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## Portfolio of Compositions and Commentary

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ALEXANDER SCOTT

PORTFOLIO OF COMPOSITIONS AND COMMENTARY

Thesis presented in partial fulfilment of the requirements for the degree of  
Doctor of Philosophy

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## ABSTRACT

The purpose of this project is to explore ways of expressing and evoking liminality and liminal concepts in music. The liminal is that which is situated at a boundary or threshold; liminality within the context of postmodernism is a particular way of understanding ‘in-between-ness’ that is associated with states of ambiguity and instability. My theoretical framework draws primarily upon the work of the literary theorist Sandor Klapcsik, who treats liminality as a basic category of postmodernism, taking a poststructuralist approach influenced by Derrida, Foucault, and others. Klapcsik employs several different forms of liminality (cultural/institutional; generic; narrative; thematic) in his analyses, and to some degree explores the aesthetic qualities that are characteristic of liminality. Some of these forms and qualities are less applicable to music than to literature, while there are other forms and qualities that are more applicable to music. By adapting Klapcsik’s ideas, I have developed an approach to musical liminality that operates on three main levels: thematic, aesthetic, and stylistic.

On the thematic level, I have composed music that is concerned with ideas related to liminality. In some cases this thematic liminality is figurative, based on taking inspiration from, or attempting to evoke, non-musical liminal concepts and entities; in other cases it is more literal, based on exploring liminality within the tangible features of the music itself. On the aesthetic level, I have pursued the qualities associated with the liminal: ambiguity, uncertainty, instability, disorientation, unresolved tension, and so on. Finally, on the stylistic level, I have attempted to compose music that is situated at the boundary between the progressive and the nostalgic, in which stylistic elements associated with these contradictory impulses coexist in ways that go beyond juxtaposition but not as far as synthesis, creating a constant and uneasy stylistic tension. This is often accomplished by allowing different parameters of the music to be governed by conflicting stylistic approaches, such that the music is simultaneously pulled in multiple directions.

This portfolio comprises nine compositions, accompanied by a technical commentary that outlines my approach to the concept of liminality and explains the compositional processes I have employed.

## ACKNOWLEDGEMENTS

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I owe thanks to too many friends for me to name them all, but I would like to single out a few who were particularly crucial. I am grateful to Lauren, for encouraging me to pursue this path, and to Ellen, Emily and Becky, for always being there throughout. A particular debt of gratitude is owed to those who got me through the various periods of lockdown during the COVID-19 pandemic, most especially Simon, Louise, Josh, Peter, Adam and Dan. Additional thanks go to Adam for his advice on matters pertaining to electronic music production.

Lastly, I would like to thank my supervisor, Ed, who pulled me out of the doldrums and got me back on track. Without his kindness, wisdom, encouragement and – perhaps most importantly – patience, I would not have been able to see this project through to its conclusion.

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**Scores**

*Voidsnakes: A Slitherflesh Offering to the Great Unspeakable Ones*

*Beyond/Between/Beneath*

*It Is Not Made Of Mud*

*Frostcrows: A Chitinous Shuddersong over our Frozen Bones*

*Riven*

*Darkshrikes: An Ancient Knowledge in the Shadow of the Bloodthorn*

**Audio Recordings**

*Voidsnakes: A Slitherflesh Offering to the Great Unspeakable Ones*  
Performed by Lontano

*Beyond/Between/Beneath*  
Performed by Lontano, cond. Odaline de la Martinez

*Frostcrows: A Chitinous Shuddersong over our Frozen Bones*  
Performed by Sara Minelli and Chris Brannick

*Altared*  
Computer-generated sound

*Ursus Subductus*  
Computer-generated sound

*Run C:\empathy.exe*  
Computer-generated sound

## TECHNICAL COMMENTARY

### I.

#### INTRODUCTION: IN SEARCH OF MUSICAL LIMINALITY

The aim of this project is to explore ways of expressing and evoking liminality and liminal concepts in music. The liminal, from Latin *limen*, meaning ‘threshold’,<sup>1</sup> is that which is situated at a boundary or in an in-between zone. Within the context of postmodernism, liminality is a particular understanding of various kinds of in-between-ness as characterised by ambiguity and instability. In attempting to understand how liminality may operate within music, I draw principally upon the work of the literary theorist Sandor Klapcsik in his book *Liminality in Fantastic Fiction: A Poststructuralist Approach*,<sup>2</sup> adapting his ideas on liminality in literature so as to apply them to music.

As Klapcsik outlines,<sup>3</sup> the conception of liminality in question derives from the work of the anthropologist Victor Turner, particularly the essay ‘Liminal to Liminoid, in Play, Flow, and Ritual’<sup>4</sup> and the book *The Ritual Process*,<sup>5</sup> which are concerned primarily with the characteristics of liminality as a phase in certain types of ritual, but also with how the notion of liminality so understood applies to social and cultural phenomena more broadly.<sup>6</sup> Turner was expanding upon the work of Arnold van Gennep, whose study of rituals in *The Rites of Passage*<sup>7</sup> identifies three constituent stages: separation, liminality (sometimes translated as ‘transition’), and reincorporation. The liminal stage, as characterised by Turner, is a period of ambiguity in which the normal social order is suspended or inverted.<sup>8</sup>

Since Turner’s work, the concept of liminality has been further explored and developed by writers and theorists in many fields, including poststructuralist philosophy, social theory, and cultural

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<sup>1</sup> *Concise Oxford English Dictionary*, 11th ed. (rev.), s.v. ‘liminal’.

<sup>2</sup> Sandor Klapcsik, *Liminality in Fantastic Fiction: A Poststructuralist Approach* (Jefferson: McFarland, 2012).

<sup>3</sup> *Ibid.*, 7.

<sup>4</sup> Victor Turner, ‘Liminal to Liminoid, in Play, Flow, and Ritual: An Essay in Comparative Symbolology’, *Rice Institute Pamphlet – Rice University Studies* 60, no. 3 (1974): 53–92.

<sup>5</sup> Victor Turner, *The Ritual Process: Structure and Anti-Structure* (Ithaca: Cornell University Press, 1977).

<sup>6</sup> See Turner, ‘Liminal’, 62, 76.

<sup>7</sup> Arnold van Gennep, *The Rites of Passage*, trans. Monika B. Vizedom and Gabrielle L. Caffee (Chicago: University of Chicago Press, 1960).

<sup>8</sup> Turner, ‘Liminal’, 57. See also Turner, ‘Liminal’, 72–73; and Turner, *Ritual Process*, 95.



studies.<sup>9</sup> Drawing upon the work of Derrida, Foucault, Deleuze, Homi Bhabha, Brian McHale, Fredric Jameson and many others, Klapcsik argues that the concept of liminality, originally rooted in a notion of linear progression between two states, has now been transformed by a turn away from binary thinking towards multiplicity: ‘this spatial metaphor shifted in meaning especially after the cultural turn of postmodernism due to the multiplication of space and time.’<sup>10</sup> In particular, liminality is no longer confined to being a temporary and highly-localised phenomenon: ‘Although postmodern liminality still implies an in-between state and the transgression of borderlines, it ceases to refer to a temporary situation in a finite and teleological process [...] Instead of progress and teleology, liminality evokes an endless, oscillating movement.’<sup>11</sup> It is this greatly-expanded understanding of liminality that Klapcsik argues provides a key to understanding much postmodern literature, and postmodern culture more generally:<sup>12</sup> ‘Liminality gains a broader meaning and becomes a spatial model or metaphor that refers to a wide range of spatial, temporal, perceptual, narratological, and social phenomena. It coincides with the (hypothetical) erosion of boundaries in our postmodernist mediasphere.’<sup>13</sup>

\* \* \*

My first encounter with the concept of liminality was in the work of the ethnomusicologist Katherine Schofield.<sup>14</sup> Its initial appeal to me was that it offered a way of moving past a stylistic impasse I had reached in my work. For some time, I had been attempting to reconcile two conflicting stylistic impulses: on the one hand, the drive towards novelty and experimentation of modernism and the post-war avant garde, and on the other hand, the lyricism and emotionality of romanticism. My attempts to synthesise these two impulses according to a Hegelian dialectic had proved fruitless, and liminality suggested an alternative: to pursue a musical style that was caught between the two, embracing this tension, rather than seeking to resolve it. Indeed I have since come to understand that the conceptual underpinning of that attempt at Hegelian synthesis was rooted in anachronistic notions of linear, teleological cultural progress – the very type of discredited

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<sup>9</sup> Klapcsik, *Liminality*, 1.

<sup>10</sup> *Ibid.*, 163.

<sup>11</sup> *Ibid.*, 13.

<sup>12</sup> *Ibid.*, 4–5.

<sup>13</sup> *Ibid.*, 2.

<sup>14</sup> Katherine Butler Brown, ‘The Social Liminality of Musicians: Case Studies from Mughal India and Beyond’, *Twentieth-Century Music* 3, no. 1 (2007): 13–49.

understanding to which Lyotard was referring in *The Postmodern Condition* when he wrote, 'Simplifying to the extreme, I define *postmodern* as incredulity toward metanarratives.'<sup>15</sup>

Beyond this initial usefulness, there are a number of other reasons I was drawn to liminality as an idea around which to focus my work.

Firstly, all art necessarily reflects the cultural conditions in which it is produced, and it is my view that art which does so consciously and thoughtfully is probably better-placed to make a valuable contribution to the cultural discourse to which it belongs, and more likely to have something meaningful to offer people who exist within that cultural context. As such, the significance and relevance of liminality in contemporary postmodern culture, as discussed above, mean that it offers a useful way of thinking about and understanding the cultural values and notions that I would inevitably be reproducing regardless.

Secondly, as someone particularly temperamentally drawn in daily life to certainty, stability and orderliness, the characteristic ambiguity and instability of liminality offer an impetus to push myself beyond my artistic comfort zone, prompting me to broaden the range of my stylistic and expressive capabilities, and helping to prevent artistic stagnation. As a person affected by clinical anxiety, I also find that the tension and unease associated with the liminal constitute an accurate and honest reflection of the way I experience the world. The arts often offer a safe, controlled space in which to explore experiences, emotions and sensations that we would otherwise ordinarily seek to avoid; as such, this discomfort of liminality has a similar compulsive appeal for me as an artistic concern to that which people often find in the sadness of tragedy, or the fear elicited by horror films.<sup>16</sup>

Lastly (at least in this non-exhaustive list) is the relevance of my being Jewish, an identity that is frequently understood as liminal; I suspect that, for this reason, the notion of liminality carries a particular resonance for me. While Klapcsik does not address Jewishness directly, he does discuss the liminality of identities closely bound up with Jewishness, such as immigrants and nomads.<sup>17</sup> (Diaspora

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<sup>15</sup> Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984), xxiv; emphasis in original.

<sup>16</sup> The question of why people seek out art that elicits emotions that would otherwise be considered negative, and which they would typically avoid in day-to-day life (often called the 'paradox of tragedy') is much discussed, and no one explanation is agreed upon. It is certainly the case, however, that this desire is common and widespread. For an overview, see Aaron Smuts, 'Art and Negative Affect', *Philosophy Compass* 4, no. 1 (2009): 39–55. The argument I have (briefly) advanced is more or less aligned with what Smuts calls the 'Rich Experience' solution to the paradox, touching also upon what he terms 'Control Theories' (indeed the latter factor into the former in Smuts' account).

<sup>17</sup> For example, Klapcsik, *Liminality*, 12–14, 18–19, 121, 131–132.

could easily be added to this list.) Beyond these more general liminal identities, the particular and specific position of Jews in European culture is as its ‘outsider within’, belonging neither entirely to the European Self nor to its Other, but somewhere in between; both white and non-white, but also neither;<sup>18</sup> never fully assimilable, but nonetheless inextricably embedded within and intertwined with European culture and history; not straightforwardly reducible to any of the neat and convenient identity typologies through which Europe has been structured (race, nation, culture, religion, ethnicity). This understanding of Jewishness as liminal is one I already possessed, but in articulating it I am indebted to the cultural studies scholar Jon Stratton, who has discussed these and other aspects of Jewish liminality in several places,<sup>19</sup> often making reference to Zygmunt Bauman’s notions of ‘ambivalence’ and ‘the stranger’, which overlap considerably with liminality.<sup>20</sup> Stratton argues that the presence of Jews in Europe as a minority predating modernity and the construction of modern nation-states challenges the cultural and racial homogeneity upon which those nation-states are putatively founded, thereby destabilising their borders, and that by straddling and repeatedly crossing the boundaries of Europe, Jews complicate any attempt to cleanly delineate the continent. ‘The presence of the Jews not only unsettled the internal binary certainties of Europe. It also blurred the discursive boundaries of Europe itself.’<sup>21</sup> I will later discuss the work of the American-Jewish poet George Oppen, whose words I set in my piece *Riven*. Commentators on Oppen have also picked up on this liminal quality of Jewish identity: ‘If [French-Egyptian-Jewish poet Edmond] Jabès’s equation of Jew and writer speaks to Oppen’s concerns it is in the kind of indeterminacy or ‘betweenness’ they might seem to share’.<sup>22</sup>

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<sup>18</sup> For a fuller discussion of this quality of the liminal as simultaneously both either/or and neither/nor, with reference to Derridean deconstruction and *differance*, see James Jakób Liszka, ‘Derrida: Philosophy of the Liminal’, *Man and World* 16, no. 3 (1983): 233–250.

<sup>19</sup> In particular, see Jon Stratton, ‘Life on the Edge: Liminality and the (European) Jews’, in *Jewish Identity in Western Pop Culture: The Holocaust and Trauma through Modernity* (New York: Palgrave Macmillan, 2008), 31–52; and Jon Stratton, ‘Jews, Race and the White Australia Policy’, in *Coming Out Jewish: Constructing Ambivalent Identities* (London: Routledge, 2000), 176–197.

<sup>20</sup> See Zygmunt Bauman, *Modernity and Ambivalence* (Cambridge: Polity Press, 1991). ‘The stranger is a person afflicted with incurable sickness of *multiple incongruity* [...] an entity ineradicably *ambivalent*, sitting astride an embattled barricade (or, rather, a substance spilled over the top of it and making it slippery both ways), blurring a boundary line vital to the construction of a particular social order or a particular life-world.’ *Ibid.*, 61; emphasis in original.

<sup>21</sup> Stratton, ‘Life on the Edge’, 32.

<sup>22</sup> Peter Nicholls, *George Oppen and the Fate of Modernism* (Oxford: Oxford University Press, 2007), 178–179. See also *ibid.*, 156–161; and John Taggart, ‘Walk-Out: Rereading George Oppen’, *Chicago Review* 44, no. 2 (1998): 54.

## LIMINALITY IN MUSIC SCHOLARSHIP

As far as I was able to ascertain at the outset of this project in 2014, no thorough examination of how Turnerian (or post-Turnerian) liminality might apply to the field of contemporary classical music composition had theretofore been undertaken. However, the terms ‘liminal’ and ‘liminality’ do appear in a number of places in the musicological literature, being used in several distinct ways. It should also be noted that discussion of liminality pertaining to music has become all the more widespread in the intervening years since 2014; it is my hope that this project can contribute in some small way to this ongoing discourse.

As far as contemporary classical composition is concerned, perhaps the most notable application of the term ‘liminal’ is its use by the composer Gérard Grisey to describe his own music. Grisey’s usage of the term differs significantly from mine, having its roots in psychology rather than anthropology; I will address this matter more fully at a later point in this commentary. Putting this and related usages aside for the moment, and omitting incidental uses of the word ‘liminal’ as a descriptive adjective with no particular theoretical underpinnings, I have been able to identify six main applications of the terms ‘liminal’ and ‘liminality’ in music scholarship (here including disciplines such as ethnomusicology and performance studies, in addition to musicology more narrowly construed). By ‘applications’, I mean that I have categorised these writings according to the thing to which the concept of liminality is applied – to where it is that they *locate* liminality within the subject matter discussed.

\*

Firstly, ethnomusicologists have continued to utilise the concept of liminality in the specific way in which it was originally used by van Gennep, and later by Turner, to analyse rituals. Types of ritual that appear frequently in this context include initiation ceremonies, funerary rites, and pilgrimages. Barbara L. Hampton’s 1982 article ‘Music and Ritual Symbolism in the Ga Funeral’<sup>23</sup> and Jaime Jones’s 2018 book chapter ‘Singing the Way: Music as Pilgrimage in Maharashtra’<sup>24</sup> are representative examples: while both do discuss the features of the music in the rituals they analyse, their focus is on the functional role that music, words and dance play in those rituals. Typically in such studies, music is analysed in terms of how it co-ordinates action (including dance), intensifies

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<sup>23</sup> Barbara L. Hampton, ‘Music and Ritual Symbolism in the Ga Funeral’, *Yearbook for Traditional Music*, 14 (1982): 75–105.

<sup>24</sup> Jaime Jones, ‘Singing the Way: Music as Pilgrimage in Maharashtra’, in *Music Preferred: Essays in Musicology, Cultural History and Analysis in Honour of Harry White*, ed. Lorraine Byrne Bodley (Vienna: Hollitzer Verlag, 2018), 727–745.

experience, and facilitates what Turner called ‘*communitas*’, a mode of interaction that often emerges during liminal periods, but is not exclusively connected to liminality.<sup>25</sup> The symbolic significance of certain musical features is also sometimes discussed, but this symbolism is typically specific to the cultural and ritual context, and does not necessarily indicate any more generalisable characteristics of liminality that might be symbolised through music. Even taking an example in which the analysis of musical structures and processes is unusually extensive and detailed, Richard Widdess’s 2006 article ‘Musical Structure, Performance and Meaning: The Case of a Stick-Dance from Nepal’,<sup>26</sup> the ways in which the music ‘articulates meanings’ are considered to be a product of its relationship with its context. Indeed, as Widdess notes, ‘many ethnomusicologists have cautioned against the analysis of musical structure in isolation from its social and cultural context.’<sup>27</sup> Widdess treats the music as a ‘framework’ for the expression of meanings through other aspects of performance, providing a stable order against which the disorder of liminality acquires significance; although the music does have symbolism of its own, it is only through its interaction with other parts of the ritual that liminality is produced.

In general, then, these ethnomusicological studies analyse music in terms of how it facilitates and contributes to the enacting of the liminal stage of a ritual, rather than how it might express or evoke the qualities of liminality more figuratively; they do not tend to address the latter – and nor should they be expected to, since it presumes a very particular paradigm for the role of music – but it is the latter that is my concern, and so these findings are not usually directly applicable to my aims. One notable exception, however, is Elizabeth Tolbert’s 1990 article ‘Women Cry with Words: Symbolization of Affect in the Karelian Lament’.<sup>28</sup> Tolbert highlights the expressive and affective qualities of the lament, stressing that ‘the musical sound itself [...] in its structures is expressive of *and* instrumental to engendering the trance-like state necessary to make a successful journey to *Tuonela*’,<sup>29</sup> the land of the dead. It is perhaps notable that these laments are performed by individuals, rather than groups, and so may more easily lend themselves to notions of expressivity; and that they are sometimes performed in non-ritual and semi-ritual contexts, as well as in ritual contexts (indeed the

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<sup>25</sup> See Turner, *Ritual Process*, 109, 128.

<sup>26</sup> Richard Widdess, ‘Musical Structure, Performance and Meaning: The Case of a Stick-Dance from Nepal’, *Ethnomusicology Forum* 15, no. 2 (November 2006): 179–213.

<sup>27</sup> *Ibid.*, 182.

<sup>28</sup> Elizabeth Tolbert, ‘Women Cry with Words: Symbolization of Affect in the Karelian Lament’, *Yearbook for Traditional Music* 22 (1990): 80–105.

<sup>29</sup> *Ibid.*, 81; emphasis mine.

rituals in which they appeared had already largely died out when Tolbert was writing), and therefore cannot be understood solely in terms of their ritual function. Tolbert observes that the lament music is characterised by instability and ambiguity, and directly links these characteristics to the liminal status of the soul on its journey to *Tuonela*: ‘the musical parameters of the Karelian lament exhibit a very flexible, unstable, almost tenuous structure, and [...] ambiguous formal relationships abound. The pitches, mode, range, and the phrase structure are not fixed and are continually changing within the course of the lament. [...] I propose that the instability and ambiguity of these parameters is crucial and necessary for the successful rendition of ritual, part of the extraordinary measures that must be taken for protection during the dangerous liminal period of a rite of passage.’<sup>30</sup> As I noted at the beginning of this commentary, I have also understood ambiguity and instability to be key characteristics of liminality. Furthermore, Tolbert states that in these laments ‘the “notes” are really constantly sliding pitch areas’,<sup>31</sup> and that ‘micro-tonal and micro-rhythmic variations are essential to the process of creating an effective performance’;<sup>32</sup> these musical features accord closely with techniques I have used in several of the compositions presented in this portfolio. Lastly, Tolbert argues that one of the ways in which ambiguity is created is through frequent incongruity between music and words, whereby the melodic structure contradicts the ordinary emphasis and intonation of the words.<sup>33</sup> This could be seen as analogous to compositional approaches I have developed over the course of this project in which the music is pulled in multiple directions at once by different structural forces.

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Secondly, following on from the previous usage, some writers have argued for the liminal character of musicians, music, or performance in general. Katherine Schofield’s 2007 article ‘The Social Liminality of Musicians: Case Studies from Mughal India and Beyond’, mentioned previously,<sup>34</sup> is a key example. Building directly upon Turner’s work, Schofield argues that professional musicians possess an institutionally liminal status in most, if not all, societies. Christopher Scheer’s 2014 article ‘The Importance of Cheltenham: Imperialism, Liminality and

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<sup>30</sup> Tolbert, ‘Women Cry’, 87.

<sup>31</sup> *Ibid.*, 101.

<sup>32</sup> *Ibid.*, 90.

<sup>33</sup> *Ibid.*, 93–97.

<sup>34</sup> See note 14.

Gustav Holst<sup>35</sup> applies Schofield's insights to examine Holst's position in English society, using the lens of liminality to recontextualise the composer's biography. In that article, published less than a fortnight before I began this project, Scheer also notes that 'the study of liminality as it applies to Western music and musical culture is still in its nascent stages.'<sup>36</sup>

Also falling under this second usage, Turner's ideas have been highly influential in the field of performance studies. Jon McKenzie provides a diachronic overview of the development of the discipline in the first chapter of his 2001 monograph *Perform or Else: From Discipline to Performance*,<sup>37</sup> including Turner amongst a number of figures who contributed to the emergence of the field. Ian Maxwell goes further in his 2008 book chapter 'The Ritualization of Performance (Studies)',<sup>38</sup> arguing that 'the nascent discipline was inaugurated institutionally by the collaboration between Turner himself and Richard Schechner [...] Arguably, Turner's theory of ritual is the foundational theory of performance studies'.<sup>39</sup> In performance studies, liminality is used to theorise the performance act itself and its relationship to the broader social fabric, with performance viewed as having ritual or ritual-like dimensions. Similar ideas have been applied specifically to music, for example by June Boyce-Tillman in her 2009 article 'The Transformative Qualities of a Liminal Space Created by Musicking',<sup>40</sup> which sees the musical experience as a liminal space with personally and socially transformative potential.

