It’s not an emulator, and it has worked its way into this in a much better way than if it were in a live sense, to have to draw out the score, and have it pitched in the right palaces, it’s really a much longer project. This is better because it is a sequencer and a synth, learning how to use the Oramics machine as a workstation is different to Ableton, so it was like learning a new process all together in itself. What I have done means that I have been able to work with it in a format which is much more conducive to what she is used too.

PROCESS: Learning the machine, working with its material, having to edit and rub things out, drawing in red, it was very time consuming, which meant that the creative process hit a wall. A brilliant experience, and it is not built into a machine that is functional as a pick up and play instrument, because it is unlike anything else. There is little to equate it too in terms of contemporary instruments which I am familiar with.

The point was never to have this machine as the only useable part for the composition, it was more so that you could have a greater chance to understand how to work with the

machine, and what Oram was doing to make something which would then be able to have a base in which Oram's practice can be worked into the composition. Good to hang out with Tom.

AJS: how is the composition progressing aside from the machine?

AD: The format of the art was not something that was clear up until this has been done, and so there was something which came out of working with this machine as well. I have decided to work with card, and so working with those shapes in card, which then correspond to the colours as part ow what Grunow was trying to convey, and then to arrange them in a way which is pleasing to me, and then to translate that into something which can be expressed sonically through the composition. This is the basis of the movements, and looking into the movements, in collections of colours which I like, can then be used as the basis of the composition. Do some art and something which is enjoyable, and free form the rest of the rules of compositions.

I worked with a lot of different materials, including lots of different paints and fabrics, but nothing gave the definition. Firm crisp, no blended lines, and can be manipulated into a (artistic) composition which I can be happy with – something which is aesthetic before it is translated to music. Moment of panic, in finding the format, but now it is going to be a process of building.

Something which is visually interesting, as a process of optical sound

Greg Eden: will it need to be documented?

AJS: Everything which can be shared would be good to have. Particular interest in how they worked once the physical artwork is there alongside the sonic artwork. As well as photographs of the work as it unfolds.

AD: The piece is not finished; however, I have Identified that I want to work across three movements, which cover these note combinations G, G♯, B♭, and D; E, E♭, A, and F; C, C♯, F♯, and B. There are other notes present in each piece, however, these were the ones which were used as the basis. there has been no dancer yet. Not causing stress, but it might not be the best direction.

AJS: Any thoughts on Dancers? There is a potential if there is not to work with Dance4 which is a local dance collective, and there is a potential to work with them. 10 weeks for the ACE grants to come throught, so I am happy to arrange for a dancer to get involved in the project as we now have the extra funds to support this.

AD: Ballet company in London, but there was not clear date there was no potential for them to take it any further. Once there is a date then they can go back to the company and work form there.

Thinking again about the performance and the want for it to be a visual experience, in which everything is translated. It is really important to rediscover the way in which the person is key to the music, not just for Grunow's experiments, but also the interaction with the machine in Oram's work.

The way in which the machine is used, and the strokes of the lines, and the way in which you have to observe, lean over the machine is all very tactile. Which would have been even more present in the working of the original machine.

Would you be happy for a Q&A, which would be with us, and the performer.

A lot depends on the next meeting, and the way NC are planning on reopening once again.

Experimental stuff, which might find its way into the movements, and manipulate them and sit with them. But it's just noise at the moment, and it is not worth sharing.

Future potentials of collaborating with the Oramics foundation, and Tom is a good connection for that.

AJS: Live performance as a key and crucial event for the research, and at the moment that is not looking good in terms of the covid map.

AD: Everybody is freaking out about the performance, it's just a massive level of anxiety towards the unknown, described through the meme. Going forward with trepidation and doing everything I can just to prepare myself to be safe in this situation.

Looking to block out a couple of weeks in august for holidays. It would likely be Tuesdays, Thursday or Saturday, most likely Thursday or a Saturday. Get back to them with a firm set of dates. 5th/7th August?

AII.5 Exit Interview with Martin Tomlinson and Alex Jovcic-Sas

AII.5.1 Tomlinson's initial way into music

And yeah, I think, um, I mean, obviously when I started out. When I got into music, I got really, I, the only reason why I got into music in my twenties, because it was, I was in galleries in painters. The reason why I got into music was because of painters. And if I ever thought I could have sung or anything, you know, I would've just, you know, put gaffer tape off on my mouth.

yeah. But, um, but anyway, and. Um, but then you get into that whole music scene and bit of the music industry, whatever, but coming back to March and Richard was just what really genuinely looking at, um, to, to, to discover something that you'd never heard before and, and the journey of that, and just, you know, You know, record, you know, having these amazing microphones and recording water mm-hmm and then also recording the sound of the wind and the glass round Canary WARF and yeah.