While the strands of scholarship discussed in the preceding two paragraphs are methodologically heterogenous aside from their adoption of Turner's ideas, I have grouped them together for my purposes because it is in musical practice or practitioners in general that they detect liminality, and because they share a concern with the place of music in society. While I must reiterate that Schofield's work was formative to my thinking about liminality, the problem as far as my aims are concerned is this: if all music-making is inherently liminal (or inherently carries the potential for liminality), this does not get us any closer to determining what musical characteristics might be

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<sup>35</sup> Christopher Scheer, 'The Importance of Cheltenham: Imperialism, Liminality and Gustav Holst', *Journal of Victorian Culture* 19, no. 3 (2014): 365–382.

<sup>36</sup> *Ibid.*, 365.

<sup>37</sup> Jon McKenzie, 'The Efficacy of Cultural Performance', in *Perform or Else: From Discipline to Performance* (New York: Routledge, 2001), 29–53.

<sup>38</sup> Ian Maxwell, 'The Ritualization of Performance (Studies)', in *Victor Turner and Contemporary Cultural Performance*, ed. Graham St John (New York: Berghahn Books, 2008), 59–75.

<sup>39</sup> *Ibid.*, 65.

<sup>40</sup> June Boyce-Tillman, 'The Transformative Qualities of a Liminal Space Created by Musicking', *Philosophy of Music Education Review* 17, no. 2 (Fall 2009): 184–202.

particularly expressive of the liminal, beyond the fact of being performed. Although it would certainly be possible to devise musical performances that foregrounded the liminal aspects of the performer(s) and/or the performance act, this would be an altogether different and more interdisciplinary project than what I have attempted here. Moreover, it would still be necessary to address the matter of what the music for such performances should sound like; the ideas I have developed here may be of some use for this purpose, although, as my previous discussion of ethnomusicological studies of ritual suggests, it is not necessarily the case that the same musical characteristics are suited to evoking and to inducing liminal experiences. It should also be noted that many musical experiences now occur outside of the performance context; a music that exists only in the performance act risks being sidelined in the age of individual listening. In this light, this project can perhaps be seen on one level as an attempt through music to make something of the liminal experience available outside of the ritual context.

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Thirdly, a number of scholars have utilised the concept of liminality to analyse non-musical aspects of musical works (or works of which music is only one element). Ayana Smith's 2005 article 'Blues, Criticism, and the Signifying Trickster'<sup>41</sup> examines liminal themes in the words of blues songs, focussing on the recurring tropes of the trickster and the crossroads. Holly Rogers's 2016 article "'The Public Will Only Believe the Truth If It Is Shot in 3D": Michel van der Aa, "Nine Years in an Ophanage" [sic] (Zenna), *Sunken Garden*, Scene 6'<sup>42</sup> examines the use of 3D visual technology in van der Aa's opera *Sunken Garden* to destabilise the boundary between stage and audience, mirroring the liminal paraspace depicted in the drama. In 'Liminality, Deixis, Subjectivity',<sup>43</sup> the second chapter of his 2012 book *From Madrigal to Opera: Monteverdi's Staging of the Self*, Mauro Calcagno draws upon Gérard Genette's notion of 'paratexts'<sup>44</sup> to posit the prologue of *L'Orfeo* as serving a liminal function on the threshold of the opera, engaging in a complex mediation between text and performance, and between audience, character, performer and composer, thereby creating a self-reflexive narrative effect

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<sup>41</sup> Ayana Smith, 'Blues, criticism, and the signifying trickster', *Popular Music* 24, no. 2 (May 2005): 179-191.

<sup>42</sup> Holly Rogers, "'The Public Will Only Believe the Truth If It Is Shot in 3D": Michel van der Aa, "Nine Years in an Ophanage" (Zenna), *Sunken Garden*, Scene 6', *Cambridge Opera Journal* 28, no. 2 (July 2016): 277-282.

<sup>43</sup> Mauro Calcagno, 'Liminality, Deixis, Subjectivity', in *From Madrigal to Opera: Monteverdi's Staging of the Self* (Berkeley: University of California Press, 2012), 32-56.

<sup>44</sup> See Gérard Genette, *Paratexts: Thresholds of interpretation*, trans. Jane E. Lewin (Cambridge: Cambridge University Press, 1997).



that corresponds to Klapcsik's oft-cited metafictionality.<sup>45</sup> Robynn J. Stilwell's 2007 book chapter 'The Fantastical Gap between Diegetic and Nondiegetic'<sup>46</sup> discusses film music's ability to traverse the boundary between diegetic and nondiegetic, opening up a liminal space of ambiguity, instability, transformation and unease. While the liminality here does pertain to the music, the locus of the liminal is not *within* the music, but rather in the relationship between the music and the drama – Stilwell is concerned with diegetic liminality, rather than musical liminality *per se*. In the third chapter of her 2012 book *Gothic Music: The Sounds of the Uncanny*,<sup>47</sup> Isabella van Elferen extends Stilwell's ideas to the televisual medium, arguing that television music can destabilise the boundary not only between diegetic and nondiegetic but between diegetic and extra-diegetic, i.e. 'the musically created space *outside* the television set in the viewer's living room.'<sup>48</sup> In doing so, 'it can bring ghosts into the living room, and turn domestic space into a liminal borderland.'<sup>49</sup> Van Elferen also includes an extended discussion of the use of *glissandi* to engender feelings of destabilisation and dislocation and to symbolise transgression,<sup>50</sup> arguing that 'a glissando's slide upwards or downwards functions as a radical destabilisation of harmonic grounding [...] caused by a seemingly endless chain of transgressions, crossings over of the boundaries between individual tones and keys',<sup>51</sup> and that 'as the glissando slides through pitch and time, the listener slides through the boundaries of the known.'<sup>52</sup> Accordingly, *glissandi* are an important device for the evocation of liminality in many of the pieces in this portfolio. Sherry Lee and Sadie Menicanin draw together several of the above approaches in their

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<sup>45</sup> See particularly Klapcsik, *Liminality*, 67–68, 155, 158–159, 169. Calcagno also draws upon Turner and Schechner's theories of performance; see Calcagno, *From Madrigal to Opera*, 18–19; and dedicates a chapter to the concept of focalisation, which Klapcsik also frequently employs; Mauro Calcagno, 'Monteverdi, Narrator', in *From Madrigal to Opera*, 191–237.

<sup>46</sup> Robynn J. Stilwell, 'The Fantastical Gap between Diegetic and Nondiegetic', in *Beyond the Soundtrack: Representing Music in Cinema*, eds. Daniel Goldmark, Lawrence Kramer, and Richard Leppert (Berkeley: University of California Press, 2007), 184–202.

<sup>47</sup> Isabella van Elferen, 'Gothic Television Music: The Unhomely Home', in *Gothic Music: The Sounds of the Uncanny* (Cardiff: University of Wales Press, 2012), 73–99.

<sup>48</sup> *Ibid.*, 77; emphasis in original.

<sup>49</sup> *Ibid.*, 79.

<sup>50</sup> *Ibid.*, 89–94.

<sup>51</sup> *Ibid.*, 90.

<sup>52</sup> *Ibid.*, 94.

2019 book chapter ‘Acoustic Space, Modern Interiority, and Korngold’s Cities’,<sup>53</sup> detecting liminality in spatial, dramatic, diegetic and paratextual aspects of Erich Korngold’s opera *Die tote Stadt*. While many of the writers cited in this paragraph do discuss musical features in their analyses, with the exception of van Elferen they do not locate liminality within these musical features; rather, the music is considered in terms of how it supports the creation of liminality in other levels of the work. It is notable that all of the works examined include words, and most include drama; this is perhaps unsurprising, since the concept of liminality was quicker to gain traction in literary studies than in music analysis. Nevertheless, this body of scholarship confirms that liminality can be a pertinent concern in musical works.

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The fourth application I have observed is the suggestion that certain musical styles, genres, and even instruments possess liminal qualities. An early and interesting example is Dennis Hall’s 1994 article ‘New Age Music: A Voice of Liminality in Postmodern Popular Culture’.<sup>54</sup> Hall’s examination of New Age music’s liminality focusses mainly on the way it is used by listeners (and radio programmers) to create a quasi-ritual, set-aside space for undergoing the transitions that are so frequent in postmodern culture; however, he also extends the concept of liminality to describe the music’s ‘position in between the categories that commonly define the sorts of music Americans listen to’.<sup>55</sup> Here we can see the beginnings of a shift, from an understanding of liminality closely tied to ritual function to a usage of the term to describe a location between categories (as it would later be used by Schofield) – a shift, in other words, from liminality as a temporary *condition* to liminality as a permanent (albeit unstable) *position*,<sup>56</sup> thus bringing us closer to Klapcsik’s postmodern reinterpretation of the concept.<sup>57</sup> Hall deliberately sets aside any discussion of the expressive qualities

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<sup>53</sup> Sherry Lee and Sadie Menicanin, ‘Acoustic Space, Modern Interiority, and Korngold’s Cities’, in *Korngold and His World*, eds. Daniel Goldmark and Kevin C. Karnes (Princeton: Princeton University Press, 2019), 67–87.

<sup>54</sup> Dennis Hall, ‘New Age Music: A Voice of Liminality in Postmodern Popular Culture’, *Popular Music and Society* 18, no. 2 (1994): 13–21.

<sup>55</sup> *Ibid.*, 13.

<sup>56</sup> This shift was in some respects already anticipated by Turner, who described certain groups, such as monks, as existing in a state of ‘permanent liminality’. See Turner, *Ritual Process*, 107–108, 131–165. This idea has since been developed by the sociologist Arpad Szakolczai; see Arpad Szakolczai, *Reflexive Historical Sociology* (London: Routledge, 2000), 207–217.

<sup>57</sup> See note 11. See also Klapcsik, *Liminality*, 14.

and symbolic associations characteristic of New Age music, only really touching upon these matters in connection to the music's social function and cultural position.

More concerned with symbolism is Christopher J. Smith in his 2011 book chapter 'Papa Legba and the Liminal Spaces of the Blues: Roots Music in Deep South Film'.<sup>58</sup> Smith discusses the blues's evocation of liminality (as did Ayana Smith)<sup>59</sup> and its ability to create a transformative liminal state that mediates between contradictory facets of black southern life, but his focus is on how the blues may itself function as a signifier of liminality and *communitas* (among other things). In a rather different domain, Hans-Joachim Braun's 2009 book chapter 'Pulled out of Thin Air? The Revival of the Theremin'<sup>60</sup> views the theremin as occupying a liminal position between old and new, human and technological, finding liminality also in 'the fleeting, volatile, undetermined nature of the theremin sound'<sup>61</sup> and in the theatrical, ritualistic quality often ascribed to theremin performances.

Perhaps the most thorough examination of liminality pertaining to musical style and genre is Kevin Fellezs's 2011 monograph *Birds of Fire: Jazz, Rock, Funk, and the Creation of Fusion*.<sup>62</sup> Fellezs sees fusion as a varied set of practices combining different, discrepant genres that never itself came to constitute a new genre: 'their music *remained between* genres—indeed, the kind of music they created has yet to coalesce into a genre of its own.'<sup>63</sup> Citing Isobel Armstrong's idea of the 'broken middle',<sup>64</sup> Fellezs situates fusion within 'an overlapping yet liminal space of contested, and never settled, priorities between two or more musical traditions [...] occupying a state of permanent instability'.<sup>65</sup>

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<sup>58</sup> Christopher J. Smith, 'Papa Legba and the Liminal Spaces of the Blues: Roots Music in Deep South Film', in *American Cinema and the Southern Imaginary*, eds. Deborah Barker and Kathryn McKee (Athens: University of Georgia Press, 2011), 317–335.

<sup>59</sup> See note 41.

<sup>60</sup> Hans-Joachim Braun, 'Pulled out of Thin Air? The Revival of the Theremin', in *Sound Souvenirs: Audio Technologies, Memory and Cultural Practices*, eds. Karin Bijsterveld and José van Dijck (Amsterdam: Amsterdam University Press, 2009), 139–151.

<sup>61</sup> *Ibid.*, 148.

<sup>62</sup> Kevin Fellezs, *Birds of Fire: Jazz, Rock, Funk, and the Creation of Fusion* (Durham: Duke University Press, 2011). It should be noted here that Fellezs uses the term 'genre' to mean a collective tradition of musical and cultural practices with socially-policed boundaries; see *ibid.*, 6–7.

<sup>63</sup> *Ibid.*, 5; emphasis in original. Compare Bauman on the stranger: 'The stranger is one [...] member of the family of *undecidables* — those baffling yet ubiquitous unities that, in Derrida's words again, "can no longer be included within philosophical (binary) opposition, resisting and disorganizing it, *without ever* constituting a third term"'. Bauman, *Modernity and Ambivalence*, 55. See also Klapcsik, *Liminality*, 11.

<sup>64</sup> See Isobel Armstrong, *The Radical Aesthetic* (Oxford: Blackwell, 2000).

<sup>65</sup> Fellezs, *Birds of Fire*, 8.

This liminal genre position closely resembles the liminal stylistic position I have aimed for in this project; however, the means for achieving those positions are necessarily different. Fellezs's argument is that the tension between genres in fusion derives not from their differing musical practices but from the social and political aspects of genre formation, particularly the perceived racial associations of different genres: 'a central problem for many listeners was that [...] the aesthetics of jazz, rock, and funk were simply too disparate, primarily because of the ways in which genres had been racialized. This idea of incommensurable mixture goes to the heart of the debates surrounding [fusion]'.<sup>66</sup> Since I am dealing not with separate traditions but with differing tendencies within one tradition (and since, as Fellezs observes, transgressing genre boundaries no longer – in and of itself – produces the tension it once did),<sup>67</sup> I have instead tried to produce tension at the level of musical logic.

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For the fifth application, I turn more directly to music analysis, where some scholars have found localised instances of liminality within larger works. Julian Johnson's 2009 book *Mahler's Voices: Expression and Irony in the Songs and Symphonies*<sup>68</sup> discusses many 'threshold' passages in Mahler's music: moments in which the narrative is ruptured, preparing the introduction of a new 'musical voice'. These passages often involve a suspension of linear progress, increased rhythmic freedom, and a sense of expansiveness. Sticking with Mahler, Sherry Lee, in her 2011 article "Ein seltsam Spielen": Narrative, Performance, and Impossible Voice in Mahler's *Das klagende Lied*,<sup>69</sup> detects liminality of a more uncanny sort in the 'bone-flute song' of the eponymous work, which 'hovers ambiguously between distance [...] and presence'.<sup>70</sup>

A particularly thorough examination of localised liminality is by Scott Burnham, in the second chapter, titled 'Thresholds', of his 2013 book *Mozart's Grace*.<sup>71</sup> Burnham identifies a number of passages in Mozart's music that evoke the liminal, brushing up against the thresholds of the supernatural, the sacred, and the interior realm of consciousness. Burnham's detailed analyses focus on the way these passages stand outside the normal flow of time (ordinarily so strongly felt in Mozart),

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<sup>66</sup> Fellezs, *Birds of Fire*, 33.

<sup>67</sup> See *ibid.*, 223–224.

<sup>68</sup> Julian Johnson, *Mahler's Voices: Expression and Irony in the Songs and Symphonies* (Oxford: Oxford University Press, 2009).

<sup>69</sup> Sherry Lee, "Ein seltsam Spielen": Narrative, Performance, and Impossible Voice in Mahler's *Das klagende Lied*, *19th-Century Music* 35, no. 1 (Summer 2011): 72–89.

<sup>70</sup> *Ibid.*, 88.

<sup>71</sup> Scott Burnham, 'Thresholds', in *Mozart's Grace* (Princeton: Princeton University Press, 2013), 37–116.

on their use of unusual harmonic progressions, and on arresting dissonances that ‘place us on a threshold of our own as listeners: we are caught up in an absorbing cognitive tension between hearing these dissonances as linear epiphenomena [...] and hearing them as aesthetic phenomena in their own right’.<sup>72</sup> These techniques, then, are highly dependent on context – both the context of the passage within a larger work (as with Johnson’s Mahler examples), and the context of common-practice tonal harmony. Some of the principles, however, do translate to other contexts, such as the combination of familiar-feeling materials with unfamiliar treatment.<sup>73</sup> Burnham also identifies one piece as liminal in its entirety: the motet *Ave verum corpus*, K. 618, which Burnham interprets as ‘a blend of churchly and personal musics, again as though the supernatural and the natural [...] meet and merge at a shared threshold.’<sup>74</sup>

We could also include here Scott Murphy’s 2019 article ‘S as a Latter-Day H: Mortally Liminal SLIDEs in Recent Popular Film and Television’<sup>75</sup> and Richard Cohn’s 2004 article ‘Uncanny Resemblances: Tonal Signification in the Freudian Age’,<sup>76</sup> upon which Murphy draws. These articles examine the association between particular unusual triadic progressions and liminal scenarios such as the erosion of the boundary between life and death. Again, the precise techniques are dependent upon the context of a particular style (as Murphy notes), but the principle of taking the familiar and rendering it strange is more generalisable.

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Lastly, and continuing more or less within the field of music analysis, there is a growing body of scholarship that characterises entire musical works as liminal on the basis of their musical characteristics (as did Burnham with *Ave verum corpus*). Almost all of the examples of which I am aware date from 2012 or later, but there is at least one earlier forerunner: Dwight W. Thomas’s 1983 article ‘Lou Harrison’s *Double Concerto for Gamelan, Violin and Cello*: Juxtaposition of Individual and

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<sup>72</sup> Burnham, ‘Thresholds’, 100.

<sup>73</sup> For example, in a passage from the overture to *Don Giovanni*, the ‘combination of unusual chromatic harmonies with the most common imaginable melodic pattern feels uncanny. Here again, we are faced with the hair-raising effect of liminal experience.’ *Ibid.*, 45.

<sup>74</sup> *Ibid.*, 69.

<sup>75</sup> Scott Murphy, ‘S as a Latter-Day H: Mortally Liminal SLIDEs in Recent Popular Film and Television’, *Theory and Practice* 44 (2019): 165–194.

<sup>76</sup> Richard Cohn, ‘Uncanny Resemblances: Tonal Signification in the Freudian Age’, *Journal of the American Musicological Society* 57, no. 2 (Summer 2004): 285–324.

Cultural Expectations'.<sup>77</sup> Recounting a performance of the titular concerto, Thomas describes both the event and the music as possessing the ambiguity characteristic of Turner's liminality in their bringing together of differing musical styles, cultures, and audience expectations. Thomas describes how 'Both Western and Javanese musical expectations are sacrificed in order to accomplish Harrison's synthesis',<sup>78</sup> but ultimately concludes that the synthesis is not fully successful, as Western musical logic (and performance practice) generally dominates: 'People did not hear Javanese music. What they heard was music still strongly grounded in the Western art music tradition.'<sup>79</sup> This, then, is perhaps the unfulfilled promise of true postmodern liminality, which requires not the concluding of tensions (whether through synthesis or through subjugation) but rather what Klapcsik calls an 'undecidable oscillation'.<sup>80</sup>

A similar but more successful example of a piece exhibiting this kind of cultural-stylistic liminality is discussed by Lisa M. Cook in her 2014 article 'Venerable Traditions, Modern Manifestations: Understanding Mayuzumi's *Bunraku* for Cello'.<sup>81</sup> Examining Toshirō Mayuzumi's 1960 solo cello piece *Bunraku* in its cultural context, Cook carries out a detailed analysis and argues that by combining traditional Japanese and avant-garde Western elements, *Bunraku* reflects Mayuzumi's position in a liminal space between cultural traditions. Some aspects of the piece derive from Japanese sources (its timbres and gestural language, which imitate both the *tayū* narrator/vocalist and *shamisen* accompaniment of traditional bunraku puppet theatre; its structure, which reflects the aesthetic theory of *jo-ha-kyū*; etc.) and some from Western ones (its chromaticism and dissonance; the instrumentation; the medium of a solo cello concert piece itself). Rather than simply being placed alongside one another, the traditional Japanese and avant-garde Western elements inflect one another: the intensification required by the principles of *jo-ha-kyū* is achieved partially through a gradual increase in chromaticism; the piece's tone colours result from a Western instrument using extended techniques to imitate the sounds of a traditional Japanese performance; and so on. Cook's view of the piece is that 'the worlds of traditional bunraku and the Western concert hall coexist in an

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<sup>77</sup> Dwight W. Thomas, 'Lou Harrison's *Double Concerto for Gamelan, Violin and Cello*: Juxtaposition of Individual and Cultural Expectations', *Asian Music* 15, no. 1 (1983): 90-101.

<sup>78</sup> *Ibid.*, 93.

<sup>79</sup> *Ibid.*, 100.

<sup>80</sup> Klapcsik, *Liminality*, 3. The phrase is borrowed from J. Hillis Miller, 'The Critic as Host', in *Theory Now and Then* (New York: Harvester, 1991), 155.

<sup>81</sup> Lisa M. Cook, 'Venerable Traditions, Modern Manifestations: Understanding Mayuzumi's *Bunraku* for Cello', *Asian Music* 45, no. 1 (Winter/Spring 2014): 98-131.

avant-garde format. *Bunraku* is not a faithful representation of the Japanese puppet theater tradition, but a reflection of the liminal space in which Mayuzumi composes.<sup>82</sup> While she does refer to this as ‘synthesis’, Cook acknowledges that such an approach may still entail some tensions: ‘the seeming contradiction of incorporating old and new styles might suggest the uncertainty looming as Japan situated itself in the twentieth century’, or ‘stand as a political statement about the disharmony [...] of Western impositions on Japan.’<sup>83</sup>

A different variety of liminality pertaining to entire musical works is discussed by Halina Goldberg in her 2017 book chapter ‘Chopin’s Oneiric Soundscapes and the Role of Dreams in Romantic Culture’.<sup>84</sup> Goldberg contends that in the Romantic imagination ‘the most important qualities of dreams possibly have to do with their liminality, their positioning between life and the beyond’,<sup>85</sup> and describes how Chopin evokes dream states through the fragmentation and distortion of musical ideas, the blurring and fading of sounds, discontinuity and contradiction, a sense of disjointed time-flow, and the use of nocturnal genres (nocturne, berceuse, barcarolle), both as titles and as musical topics. Goldberg connects this to the fact that Chopin viewed himself, and was viewed by his contemporaries, as someone ‘who inhabits the boundary between life and death, between the real and ideal [...] ailing, moribund, or on the edge of madness’.<sup>86</sup> Similarly, Aidan J. Thomson’s 2015 book chapter ‘Bax’s “Sea Symphony”’<sup>87</sup> uses liminality as a hermeneutic lens, offering a narrative reading of Arnold Bax’s Fourth Symphony in which sea and land, nature and humanity transform one another at the liminal site of the shore. In this reading, the sea is ultimately triumphant, reflecting an earlier understanding of liminality as a finite, transformative process (as would be expected, given that the symphony was composed in 1930), rather than the ‘undecidable oscillation’ of postmodern liminality.

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<sup>82</sup> L. Cook, ‘Venerable Traditions’, 116.

<sup>83</sup> Ibid., 106. This passage is in reference to another of Mayuzumi’s pieces from the same period, the *Nirvana Symphony* of 1958, which Cook considers to employ the same stylistic approach as *Bunraku*, describing both as examples of ‘compositional synthesis’. See *ibid.*, 104–5, 111.

<sup>84</sup> Halina Goldberg, ‘Chopin’s Oneiric Soundscapes and the Role of Dreams in Romantic Culture’, in *Chopin and His World*, eds. Jonathan D. Bellman and Halina Goldberg (Princeton: Princeton University Press, 2017), 15–43.

<sup>85</sup> Ibid., 25.

<sup>86</sup> Ibid., 39.

<sup>87</sup> Aidan J. Thomson, ‘Bax’s “Sea Symphony”’, in *The Sea in the British Musical Imagination*, eds. Eric Saylor and Christopher M. Scheer (Woodbridge: The Boydell Press, 2015), 225–249.

Popular musics have also been analysed in terms of liminality, for example by van Elferen in the fifth chapter of her previously-mentioned *Gothic Music*.<sup>88</sup> Van Elferen outlines a number of liminal characteristics shared by musical styles associated with the Goth subculture (or ‘milieu’, in van Elferen’s terminology), such as the use of ghostly timbres, and the combination of musical elements from different genres and time periods to create ‘temporal twilight zones’.<sup>89</sup> Among other examples, I could also include here the twelfth chapter of Stephen Graham’s 2016 book *Sounds of the Underground: A Cultural, Political and Aesthetic Mapping of Underground and Fringe Music*,<sup>90</sup> which identifies liminality in the instability and ambiguity of structure and tonality in the drone metal of bands such as Sunn O))), whose music ‘hovers compellingly between’ different structural models<sup>91</sup> and between modality and atonality, working in a ‘tonally liminal way, moving in and out of stability and clear pitch identity’;<sup>92</sup> and Paul Sanden’s 2012 article ‘Virtual liveness and sounding cyborgs: John Oswald’s “Vane”’,<sup>93</sup> which, for its analysis of the titular work, suggests that listeners to recordings featuring heavily-electronically-manipulated performances account for these sounds by constructing virtual performing personae that, in their liminal positioning in the space between human and machine, can be understood as cyborgs.

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Further examples could be provided, but I hope that the general shape of the literature is now apparent. As I have demonstrated, the terms ‘liminal’ and ‘liminality’ are used in a wide variety of different ways in musicology and related disciplines. In the foregoing, I have classified those usages according to the specific thing to which the term is being applied – what I have earlier referred to as the *locus* of liminality – rather than according to the *type* of liminality being discussed. This is partially for self-interested reasons, because this is a more accurate determinant of how the discussion relates to my concerns in this project, and partially because many of the writings cited discuss several different types of liminality pertaining to the same thing. A classification according to type might look something like this: liminality as transformative ritual state (the music *engenders* liminality); liminal

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<sup>88</sup> Isabella van Elferen, ‘Goth Music: Uncanny Embodied’, in *Gothic Music*, 128–172.

<sup>89</sup> *Ibid.*, 134. See also *ibid.*, 170.

<sup>90</sup> Stephen Graham, ‘Extreme Metal’, in *Sounds of the Underground: A Cultural, Political and Aesthetic Mapping of Underground and Fringe Music* (Ann Arbor: University of Michigan Press, 2016), 218–242.

<sup>91</sup> *Ibid.*, 236.

<sup>92</sup> *Ibid.*, 237.

<sup>93</sup> Paul Sanden, ‘Virtual liveness and sounding cyborgs: John Oswald’s “Vane”’, *Popular Music* 31, no. 1 (January 2012): 45–68.



social or cultural position (the music is liminally *positioned*); liminality as subject matter (the music *evokes* or *signifies* liminality); and so on. Some of the authors I cite discuss Turner's ideas directly and some do not, but few devote any significant attention to further theorising liminality for its application to music, and where different types of liminality are invoked, they are generally not clearly differentiated. Furthermore, I was not able to find any writings pertaining to music that took Turnerian liminality itself as their subject matter, as opposed to utilising the concept to investigate another topic – these writings describe things *as* liminal, but do not necessarily describe *liminality itself*, at least not in great detail. A number of qualities associated with liminality do recur throughout this body of scholarship – ambiguity, instability (particularly of pitch), incongruity and contradiction, the uncanny, defamiliarisation, etc. – but in order to fully understand the many different forms liminality may take and levels on which it may operate, I felt that it was necessary to have a clear theoretical framework in place, and it was for this reason that I turned to literary theory, where the work of assembling such a framework had already been undertaken. Indeed, had I not done so, I would not have been able to distinguish and articulate the many forms of liminality discussed in the preceding paragraphs.

As for why I selected Klapcsik's work specifically to provide the basis for my understanding of liminality, its primary appeal is its thoroughness: to my knowledge, no other writer on the subject of liminality in the arts has expounded in such detail liminality's many characteristics and manifestations, nor explored it from such a variety of different methodological perspectives. This is not to suggest that Klapcsik presents any kind of unified theory of liminality; indeed, he challenges the possibility of doing so, given the many different theoretical strands upon which he draws: 'It would be a highly problematic task to combine these – in certain ways incompatible – theories to produce a general model of liminality; yet, I firmly believe that they can be utilised to reconstitute the notion, especially if one uses them only as "a box of tools" or "toolkit"'.<sup>94</sup> I will also note that Klapcsik's chosen domain in which to investigate liminality, which he refers to as 'fantastic fiction' (meaning primarily science fiction and fantasy, but also various other related genres), aligns closely with my own literary (or perhaps, some would say, not-so-literary) tastes, a fact that I suspect is not coincidental, and which almost certainly contributed to my interest in his work. Perhaps as a result of this alignment, I simply found that reading Klapcsik's work sparked ideas for me; it may well be this, more than anything, that encouraged me to base my theoretical framework on his, and to turn to his work so frequently.

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<sup>94</sup> Klapcsik, *Liminality*, 1.

## THEORETICAL FRAMEWORK

Klapcsik identifies four main forms of liminality that operate in the texts he examines: cultural or institutional liminality ('the texts that I analyse hover on the brinks of mainstream and popular literature'), generic liminality ('these authors are on the edges of various (sub-)genres such as fantasy, horror, detective fiction, and science fiction'), narrative liminality ('the reader oscillates among various perspectives, focal points, styles, and intertextual registers'), and thematic liminality ('which blurs the boundaries of the self and the Other, organic and artificial, human and mechanical, and most of all, between the real world and the fantastic-virtual').<sup>95</sup>

As mentioned previously, I have needed to adapt these ideas in order to apply them to music, since some of the forms Klapcsik outlines are less relevant to music than to literature, and there are other forms less centred by Klapcsik that are more relevant. Narrative liminality, in particular, is less relevant to music; I think that narrative liminality of the kind Klapcsik describes is still possible in music (indeed I have attempted it), but it is of lesser significance than in literature, given that music is not an explicitly narrative artform in the same sense – it does not generally involve *narration*, which is central to Klapcsik's formulation,<sup>96</sup> though narrative perspectives and subject positions can, arguably, still be suggested.<sup>97</sup> Thematic liminality must be approached in a different manner in music, since, relative to writing, it has a much lesser capacity to describe, but can still to some degree refer. Cultural/institutional liminality and generic liminality certainly apply to music, but both are heavily entangled with questions of style (which, in Klapcsik's framework, also factors into narrative liminality). It is necessary to clarify here that I am using the term 'genre' not merely as a synonym for style or stylistic tradition, nor in the way it is used by Fellezs,<sup>98</sup> but in the more limited (though connected) sense of a particular type within a tradition, entailing certain genre conventions and expectations (e.g. the symphony or the waltz). It is my impression that most listeners in the present day, even those reasonably well-acquainted with music of the classical tradition, are not so intimately familiar with the conventions of particular genres within that tradition as to make the type of genre play involved in Klapcsik's generic liminality meaningful, or even necessarily noticeable, to any but the most thoroughly enculturated. Even if I myself were among those few, to write music in which these questions of genre are central concerns would, in my view, risk being rather inward-looking, and

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<sup>95</sup> Klapcsik, *Liminality*, 19–21.

<sup>96</sup> *Ibid.*, 21.

<sup>97</sup> For a brief overview of theories of musical narration, see Robert Samuels, *Mahler's Sixth Symphony: A Study in Musical Semiotics* (Cambridge: Cambridge University Press, 1995), 133–140.

<sup>98</sup> See note 62.

would likely exclude many potential listeners from important dimensions of the work. Hence, I have tended to eschew generic liminality as such, at least as a central concern, in favour of a broader focus on style, feeling that this form of liminality will be more widely appreciable, as well as more salient to my own concerns. Finally, music being an artform so concerned with affect and sensation, I have felt it important to bring the question of what liminality *feels* like to the fore. Klapcsik does frequently discuss this matter, but not as its own specific form of liminality – rather, the feelings and experiential qualities associated with the liminal are more often discussed in reference to the liminal phenomena that produce them.

Proceeding on the basis of these considerations, I have developed an approach to musical liminality that operates on three main levels: thematic, aesthetic, and stylistic.

On the thematic level, the music presented here is concerned with ideas and themes relating to the liminal. In some instances this takes a literal form, whereby I have focussed on liminal features within the music itself, such as the spaces between the notes, or the sonic boundaries between instruments. In other instances it is more figurative, based on taking inspiration from, or attempting to evoke, non-musical liminal concepts and entities, such as cyborgs, the uncanny valley, mirroring, and geographical boundary zones; in such cases, the titles of the pieces in question often provide hints as to their non-musical thematic concerns. Thematic liminality has in most cases provided the initial, originary idea for each of the works in this portfolio.

On the aesthetic level, the music in this project pursues qualities associated with the liminal: ambiguity, uncertainty, instability, uneasiness, disorientation, fluidity, slipperiness, discomfort, aimless wandering, suspended motion, unresolving tension, and so on. This could perhaps also be termed the ‘experiential’ level, encompassing as it does all matters of affect, sensation, appearance, character, and the like. The eerie sense of disorientation that accompanies walking down a corridor so long it seems endless, or the unsettled feeling experienced while waiting for some momentous event, only for it to continually fail to arrive – these are the sorts of feelings I have attempted to evoke in the compositions presented here. Of all the ways in which I have attempted to express liminality through the music in this portfolio, this liminal aesthetic, or liminal quality of experience, is perhaps the most tangible to the listener.

The stylistic level covers much of the ground included in Klapcsik’s cultural/institutional and generic forms of liminality, as well as some of what he discusses as characterising narrative liminality. As suggested previously, I have attempted to compose music that is situated at the boundary between the progressive and the nostalgic, caught irresolvably between the two. The pieces in this portfolio combine stylistic elements associated with these contradictory impulses in ways that go beyond

juxtaposition, but not so far as synthesis or reconciliation; rather, these elements cast one another into relief, creating a constant and uneasy stylistic tension. Conventional features such as melody and harmony are generally present and identifiable, giving the listener something seemingly-familiar to latch onto, but they are often recontextualised, reordered, disrupted, blurred, or distorted, rendering them strange, slippery, and difficult to grasp. As Turner writes, ‘in liminality people “play” with the elements of the familiar and defamiliarize them. Novelty emerges from unprecedented combinations of familiar elements.’<sup>99</sup> This is often accomplished by allowing different parameters of the music to be governed by conflicting stylistic approaches, such that the music is simultaneously pulled in multiple directions. Modernist ordering techniques are not totalising in these pieces; they fail to subjugate all elements of the music beneath their grip, but must nonetheless be continually striven against. Stylistic liminality in this project constitutes an attempt not to create a single liminal style, but to pursue a liminal approach to style, with results that vary considerably – a proliferation of little narratives, rather than a single metanarrative or grand narrative, in Lyotardian terms.

This reconstituted tripartite model of liminality should not be taken to imply that other forms of liminality identified by Klapcsik, such as cultural/institutional and narrative liminality, do not appear in my work – only that they are not central or focal concerns of this project as a whole.

## MUSICAL CONTEXT

My two main reference points in terms of approach to musical style in this project were the composers Olivier Messiaen and George Crumb. In different ways, the music of both these composers combines progressive and traditional elements (relative to the times at which they were writing), as I have sought to do, although I have aimed to produce a different effect through that combination from that produced by either Messiaen or Crumb.

In Messiaen’s music, familiar diatonic chords appear frequently, but recontextualised within novel harmonic systems; lyrical melodic lines are combined with a radically innovative approach to rhythm; rigorous organisational approaches and free writing exist side by side. Paul Griffiths outlines this ‘stylistic incongruity’ in his *Grove* entry, stating that ‘If diatonic chords still constitute a large part of [Messiaen’s] harmonic vocabulary, their normal functions are weakened or annulled by their use within the framework of his “modes of limited transpositions”’, and that ‘Messiaen’s association [in the *Livre d’Orgue*] of highly constructed with seemingly improvised movements is suggestive of his

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<sup>99</sup> Turner, ‘Liminal’, 60.

acceptance and even enjoyment of contrast [...] the strict and the free blithely coexist'.<sup>100</sup> Thomas Barker has made similar observations about Messiaen's 'conventional-unconventional juxtaposition',<sup>101</sup> particularly in reference to the harmonic and melodic content of the *Turangalila-symphonie*. Taking as an example the opening of the fifth movement, Barker argues that 'the dissonance which undergirds this phrase effectively lampoons what would otherwise be heard as a fairly conventional, even banal, melodic idea. [...] We are thus left with a sense of misplaced consonance; of a familiarity in such a radically inhospitable environment that its distinctive features begin to dissolve.'<sup>102</sup> This, then, is a comparable effect to one I have mentioned previously: through recontextualisation, familiar material is rendered strange, but without entirely losing its familiarity.<sup>103</sup> However, as Griffiths's remarks about 'blithe coexistence' suggest, this incorporation of contrasting styles is not generally considered to entail a sense of tension in Messiaen's music. Barker argues that Messiaen's 'indiscriminate' combination of ostensibly contradictory styles stems from a religious motivation to 'make all things sacred'.<sup>104</sup> This argument is taken further by Roberto Fabbi, whose reading suggests a hegemonic tendency in this totalising desire to incorporate everything (including the music of non-Christian cultures) into a Christian vision of the universe.<sup>105</sup> In Fabbi's view, Messiaen's techniques leave an indelible imprint on all of his diverse materials, resulting in a unified style: 'The joint presence in [Messiaen's] work of the modern and the traditional, the theoretical and the pragmatic, the antique and the avant-garde, of western, exotic, natural, and artificial elements, does not result in contamination or hybrid style. [...] The influences, however heterogenous they may be, are subjugated to the highly personal and totalizing acoustic language of their manipulator.'<sup>106</sup> Conversely, my aim is precisely a hybrid approach that embraces the tensions between contradictory musical styles.<sup>107</sup> As a result, while Messiaen's example is an important one to me in the *fact* of

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<sup>100</sup> Paul Griffiths, 'Messiaen, Olivier', in *Grove Music Online* (Oxford University Press, 2001–). Accessed 16 April, 2022.

<sup>101</sup> Thomas Barker, 'The Social and Aesthetic Situation of Olivier Messiaen's Religious Music: *Turangalila Symphonie*', *International Review of the Aesthetics and Sociology of Music* 43, no. 1 (June 2012): 58.

<sup>102</sup> *Ibid.*, 58.

<sup>103</sup> See notes 73, 99.

<sup>104</sup> Barker, 'Social and Aesthetic Situation', 54.

<sup>105</sup> Roberto Fabbi, 'Theological Implications of Restrictions in Messiaen's Compositional Processes', in *Messiaen's Language of Mystical Love*, ed. Siglind Bruhn (New York: Routledge, 2012), 55–84. See especially *ibid.*, 75, 77.

<sup>106</sup> *Ibid.*, 71.

<sup>107</sup> On the relationship between hybridity and liminality, see Klapcsik, *Liminality*, 12–13.

combining ‘the modern and the traditional’, I have pursued a different approach in regard to the *way* of combining them.

Crumb’s music, meanwhile, combines pitch structures rooted in early-20th-century post-tonal models with highly novel sonorities produced by innovative and unusual playing techniques, while also featuring considerable amounts of intertextuality in the forms of quotation and pastiche. This combination of various styles and musical references is often understood as quintessentially postmodern. Richard Bass’s influential 1994 article ‘Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors’<sup>108</sup> demonstrates how Crumb’s pitch structures are often based around the interplay between ‘referential pitch-class collections such as the octatonic and whole-tone “scales”’,<sup>109</sup> arguing that this approach is an adaptation and extension of methods used by earlier composers including Debussy, Skryabin and Bartók. Bass characterises this as ‘a conservative approach to composition’ even when employed earlier by Crumb’s teacher, Ross Lee Finney.<sup>110</sup> While less analytical attention has been devoted to the more innovative aspects of Crumb’s style, such as timbre,<sup>111</sup> there are a number of differing views on the result of his combination of different styles. Bass himself is dismissive of Crumb’s use of extended techniques, asserting that ‘the unusual timbres are ultimately of little significance with regard to purely musical content.’<sup>112</sup> This suggests a hierarchical relationship, whereby the somewhat traditional pitch structures form the core of the music, with the timbres layered on top, but not really integrated into the musical fabric. Victoria Adamenko takes a different view, regarding Crumb’s approach as ‘a synthesis of diverse media and stylistic components’ in which these elements *are* integrated, in ‘an attempt to return to the mythic “whole” and undivided state’ – an attitude she characterises as ‘syncretism’.<sup>113</sup> This interpretation closely resembles Barker’s and Fabbi’s arguments about Messiaen, discussed above. Conversely, Robert C. Cook, in his article ‘Crumb’s *Apparition* and Emerson’s Compensation’, contends that the

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<sup>108</sup> Richard Bass, ‘Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors’, *Journal of Music Theory* 38, no. 2 (Autumn 1994): 155–186.

<sup>109</sup> *Ibid.*, 156. See also *ibid.*, 176.

<sup>110</sup> *Ibid.*, 173.

<sup>111</sup> For a brief, recent overview of the literature, see Kristina L. Knowles, ‘Metric Ambiguity and Rhythmic Gesture in the Works of George Crumb’, *Contemporary Music Review* 41, no. 1 (2022): 30–31.

<sup>112</sup> Richard Bass, “‘Approach Strong Deliveress!’” From George Crumb’s *Apparition*: A Case Study in Analysis and Performance of Post-Tonal Music’, *Journal of Music Theory Pedagogy* 16 (2002): 59.

<sup>113</sup> Victoria Adamenko, ‘George Crumb’s Channels of Mythification’, *American Music* 23, no. 3 (Autumn 2005): 347.

diverse materials in Crumb's music 'actively avoid synthesis'.<sup>114</sup> While his analytical methods in this article are still largely pitch-based, Cook cautions against 'an interpretation that dismisses as mere surface the composer's strong stylistic eclecticism.'<sup>115</sup> Cook interprets Crumb's music through the lens of Ralph Waldo Emerson's concept of 'Compensation', which, rather than synthesis and subsumption, 'seeks unity of *purpose* among independent, even irreconcilable materials'.<sup>116</sup> A similar view is advanced by Blair Johnston, who describes Crumb's music as 'a polystylistic mix of compositional methods, harmonic structures, rhythmic and metric approaches, and extended performance techniques',<sup>117</sup> and explicitly links this 'eclecticism' to postmodernism. In his analysis of the way quotation and pastiche are incorporated into *Black Angels*, Johnston argues that 'the individuality of the materials is [...] maintained', and that these different materials are 'complementary even as they are disjunct'.<sup>118</sup> Although Johnston's understanding of the structure of *Black Angels* involves more interaction between contradictory forces, in general both he and Cook see the diverse elements of Crumb's music as maintaining independence from one another while working towards a common goal; my aim, conversely, has been to intermingle elements of contrasting styles more deeply, specifically in order that they work *against* one another, bringing out the tensions between them at the level of musical construction. Marcel Cobussen offers a reading of *Black Angels* that is much more in keeping with liminality, arguing that the piece 'bespeaks [...] the openness of the space between or beyond categories'.<sup>119</sup> Although the liminal formulations Cobussen employs relate mainly to the spiritual dimensions of the piece, he does also characterise the approach to style in similar terms: '*Black Angels* is the environment in which two or more formerly mutually exclusivating musical languages encounter one another. In this sense, one could speak of *intermusicality*'.<sup>120</sup> Nevertheless, my own view of Crumb's music is closer to Cook's and Johnston's: I hear a fairly clear separation between elements of different styles – whether traditionalist melodic construction

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<sup>114</sup> Robert C. Cook, 'Crumb's *Apparition* and Emerson's Compensation', *Music Theory Spectrum* 34, no. 2 (Fall 2012): 2.

<sup>115</sup> *Ibid.*, 2.

<sup>116</sup> *Ibid.*, 3; emphasis mine.

<sup>117</sup> Blair Johnston, 'Between Romanticism and Modernism and Postmodernism: George Crumb's *Black Angels*', *Music Theory Online* 18, no. 2 (June 2012): para. 10.

<sup>118</sup> *Ibid.*, para. 25.

<sup>119</sup> Marcel Cobussen, 'Music and Spirituality: 13 Meditations around George Crumb's *Black Angels*', *The New Centennial Review* 7, no. 1 (Spring 2007): 205.

<sup>120</sup> *Ibid.*, 195.

manifested through novel playing techniques, or the spatially-separated juxtaposition of contrasting but self-contained musics – with the result that the boundary between those styles remains largely intact and identifiable. In order to achieve a liminal approach to style, I would have to allow contradictory stylistic impulses to simultaneously affect the underlying construction of the same musical features, in such a way as to make those stylistic impulses individually apparent but inseparable.

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As mentioned previously, the French composer Gérard Grisey characterised his own music as ‘liminal’. Grisey is regarded as a key proponent of spectralism, but initially used the term ‘liminal’ rather than ‘spectral’ to describe the movement.<sup>121</sup> The thresholds with which Grisey was concerned were specifically perceptual thresholds, a usage relating to the use of the term ‘limen’ in psychology to refer to ‘a threshold below which a stimulus is not perceived or distinguished from another’;<sup>122</sup> he regarded the spectral approach as entailing an ‘attentive attitude towards the phenomenology of perception’.<sup>123</sup> Grisey’s interest was in the points at which timbre becomes harmony, rhythm becomes duration, and so on, which he refers to as ‘the thresholds between different parameters’.<sup>124</sup> As Marilyn Nonken writes, ‘the comings and goings, the fluctuations between harmony and timbre, between complex sounds and noise, between pitch and noise, between harmonicity and inharmonicity, between timbre and saturation – all of these continua produced a sort of basic repertoire of idioms at the heart of spectral music.’<sup>125</sup> This principle is often linked to the technique of ‘instrumental synthesis’, whereby multiple instruments are combined in such a way as to mimic particular sound

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<sup>121</sup> Jonathan Cross, ‘Introduction: Spectral Thinking’, *Twentieth-Century Music* 15, no. 1 (February 2018): 6.