And generators and data generators. And then, then, then composing out of it, you know? Interesting. So, but I will, um, I might send you. Some of our work. So, you can just have a, have a listen to, you know, oh, I say you love that. Yeah. Yeah. To see if, you know, I mean, uh, just, I guess it just allows a kind of window into the kind of things that we've been working on.

AII.5.2 Tomlinson's engagement with the project with Afrodeutsche

Yeah, definitely. I think, I think that really great. Yeah. Um, just, just, um, out of curiosity, actually, because you've, you've just kind of said something, um, After I was speaking about the work with me, and he did. How much of it did she share with you before, before you kind of came on board with the project? Can you say that one more time, Alex?

What was that? How, how much of, of her work did, did she share with you before, um, she asked you to be on board of the actual piece. Oh. Or just in general? Like the, the

process of, of the composition or anything like that at all? Um, well, Me and Henrietta have been as I've been friends for some time. Yeah. So, we've been friends looking time with the conversation.

She, I think Henrietta, she, um, I think it was very, I mean, I think I got the, I think I got the score maybe like three weeks before the, maybe a month, three weeks before the performance. Yeah. And she wasn't sure whether she wanted to give it me. Um, if she wanted to even just like, I think she's even considering giving me, giving me the, the score on the day to see how I would react in real time to it and stuff.

Yeah. Um, so, um, but yeah, it, it, it, I mean, I was never part of the process of creation, you know, so it was more a case of like, it came, um, yeah. She sent it to me three weeks before, and then I had to just kind of, you know, go inside it and get obsessed with it and then kind of find my own, um, yeah. Meaning within it and stuff.

Yeah. Yeah, of course. But then it's, it's like, I, I think this is, this is really interesting obviously, because you know, thinking about this idea of, um, kind of like I was saying earlier about this kind of curatorial idea around kind of events, practice and performance, mm-hmm the way that, that we've kind of done this project kind of by accident has become.

Very kind of like disruptive and kind of, it's quite, um, it's not as you'd expect like a performance to go, you know, you'd, you kind of hope that there's like, okay, so we've got the score that's been created kind of quite meticulously, which then kind of goes towards the performer to then kind of say, okay, so we're going to choreograph this.

We're going to make it something which is, um, you know, kind of a very like, you know, it, it, it's saying it speaks the same narrative that the music is trying to go to. If that makes sense.

think she definitely went out her. She thought about like the less, she said the better. Yeah. Which I thought was really interesting. And I think every time you. You know, when you give, um, you know, you know, every single, like I think I said that in, when we were doing the interview, but every single performer and every, you know, dancer or every, you know, someone who's going to interpret a score, they just got their own baggage.

Haven't they, you know, like, absolutely for me, that whole piece was, you know, my father died. Um, I was just kind of performing my father really. Yeah. And he's, you know, my father died in. From a very, quite serious illness. Mm-hmm so, and so I was just bringing that baggage to that score and, and I was just accessing all those kinds of, you know yeah.

The tones and, you know, the, the coldness of that score. Cause there was, there seemed to be a lot of, um, um, my partner told me off of saying sadness. He said, I should say something else, but um but yeah, so yeah. And then, and, but yeah, very interesting that HETA just gave me the get, um, get you. Handed the score over and said very little of them, but I think it's very interesting now, Alex, because I think again, if I, um, we reperform the score, you know, I definitely would like, uh, just a couple of little nuggets from there.

Oh no, absolutely. Yeah, yeah. You know, and I think it would be just very interesting to. You know, be aware of the colour score and, and, and those emotions and also the space and light, you know, so because the, I guess, you know, the MEISON, you know, the staging of it is I just think it'd be really good to come and perform this in London, you know, at the IC, you know, on some kind of program at the ICA or only one of the tech tanks or something, I think it would be really, um, and cause I think sometimes.

With these kinds of projects, they're so particular. And so, um, yeah, it's kind of in, it's within fine art context, isn't it fine art and sound and performance. And, but I think the chance to, you know, rehearse it more or, you know, or just even sculpt it even more, you know, it just, um, Yeah, it'd be sad to let that go, you know, just from doing, cause you do one show when Nottingham, you know, if you, if you did that, like, you know, um, yeah.