<sup>122</sup> *Concise Oxford English Dictionary*, 11th ed. (rev.), s.v. ‘limen’. This specific usage is not noted in the definition of ‘liminal’, which is given as, ‘1 relating to a transitional or initial stage. 2 at a boundary or threshold.’ *Ibid.*, s.v. ‘liminal’; see note 1.

<sup>123</sup> Gérard Grisey and Joshua Fineberg, ‘Did You Say Spectral?’, *Contemporary Music Review* 19, no. 3 (2000): 2.

<sup>124</sup> Grisey and Fineberg, ‘Did You Say’, 3. These matters are also addressed in Gerard Grisey, ‘La musique: le devenir des sons’, *Darmstädter Beiträge zur Neuen Musik* 21 (1982): 16–23; in the absence of an English translation, I have chosen to rely upon other sources so as not to risk any misunderstanding, especially regarding the precise connotations and associations of terms that may not be exact equivalents. In particular, while both were writing in French, van Gennep’s original term in *The Rites of Passage*, translated as ‘liminal’, was ‘liminaire’, whereas the word Grisey uses is ‘liminale’. Although these are synonyms, and would both be translated into English as ‘liminal’, I would not be equipped to unravel the subtle differences of signification between the three words. Similarly, while English has only the single word ‘liminality’, French has both ‘liminarité’ and ‘liminalité’, which also differ in usage.

<sup>125</sup> Marilyn Nonken, *The Spectral Piano: From Liszt, Scriabin, and Debussy to the Digital Age* (Cambridge: Cambridge University Press, 2014), 163–164.



spectra, creating sonorities that are not quite timbres and not quite harmonies, but rather ‘sit in a no-man’s land between these two perceptual categories’.<sup>126</sup>

A number of composers other than Grisey have also written music focussed on such perceptual thresholds. For example, Stephen Lehman, following on from Grisey’s interest in rhythmic thresholds, has drawn upon a wide variety of research into music perception in order to develop approaches to rhythm that create ambiguity in the perception of pulse and duration, for example by combining parallel tempi that compete for entrainment, or by employing sequences of durations that differ by small percentages, such that it is difficult for the listener to establish whether they are equal or unequal.<sup>127</sup> Lehman combines these rhythmic approaches with spectral harmonic techniques (taking inspiration particularly from Grisey and Tristan Murail), and with improvisation, which he also understands as having liminal qualities.<sup>128</sup> A significant number of composers have written music that is concerned with the threshold between audibility and inaudibility. In her book *Experimental Music Since 1970*, Jennie Gottschalk discusses several such composers, including Bernhard Günter, Éliane Radigue and Jakob Ullmann.<sup>129</sup> To this list we could also add Evan Johnson,<sup>130</sup> Charlie Sdraulig,<sup>131</sup> Helmut Lachenmann<sup>132</sup> and Salvatore Sciarrino,<sup>133</sup> among others.

While the perceptual liminality of psychology and the ritual-symbolic liminality of anthropology share an etymology, they constitute distinct (though not entirely unrelated) definitions of the word ‘liminality’;<sup>134</sup> the concepts apply to different domains, and indeed may correspond to

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<sup>126</sup> Eric Drott, ‘The End(s) of Genre’, *Journal of Music Theory* 57, no. 1 (Spring 2013): 28.

<sup>127</sup> Stephen H. Lehman, ‘Liminality as a Framework for Composition: Rhythmic Thresholds, Spectral Harmonies and Afrological Improvisation’ (D.M.A. thesis, Columbia University, 2012), <https://academiccommons.columbia.edu/doi/10.7916/D8639WV9/download>.

<sup>128</sup> Lehman’s understanding of improvisation as liminal appears to derive from the theorisation of liminality used in performance studies, as discussed earlier, but in Lehman, ‘Liminality as a Framework’ he does not explicitly distinguish between this and the type of liminality relating to perceptual thresholds.

<sup>129</sup> Jennie Gottschalk, *Experimental Music Since 1970* (New York: Bloomsbury Academic, 2016), 22–26.

<sup>130</sup> See Tim Rutherford-Johnson, *Music after the Fall: Modern Composition and Culture since 1989* (Oakland: University of California Press, 2017), 178–189.

<sup>131</sup> See *ibid.*, 205.

<sup>132</sup> See Paul Griffiths, *The Substance of Things Heard: Writings about Music* (Rochester: University of Rochester Press, 2005), 227.

<sup>133</sup> See Aaron Helgeson, ‘What is Phenomenological Music, and What Does It Have to Do with Salvatore Sciarrino?’, *Perspectives of New Music* 51, no. 2 (Summer 2013): 4–36.

<sup>134</sup> See note 122. See also Klapcsik, *Liminality*, 7.

different terms in languages other than English.<sup>135</sup> These concepts, therefore, diverge significantly in their associations and in the ways in which they have been theorised, although there is inevitably some overlap (both, for example, being associated with ambiguity – a quality that I would argue inheres more to the metaphor of the threshold than, for example, the association of Turnerian liminality with the uncanny). Turner called his anthropological approach ‘comparative symbology’, a practice that he described as being concerned with ‘the relationships between symbols and the concepts, feelings, values, notions, etc., associated with them by users, interpreters, or exegetes’. In this practice, symbols are understood as ‘social and cultural dynamic systems, shedding and gathering meaning over time and altering in form’.<sup>136</sup> Accordingly, my interest in this project is in the *symbolism* of the limen, its associated concepts and feelings, rather than in any one particular limen (particularly where that limen pertains to physical, rather than symbolic, aspects of experience). Recall two earlier examples: the cyborg and the continually-extended period of waiting. These do not trouble the limits of the senses, but produce a feeling of liminal disquiet through their apparently-permanent enshrining of an in-between situation. To put it another way, my primary focus is on liminality within the domain of *culture*, rather than the domain of *nature* (without wishing to suggest that these domains are not interconnected and interdependent). It was, after all, an encounter with the concept of liminality as formulated to theorise social position, and the notion of applying this idea to musical style, that initially led me into this project. Whereas Grisey stated that, in his music, ‘it is sounds and their own materials which generate [...] new musical forms’,<sup>137</sup> my approach has been grounded less in physical phenomena and more in culturally-determined musical features such as melody and quasi-syntactical harmonic systems, with all of their associated baggage. Although I have occasionally employed techniques intended to produce liminality at a perceptual level (chords that fade into one another; melodic lines that can’t quite be disentangled; etc.), which in my theoretical framework would be classified as thematic liminality of a more literal variety, this is only one of many thresholds with which the music in this portfolio is concerned.

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Some other composers have taken approaches to which mine bears a somewhat closer resemblance. Brian Ferneyhough often employs liminal formulations such as ‘grey zones’,<sup>138</sup>

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<sup>135</sup> See note 124.

<sup>136</sup> Turner, ‘Liminal’, 54.

<sup>137</sup> Grisey and Fineberg, ‘Did You Say’, 2.

<sup>138</sup> Brian Ferneyhough, *Collected Writings*, eds. James Boros and Richard Toop (London: Routledge, 2003), 49, 51.

'boundary situations',<sup>139</sup> 'unstable boundaries'<sup>140</sup> and 'borderline states'<sup>141</sup> in the discussion of his music. There are two characteristics of Ferneyhough's music to which these formulations most often relate. The first is the interaction between ordered, predetermined structures and free, intuitive writing: 'the fluctuating neutral zones separating rigorous pre-ordering from more obviously spontaneous reactions to (against) the resultant pressure';<sup>142</sup> 'the "shadow zone" between the totally ordered and that which lends that ordering significance.'<sup>143</sup> I have adopted a similar approach in many of the compositions presented here, whereby the music is situated at the intersection between intuitive writing and highly organised systems, but with two key differences from Ferneyhough's stance. Firstly, in my music, these two impulses are associated with different musical styles – the ordered with the progressive and the intuitive with the traditionalist – whereas Ferneyhough considers style to be something more unified that emerges from this interaction, rather than a pre-existing referent that can participate in it.<sup>144</sup> This discrepancy is perhaps an inevitable result of my intuition being shaped rather differently from his, and standing in a different relationship with avant-garde tendencies. Secondly, I take this site of interaction to be a source of unease and ambivalence, while for Ferneyhough it is liberatory and propulsive: 'I conceive of complex forms of music primarily as examining and articulating such fluctuating boundary-states as a continuing manifestation of revelatory "progress"',<sup>145</sup> 'an unfailing source of renewal which is entirely positive.'<sup>146</sup> This contrast, I think, derives from a difference in philosophical outlook: in this project I have tended to accept the premises of postmodernism and to attempt to articulate the unease and difficulty of experiencing postmodernity from within, whereas Ferneyhough's aim appears to be more the reinvigorating of certain aspects of the modernist project as a means of opposing postmodernism – or at least particular postmodernist positions – from without (while not necessarily entirely rejecting the

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<sup>139</sup> Ferneyhough, *Collected Writings*, 377.

<sup>140</sup> *Ibid.*, 412.

<sup>141</sup> *Ibid.*, 431.

<sup>142</sup> *Ibid.*, 15.

<sup>143</sup> *Ibid.*, 214. See also Ross Feller 'Resistant Strains of Postmodernism: The Music of Helmut Lachenmann and Brian Ferneyhough', in *Postmodern Music/Postmodern Thought*, eds. Judy Lochhead and Joseph Auner (New York: Routledge, 2002), 257.

<sup>144</sup> 'For me, style is a result: it's not something you start out with.' Ferneyhough, *Collected Writings*, 156. See also *ibid.*, 77, 82.

<sup>145</sup> *Ibid.*, 77.

<sup>146</sup> *Ibid.*, 451. See also *ibid.*, 126, 130.

analyses of philosophers of the postmodern).<sup>147</sup> I should stress that I think there is value in both endeavours.<sup>148</sup>

The second characteristic of his music that Ferneyhough often discusses in liminal terms is the navigation between different listening perspectives, engendered by a compositional approach whereby different levels of the music suggest different relationships between the surface features and the structural frame: ‘What may, on the local level, be perceived as chaotic or not amenable to useful prediction is often seen to be highly ordered when observed from a differently-scaled perspective.’<sup>149</sup> The listener is understood as constructing multiple hypothetical formal models through which to comprehend the music and predict its motion, and is forced by the interaction and interference of differing structural forces and developmental processes to move to and fro between these different interpretations, creating an impression of ‘purposeful fluctuation, constant change of perspective and focus.’<sup>150</sup> The ‘grey zones’ and ‘borderline states’ mentioned earlier are precisely those places in which the listener must perform sudden ‘shift[s] in perspectival assessment’<sup>151</sup> or ‘twists of focus’.<sup>152</sup> This perspectival multiplicity closely resembles Klapcsik’s narrative liminality, in which ‘the reader oscillates among various perspectives [and] focal points’,<sup>153</sup> although it must be noted that narrative perspectives and interpretative perspectives are not precisely equivalent, and Klapcsik also includes oscillation between styles as part of narrative liminality, which entails a polystylistic approach to which Ferneyhough seems opposed, as discussed. In my own music presented here, this type of liminality between perspectives has not been a primary concern, but I have nevertheless attempted it in some pieces (specifically *Beyond/Between/Beneath* and the central section of *Ursus Subductus*).

Other liminal concerns are addressed in some of Ferneyhough’s pieces. In *Time and Motion Study III*, Ferneyhough states that he ‘wanted to blur, destabilize the boundaries’ separating human from machine, creator from created<sup>154</sup> – a typical cyborg formulation. This is accomplished by the use

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<sup>147</sup> See particularly Ferneyhough, *Collected Writings*, 76–83. See also *ibid.*, 27, 424–425.

<sup>148</sup> My thinking here is informed by McKenzie’s discussion of transgressive and resistive strategies of efficacy. See McKenzie, ‘The Efficacy’, 38–44, especially *ibid.*, 43.

<sup>149</sup> Ferneyhough, *Collected Writings*, 66.

<sup>150</sup> *Ibid.*, 126. See also Paul Griffiths, *Modern Music and After*, 3rd ed. (New York: Oxford University Press, 2010), 306.

<sup>151</sup> Ferneyhough, *Collected Writings*, 49.

<sup>152</sup> *Ibid.*, 431.

<sup>153</sup> Klapcsik, *Liminality*, 21; see note 95.

<sup>154</sup> Ferneyhough, *Collected Writings*, 93.

of voices with electronic amplification and the taking on of machinic aspects by the former and organic aspects by the latter: ‘the voices are challenged [...] to act with an almost computer-like precision and engagement [while] the electro-acoustic dimension is accorded a certain “human” flexibility.’<sup>155</sup> Paul Griffiths gives a liminal characterisation of the opera *Shadowtime*: ‘The work places itself in a multi-dimensional borderland: between France and Spain [...]; between this world and the next; between present and past; between chronological time and eternal simultaneity’; etc.<sup>156</sup> In Ferneyhough’s discussion of his Second String Quartet,<sup>157</sup> he describes the opening section as containing three types of material: a (largely) homophonic ‘main material’ that develops through additive processes; a polyphonic ‘secondary material’ that varies but does not develop in a directed fashion; and a kind of thematised silence, beginning as actual rests and later sometimes being filled with ‘impoverished’ sounds, particularly *glissandi*, which are treated as functioning like silence because of their low informational content.<sup>158</sup> Ferneyhough treats passages of this third type of material as occupying a liminal space, writing that they ‘paradoxically partake of both static and active functions: theirs is the underlying ambiguity, theirs the iconic demonstration of that No-man’s-land, that area of brittle and unstable truce in which all battles for signification begin and end.’<sup>159</sup> *Glissandi* also feature prominently in my evocations of liminality, though I do not quite treat them as containing ‘nothing informationally germane’ and having a ‘functional value [that is] low because possessed of no significant harmonic/intervallic delineation’;<sup>160</sup> typically, they have an important function, but this is not to delineate pitches but precisely to problematise that delineation by both blurring and foregrounding it, drawing the ear in order to suggest that something important is occurring but making it difficult to establish precisely what. In other words, the *glissando* itself is germane *gestural* information but impedes the identification of germane *pitch* information by suggesting that all pitches within the spanned interval are potentially significant. (It must be said, of course, that the informational content of my music in general is much lower than that of Ferneyhough’s; in such a context, *glissandi* would inevitably function somewhat differently.)

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<sup>155</sup> Ferneyhough, *Collected Writings*, 93.

<sup>156</sup> Griffiths, *Modern Music*, 415.

<sup>157</sup> Ferneyhough, *Collected Writings*, 117–130.

<sup>158</sup> *Ibid.*, 119–124.

<sup>159</sup> *Ibid.*, 124.

<sup>160</sup> *Ibid.*, 122.

Generally speaking, it is my impression that Ferneyhough typically treats liminal zones as being temporary or localised situations forming part of a progressive, directional process, resulting perhaps from his endorsement – not uncritically, but rather reassessed and re-evaluated – of dialectics and synthesis.<sup>161</sup> As he writes, ‘In my compositions, I am always setting out to define *momentary, transitory* states of balance or conflict’.<sup>162</sup> The grey zones are within the music, rather than vice versa. The forward drive of this directional, processual approach is, I suspect, at least partly responsible for what Griffiths calls the ‘wild, fresh energy’<sup>163</sup> of Ferneyhough’s music. Conversely, in accordance with Klapcsik’s postmodernist reformulation,<sup>164</sup> I understand liminality as a permanent situation, and have often tried to evoke something of this ‘endless, oscillating movement’ in the music presented here. Nevertheless, there are certain commonalities of approach between my music and his. Of course, the foregoing finer distinctions notwithstanding, the most immediately-apparent difference is one of style. While I think that most listeners would place Ferneyhough’s music fairly straightforwardly within the avant garde (Max Paddison would seem to agree;<sup>165</sup> Ross Feller argues it is often *mistaken* for avant-gardism;<sup>166</sup> Ferneyhough himself sees it as ‘a continuation (and reformulation) of the central concerns of Late Modernism’),<sup>167</sup> my attempt to achieve a liminal positioning between styles has been an indispensable concern of this project, having been the impetus that initiated it.

Another potentially illuminating comparison would be to the music of Aaron Cassidy. Cassidy’s music involves the ‘decoupling’ of different parameters that combine to produce sound,<sup>168</sup> an act achieved through the use of novel, bespoke notation systems that specify multiple simultaneous types of physical movement (which often interfere with one another), rather than the desired outcome in sound of those movements.<sup>169</sup> Again, then, the music is produced by the interaction between various forces that pull in different directions; as with Ferneyhough, this happens within a single

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<sup>161</sup> See Ferneyhough, *Collected Writings*, 424.

<sup>162</sup> *Ibid.*, 132; emphasis mine. See also *ibid.*, 247.

<sup>163</sup> Griffiths, *Modern Music*, 299.

<sup>164</sup> See notes 11, 57.

<sup>165</sup> Max Paddison, ‘Postmodernism and the Survival of the Avant-Garde’, in *Contemporary Music: Theoretical and Philosophical Perspectives*, eds. Max Paddison and Irène Deliège (Farnham: Ashgate, 2010), 205–228.

<sup>166</sup> Feller, ‘Resistant Strains’, 253.

<sup>167</sup> Ferneyhough, *Collected Writings*, 425.

<sup>168</sup> Rutherford-Johnson, *Music after the Fall*, 104.

<sup>169</sup> Gottschalk, *Experimental Music*, 79–81.

stylistic paradigm, but here the forces act more upon the performer than directly upon the sequence of musical events (though the former also occurs to some degree in Ferneyhough's music). Cassidy's notation systems are designed to allow for constant change in each of the parameters they address, shifting the focus of the music away from discrete points and pitches and towards the spaces and movements between them. He describes this in liminal terms that resonate strongly with some of my concerns in this project: 'my music has always been about in-between states. It has always been about the glissando, the timbral transition, the movement between bow positions or pressures [...] The points on either side have often been immaterial—they are simply the starting and stopping points of unstable, transitional movements.'<sup>170</sup> The effect produced by these shared concerns, is, however, rather dissimilar in Cassidy's music and in mine, as a result, I think, of two principal distinctions. Firstly, Cassidy's aesthetic outlook is heavily informed by a desire for innovation, a primary interest in 'expanding what *might* be possible' and avoidance of 'materials and crafts and methods and forms that already exist',<sup>171</sup> which I would characterise as a modernist stance (Martin Iddon describes Cassidy as a composer 'whose musical upbringing was in a world, essentially, *after* modernism, but whose work is still bound up in its trappings'),<sup>172</sup> whereas I have taken an essentially postmodernist position that is more sceptical of the pursuit of newness and more willing to incorporate pre-existing forms. Secondly, as discussed previously, my concern is with the liminal as a more general category of experiences and phenomena, rather than solely with in-between states operating at the level of musical features, and consequently I have attempted to approach the liminal on multiple levels simultaneously, as laid out in my theoretical framework.

Generally speaking, my music is not so radically novel in sound and contains less moment-to-moment change than Cassidy's, but this is, I would contend, supportive of my aims in this project. As I have noted, the recontextualisation and defamiliarisation of the familiar is often associated with liminality,<sup>173</sup> and this requires the use of elements that carry a sense of familiarity — as, importantly, does my goal of stylistic liminality. Of course, familiarity is a matter of perspective and enculturation,

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<sup>170</sup> Aaron Cassidy, 'Imagining a Non-Geometrical Rhythm' (Inaugural Professorial Lecture, University of Huddersfield, 23 March, 2015), transcript and video (Huddersfield: University of Huddersfield Repository, Unpublished), <http://eprints.hud.ac.uk/id/eprint/27077/>, 2.

<sup>171</sup> Aaron Cassidy, 'I am an experimental composer' (paper presented at the Composition-Experiment-Tradition conference, Orpheus Research Centre in Music, Ghent, February 2012), transcript, <http://aaroncassidy.com/experimental-composer/>; emphasis in original.

<sup>172</sup> Martin Iddon, review of *Musical Modernism at the Turn of the Twenty-First Century*, by David Metzger, *Notes* 67, no. 2 (December 2010): 319.

<sup>173</sup> For example, see notes 73, 99.

and there are certainly elements within Cassidy's music that carry recognisable traces of the known, but I think that for most listeners Cassidy's emphasis on innovation would place his music significantly *beyond* the threshold at which the familiar gives way to the strange.

Furthermore, it is my view that the liminal experiences and situations I have tried to evoke are characterised more often by an eerie and unsettled kind of instability than a more extreme discontinuity. Therefore, my aim of expressing the emotional states associated with the symbolism of the limen is better met by an approach that maintains some degree of continuity in some parameters, rather than Cassidy's approach in which 'each layer of physical activity [...] is in a more or less continuous state of change';<sup>174</sup> instability in my music appears as the *undermining* of stability, rather than its absence. Additionally, recalling my earlier image of the seemingly-endless corridor as an illustrative example, the liminality of that space is dependent upon a certain degree of recognition of its transitional function; the inability to determine where the corridor leads only produces a sense of disorientation if it is apparent that it *should* lead somewhere. Consequently, as I have suggested, my music also tends to retain some degree of quasi-syntactical structuring that produces a sense of function, but a function that is often frustrated or attenuated. Therefore, while Cassidy's music *embodies* in-between-ness more pervasively in its musical features than mine, my goal of *evoking* liminal phenomena that are not themselves musical requires a somewhat greater degree of continuity, both in order to achieve the desired array of expressive characters and in order that the nature of the changes that *are* occurring can more readily be apprehended. To put it another way, my aim has often been to produce music that offers something to cling onto, but makes these handholds slippery and tenuous. Tim Rutherford-Johnson writes that in Cassidy's music 'The ear struggles to grasp a semantic structure [...] and instead listens in the moment';<sup>175</sup> I have chosen rather to try to *maintain* that struggle by offering something closer to the threshold between graspable and ungraspable (although I should note that it is not generally the semantic structure that fulfils this role).

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To summarise, the primary thing that is distinctive about my approach in this project as compared with the music discussed above, as well as the music mentioned in the scholarship cited earlier, is my attempt, underpinned by a theoretical framework adapted from literary theory, to embed liminality into the music presented here on three distinct levels simultaneously: the thematic level (encompassing the figurative as well as the literal); the aesthetic (or experiential) level; and the stylistic

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<sup>174</sup> Cassidy, 'Imagining', 2.

<sup>175</sup> Rutherford-Johnson, *Music after the Fall*, 104.



level. In particular, the stylistic liminality for which I have aimed is fundamental to this project, which arose initially out of a dilemma relating to style. In many ways, my interest in liminality more broadly was spurred by the idea of applying this concept from anthropology to the question of musical style.

## FINAL OVERVIEW

This portfolio comprises nine pieces. Three are standalone works: *Beyond/Between/Beneath; It Is Not Made Of Mud*; and *Riven*. Each of these explores different issues relating to liminality.

Next, three pieces for different instrumental duos form a loose trilogy: *Voidsnakes: A Slitherflesh Offering to the Great Unspeakable Ones*; *Darkshrikes: An Ancient Knowledge in the Shadow of the Bloodthorn*; and *Frostcrows: A Chitinous Shuddersong over our Frozen Bones*. Here I have listed these pieces in suggested performance order (rather than order of composition), though they need not be performed as a complete set. As well as each having their own individual concerns, these three pieces, in differing ways, explore the overlappings and divergences of their respective pairs of instruments, the sonic and conceptual spaces between them.

Lastly, a set of three microtonal electronic pieces constitutes a more cohesive trilogy: *Altared*; *Ursus Subductus*; and *Run C:\empathy.exe*. Again, I list these in their intended running order (here not merely a suggestion). These three pieces explore the space between the notes as a source of unstable and uncomfortable harmony, employing chords that sound familiar but strange, and often move in unexpected and disorientating ways. Utilising Baroque influences alongside elements from a variety of more recent styles, these pieces also constitute a project of alternate history, imagining that tonality had developed along drastically different lines from its outset, and applying tonal logic to microtonal tuning systems where it jars uncomfortably.<sup>176</sup> Much more than the other works presented here, they also exhibit Klapcsik's cultural/institutional liminality, interrogating the boundary between contemporary classical and popular musics.

I shall discuss each of these nine pieces in the following order: firstly, the six pieces for conventional instruments, ordered chronologically according to when I commenced work on them; secondly, the three electronic pieces, ordered in the same way.

\* \* \*

This project could be understood as an experimental one, in the sense that I have tried out a number of different approaches to expressing and evoking liminality in order to determine which

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<sup>176</sup> For a discussion of alternate histories in relation to liminality and postmodernism, with reference to the works of Philip K. Dick, see Sandor Klapcsik, 'Philip K. Dick: Urbanity, Liminality, Multiplicity', in *Liminality*, 121-162. See particularly *ibid.*, 147-154.

were effective; some approaches led to results that I found unsatisfying in certain regards, and these were not carried forward, while others proved fruitful and were built upon in later pieces. I would not, however, wish to suggest that my approach has been a scientific one: I have not devised a falsifiable hypothesis and tested it in order to determine its accuracy in hopes of establishing some fundamental, central truth about liminality. Nor is this a cartographical expedition, attempting to map the full extent of the terrain of the liminal, to define its borders and comprehensively catalogue its features – indeed, any such attempt would seem inimical to a concept concerned with ‘transgressions, or traversals, across *evanescent*, [...] *ambiguous*, *evasive borderlines*.’<sup>177</sup> Rather, this is a project of exploration: a series of roving across that terrain, guided by particular aims, but not directed towards any specific, known destination. In each piece, I set off in a slightly different direction, taking into account what I have learned so far, but trying not to retread too much of the same ground, in hopes simply of discovering something interesting and fruitful.

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<sup>177</sup> Klapcsik, *Liminality*, 14; emphasis in original.

## II.

**VOIDSNAKES: A SLITHERFLESH OFFERING TO THE GREAT UNSPEAKABLE ONES**  
for Two Violins (2014, rev. 2015)

*Voidsnakes* is, at its most basic level, a study on *glissandi*. More specifically, it is a study on the different ways in which pairs of simultaneous *glissandi* can interact. *Glissandi* seemed an apt technique to explore from the perspective of liminality (as many examples cited in my Introduction attest), because they draw the attention of the listener into the space between the notes – both in the vertical sense of the microtonal pitches through which they pass, and in the horizontal sense of the gradual transition between one note and the next in a melodic line. In *Voidsnakes*, *glissandi* are foregrounded to the extent that they become not just an expressive device or textural effect, but the substance of melody itself – the melody lies as much in the journey between the notes as it does in the notes at either end of the journey. Additionally, in this piece I use *glissandi* to blur the boundary between the two violins, intertwining the identities of their individual lines, such that it becomes difficult for the ear to unpick them. As Turner writes, ‘blurring and merging of distinctions may characterize liminality.’<sup>178</sup> This focus on *glissandi* and on the sonic boundary between the instruments constitutes the thematic liminality of the piece, which in this case is quite literal, pertaining as it does to the tangible features of the music itself.

The liminal aesthetic qualities of *Voidsnakes* also derive primarily from the way in which it uses *glissandi*. By its constant blurring and sliding, the music becomes unstable and slippery; the rhythms are often ambiguous or indeterminate, especially where the violins move onto or away from the same notes at different times; melodic lines pass back and forth between the instruments, becoming difficult to follow. There is also a ‘constant oscillation’<sup>179</sup> between major and minor intervals, creating a kind of modal ambivalence. The overall effect is unsettling and disorientating, and perhaps even subtly threatening (an impression that the title encourages).

Stylistic liminality is perhaps a lesser concern in *Voidsnakes*, but is still present. The pitch and rhythmic content of the music is quite traditionalist: it is based primarily around melody, with the melody either supported by a simple, largely-consonant harmonisation using mostly thirds and sixths (such as in bb.16–30), or elaborated using imitative counterpoint (e.g. bb.57–62). Most of the motivic material grows quasi-organically from a ‘seed’ of pitch class set {0,1,4}, most often appearing as an ascending major third followed by a descending semitone. The structure of the piece is also traditional: it is essentially a theme and variations, proceeding episodically. However, the presentation

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<sup>178</sup> Turner, ‘Liminal’, 59.

<sup>179</sup> See Klapcsik, *Liminality*, 13, 14.

of this material is at odds with its traditionalism. The ubiquity of extended techniques (mainly *glissandi*, but also changes in bowing position) is more typical of avant-garde and experimental music (compare, for example, the extensive use of *glissandi* in Rebecca Saunders's *Blue and Gray*),<sup>180</sup> while the constant exchanging of notes and registral crossings between instruments throughout much of the piece disguise the melodic material, undermining the listener's ability to parse it as melody, and thereby weakening the ability of melody to serve as an organising principle. Indeed, in the only place in which imitative counterpoint occurs without the complicating factor of note exchange (bb. 51–56, a kind of attempted *stretto*), it almost immediately breaks down, as if to suggest that only stylistic tension allows the music to be sustained for any significant duration. Complicating this relationship between styles further, the logic of the musical construction is underpinned by concerns relating to the interaction of simultaneous *glissandi*, meaning that it is not straightforwardly possible to separate the piece into a traditionalist frame and a progressive façade – the *glissandi* are always already present as an organising principle.

\* \* \*

The first stage in composing *Voidsnakes* was to create a chart of all of the ways in which two simultaneous *glissandi* can interact in terms of pitch. The *glissando* pairs are categorised in terms of the relative pitches of the four notes involved (i.e. the starting and finishing pitches of each *glissando*), since this is what determines how the *glissandi* themselves interact – whether they diverge, converge, cross over, etc. So, for example, one type of *glissando* pair could be described as: the starting note of *glissando a* is higher than the starting note of *glissando b*; the finishing note of *glissando b* is the same as the starting note of *glissando a*; the finishing note of *glissando a* is lower than the starting note of *glissando b* (and, therefore, also lower than the other notes). The chart of all these possible types is reproduced in Figure 1 (the type just described being number 10).

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<sup>180</sup> Rebecca Saunders, *Blue and Gray* (2005): *For Two Double Basses with Five Strings* (Frankfurt am Main: Henry Litolf's Verlag/C. F. Peters, 2005).

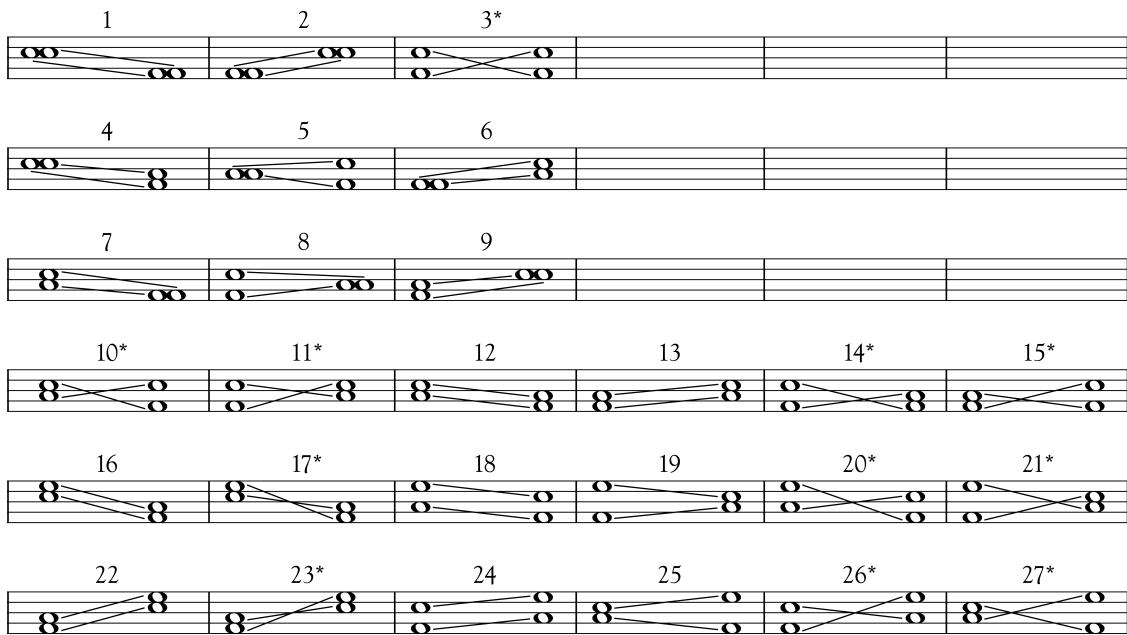


Fig. 1. Types of *glissando* pair used in *Voidsnakes*

Again, the pitches here are relative, not absolute; what matters is whether each note is higher than, lower than, or the same as each other note. Over the course of *Voidsnakes*, all 27 of these types are used, most of them many times. The form and content of the piece are designed specifically to fulfil this aim of exhaustively (but not systematically) working through all of these possibilities. Particular attention is given to those types in which one *glissando* crosses over the other, marked in Figure 1 by asterisks, since these accord with what Klapcsik identifies as the creation of liminality by ‘transgressions, or traversals, across *evanescent, porous, indefinite, ambiguous, evasive borderlines*.’<sup>181</sup>

The theme of *Voidsnakes* (which is essentially monothematic), is shown in Figure 2.



Fig. 2. Theme of *Voidsnakes*

This theme is characterised by its zig-zagging shape, deliberately chosen so as to provide frequent opportunities for both upwards and downwards *glissandi*. Additionally, the alternation between ascending and descending intervals allows most of the notes to function as inflection points, making the contours of the melody clearer than if too many of the notes functioned merely as stopping-points between two *glissandi* in the same direction (though a few notes do fit this description). Furthermore, the zig-zagging motion, along with the modal ambivalence mentioned

<sup>181</sup> Klapcsik, *Liminality*, 14; emphasis in original. See note 177.

previously, evokes what Klapcsik calls the ‘constant oscillation’ of liminality,<sup>182</sup> and the reversals involved in ‘the deconstruction of linear movements, binary oppositions, and hierarchies, the ambivalence of liminality.’<sup>183</sup>

In the theme’s initial presentation (bb.1–5), it is played by both violins in something that is not quite unison. Their notes are the same, but their *glissandi* are not all completely synchronised; one violin often begins or ends before the other. This blurring technique somewhat resembles Ligeti’s ‘micropolyphony’, and allows a space to open up between the instruments. The nature of this space, and the relationship between the instruments, is ambiguous, as is the identity of the theme; we are unsure whether we are hearing one line or several, and unsure which violin is moving when. This is the beginning of the ‘blurring and merging of distinctions’ mentioned earlier.<sup>184</sup> The effect is tense and uneasy.

As the instruments diverge (beginning at b.6), the space between them widens, but their relationship remains complex, their boundaries ambiguous. This is achieved primarily by what I have referred to as ‘note exchange’, i.e. the passing of a melodic line (or simultaneous passing of two lines) back and forth between the instruments. Ordinarily this would not necessarily make it especially difficult to pick out the melody, especially where a registral separation persists. However, the *glissandi*, already blurring the shape of the melody and drawing the listener’s focus away from the discrete pitches, also create a tangible link between successive notes played by one violin, thereby tying the notes of the melody to their surrounding non-melodic notes, and weakening their connection to one another. Paradoxically, then, the *glissandi* both strengthen and weaken the links between the notes: they create a perceptible thread from one note to the next, foregrounding the connection between them, but also impose a distance between the notes, a temporal separation and a distracting gestural barrier. (I will return to this idea in *Riven*.)

This note exchange technique is an attempt to create what Klapcsik calls ‘liminality as the *space of continuous transference*’.<sup>185</sup> Notes and part-identity are continuously transferred back and forth between the violins, and it becomes extremely difficult for the ear to disentangle the sound of one

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<sup>182</sup> See note 179.

<sup>183</sup> Klapcsik, *Liminality*, 9. In *ibid.*, 9–11, Klapcsik discusses these reversals in the context of Derridean deconstruction, with some reference to how they can manifest in literature. Turner also discusses how liminality is often characterised by reversal – see Turner, ‘Liminal’, 85; and Victor Turner, ‘Humility and Hierarchy: The Liminality of Status Elevation and Reversal’, in *Ritual Process*, 166–203.

<sup>184</sup> See note 178.

<sup>185</sup> Klapcsik, *Liminality*, 14; emphasis in original.

violin from the other, one melodic line from another, thereby continuing the ‘blurring and merging of distinctions.’ This is especially true where the *glissandi* cross over one another, since this causes their pitches to meet in the middle, and it can be almost impossible to determine which ending pitch came from which starting pitch. The effect is disorientating and cognitively taxing; the ear is drawn to the melody, but often struggles to keep it in focus.

To illustrate this note exchange technique, Figure 3 shows how it is implemented in bb.57–62. Here, the theme is superimposed on top of itself at an interval of a major third, one crotchet apart.

Fig. 3. Construction of note exchange technique in *Voidsnakes*, bb.57–62

The top pair of lines shows the theme and its imitation before notes have been exchanged. The dotted lines indicate how the note exchange operates, by showing the voice-leading it will produce in each violin part. The bottom pair of lines shows the music as it appears in the score (with articulation and dynamics removed for clarity). The numbers between the staves correspond to the chart in Figure 1, indicating which type of *glissando* pair is occurring at that point.

The number of different *glissando* pair types found in the above passage is small; in passages where the theme is harmonised more freely, the choice of harmony note is often influenced by a desire to produce a particular type of *glissando* pair, with each passage tending to focus on a particular subset (for example, bb.16–30 contain instances of types 10–15). This focus on different subsets is part of what creates the different character each variation – the static quality of bb.16–30 versus the exuberance of bb.40–50, for example – and illustrates how concerns relating to *glissando* pairs function as an organising principle in the piece.

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Even in this relatively simple piece, liminality is in operation on multiple different levels, and informs most of the compositional decisions. First and foremost, it is expressed through the focus on *glissandi*, and the way in which they are used call into question the sonic boundaries between the two violins as their lines diverge, converge, overlap and intertwine.

## III.

## BEYOND/BETWEEN/BENEATH

for Flute, Clarinet (doubling Bass Clarinet), Violin, Viola and Pianoforte (2015)

*Beyond/Between/Beneath* is an attempt to translate into music the principles underlying the literary subgenre of 'liminal fantasy', one of four categories of fantasy identified by Farah Mendlesohn in her book *Rhetorics of Fantasy*.<sup>186</sup> Liminal fantasies are those in which the boundaries between reality and the fantastical are challenged or obscured, such that the reader is unsure which elements of the story belong to which realm; 'the liminal fantasy is about doubt,'<sup>187</sup> and 'suggest[s] that the boundaries between fantasy and reality are elusive or insignificant.'<sup>188</sup> This is generally accomplished by a doubling (or pluralising) of narrative perspective, in which the reader's notions of what constitutes reality are set at odds with those of the character(s) and/or narrator(s):<sup>189</sup> 'we sit in the subconscious of the point of view character, quietly screaming, "But something is wrong."<sup>190</sup> Klapcsik draws upon Mendlesohn's notion of liminal fantasy for his formulation of narrative liminality ('the reader oscillates among various perspectives') and thematic liminality ('which blurs the boundaries [...] between the real world and the fantastic-virtual'),<sup>191</sup> and for his analysis of the works of Neil Gaiman.<sup>192</sup>

In *Beyond/Between/Beneath*, I set out to evoke this same sense of uncertainty between the real and the fantastical. In liminal fantasy, this tension typically arises from an incongruity between the events described and either the tone used to describe them, or the characters' responses to them, or both: things that the reader considers fantastical are treated as unremarkable, or vice versa.<sup>193</sup> 'The tone of the liminal fantasy could be described as blasé.'<sup>194</sup> This method relies on literature's ability to describe events, entities and phenomena, and the reader's ability to recognise those things as either realistic or fantastical. Music, however, is not a complete semantic system, and cannot generally

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<sup>186</sup> Farah Mendlesohn, *Rhetorics of Fantasy* (Middletown: Wesleyan University Press, 2008).

<sup>187</sup> *Ibid.*, 116.

<sup>188</sup> Klapcsik, *Liminality*, 57.

<sup>189</sup> Mendlesohn, *Rhetorics*, xxiii–xxiv; Klapcsik, *Liminality*, 56–59.

<sup>190</sup> Mendlesohn, *Rhetorics*, xxiv.

<sup>191</sup> Klapcsik, *Liminality*, 21. See note 95.

<sup>192</sup> *Ibid.*, 56–59, 65–68.

<sup>193</sup> *Ibid.*, 57–58.

<sup>194</sup> Mendlesohn, *Rhetorics*, xxiii.



describe in this way.<sup>195</sup> A listener's conception of what does and does not belong in a particular musical context is rooted not in the recognition of mimesis but in an understanding of the implicit rules by which the music is operating, such as expectations of style and form. In *Beyond/Between/Beneath*, I attempted to recreate the uncertainty of liminal fantasy by presenting an apparent contrast between music intended to evoke the real and music intended to evoke the fantastical, then destabilising this binary, eventually resulting in an ambiguity as to the identity of the musical material at the end of the piece, and thereby implying an ambiguity between the real and the fantastical.

\* \* \*

*Beyond/Between/Beneath* is structured as a reordered theme and variations, by which I mean that the variations appear in an order different from that in which they are derived from one another and from the theme. The piece proceeds through three distinct stages. The first stage establishes a contrast between 'worldly' music intended to evoke ordinary reality and 'otherworldly' music intended to evoke the fantastical or supernatural. This contrast is one not only of character but also of musical style. In the second stage, both of these musics undergo processes intended to destabilise their identities: the otherworldly music is gradually revealed to be derived from the worldly music, such that it encroaches upon the worldly music's identity, while the worldly music is gradually deformed and distorted, loosening its grasp on its own identity. Finally, in the third stage, the results of these processes are presented simultaneously; the intention is that it should be ambiguous which music possesses a continuity of identity with the worldly music of the original theme, thereby calling into question the original apparent boundary between the worldly music and the otherworldly music, and, by implication, between the real and the fantastical. (Whether this intention is successfully realised will be addressed later.)

Figure 4 illustrates the form of the piece (referring to the variations by character, rather than number, since they are reordered). This is a simplified schematic, and does not account for the frequent interjections of material from one section into another section.

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<sup>195</sup> To be clear, I do not regard music to be an inherently abstract artform. As well as imitating real sounds, music can suggest through associations, such as the use of a march to suggest militarism; this matter is discussed at length in V. Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music* (Princeton: Princeton University Press, 1991). However, these associations must be established by convention, and no such convention exists for the signification of the referents with which I am concerned.

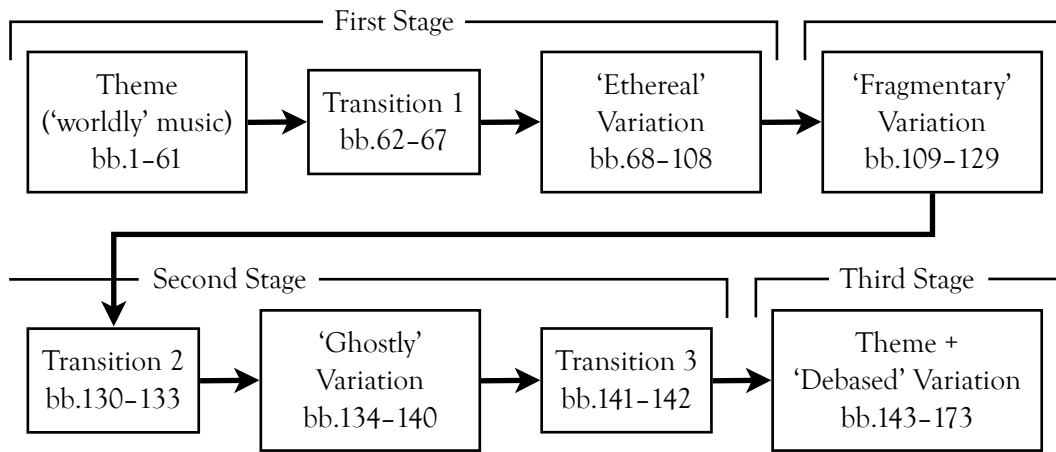


Fig. 4. Form of *Beyond/Between/Beneath*

Figure 5 shows how each variation derives from the theme (directly or via other variations); the order of this progression differs from the chronological order in which the material is presented.

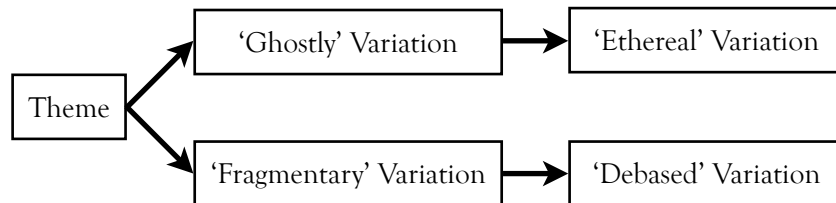


Fig. 5. Derivation of variations in *Beyond/Between/Beneath*

From left to right along this progression, the music becomes separated from the theme not only through development, but also through a stylistic shift away from the self-conscious traditionalism of the theme towards more progressive styles.

A third (more subjective) progression underlies the structure, concerning the evocative characters of the sections. This progression could be characterised as a descent from the celestial to the diabolical, and is illustrated in Figure 6 (again not presented chronologically).