Say you could even do it. Um, four times in a day. Do you know what I mean? At different times? Yeah, of course. Yeah. And, and then it just becomes much more, then you get it, then you get stronger and stronger and more refined and more precise, you know, and then it becomes are more than you hope it becomes a magnificent piece of yeah, no, absolutely.

I mean, I think it was a magnificent piece of, um, a performance, you know? yeah, yeah. My body my body. Yeah. Like. My poor body. yeah, no, absolutely. I mean, sorry. I, I, I, yeah, I, I agree. I think it's, um, it is definitely worth kind of continuing and stuff like this and, and as much as, yeah, I, I would really want this to happen, um, for sure.

AII.5.3 Tomlinson's story of his dance and the inspiration behind it

I guess I think that, um, as a, as a performer, as a dancer, you, your kind of, you always have to train, um, really hard.

So, you're almost like an elastic. So, you're, your kind of almost become this, like just, I don't know, like you just become, so, um, you try to just be super supple and, and, uh, uh, so you can just really respond, um, honestly to the, to the, to the music. But I think there definitely was a, I, I, I brought the piece down into three into three sections mm-hmm and these three scores.

Um, I think also for me, um, I'm really interested in, um, Men's mental health. Yeah. And, and, and, and, and, uh, you know, like I I'd said that, uh, you know, um, my father was, uh, um, Yeah, my father was an, my father was an alcoholic and he was just a really bad death. And, uh, it wasn't bad in the final moments, but it was just this.

And so, for me, that's kind of consumed, it consumes me in so many ways. And like, I have a project I minute where I'm working with a gallery, and I might be gone working with many in prison. But with dance, you. So, I'm very interest in that. But so, when I, and so when then I, so I was just pulling from that, oh, I'm constantly pulling from that resource of my dad really?

Cause I guess it's so a isn't it, you have a wound and you just go to it and uh, and so, yeah, and then the, the, this the piece, I just saw it within these three, these three. Yeah. These was three arts, which is, this kind of was the beginning. Was this just. You know, this man kind of, I don't know, he could be anyone on chairing crossroad or, you know what I mean, or whatever, but it's just the elements of kind of beating, beating, um, against him.

And then in the middle I just saw, um, yeah, I just saw him fighting with his shadow and, and, and the battle that we all have with ourselves, you know what I mean? Yeah. And

the and. The, the, you know, it's almost like the youngian, isn't it? The youngian the shadow and, and, and that kind of darker side of yourself, which is really about yourself.

Yeah. And then at the end of the score as well, it just was, I think when had Mary Yetta comes in with a piano at the end, it was just so bloody beautiful, but it was like, it was, it was just redemption. Do you know what I mean? Yeah. All I heard in that piano was redemption. So, The, the Sy the sounds at the beginning of the school were just, they, just, to me, my imagination, it was just a cold, hard wind, you know, in London you get these really long, like Holloway Road or K

Yeah. You know what I mean? Just get these like grey, grey roads that just, you know, test humanity and then yeah. And then the battle in the middle. So that was really, and I think from a performance aspect, any dancer or any just performer, you just, um, yeah, you, you just try to get into that really supple, soft place of alertness and, and of improvisation, you know what I mean?

So, mm-hmm and then you just kind of, um, um, uh, try to. Yeah. And also, then you just bring yourself to the stage and just really be open to kind of a bit of unexpected. I'm quite good at that. Actually, Alex, he's actually been quiet, um, um, very unpredictable, which kind of sometimes can bring a bit of like, um, danger or.

you know, but it was very interesting after that performance for you, for, uh, Nottingham, because also it was very interesting in many respects, because I hadn't seen myself on stage like that in a while and I, yeah. And I looked, I thought who's this old man I was like, who's this aging man on stage. I was like, always me.

You know what I mean? Yeah. But, but also, I think I might have said that to him yet, but I think it was like. Very interesting to see myself getting older on stage. Cause I found it actually really massively. Um, I thought my God, Martin, there's even more possibilities here for. You know what I mean? Yes, course.

Yeah. You almost let youth go and, and actually when you let your youth go a bit, you actually become more interesting. do you know what I mean? Yeah, no. I feel that I feel that I, I think a lot of performers find it hard to. Sure, that they're aging of themselves.

Yeah. But I, but it's a very sense it's, you know, it, it's actually very liberating because yeah.