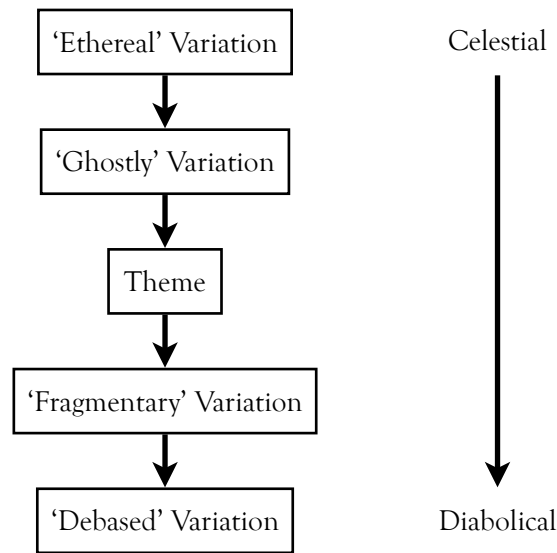


Fig. 6. Progression of evocative characters of sections in *Beyond/Between/Beneath*

The symbolic rationale underlying this progression is not necessarily obvious to the listener, but the progression itself is audible in a chopped-up form, as depicted in Figure 7, which shows how this progression is deployed chronologically in the piece.

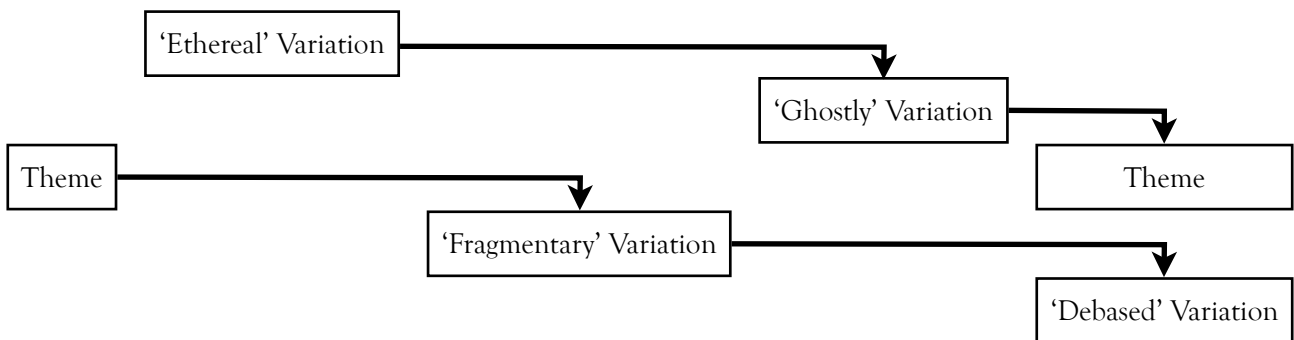


Fig. 7. Chronological deployment of progression of evocative characters of sections in *Beyond/Between/Beneath*

That the theme is the departure point for one segment of this process and the arrival point for the other segment suggests that it is indeed one continuous linear process, but one that is at odds with the chronology of events as presented in the piece. The ordering of the piece's title provides a hint as to the presence of the underlying trajectory shown in Figure 6.

The contradictory orderings of these overlapping trajectories are intended to create a complex narrative multiplicity, in which chronology and causality do not align.<sup>196</sup> By this method, I attempted to create the pluralised perspectives characteristic of liminal fantasy; the events can be interpreted in

<sup>196</sup> See Klapcsik, *Liminality*, 9–11.

several different ways according to several different logics. ‘Liminal fantasy creates possible readings [...] it “makes readings available.”’<sup>197</sup>

The structural model above is predicated on discrete sections; in actuality, however, the sections often interject into one another. Early examples are the string *glissandi* in bb.4, 19–20, and 43–45, which prefigure the ‘ethereal’ variation, and the piano solo in bb.95–98, which recalls several passages of the theme. The final manifestation of this principle of interjection is in what I described earlier as the ‘third stage’: the ‘debased’ variation and the recapitulation of the theme are collapsed into a single section, such that the former exists only as interjections into the latter. This erasure of the temporal boundary between sections is intended to destabilise the boundary between the sections’ identities, so as to contribute to the difficulty in deciding which layer of the music corresponds to the theme as originally presented.

In accordance with Klapcsik’s statement that ‘liminality is created by transgressions, or traversals, across *evanescent, porous, indefinite, ambiguous, evasive borderlines*,’<sup>198</sup> I have aimed to create a structure in which the chronological sequence of events not only traverses across the linear processes by which those events are related to each other, but also transgresses the boundaries that govern its own sequential presentation of those events.

\*

I shall briefly describe each of the sections, in order to clarify the processes outlined above.

The theme (bb.1–61) is characterised by busy counterpoint in a fairly traditionalist style somewhat reminiscent of neoclassical Stravinsky. While by no means intended to be tedious, it is supposed to convey the mundane, while a *fugato* section (bb.32–52) acts as a deliberate signifier of the traditional. This style of music is employed both to evoke the quality of ‘worldliness’ and to govern stylistic expectations. Both melody and harmony emphasise the interval of a minor 9th, chosen for its ability to evoke a feeling of being simultaneously near and yet far, and the clarinet is cast in a soloistic ‘protagonist’ role.

The transition in bb.62–67 attempts to evoke ‘the transliminal moment, the point where we are invited to cross the threshold into the fantastic, *but choose not to do so*. The result is that the fantastic leaks back through the portal.’<sup>199</sup> The flow of the music is disrupted by the sudden intrusion of extended techniques, creating sounds which do not ‘belong’ within the musical paradigm so far

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<sup>197</sup> Mendlesohn, *Rhetorics*, 183.

<sup>198</sup> Klapcsik, *Liminality*, 14; emphasis in original. See notes 177, 181.

<sup>199</sup> Mendlesohn, *Rhetorics*, xxiii; emphasis in original.

established. The clarinet dialogues with the strings, taking up the *glissando* technique from their earlier interjections, but not going so far as to alter its timbre to match the extremity of their overpressure – a mere flirtation with the fantastical, but enough for it to get a foothold.

When the ‘ethereal’ variation (bb.68–108) begins, the style is radically different from the theme. It focusses on timbre, employing various extended techniques, while melody and rhythm become somewhat intangible. This stylistic and expressive contrast establishes the opposition between the worldly/real and the otherworldly/fantastical; despite its contrasting appearance, however, the notes of the ‘ethereal’ variation are derived from the theme, as illustrated by Figure 8.

The figure consists of two systems of musical notation. The top system shows a short melodic phrase in treble clef with a key signature of one sharp (F#) and a common time signature. The bottom system shows a longer, more complex melodic phrase in the same key and time signature. Arrows indicate the derivation of notes in the bottom system from notes in the top system. A double bar line with a repeat sign is placed between the two systems. The word 'etc.' appears in both systems.

Fig. 8. Derivation of ‘ethereal’ variation from theme in *Beyond/Between/Beneath*

Although notes that are consecutive in the theme sometimes become simultaneous here, if a note is taken to begin at the start of the *glissando* that leads to it, the order of the notes is essentially retained. This variation is, in many ways, a successor to *Voidsnakes*, but its range of timbres is significantly broader. The derivation illustrated in Figure 8 is not intended to be audible at this stage in the piece; the connection is only revealed later.

Immediately after this follows the ‘fragmentary’ variation (bb.109–129). Here, the connection to the theme is much closer; the link is audible, creating a continuity of identity with the theme. Figure 9 illustrates the melodic derivation.

Fig. 9. Derivation of ‘fragmentary’ variation from theme in *Beyond/Between/Beneath*

The melody is distorted by octave displacements and rhythmic alterations, but its basic shape and phrase-structure are intact, and the clarinet still carries the melody. Stylistically, this variation is much freer than the theme; rhythm and register are used more creatively, and extended techniques, while not the focus, add colour. After the climax in b.120, the otherworldly strings begin to creep back in, mingling with the other instruments much more fully than they have done before (bb.124–129) – the boundaries between the contrasting musics have begun to weaken.

Preceded by a brief transition (bb.130–133) that recalls the ‘ethereal’ variation, the ‘ghostly’ variation (bb.134–140) constitutes the ‘missing link’ between that variation and the theme. As shown in Figure 10, the melody of the theme is divided between the flute, violin and viola, such that in many cases a note is arrived at simultaneously by two instruments, one by *glissando* and one with a clean onset.

Fig. 10. Derivation of ‘ghostly’ variation from theme in *Beyond/Between/Beneath*

The theme’s melody is audible but smudged, while the eerie character and abundance of *glissandi* connect this music to the ‘ethereal’ variation. The otherworldly music now transgresses not only into the space of the theme, but into its identity.

A final transition (bb.141-142) uses the same technique as the ‘ghostly’ variation to outline the first four notes of the theme; this prepares the theme’s reappearance, while further connecting it to the ‘ghostly’ variation.

In the final section (bb.143-173), the flute, violin, viola and piano play a fairly straightforward (albeit abridged and rearranged) version of the theme, while the bass clarinet, taking over from the clarinet, plays the ‘debased’ variation. This variation continues the process of distortion heard in the ‘fragmentary’ variation, but to a much greater extreme. Figure 11 shows how the ‘debased’ variation relates to the theme.

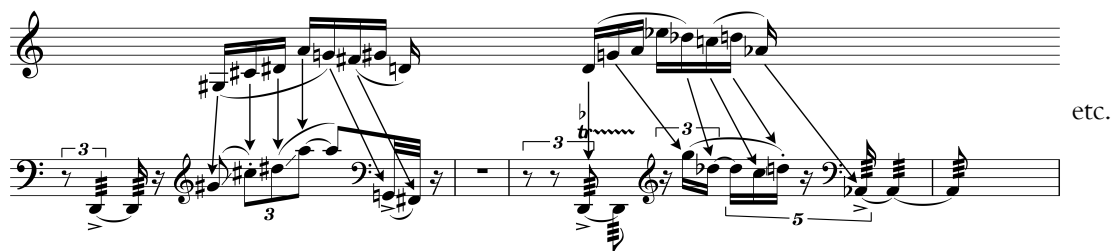


Fig. 11. Derivation of ‘debased’ variation from theme in *Beyond/Between/Beneath*

Phrases from the theme are taken in different transpositions, and its linear progress is not followed. Meanwhile, the extremes of range and timbre in this variation, along with its rhythmic complexity, mean that it sounds very much out of place set against the restrained contrapuntal style of the theme.

The process laid out in Figure 7 is now complete; the music of the ‘ethereal’ variation, originally evoking the fantastical, has descended to the worldly domain of the theme, which originally evoked the real, and has taken over its material. Meanwhile, the music of the theme has been gradually distorted, losing much of its original identity as it becomes stylistically and expressively estranged. The intention in bb.143-173 is that it should be ambiguous which layer of the music now corresponds to the original theme – and, by implication, which to the real and which to the fantastical.

\* \* \*

If some of the above seems a little unclear, I think it is largely because the thinking underlying the piece was somewhat muddled. As I have hinted, I do not think that *Beyond/Between/Beneath* is successful in creating a parallel to the liminal fantasy. This is not to say that I regard it as a bad piece; musically, it functions well enough, and the inspiration behind it resulted in a novel structure. Nevertheless, the sense of liminality between the real and the fantastical is not really present. Expectations in literature are already governed by style, genre and expressive character; liminal fantasy

adds ontological concerns on top of that, and *Beyond/Between/Beneath* does not accomplish the same. While the music of the theme and the ‘ethereal’ variation may evoke the real and the fantastical, that does not mean that the destabilising of the boundaries between them poses an ontological problem; the associations are simply not concrete enough for most listeners to hear this as anything more than an ordinary musical developmental process. There are multiple interpretations available for the music of the final section, but these interpretations are not necessarily mutually exclusive, and do not constitute differing *narrative* perspectives, only different interpretative perspectives. The listener may identify with the clarinet in its ‘protagonist’ role, but the clarinet does not meaningfully express a narrative perspective at odds with that of the listener; indeed I now question whether such a thing is possible in instrumental music. Ultimately, some aspects of liminal fantasy are evoked, but its central tension is absent. My conclusion was that my attempt here to translate a literary technique into music was too literal to be successful; hereafter, I largely focussed on the broader characteristics and associations of liminality, rather than specific literary techniques for creating it.

I was also dissatisfied with my approach to style in *Beyond/Between/Beneath*. Its polystylism consists mainly in juxtapositions – whether horizontal or vertical – of music of contrasting styles. This is reminiscent of the work of previous postmodern composers (for example, Schnittke), and feels less applicable to the present cultural moment; it does not achieve the liminal approach to style I outlined previously, nor does it generate liminality’s constant tension, appearing rather as a conflict that may ultimately be resolved. I would later find ways to combine elements of different styles at a more fundamental level, more successfully creating stylistic tension.



IV.  
IT IS NOT MADE OF MUD  
for Pianoforte (2015)

*It Is Not Made Of Mud* is a response to Donna Haraway's seminal 'Cyborg Manifesto',<sup>200</sup> from which the title of the piece is drawn.<sup>201</sup> In this essay, Haraway uses the image of the cyborg as a lens through which to analyse postmodern culture and politics, to understand the deconstruction (or collapse) of binaries in the postmodern era, and to propose a way forward: 'Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves. This is a dream not of a common language, but of a powerful infidel heteroglossia.'<sup>202</sup> Klapcsik mentions cyborgs as an example of a liminal entity in several places.<sup>203</sup> Haraway herself uses the term 'liminal' only in one place,<sup>204</sup> but the ideas she outlines are very much in keeping with Klapcsik's interpretation of liminality, centring as they do around hybridity, multiplicity, and, above all, boundaries, and the ambiguity, permeability, transgression and breakdown thereof. 'There is no drive in cyborgs to produce total theory, but there is an intimate experience of boundaries, their construction and deconstruction.'<sup>205</sup>

One of Haraway's core arguments is that, by the late 20th Century, the boundaries between human and animal, between organism and machine, and between physical and non-physical have all broken down. These binaries and their breakdowns are related: 'The cyborg appears in myth precisely where the boundary between human and animal is transgressed',<sup>206</sup> and 'The third distinction is a subset of the second'.<sup>207</sup> Haraway's contention is that the world has been translated into a problem of

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<sup>200</sup> Donna J. Haraway, 'A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century', in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149-181.

<sup>201</sup> 'The cyborg does not expect its father to save it through a restoration of the garden [of Eden]; [...] it is not made of mud and cannot dream of returning to dust.' *Ibid.*, 151.

<sup>202</sup> *Ibid.*, 181.

<sup>203</sup> See in particular Klapcsik, *Liminality*, 142-147. *Ibid.*, 142 is one of several places in which Klapcsik cites Haraway.

<sup>204</sup> 'Cyborg politics is the struggle for language and the struggle against perfect communication, against the one code that translates all meaning perfectly [...] This is not just literary deconstruction, but liminal transformation.' Haraway, 'Manifesto', 176-177.

<sup>205</sup> *Ibid.*, 181.

<sup>206</sup> *Ibid.*, 152.

<sup>207</sup> *Ibid.*, 153.

coding, and that both machines and organisms have been reconceived as coded texts (electronic signals, gene sequences, etc.).<sup>208</sup> Machines have acquired autonomy, while organisms have been technologised. 'It is not clear what is mind and what body in machines that resolve into coding practices. [...] Biological organisms have become biotic systems, communications devices like others. There is no fundamental, ontological separation in our formal knowledge of machine and organism, of technical and organic.'<sup>209</sup> It is the collapse of this boundary that allows for the hybridity of cyborgs, since 'any component can be interfaced with any other if the proper standard, the proper code, can be constructed for processing signals in a common language.'<sup>210</sup>

This idea of the interoperability between technological and biological components provides the basis for *It Is Not Made Of Mud*. The piano, comprising as it does a fusion of mechanical and organic components, seemed a fitting medium.

\* \* \*

*It Is Not Made Of Mud* is constructed from a modular system of melodic cells – or, more precisely, two modular systems (henceforth system i and system ii), which differ in character but fit together according to the same rules, and are thus fully interoperable. These systems use Messiaen's third Mode of Limited Transposition, shown in Figure 12 as a set of three interlocking augmented triads.



Fig. 12. Messiaen's third Mode of Limited Transposition, used in *It Is Not Made Of Mud*

This is the transposition used in the outer sections of the piece; the middle section (roughly bb.86–152, after a transition beginning at b.73) uses a different transposition, shifting all cells down a semitone.

<sup>208</sup> Haraway, 'Manifesto', 164.

<sup>209</sup> Ibid., 177–178.

<sup>210</sup> Ibid., 163. This may appear to contradict the resistance to the idea of a 'common language' cited in note 52. This tension arises because Haraway argues that the cyborg is constituted through an attempt at domination, but that the image of the cyborg also provides the means to resist this domination. 'From one perspective, a cyborg world is about the final imposition of a grid of control on the planet [...] From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. The political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point.' Ibid., 154.

The melodic cells are constructed and categorised according to their start and end notes (understood as nodes by which each cell can connect to others), with each cell functioning to connect one pitch to another by way of a short snippet of melody. In accordance with the construal of the mode as being formed of three augmented triads, trajectories a major third apart are treated as equivalent – so, for example, the cell that connects B-flat to C-sharp is the same as the cell that connects D to F and F-sharp to A, simply transposed by a major third. The cell performing this function in system i is shown in Figure 13, as an example.



Fig. 13. Example of a melodic cell from *It Is Not Made Of Mud*

The stemless noteheads here indicate the trajectory traversed by the melodic cell; the notes with stems are the cell itself. The first transposition of this cell (i1cMx, connecting B-flat to C-sharp) can be preceded by any cell ending on B-flat and followed by any cell beginning on C-sharp; in this way, long strings of melody are constructed. The full index of cells in both modular systems can be found in Appendix 1. The label above each cell in Figure 13 indicates its position in this index; the classification system is explained in Figure 14.

i/ii	1/2/3	a/b/c	L/M/R	x/y/z
Modular system	Vertical block (categorised by triad of starting note)	Row within vertical block (categorised by triad of ending note)	Horizontal block (i.e. Left/Middle/Right; categorised by ending note)	Transposition (determining starting note)

Fig. 14. Classification system used in melodic cell index for *It Is Not Made Of Mud*

So, for example, cell i1cMx is found at the following location: system i, row 1c, middle block, first transposition.

The two modular systems differ in expressive character and in rhythmic specificity. System i is intended to evoke the mechanical. It contains many large, angular leaps, and is generally played quickly in even note values, usually *meccanico* (sometimes *leggero*). System ii is intended to evoke the organic. Its rhythms are flexible and vary between instances of the same cell, usually consisting of uneven note values. Its melodic contours are smoother, and it is generally played slowly and expressively. In cells from system ii, notes are often repeated (i.e. the same note is played twice in a

row, despite only one instance appearing in the generic version of the cell); this is not the case for system i at the beginning of the piece, but it gradually acquires this characteristic from system ii.

Material from system ii is generally accompanied by a chordal texture with small melodic and arpeggiated flourishes; the notes of this texture are not drawn from either modular system, nor are they constrained to the mode shown in Figure 12. The availability of notes not present in the modular systems facilitates contrapuntal independence. It should also be noted that the modular systems do not contain cells traversing every trajectory available within the mode; new cells were composed only as and when they were needed. These systems, then, are not totalising; they do not account for all of the piece's material or for all possibilities. As Haraway writes, 'Cyborg imagery can help express [that] the production of universal, totalizing theory is a major mistake that misses most of reality, probably always, but certainly now.'<sup>211</sup>

Each of the two modular systems predominates in certain sections of the piece – first and foremost, system i in passages marked 'Disturbingly Lively' and system ii in passages marked 'Frighteningly Inert'.<sup>212</sup> But these systems are never entirely separate; from the outset, the accompanimental texture associated with system ii also appears with material from system i, and cells from system i are interpolated into melodic lines constructed mainly from system ii. This tendency to combine the systems culminates in two passages where melodies constructed from each system are superimposed contrapuntally (bb.120–130 and 144–155). (This superimposition also occurs in bb. 59–64 and 71–75, but less audibly.)

Figures 15–17 illustrate how several passages of the piece are constructed.

Figure 15 shows the construction of bb.16–22.

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<sup>211</sup> Haraway, 'Manifesto', 181.

<sup>212</sup> 'Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert.' Ibid., 152.

**Disturbingly Lively (tempo primo)**

Fig. 15. Construction of melodic lines from cells in *It Is Not Made Of Mud*, bb.16–22

By way of some illustrative examples, note how  $i3cRy$  is a transposition up a major third of  $i3cRx$ , and that in each of the two appearances of  $i2bMz$  in this passage, it connects to different cells on either side.

Figure 16 shows bb.30–35.

**(Frighteningly Inert)**

Fig. 16. Construction of melodic line from cells in *It Is Not Made Of Mud*, bb.30–35

Note the interpolation of  $i3bLz$  and  $i1aLx$  into a melody otherwise constructed from system ii; the repetition of the C-sharp in  $ii2bLx$ ; and the fact that only the uppermost melody is constructed from the modular systems.

Figure 17 shows bb.120–126.

**Disturbingly Lively**

Fig. 17. Construction of melodic lines from cells in *It Is Not Made Of Mud*, bb.120-126

Since this is in the middle section, all of the melodic cells are transposed one semitone down. Notes have now begun to be repeated in cells from system i. Note how the right hand leads the left: each change of note in the left hand is immediately preceded by the same pitch class in the right.

\* \* \*

As with *Beyond/Between/Beneath*, I do not think *It Is Not Made Of Mud* is entirely successful in achieving its aims. While system i does, I think, sound modular, the modularity of system ii is not necessarily audible, and so the principle of interoperability between the two is likely to go unnoticed by the listener. The conception of the piece is also perhaps overly reliant on a binary, albeit one it attempts to deconstruct. Including music that evoked the other dualisms Haraway mentions in connection with organism/machine (i.e. human/animal and physical/non-physical) may have better engendered the multiplicity characteristic of postmodern liminality.<sup>213</sup> Additionally, I was unsatisfied with the looseness of the structure. In subsequent works I would continue to implement complex (but not totalising) organisational systems and to use modes, but these later systems would incorporate large-scale structural planning, including the use of more frequent mode changes to produce harmonic variety and a sense of movement.

<sup>213</sup> See Klapcsik, *Liminality*, 3-4, 14-16, 163-166.

## V.

**FROSTCROWS: A CHITINOUS SHUDDERSONG OVER OUR FROZEN BONES**  
**for Flute and Vibraphone (2015–16)**

*Frostcrows* was initially conceived as a sequel to *Voidsnakes*. Like that piece, *Frostcrows* is concerned at a thematic level with exploring the sonic boundaries between its two instruments, but the technical means here are necessarily different: whereas *Voidsnakes* used blurring techniques to disguise the boundary between two matching instruments, *Frostcrows* organises different playing techniques into a system of canons in order to explore the similarities and differences between various sounds that its two different instruments can produce.

There is also a greater focus on stylistic liminality in *Frostcrows* than in any of the works previously discussed. The highly systematised approach to playing technique, and the extreme degree of local control this system exerts, were loosely inspired by total serialism, and the focus on timbre, and concomitant abundance of extended techniques, would also typically be more associated with the avant-garde. Conversely, there is a distinct presence of the conventional elements of melody and harmony, involving lyrical, overtly-expressive writing that suggests older styles (or those that look back to them). These stylistic elements are deliberately placed in tension; in composing *Frostcrows*, I was consciously striving for long, flowing lines of melody, but the incessant changes of technique dictated by the organisational systems continually and deliberately frustrated those efforts. Hence, the music is simultaneously pulled in two different directions.

This stylistic tension also produces tension at the experiential level: the music shifts restlessly, continually changing direction, evoking the ‘fluid, ever-changing, heterogenous, ambivalent spaces’ that exemplify liminality.<sup>214</sup> The expressive character of the piece is uneasy, unsettled, and somewhat eerie.

\* \* \*

The flute and vibraphone share certain timbral qualities (metallic, pure, rounded, etc.), but have radically different methods of sound production, allowing for both convergences and divergences in sonic properties. My first step in writing *Frostcrows* was to draw up a (non-exhaustive) list of techniques each instrument can employ, and to determine which have approximate sonic equivalents in the other instrument and which do not. My results are shown in Figure 18.

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<sup>214</sup> Klapcsik, *Liminality*, 21.

Parameter	Flute	Vibraphone
Modulation (pitch or amplitude)	<i>Vibrato</i>	Motor on
	<i>Senza vibrato</i>	Motor off
Attack repetition	Flutter tonguing	<i>Tremolo</i>
	Ordinary	Ordinary
Note length	<i>Legato</i>	<i>Legato</i>
	Detached	Detached
	Tongue ram	Pedal dampening
	Slap tongue	Dead stroke
Pitch bend	Lip up	–
	Lip down	Bend down
	<i>Portamento</i> up	–
	<i>Portamento</i> down	–
	Ordinary	Ordinary
Dynamic (single note)	Sustained	–
	<i>Crescendo</i>	–
	<i>Diminuendo</i>	Let ring

Fig. 18. Playing technique equivalences in *Frostcrow*s

These techniques are grouped according to the parameter they affect, so as to allow each parameter to be controlled independently. There are five flute techniques in this list with no equivalent in the vibraphone; these are treated separately in the piece and used as a source of contrast. All other techniques are paired with their equivalent and governed by a series of parameter canons, with the exception of ‘*diminuendo*’ and ‘let ring’ – excluding further extended techniques such as bowing (which I opted not to include), the vibraphone must *diminuendo* on a single sustained note; hence, it was impossible to construct a canon for this parameter, because there was no other technique with which ‘let ring’ could alternate. ‘*Diminuendo*’ and ‘let ring’ are included in this list mainly because I use ‘let ring’ as a contrast to the flute techniques affecting dynamic that have no vibraphone equivalents (and because they would otherwise be a conspicuous omission).

Figure 19 shows the system of parameter canons.



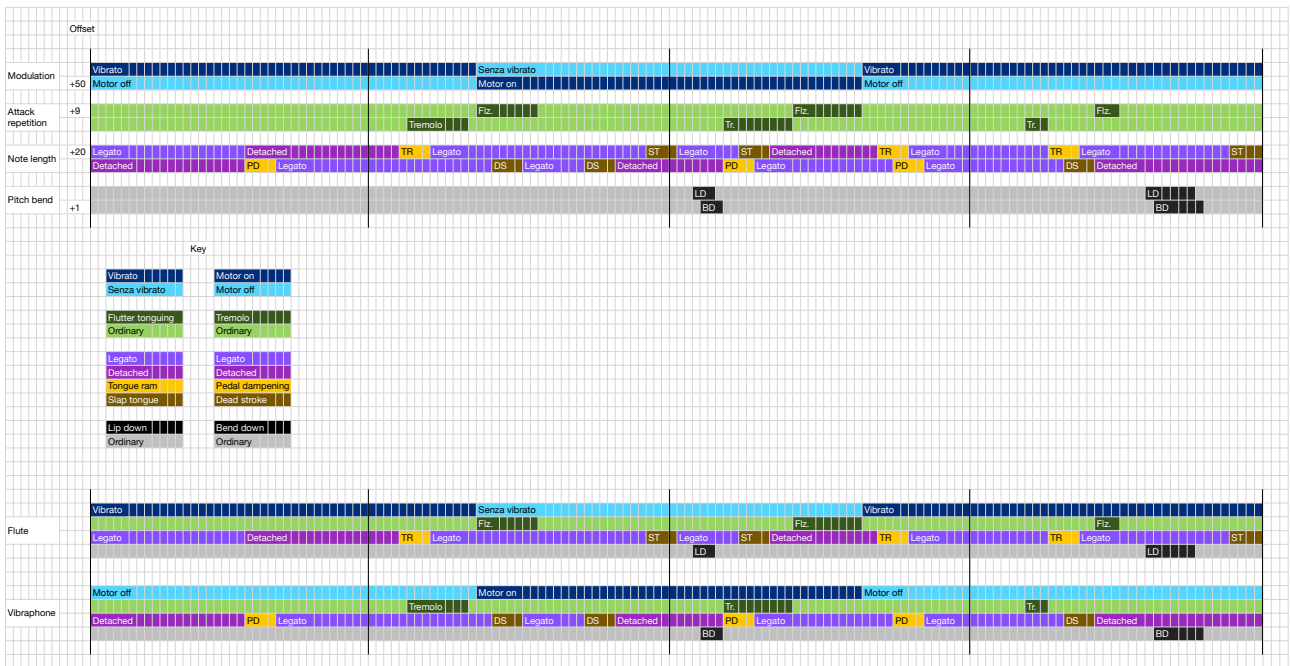


Fig. 19. Parameter canons in *Frostcrows*

A larger version of Figure 19 can be found in Appendix 2. Each column in Figure 19 represents one quaver beat. The top line shows the canons arranged by parameter, while the bottom line shows how the techniques apply within each instrument's part. Taking as an example bb.35–41 (corresponding to the 29 cells immediately to the right of the central vertical dividing line in Figure 19), Figure 20 shows how these parameter canons are manifested in the music.

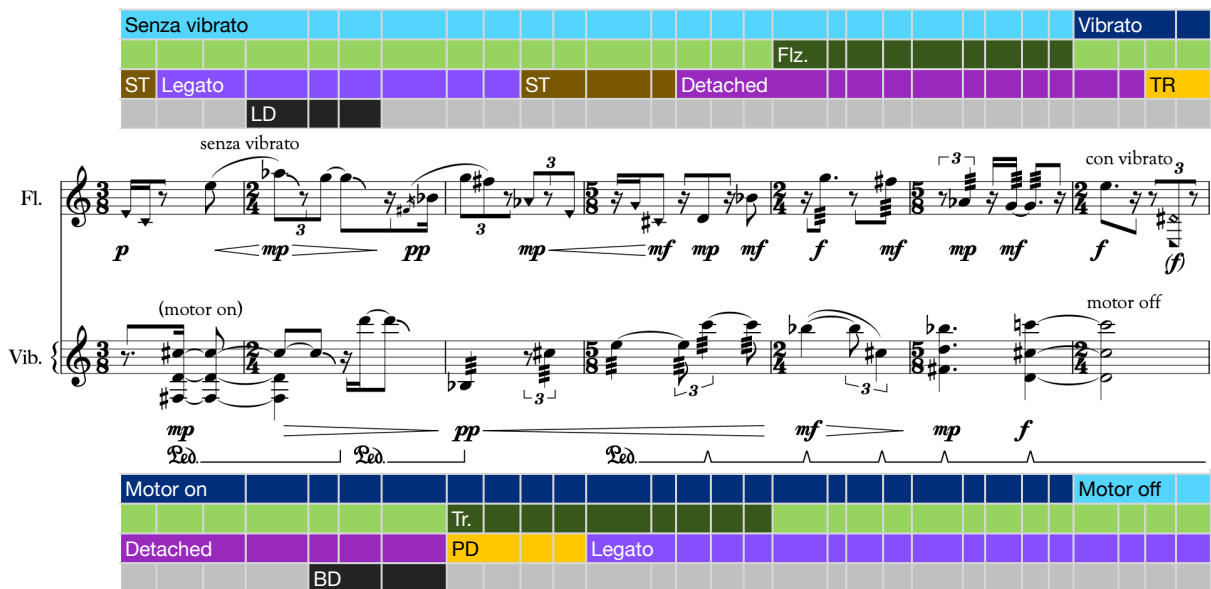


Fig. 20. Deployment of parameter canons in *Frostcrows*, bb.35–41

The canons do not, however, account for the entirety of *Frostcrows*; again, the system is not totalising. The vertical black lines in Figure 19 show where a refrain appears that is not governed by

the canons; indeed, the middle three instances interrupt those canons. It is in these refrains that the unpaired techniques feature. Each refrain comprises two parts: in the first, the instruments use equivalent techniques to play a variation on a short piece of two-part counterpoint; in the second, the flute features one of the unpaired techniques, while the vibraphone plays accompanying chords. The underlying pitch structure of this refrain is shown in Figure 21, alongside the first refrain (bb.1–5).

Fig. 21. Pitch structure of refrain from *Frostcrows*, shown with first refrain

In the second part of each refrain, only the first chord is specified by the pitch structure shown in Figure 21; the remainder is freely composed. Figure 22 shows the techniques featured in each refrain.

Refrain	Bar numbers	Paired flute technique(s) featured in first part	Paired vibraphone technique(s) featured in first part	Unpaired flute technique featured in second part
1	1–5	Tongue ram	Pedal dampening	Lip up
2	13–20	Slap tongue	Dead stroke	<i>Crescendo</i>
3	29–34	<i>Vibrato</i> <i>Legato</i>	Motor on <i>Legato</i>	<i>Portamento up</i>
4	44–57	<i>Senza vibrato</i> Flutter tonguing Detached	Motor off <i>Tremolo</i> Detached	<i>Portamento down</i>
5	66–70	Tongue ram	Pedal dampening	Sustained

Fig. 22. Techniques featured in each refrain in *Frostcrows*

*Frostcrows* exclusively uses Messiaen's sixth Mode of Limited Transposition. Every time the refrain appears, the mode changes transposition, first briefly 'ratcheting up' by a tone or minor third,

then dropping down by a semitone onto the chord that begins the second part of the refrain; this new mode is then continued when the canons resume. Figure 23 shows the modal structure of the piece.

1a Refrain 1, first part (bb.1-3)

1b Refrain 1, second part; canonic passage 1 (bb.3-12)

2a Refrain 2, first part (bb.13-17)

2b Refrain 2, second part; canonic passage 2 (bb.17-28)

3a Refrain 3, first part (bb.29-32)

3b Refrain 3, second part; canonic passage 3 (bb.33-43)

4a Refrain 4, first part (bb.44-54)

4b Refrain 4, second part; canonic passage 4 (bb.54-65)

5a Refrain 5, first part (bb.66-68)

5b Refrain 5, second part (bb.68-70)

Fig. 23. Modal structure of *Frostcrows*

Some of these modes are, of course, identical. Where their nominal starting notes in Figure 23 differ, they are treated differently for the purposes of transposing the refrain, with the exception that the final chord of the piece (constituting the entirety of Refrain 5, second part) is the same as the chord that begins the second part of Refrain 1, taking advantage of mode 5b being identical to mode 1b to provide some additional symmetry to the piece's structure. The transpositions are themselves determined by the notes of the mode: the starting notes of the 'a' modes progress along the notes of mode 1a (F, F-sharp/G-flat, G-sharp/A-flat, etc.), and the 'b' modes likewise along mode 1b (inevitably, because in each case the 'b' mode is a semitone below its 'a' mode). It should also be noted that, taking after *Voidsnakes*, much of *Frostcrows* is built around the pitch class set {0,1,4}, both melodically and harmonically. The mode used was chosen partially because it includes many instances of this pitch class set.

To summarise, *Frostcrows* is constructed around a set of parameter canons that incessantly derail its attempts at lyricism, and these canons are themselves repeatedly interrupted by a refrain in which those same parameters first align and then diverge, simultaneously instigating a modal change.

The result is that the sonic properties of the instruments are continually shifting in and out of alignment, while the music constantly, restlessly changes direction.

\* \* \*

*Frostcrows* represented something of a technical breakthrough in this project. The combination of highly-organised systems to govern certain parameters of the music with a much freer and more intuitive approach to other parameters is, I think, very effective at creating both the stylistic liminality for which I was aiming, whereby elements of different styles are placed into tension and pull the music in different directions, and some of the aesthetic and expressive qualities associated with the liminal. I also, somewhat inadvertently, developed an approach to rhythm that was well-suited to these aesthetic goals. Conscious that the organisation of the piece into units of a single quaver could easily lead to foursquare, leaden rhythms, I made an effort to avoid emphasising the beat wherever possible (knowing that it would often not be possible); the result is a fluid, supple and slightly slippery quality that I think is much more evocative of the ambiguity and instability of liminality than the more clear-cut and emphatic rhythms I had often used previously. This new approach would continue to inform my writing.

## VI. RIVEN

for Soprano, Alto, Tenor, Bass, Two Violins, Viola, Violoncello and Contrabass  
(2016–20, rev. 2021)

*Riven* is a setting of the poem ‘Myth of the Blaze’ by George Oppen.<sup>215</sup> Aside from its emotional and psychological power, and its appeal to me personally, this poem was selected for the relevance of liminality to its concerns. The poem contains many liminal images: ‘brilliant highways / of the night sky,’ ‘death bed           pavement           the secret taste / of being lost’, ‘the shack // on the coast // under the eaves’, and so on. More generally, Oppen’s extensive use of *caesurae*, *enjambement* and line breaks in his late works draws the the reader into the spaces between the words, creating an unstable, unresolving rhythm, frequently ambiguous syntax, and an awareness of the gulf between words and their signifieds. ‘The caesural pause inhibits any rhetorical “smoothness” and situates the subject on both sides of the “abyss” at once’.<sup>216</sup>

My sense that liminality was a salient concern to Oppen’s work was confirmed by the analyses of a number of literary scholars. John Taggart writes that ‘Oppen’s position of poetics is no one “position” but rather a dialectical motion working to create a tensioned space of *between*.’<sup>217</sup> Steve Shoemaker observes that ‘Edges, with their threatened unravelings, are important sites in such a poetics of disclosure, and this accounts partly for Oppen’s fascination with New York’s harbor. The harbor, one of the city’s powerfully liminal presences, appears in many of Oppen’s poems.’<sup>218</sup> Speaking of Oppen’s development towards his late style, Susan Thackrey writes, ‘As the words themselves began to stand more and more on their own, they also began to work more polyvalently with one another, backward and forward, creating an intricate web of disclosure that was not linear, causing a constant refocusing in the reader.’<sup>219</sup> This echoes Klapcsik’s references to nonlinearity<sup>220</sup> and ‘*narrative liminality*, when the reader oscillates among various [...] focal points,’<sup>221</sup> as well as

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<sup>215</sup> George Oppen, ‘Myth of the Blaze’, in *New Collected Poems*, rev. ed., ed. Michael Davidson (New York: New Directions, 2008), 247–249. The full text of the poem is included in the score for *Riven*.

<sup>216</sup> Nicholls, *Fate of Modernism*, 179. See also *ibid.*, 159–161.

<sup>217</sup> Taggart, ‘Walk-Out’, 54; emphasis in original.

<sup>218</sup> Steve Shoemaker, ‘*Discrete Series* and the Posthuman City’, in *Thinking Poetics: Essays on George Oppen*, ed. Steve Shoemaker (Tuscaloosa: University of Alabama Press, 2009), 80.

<sup>219</sup> Susan Thackrey, ‘George Oppen – A Radical Practice’, in *Thinking Poetics*, 247.

<sup>220</sup> See Klapcsik, *Liminality*, 9–10, 166.

<sup>221</sup> *Ibid.*, 21. See note 95.

Deleuze and Guattari's rhizome,<sup>222</sup> which Klapcsik frequently cites in connection with liminality.<sup>223</sup> As I have mentioned previously, the relevance of liminality to Oppen's thinking has often been linked to his Jewishness. To quote Oppen himself, 'Somewhere half-way between the fact of being singular and the fact of being numerous is the fact of being Jewish.'<sup>224</sup>

Oppen's late works, including 'Myth of the Blaze', are strongly influenced by Heidegger, particularly the writings collected in *Poetry, Language, Thought*, and most especially 'The Origin of the Work of Art'.<sup>225</sup> In this essay, Heidegger suggests an understanding of truth as being not a mere correspondence between statement and fact, but rather something more fundamental, which establishes what kind of facts may exist.<sup>226</sup> For Heidegger, truth happens as a process of 'disclosure';<sup>227</sup> in the work of art, this process occurs through a conflict or oppositional striving between what Heidegger calls 'world' and 'earth'.<sup>228</sup> Simplifying greatly, 'world' is that which is encompassed by our systems of understanding, the 'horizon of all one's horizons',<sup>229</sup> which is created by language<sup>230</sup> and which discloses itself to us.<sup>231</sup> 'Earth' is that which resists understanding, the ineffable and unfathomable,<sup>232</sup> which secludes itself from us.<sup>233</sup> The work of art makes conspicuous to us our understanding of all that is, while simultaneously confronting us with the inadequacy of that understanding, a process of both revelation and concealment.<sup>234</sup>

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<sup>222</sup> Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: The Athlone Press, 1988).

<sup>223</sup> See especially Klapcsik, *Liminality*, 16–19, 21, 165–166.

<sup>224</sup> Notes, Jottings, etc., Box 14, File 15, George Oppen Papers, MSS 16, University of California San Diego Special Collections & Archives, San Diego, California. Quoted in Nicholls, *Fate of Modernism*, 156. See note 22.

<sup>225</sup> Martin Heidegger, 'The Origin of the Work of Art', in *Poetry, Language, Thought*, trans. Albert Hofstadter (New York: Harper & Row, 1971), 15–86.

<sup>226</sup> Julian Young, *Heidegger's Philosophy of Art* (Cambridge: Cambridge University Press, 2001), 22–23. See also Thackrey, 'Radical Practice', 237.

<sup>227</sup> Heidegger, 'Origin', 35–37.

<sup>228</sup> *Ibid.*, 47–49.

<sup>229</sup> Young, *Heidegger's Philosophy of Art*, 23.

<sup>230</sup> *Ibid.*, 34.

<sup>231</sup> Heidegger, 'Origin', 47.

<sup>232</sup> Young, *Heidegger's Philosophy of Art*, 40.

<sup>233</sup> Heidegger, 'Origin', 46.

<sup>234</sup> *Ibid.*, 43–45; Young, *Heidegger's Philosophy of Art*, 38–40; Nicholls, *Fate of Modernism*, 190–192.

Oppen is particularly interested in Heidegger's concept of the 'rift' (*Riss*) between world and earth, the striving that both unites and divides the two – a liminal formulation, from which *Riven* takes its name. The rift is 'the intimacy with which opponents belong to each other', which 'does not let the opponents break apart'.<sup>235</sup> In Oppen's notes on *Poetry, Language, Thought*, he writes the following:

“what unites opposites is the rift” (but they both exist)  
 ((but opposites are not contraries)) (contradictions)  
 The pain of the threshold that unites<sup>236</sup>

There is a reference here to the essay 'Language', in which Heidegger writes, 'Pain is the joining agent in the rending that divides and gathers. Pain is the joining of the rift. The joining is the threshold.'<sup>237</sup> Although the term 'liminality' is not used here, Heidegger is making similar use of the image of the threshold (*limen*) as a source of tension that destabilises binaries, producing an 'undecidable oscillation':<sup>238</sup> 'The threshold [...] sustains the middle in which the two, the outside and the inside, penetrate each other. [...] the middle must never yield either way.'<sup>239</sup>

These ideas of the rift between world and earth and of truth as a process of disclosure that is both revelation and concealment are of enormous importance to Oppen's late poetry, influencing both form and content. Shoemaker argues that Oppen's poetics are intended precisely to produce this process of disclosure through a 'density and resistance' that slows perception, 'drawing attention to what is there *and* what is missing, to surface and depth'; he describes Oppen's poetry as one of 'arduous appearances, strange absences, and unexpected interpositions'.<sup>240</sup> Peter Nicholls finds Heidegger's ideas reflected in both the imagery and the ruptured rhythm of 'Myth of the Blaze', in which he identifies 'an exemplary image of the rift as revelation *and* concealment, as transparency *and* opacity [...] Here the "gap," literalized again in the "cut" of the caesura and in the poem's spatial

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<sup>235</sup> Heidegger, 'Origin', 61.

<sup>236</sup> 'The Book of Job and a Draft of a Poem to Praise the Paths of the Living' – Early published versions, drafts, and sections 1–6, 1975, General, Box 24, File 11, George Oppen Papers, MSS 16, University of California San Diego Special Collections & Archives, San Diego, California; emphasis in original. Quoted in Peter Nicholls, 'Oppen's Heidegger', in *Thinking Poetics*, 107–108.

<sup>237</sup> Martin Heidegger, 'Language', in *Poetry, Language, Thought*, 202.

<sup>238</sup> See note 80.

<sup>239</sup> Heidegger, 'Language', 201.

<sup>240</sup> Shoemaker, 'Discrete Series', 62–63; emphasis in original.

layout, “unites opposites” [...] evoking the tiger as both stealthy predator and disembodied presence’.<sup>241</sup>

In setting ‘Myth of the Blaze’, I knew that I wanted the poem’s rifts and ruptures to be reflected in my music, but to have merely reproduced them as arbitrary interruptions in the music’s flow would have felt like a shallow reading. Instead, I wanted these interruptions to be produced by some principle that pertained to the underlying thinking of the poem. I saw significant parallels between Heidegger’s rift and the approach to stylistic liminality I had employed in *Frostcrows*. Nicholls links the propensity for ‘unresolvable contradiction’ in Oppen’s late poems to Heidegger’s rift, to the oppositional striving of world and earth, writing, ‘The poem [...] is caught within just this tension [...] The tensions here between language and reality, between thinking and poetry, are not ones that can be canceled by some appeal to ultimate harmony.’<sup>242</sup> This seemed to me to align closely with my placing into unresolving tension of non-totalising ordered systems and intuitive writing. (If the equivalence is not quite exact, I am content to allow the systematic and intuitive to stand as metaphorical evocations of world and earth, giving me a ‘way in’ to engaging with the poem.)