I guess it kind of comes to this idea of, you know, you're just kind of accepting who you are. It's not like mortality, it's not a bravado of like, you are this invincible creature you are model, you know, at the end of the day, you are someone. Who, you know, susceptible to the ravages of time. Yeah, absolutely.

And I think it takes a bit of humility and, um, to, uh, be able to reveal the mask. Do you know what I mean? Yeah. Kind of like pull the mask down. Cause we're all wearing these masks and, and performers, you know, there's a lot of, you need, you need an aspect of ego to bring yourself to the stage. Yeah. But you know, you don't.

I think it's easier when you're younger, but when you get older, I think like that's, then we'll start separating the men from the boys. yeah, of course. Yeah. But I think more, but yeah, so this, um, I guess when the premier gave me the score, it was just so, I mean, that was just amazed that she just was like, you know, it's open to you Martin, really?

And, um, but yeah, I mean, I'm always pulling for me right now, Alex. I'm kind of. Because of my father's death and because of the struggles that I went through afterwards, I'm, I'm very much interested in, um, um, heterosexual middle-aged white men because yeah. There's such an underrepresented demographic of and suicide amongst these men.

So high. Yeah. So, it's just something that I'm constant. um, digging into, and then I'm doing a commission right now with this gallery called the resident gallery in London. Yeah. And she's commissioned me to, yeah, we we're trying to get me in, in, into prisons. Yeah. Um, because I just believe that dances are, you know, as much as it, it can be a, yeah.

I just think that dance has the. I just find it very interesting to explore choreography and movement with, with prisoners. Really? Yeah, because then there's a sense, again, there's some, it's just something that I, yeah. That I I'm just really interested in and also using arts as a or dancers are kind. Yeah, maybe social activism.

I don't know. You know, I mean, it's something, but it's, it's, I think it's, um, artist therapy is very much like a, a big thing at the moment of, um, kind of research topics and stuff like this. So, kind of like how you can use the arts to like further peoples to kind of education or for social causes and injustice like this.

And I think it's, you know, I'd be really interested to see what happens at the end of this project, just because, you know, in my head, obviously I've got like a very kind of. Particular view of like how kind of a prison system works. I have no engagement with it myself. Like, you know, I just kind of am influenced by pop culture and TV, you know, just kind of thinking about like bringing someone in to do to a dance thing in a prison like that.

To me, just like it's like sister act or something. I don't know. Like, no, no, no, totally, totally. I mean, um, it's just really, I think I was, um, I, yeah, I think it's, I think I was, um, yeah. Looking at, I just, yeah. I mean, um, I kind of the, um, um, how do I, how do I explain it? Like, I just think that, um, yeah. I also did a lot of movement as well.

I worked with a; I did a season. I did a, like a season with, uh, asylum seekers. Mm-hmm, you know, I worked with the British red cross. I was working with people. Uh, I did, and I did movement with them, you know yeah. Which is really great. Cause suddenly like, you know, you're not around, you know, kind of, you know, hysterical divas yeah, no, exactly.

Yeah. You're around people. could genuinely actually want to like, have an interest with this and I've never had the opportunity to do so. Yes. Yeah. And then it becomes a point where you, and, and it becomes something very real. Yes. And it becomes something that very, and, and it, and it, and it actually rewards you in a way, in an insightful way.

And, and it humbles you on oh, absolutely. Yeah. The journey of people and yeah, the power of, of, uh, all that stuff, but yeah, but definitely going to. Men's mental health and, and it's just something that, um, I, it I've like, um, because my, what happened was my family lost everything. My father in the financial crash of 2007, my father, um, we just, as everything that as a recession disseminated the north, it disseminated my father.

Yeah. You know? And so it's just become this, um, Area of, you know, what, not research, but like, it's, it's more like, you know, when you have a wound like that, you just, you can't, you, you have to, and if you're an artist, you have to expel it. You know what I mean? So it's this kind of, but wanting to explore it through dance, you know, so, and, and these avenues and, and to tell these stories and stuff like that, the, um, but also, I guess, particularly working with people who have kind of experienced, I guess, like a similar sort.

Um, loss in terms of, you know, like the loss of freedom, you know, be it through different actions and things like this, but they kind of like, you know, in the same way that your dad kind of went through the, the process of kind of like losing everything around him, to kind of the prison context is like, you lose everything around you, but for a different reason, Yes.

And I think it's also, like I was saying, you know, one of my, since my partner D you know, um, that one of my favourite films of all time is the PAs film, which was the gospel, according to say at Matthew, do you know that film? I don’t know. Got, um, so it's, it's his movie and he kind of shot it in Southern Italy, but he kind of just, he, he made it always EV he just used local people.

Yeah. And it, the way that he holds that camera and the way that he just holds that space with those people is one of the most powerful pieces of cinema. I've ever seen, you know, and it's because there's something so unguarded and real about the people that he cast in the film, you know, and, and, and, and it just it's arresting and it, and, and it's just incredibly beautiful.

So, I think when you bring performers, you know, a lot of people these days, Alex, I don't think people, you know, the arts are becoming such a harder and harder thing to. Involved in. Yeah. Do you know what I mean? Yeah, because it's, you know, to, I just find that sometimes when you find these raw diamonds and who may not have had the privilege of higher education or, you know, certain whatever, but there's, there's these diamonds and, and.

The, you know, there's a, there's a beauty to be found there and stories to be told. Yeah. You know, so, and like, we were talking with my friend, um, at the residence gallery,

we're thinking of, you know, there's just all these amazing, like fashion photographers around, but bringing them on board for the project to just document the, just, just, just, just some documentation and stuff.

But yeah, it's, it's, it's um, yeah, I just. I don't think it's about like marginalized people, but I don't know. It's just, I'm just, you know, when you just got a gut thing, like I need to work with men in prisons, you know, mean no Absolut. No, I feel that it's and you know, like, I mean, maybe I'm a bit like, you know, people are thought, well, you know, you're a fucking flamboyant, you know, what I mean?

Like jail bit, but I think it's more case of like, I just know there's, there's something to be done here and I know that, um, and I'm just, uh, and to, to push myself and see what kind of, what, so we've, we're working in the prison, then we'd come out and, and we'd do a series of workshops that would build towards a, a, um, a collective performance at the end.

Yeah. And, um, I think it'd be just very interesting to. How that transpires, but yeah, but, uh, so, but it's, but this is, uh, but, but that was kind of like, you know, um, Were, I guess that's, that's where he's score was, um, inspired from, but hop, I didn't chew your ear off there no, no, absolutely. No, this, this is really interesting and it's nice to kind of just have a break and actually chat with someone about talking about art, you know, because I barely do that over year, um, these days.

APPENDIX III:

Audience feedback for *Eight to Infinite*

AIII.1 Survey responses from the event

On the night of the event, I conducted an online and in person survey. In order to access this survey, those who were participating online could follow a link in the caption of the YouTube video. In person they could access this survey by scanning a QR code which was displayed in the event space. The survey followed four questions which were 1. Did you watch the performance online or in person? 2. What really stood out for you in this performance? 3. Did anything inspire you about the histories of Grunow and Oram? 4. Would you like to hear more about this project? (which gave participants the opportunity to join a mailing list). This survey collected 5 responses on the night, of which three were online, two were in person. I have put these responses bellow for questions two and three, and numbered the responses 1-5, 1-3 are online, 4-5 are in person.

AIII.1.1 Question 2: What really stood out for you in this performance?

1. The performance was an interesting interplay between creating sound with visuals (afro), and creating visuals with sound (dancer). I would have liked to have seen some of the visuals that inspired this particular musical piece.
2. How the modern sounds and modern music style complemented the retro sounds so well. The energy of the performance was inspiring; I loved how it matched the tone of the music so well.
3. The connection between colour, shapes and music, also the passing of the baton from researcher to composer to dancer. The importance of the conscious mother (the space) in which the constituent fragments could come together to create the finale.
4. The performance was the dancer was a lot! I really came for Afrodeutsche, but I found that the dancer was really over powering. The performance was great, but I feel a bit cheated that I couldn't really concentrate on the music. The Q&A was nice.

5. I liked the music, and I wish that had more presence in the performance. The dance was too much.

AIII.1.2 Question 3: Did anything inspire you about the histories of Grunow and Oram?

1. The idea of optical sound is fascinating, and is a new concept to me (at least in the context of conceiving art). I have certainly gained interest of the process behind turning graphics/visuals into musical pieces.
2. The idea of thinking about music and sounds in terms of colour and shapes is very interesting and new concept for me, which I will try and listen (or see) to in the future
3. before this I wasn't aware of them but they are going to be part of my own research
4. Really cool. I haven't heard of optical sound, and I want to try and compose with colour myself, maybe without the movement bit.
5. I would love to have a go with the Mini-Oramics machine, I am a visual artist, and if it can be used to translate my work into sound I would like to explore that possibility

AIII.2 Focus group responses

After the event, I showed the documentation of Eight to Infinite to a selected group of musicians, and a group of other PhD candidates and professors. In these sessions, I invited the participants to explore each piece individually, as well as viewing them with the dance performance, to see if there was a differing response to the music with and without the dance. Responses to the music presented much more personal results, whereas the addition of the dance video created more disrupted responses. The responses are organised bellow by musical movement.

AIII.2.1 First movement

1. Words used to describe the first movement from the PhD focus group: Earthy, Forest, Contemporary dancers, uplifting, tension, fog, threat, (Not Calm) ocean.
2. Colour responses from the PhD focus group: Blue - green – red; terracotta/red then leaning into brown; Blue, Red Violet, Grey; Brown to Blue/Violet; Violet,

Green, Silver; Grey - brown, - Silver - blue, and the tension resides between the colours and their definitions for me.

3. General feedback PhD focus group: Don't really agree with the colour coding - in relation to my own residence with certain colours. Ephemeral shifting patterns; Building; Scratching; Heart beat; Subtle; Pattern; Similarities - ebbing and flowing; Shifts from one plan to another other; Electronic; Peaceful; Grounded; Fleeting; Like water, flowing
4. Reponses from the PhD focus group about the music with the dance: So find it annoying…; distracting; a different interpretation to the one which I was feeling; too aggressive, unsure of itself.
5. Musicians' response: First section is really cool, it's like a blend of Ivy Labs, Eluvium and the soundtrack to the film Annihilation; on first impressions I really dig that rhythmic ambiguity that slots into a solid rhythm with the addition of that kick sound that creates a regular pulse. Big fan of that using rhythmic tension and release, not just harmonic tension and realise. Love that

AIII.2.2 Second movement

1. Words used to describe the second movement from the PhD focus group: Story picture, huge buildings, no voice, noise, dancing, hard beat was obscuring, uncomfortable, exploring running, solitary, urgency
2. Colour responses from the PhD focus group: Blue/violet with brown with terracotta; Grey/brown to blue/blue-violet, blue/silver; Blue - Green/blue - Grey, - White; red-brown-blue/violet-white
3. General feedback PhD focus group: Anxious Rapid Beat, Club; Steady grey beat; Shifting modes; Darker then first; More recognisable - connection to Old school; More anxious, less peaceful; Faster, faster; Hectic; Speed; Darker; Urgency; Walking away; If you were to ask me to match the score to the music, I would have chose the second image for the first piece, and the fist image for the second.
4. Reponses from the PhD focus group about the music with the dance: Assertion from the dancer fits better with the ideas of the colours which is involved in making this piece.
5. Musicians' response: The second part is interesting how the beat becomes much more intense and almost DnB, yet it keeps that ominous ambient vibe that still keeps it spacey and trippy. As it progresses the beat gets pretty intense and a pretty

stark contrast to the rest of the track...like you could take the beat out and put it on a yoga mediation playlist. It's sick how the beat slows as it fades out; Great use of timbre on those percussion sounds too; I hope you wouldn't mind me drawing a comparative description? but it's giving me real Radiohead/Thom Yorke (The Eraser album specifically) vibes, in a real good way. I often struggle with instrumental songs based around a drone-esque (obviously not strictly harmonically speaking here) element but the use of dynamics and movement within that synth (synthy? Stringsy?) Backing definitely kept it interesting for me. Not sure if that's the kind of feedback you were looking for but hey, Its what I was thinking

AIII.2.3 Third movement

1. Words used to describe the third movement from the PhD focus group: Irritation, unsure, confusion, no resolution, intervention of the electronic sounds, light, conflict and danger, holy feeling, sacrifice of importance, clutching, confusion, excitement.
2. Colour responses from the PhD focus group: blue/violet - silver - green - red/violet; White;
3. General feedback PhD focus group: Yearning Beauty; Traditional starting; Line of playing; Lovely; Droplets; Water; Interconnection of facades; Loaded sounds; Complex; Resolution; Over playing pattern and rhythm; Beauty; Quite/subtle; Would like more; waking up/ready-ing … preparatory for something not yet decided but joyful anticipation. I am curious about how the colour/definitions are decided or arrived at. There are different systems I guess … it made me think a bit about Chakra systems within yogic traditions but the match of colour to emotion/state has some resonance but also difference. makes me also think about synaesthesia; Not able to match a colour to the third piece, they don't respond to my feelings of irritation with the piece itself. Seems confusion in terms of what it is playing. Unresolved musically - confusion of musical ideas; light, sunlight, water, flow, energy, calming, liked its stuttering and unresolvedness, felt like a conversation. I'm obviously more ambient than techno… That score makes much more sense to me, looks like 'Bloom' (The music composition application - Brian Eno)

4. Reponses from the PhD focus group about the music with the dance: The shouting really put me off. I think his crisis does not match with the piano voicing; His movement is definitely too erratic in this moment, it is much more calm; I don't want to forgive him.
5. Musicians' response: The third starts off like a really sleepy Beethoven playing Fur Elise! Then the Eluvium/Brian Eno ambient synth drones come in and makes it even more dreamlike. I like how it ends unresolved; Oh I absolutely loved those piano sounds at the end there. Really, really liked that. It's gorgeous. It actually reminded me a little of some of the piano textures/elements I've been playing with for my Evergreen stuff (this album I've been working on). This is really cool stuff man. For an 11 and a half minute ambient instrumental track (a style that's not particularly in my wheelhouse) there's a lot going and plenty to keep me interested. Super cool rhythmic business, timbre and dynamics.

AIII.3 Afrodeutsche from the Q&A

This is a selection of questions from the Q&A which is directly related to the creation of the music which responds to how Afrodeutsche worked with colour.

What has this process taught you?: Can't read music – would use colour to learn how to play music in a digital work station, to colour code different patterns to know what to play. Map colour and shape with sound through Grunow's work. Translate what I do now, using shapes and colours in card, began with the colours and the shapes, to create a visual score, and use the notes that are mapped to the colour and shapes to then compose.

How do you feel that this has changed the way that you work?: Gives licence to not be classically trained, and gives you licence to be able to create music without having that background. It was wide open, it was inviting, looking at landscape and using it as sound, opening a world that was image based sound production. [hills could be used as motions in order to make the sounds that are being heard in the piece of music, and the colour delineated the notes that are used in the progressions.]

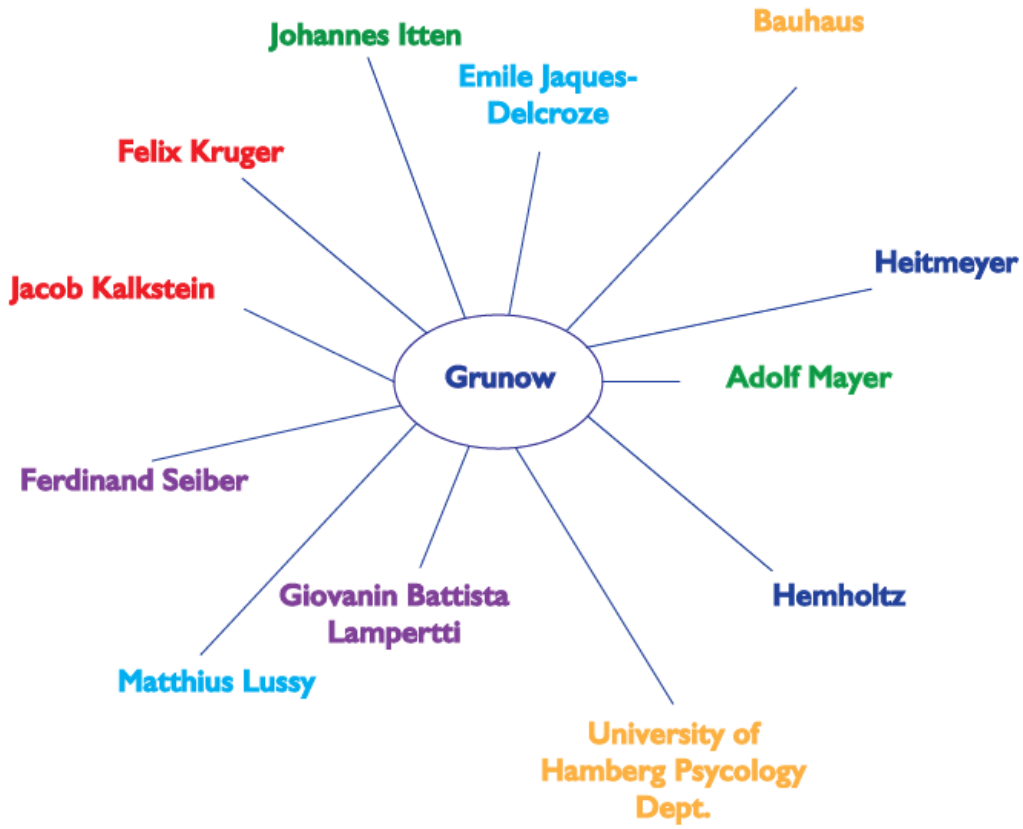
Martin Tomlinson's response to the same question: the freedom to enter this very cold landscape, very sad, like London. Create freedom and space on the floor. The synths are

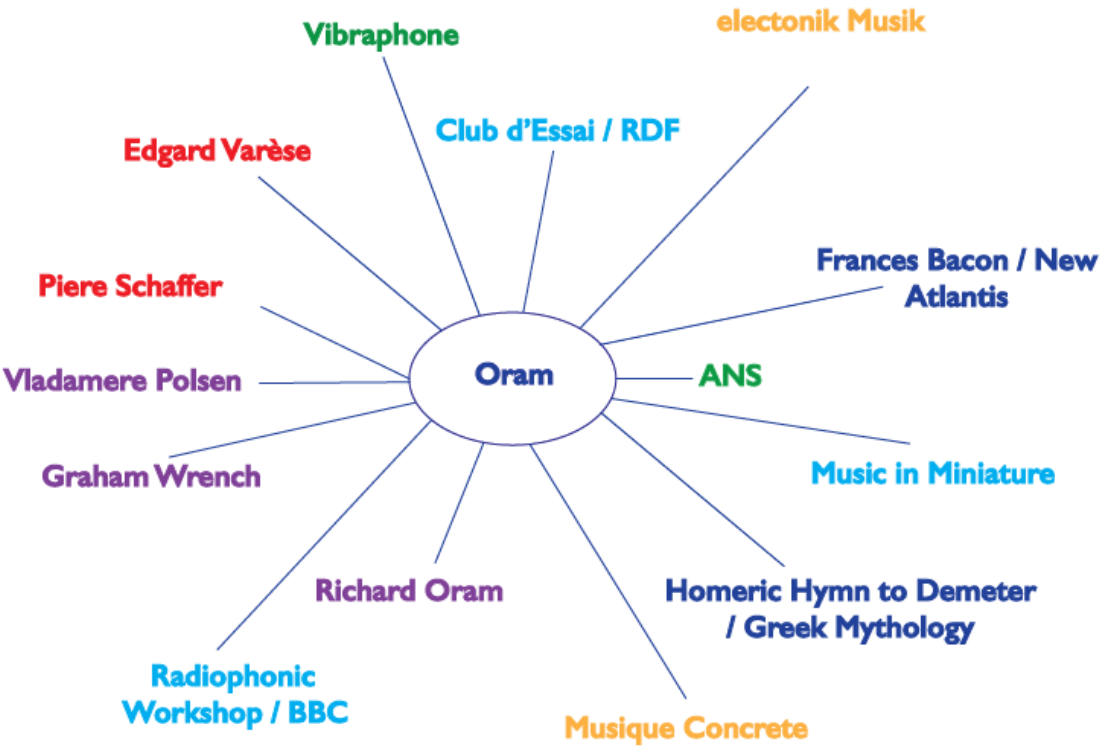
like a harsh wind, fighting with a shadow, the keys are redemption. Everybody's personal experience triggers the imagination.

How much did the colour influence the direction of the music?: Full experiment with the colour choice, strict framework of the notes from each of those colours, the combination of the 4 notes, didn't dictate the journey. You know, it is very melancholic. But is that because of the combinations of colour or because of the combinations of the notes? Or is it me, it was, it was an experiment. And I think, by the time I got to the third movement, I needed less electronic, you know, it was like, I just needed more acoustic. And, yeah, yeah, it was, it was an experiment, I just didn't know it was going to go there.

APPENDIX IV: Genealogical constellation diagrams

Here are some diagrams which illustrate the genealogical constellations which this research has identified with each musician and their historical context and influences. These are presented as spider diagrams which each musician in the centre




Vibraphone
electonik Musik
Club d'Essai / RDF
Edgard Varèse
Frances Bacon / New Atlantis
Piere Schaffer
Oram
Vladamere Polsen
ANS
Graham Wrench
Music in Miniature
Richard Oram
Homeric Hymn to Demeter / Greek Mythology
Radiophonic Workshop / BBC
Musique Concrete


Mini-Oramics Machine
Site specific Composition
Live DJ
Spirituality / Christianity
Alex Jovcic-Sas
Sampling practice
Afrodeutsche
Martin Tomlinson
Composing with colour
Composing using Ableton Live
Tom Richards
Radio DJ