The fundamental basis of *Riven* is the interaction between a numeric system of control that governs several parameters of the music, and my intuitive response to the poem. This interaction generates the rifts that pervade the texture, as well as the harmonic structure of the piece, and exerts an influence on melody and harmony at a local level. I was wary of granting the numeric system priority as the initial foundation of the work, relegating intuitive composing to a lesser status as a response to this system;<sup>243</sup> therefore, I ensured that the intuitive level was ‘baked in’ to the substance of the numeric system: the system derives from a structural plan produced through a spontaneous and intuitive response to the text. The form of this plan, however, factors in its use as a basis for the numeric system, ensuring that neither the systemic nor the intuitive takes precedence; the piece derives from their interaction. I also sought to produce in my music a ‘density and resistance’ comparable to Oppen’s poetry, evoking his ‘arduous appearances’.<sup>244</sup>

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The structural plan for *Riven* consists of a series of ‘blocks’ that specify the nature of the music at each point in the piece. The full plan can be found in Appendix 3. The voices and strings are

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<sup>241</sup> Nicholls, *Fate of Modernism*, 191–192; emphasis in original.

<sup>242</sup> Nicholls, ‘Oppen’s Heidegger’, 107–109.

<sup>243</sup> See Shoemaker, ‘*Discrete Series*’, 65–66.

<sup>244</sup> See note 240. See also Thackrey, ‘Radical Practice’, 247.



treated separately in this plan. For the voices, the structural blocks specify mainly which words appear where, though aspects of the musical setting are also indicated in some places. For the strings, the blocks specify primarily the texture (or gesture) that forms the basis for each passage of music, with additional information (such as dynamic, register or small modifications to the basic texture) also sometimes included. Each of these textures is designated by a letter, ranging from A to R; throughout the piece, new textures are added, while previously-established ones continue to recur, creating a gradual spiralling-outwards, '*an infinite process towards an unreachable end*'.<sup>245</sup> Usually the strings all play one texture together, but at a few points in the piece multiple string textures are layered on top of one another.

Each block is separated by a gap, a silence in the music, which is the source of the most extreme textural ruptures (however, the precise locations of these ruptures in the music are governed as much by the numeric scheme as by the structural blocks, as I shall explain). These structural blocks are arranged into groups, which sometimes contain overlappings that bridge the gaps between blocks (mainly the voices continuing across gaps in the strings and vice versa). Each block-group is also separated by gaps (typically longer, and never bridged), and the start of a new block-group prompts a change in mode transposition. Finally, the groups are arranged into eight large-scale sections (corresponding to letters A–H in the score's rehearsal figures), each of which uses a different mode.

The number of blocks in each group is what produces the sequence of numbers used in the numeric system. The plan for the first section, comprising five block-groups, is reproduced in Figure 24.

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<sup>245</sup> Klapcsik, *Liminality*, 14; emphasis in original.

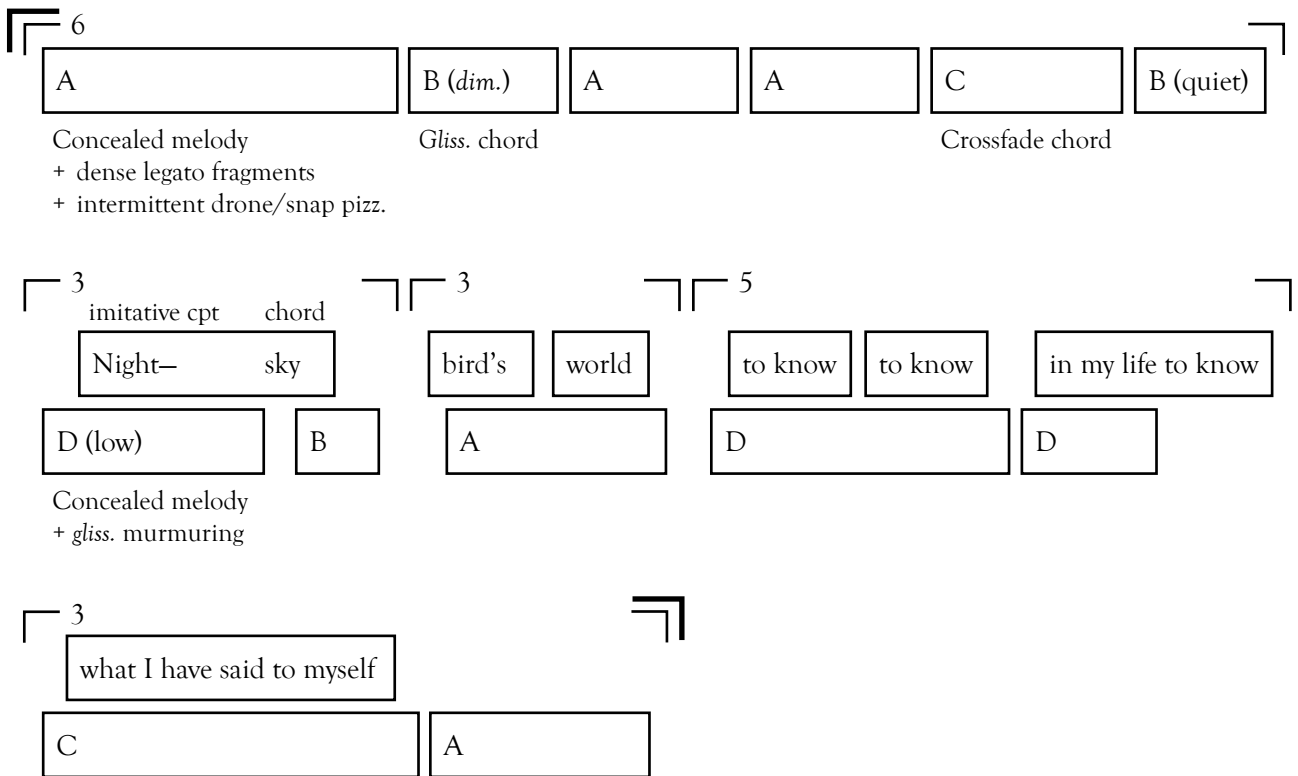


Fig. 24. Structural plan for first section of *Riven*

The top row of each line in Figure 24 corresponds to the voices (absent in the first line), and the bottom row to the strings. The brackets delineate the block-groups, and the double brackets the large-scale section. As Figure 24 shows, the first five block-groups comprise 6, 3, 3, 5 and 3 blocks, respectively; hence, the first five numbers in the numeric sequence are 6, 3, 3, 5, 3. The full sequence of 52 numbers can be found in Appendix 4. As I have stated, this plan was produced as a spontaneous and intuitive response to the poem. The text is broken up in loose accordance with the *caesurae* and line breaks, while *enjambement* often involves one voice taking over from another, in which case vocal blocks may overlap slightly. The string textures at any given point are simply what 'seemed right', based on the content of the text and a rough imagining of how each texture would sound.

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A thread of pre-determined melody runs through *Riven*, often in long note values; although it was not explicitly conceived as such, this is effectively a *cantus firmus* – or, in fact, a set of eight *cantus firmi*, one for each section. These *cantus firmi* derive from the numeric sequence: the numbers determine the interval (in semitones) between each note. The mode used in each section is derived, in turn, from its *cantus firmus*; I simply continued adding notes to each *cantus firmus* until it contained eight different pitch-classes, and these constitute the mode. (The first interval of each *cantus firmus*

after the first picks up where the previous one left off in the numeric sequence.) The *cantus firmus* and mode for the first section of the piece are shown in Figure 25.

The figure displays five musical staves. The top staff, labeled 'CF 1', shows a sequence of notes with intervals: +6 (= -6), +3 (= -9), +3, +5, +3, etc. Below are four staves labeled 'Mode 1a', '1b', '1c', and '1d', each showing a different transposition of the mode.

Fig. 25. *Cantus firmus* and mode for first section of *Riven*

As mentioned previously, the mode transposition changes with each block-group (the *cantus firmus* is also transposed accordingly). The first section contains five block-groups, so the fifth returns to the original transposition (1a). The interval by which each mode is transposed differs, and was chosen to ensure that there would be some harmonic change between each group, but less than between sections. The starting transposition for the mode and *cantus firmus* of each section after the first is chosen to ensure the maximum possible harmonic change between sections, i.e. it includes all four notes absent from the mode in use at the end of the previous section (so, for example, mode 2a, coming immediately after mode 1a, contains F, F-sharp, B and D).

The *cantus firmus* tends to lead the harmony, with changes in harmony often occurring when the *cantus firmus* changes note, and the precise harmony often chosen so as to exclude upcoming *cantus firmus* notes, ensuring that the *cantus firmus* drives the harmonic change by introducing new pitch classes.

Each string block contains a segment of *cantus firmus*, the length of which is determined by the numeric sequence: the first contains six notes, the second three, and so on. In this way, the numeric sequence determines the position in the music of the gaps between textural blocks, since the block ends once its segment is complete. Of course, there is some flexibility, because the notes of the *cantus firmus* can vary in length; in this way, the location of gaps between blocks becomes a negotiation between the intuitive structure and the requirements of the numeric scheme.

This segmentation principle also operates at a more local level: the number of notes in each phrase is determined by the numeric sequence, with three additional instances of this sequence running simultaneously, all starting in alignment but gradually diverging (a fourth instance appears intermittently). This produces many smaller ruptures in the surface of the music, as individual lines cut off and restart; these are perhaps most noticeable in textures J (first appearing at bb.199–201) and M (first appearing at bb.277–282).

Again, this system is not totalising – parts of certain textures lie outside of the scheme. Most notably, the voices are not subject to this system governing phrase-length at all, largely because I suspected that the comprehensibility of the text would suffer if they were. (They do, however, still abide by the modes that derive from the same source.) Nonetheless, much of the music is governed by these strictures. Figure 26 shows how the *cantus firmus* and limitations on phrase length are manifested in the opening bars of the piece.

The musical score for the opening of *Riven* is presented in two systems. The first system includes staves for Violin I (Vln I), Violin II (Vln II), Viola (Vla), Violoncello (Vc.), and Contrabasso (Cb.). The second system includes staves for Violin I (Vln I), Violin II (Vln II), Viola (Vla), Violoncello (Vc.), and Contrabasso (Cb.).

Key features of the score include:

- Violin I:** Features a prominent number sequence (3, 5, 6, 3) with dynamic markings *f* and *mf*.
- Violin II:** Features a number sequence (5, 6, 5, 3) with dynamic markings *f* and *mf*. A *Cantus Firmus* (CF) is indicated with a dashed line.
- Viola:** Labeled "Cantus Firmus" and "(Outside of scheme)", featuring a long melodic line with dynamic markings *ff* and *mp*.
- Violoncello:** Features a number sequence (6, 3, 3) with dynamic markings *ff* and *mf*.
- Contrabasso:** Labeled "(Outside of scheme)", featuring a number sequence (6) with dynamic markings *ff* and *mp*.

The second system continues the musical development with similar phrasing and dynamic markings across all staves, including a *Cantus Firmus* (CF) in the Violin II staff and a *sub.* marking in the Violoncello staff.

Fig. 26. Opening of *Riven*, with *cantus firmus* and limitations on phrase length indicated

As can be seen in Figure 26, both the *cantus firmus* and the three other instances of the number sequence move between instruments. The latter three instances function as high, middle and low contrapuntal strands, but do sometimes cross over. (The fourth instance, where present, is placed below the others.) The precise manner of realisation of the *cantus firmus* and three other sequence instances differs depending on texture, but they are present in some form throughout the piece.

At the local level, the writing in *Riven* is again intuitive, but must always accord with both the *cantus firmus* and the limitations on phrase length. Harmony and melody sometimes coalesce into something resembling tonality (my musical instincts being heavily shaped by tonal music), but the

limitations imposed by the *cantus firmus*, textural ruptures and system of modes always push back against this impulse. Often the result is something that sounds almost familiar, but is somehow estranged, or slips away before it can be fully grasped.

Stylistically, the effect here is not dissimilar to *Frostcrows* (although the soundworld is rather different). Dense modernist textures and pervasive discontinuities sit uneasily alongside rich, extended harmonies and long, flowing melodic lines. Taking cues from *Voidsnakes*, the use of *glissandi* is extensive, often serving to create an unstable foundation (especially in texture D, first appearing in bb.51–57), or to smudge otherwise-familiar harmonies. The string writing is loosely influenced by Lutosławski and late Bartók, while the vocal writing bears the distinct and somewhat incongruous trace of Gesualdo, but if there is a risk here of the kind of stylistic juxtaposition found in *Beyond/Between/Beneath*, I think it is largely avoided through the greater integration of the parts, and the fact that nowhere is any one specific style being imitated. All parts share the same tension between the underlying principles governing structure and harmony and the intuitive writing that often hints towards tonality, and the voices and strings generally work together, rather than operating independently as the instruments in *Beyond/Between/Beneath* frequently did. While the strings may tend more often towards a mid-20th-Century modernist style, and the voices towards something older, this distinction is never clear-cut, since there is such a diversity of material within both.

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There is a solidity to *Riven* that both *Frostcrows* and *Voidsnakes* eschew, but it is not the easily-apprehended solidity of the ‘worldly’ music of *Beyond/Between/Beneath*, but rather something altogether more resistant and slippery; I hope that in this I have been successful in following Oppen’s lead. I would like to conclude by discussing some of the textures employed in *Riven*, and in particular how I have attempted to produce Oppen’s ‘arduous appearances’, the Heideggerian process of simultaneous revelation and concealment that Shoemaker describes as ‘a poetics of *translucence*, a *shining through* that seeks clarity but registers the difficulties of seeing.’<sup>246</sup>

First, I shall return to texture A, an example of which is shown in Figure 26. This texture always begins with a ‘tearing’ gesture, which widens with each appearance: in Figure 26, the first instance, it moves from a unison to an interval of a semitone; by the final appearance (b.542), it moves from a compound tritone to a compound augmented 5th. As with the structure and the multiple instances of the numeric sequence, this gesture begins from a single point and diverges

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<sup>246</sup> Shoemaker, ‘*Discrete Series*’, 62; emphasis in original.

outwards, evoking both ‘the knife-cut’ and ‘the narrow // end of the funnel’.<sup>247</sup> The remainder of texture A is a dense weave of counterpoint through which individual parts occasionally protrude. The use of different beat subdivisions in the three numeric strands other than the *cantus firmus* (triplets, quintuplets and semiquavers in the high, middle and low strands respectively), loosely inspired by the surface features of Carter’s long-range polyrhythm, serves to prevent the parts from combining into an easily-parsed whole; the listener can either take in the overall mass of sound, or pick out fragments of individual parts, but cannot easily relate the parts to one another so as to follow multiple lines simultaneously, the way one would with Bachian counterpoint.

Against this opaque surface, the *cantus firmus* attempts to shine through. Ordinarily it sits at a dynamic level below most of the texture, but each time it moves, it *crescendos* towards the new note, pushing its way to the surface before falling away again. There is an echo here of Heidegger: ‘The world grounds itself on the earth, and earth juts through world.’<sup>248</sup> Additionally, returning to a technique from *Voidsnakes*, the use of *glissandi* serves both to create a tangible link between the notes of the *cantus firmus* (especially important given that it is here moving between instruments and registers) and to attenuate the shape of the melody by imposing a distance between the notes. Set against dense counterpoint, the long *glissandi* draw the ear, but weaken the sound-identity of the intervals from which the *cantus firmus* is formed. Like Heidegger’s rift, this technique ‘separates, yet [...] draws and joins together what is held apart in separation.’<sup>249</sup> Similar techniques for the ‘arduous appearance’ of the *cantus firmus* are employed in several other textures that are prominent throughout the piece, especially textures E (first appearing at bb.95–100) and K (first appearing at bb.259–263, though subsequent appearances, such as bb.292–296, illustrate this point better). This principle is often referred to in the structural plan as ‘Concealed melody’.

Texture C, described in the structural plan as ‘Crossfade chord’, and first appearing at bb.40–42, achieves similar aims through different means. Figure 27 shows a later example, from bb.451–457. In this texture, the parameter of volume, rather than pitch, is used to blur the boundaries between notes, which fade in and out gradually, sometimes individually and sometimes as part of a chord.

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<sup>247</sup> Oppen, ‘Myth of the Blaze’, 249.

<sup>248</sup> Heidegger, ‘Origin’, 47.

<sup>249</sup> Heidegger, ‘Language’, 202.

The image displays a musical score for a section of Riven, measures bb.451-457. The score is arranged in two systems, labeled '1' and '2'. System 1 includes the vocal line (T) and the string section (Vln I, Vln II, Vla, Vc., Cb.). System 2 includes the Cantus Firmus (CF) and a harmonic reduction of the string parts. The vocal line begins with the word 'eyes' and ends with 'of'. The string parts are marked with various dynamics: *pp*, *mp*, *mf*, *f*, and *pp*. The texture is characterized by overlapping, fading chords that create a sense of continuous harmonic change.

Fig. 27. An example of Texture C ('Crossfade chord') from *Riven*, bb.451-457

The top bracket in Figure 27, labelled '1', shows the music as it appears in the score, while the bottom bracket, labelled '2', shows the *cantus firmus* and a harmonic reduction of the string parts. In this reduction, only the notes that are foremost in volume at any given time are shown. The *cantus firmus* is at the top of the texture in this example; in other instances of texture C it is at the bottom, or moves between the two, but it is always on the outside; this allows it to be heard as a melody, but not without considerable difficulty, since its form is so blurred and amorphous. The other numeric strands are suspended here; the entire string section is functioning almost as one instrument, and, in any case, the texture simply would not function as intended otherwise. Since the system is not totalising, and most textures contain some material that lies outside of it, I do not regard this as a problem.

The chords in texture C form what initially appears to be a solid surface, often rendered opaque by the muddying effect of the dissonances between the louder and quieter layers; however, new harmonies gradually shine through this surface, while the old chords fade away, becoming translucent before disappearing entirely. As with the *glissandi* that are so prevalent elsewhere in *Riven*, the idea here is a liminal one: much of the focus is on the ambiguous and unstable area between the



notes and chords, rather than on the notes and chords themselves, which often shine through only for a brief moment. As with Oppen's poetics, the music here 'seeks clarity but registers the difficulties of seeing. [...] things that are hidden are brought, sometimes with considerable difficulty, to light.'<sup>250</sup> There is also a constant refocussing of the ear as different notes emerge from the texture, evoking again Klapcsik's narrative liminality.<sup>251</sup>

Texture F (perhaps more a gesture than a texture) first appears in b.125, and uses different techniques again to both draw attention to and obscure the *cantus firmus*. Figure 28 shows a later instance (b.198; b.197 is included for context).

The figure shows a musical score for a vocal line and five instrumental parts. The vocal line (A.) is in treble clef with a key signature of one sharp (F#) and a 6/8 time signature. It features a melodic line with lyrics: "from that land - scape it will". Above the vocal line, there are dynamic markings: *f* (forte) and *mp* (mezzo-piano). The instrumental parts are: Violin I (Vln I), Violin II (Vln II), Viola (Vla), Violoncello (Vc.), and Contrabasso (Cb.). Violin I and II, and the Viola, play tremolos and clusters of notes, with dynamic markings of *f*. Violin II and Viola also have fingering numbers (5) under some notes. The lower strings (Vc. and Cb.) play a Bartók pizzicato, with dynamic markings of *ff* (fortissimo).

Fig. 28. An example of Texture F ('High trem. clustery descent') from *Riven*, bb.197–198

In this example, Violin I carries the *cantus firmus*. The lines of Violin II and the Viola are written so as to coil around that of Violin I, often playing notes adjacent to the *cantus firmus*, with all three instruments marked *tremolo*, creating small, skittering clusters. Violin II and the Viola also imitate the descending shape of the *cantus firmus*, while the Bartók *pizzicato* in the lower instruments highlights its first note. The overall effect is a kind of smudged unison, whereby the *cantus firmus* is both centred and obscured; the ear is drawn to its shape, but cannot easily pick it out.

<sup>250</sup> Shoemaker, 'Discrete Series', 62–63. See note 246.

<sup>251</sup> See note 221. See also note 219.

A similar principle operates in several other textures; for example, in textures H (first appearing at bb.141–148 in the violins) and I (first appearing at bb.165–166), the violins *glissando* back and forth between the notes of the *cantus firmus* and the notes immediately above and below it within the mode; the *cantus firmus* is not present as held notes, but rather as the unstable centre of a ‘constant oscillation’.<sup>252</sup>

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*Riven* is a dense and difficult work, making considerable demands of the listener; I feel that those demands are justified, however, both by the gravity of the text and by the principle of ‘arduous appearances’, of simultaneous revelation and concealment, that I was attempting to evoke. Liminality *per se* is not the sole thematic focus, sharing priority with the ideas that underlie Oppen’s poem, but, as I have discussed, I consider these ideas to align closely with liminality. While *Riven* does not tend to evoke the fluidity associated with the liminal, its solidity is of a distinctly unstable and uneasy sort, and if its stylistic liminality is a little less finely-poised than that of *Frostcrows*, that is perhaps necessary in a piece of this scale, which requires more variety of material – it may veer further in one direction or another, but I think it succeeds in refusing to conclusively resolve the tension between styles, both in terms of the surface techniques employed and in terms of the generative tension between systemic and intuitive writing.

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<sup>252</sup> See note 179.

## VII.

**DARKSHRIKES: AN ANCIENT KNOWLEDGE IN THE SHADOW OF THE BLOODTHORN  
for Bass Clarinet and Harpsichord (2018–19, rev. 2021)**

*Darkshrikes* was conceived as a companion piece to *Voidsnakes* and *Frostcrows*, occupying a position between them in the suggested running order. Like those pieces, *Darkshrikes* is concerned with exploring the relationship between its two instruments; however, there is less commonality in timbre between the instruments here, and so the approach is more metaphorical, taking as its inspiration the idea of the mirror as a site of liminal encounter.

Taking the work of Stanisław Lem as an example, Klapcsik argues that in many postmodern texts, mirroring, mimicry and doubles serve to call into question the boundary between Self and Other by casting doubt upon who is reflecting whom: ‘When the distinction between the original and the mirror image falls under doubt, the situation demonstrates poststructuralist liminality [...] Science fiction texts often make it problematic to distinguish between the original and the mirror image by questioning priority. Did the humans create robots to duplicate themselves, or was it the other way around?’<sup>253</sup> Perhaps paradoxically, this is often achieved through a difference between the original and the mirror image, since this undermines the ontological priority of the original: if the mirror image is not identical, it cannot be a mere copy. ‘The reflection is frequently accomplished with a difference, refraction, rupturing surprise – with the *revenge* of the mirror.’<sup>254</sup> This may produce a sense of the uncanny.<sup>255</sup>

In *Darkshrikes*, this idea of mirroring is evoked through the use of a modified palindromic structure in which a highly systematised rhythmic process runs simultaneously in opposite directions. Conscious that the first half would tend to assume priority simply by being presented first, with the second half being heard as a mere reflection, I undermined this hierarchy by inserting deliberate ‘errors’ into the rhythmic process in the first half, which are then ‘corrected’ in the second half, as well as a few beats being excised. In this way, the second half functions as a ‘perfected’ reflection, ‘a mirror that *over-fulfils* its task.’<sup>256</sup> Like the selfie camera, it presents an idealised likeness in which blemishes are removed and fat trimmed away. ‘The mirror experience leads not only to self-formation

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<sup>253</sup> Klapcsik, *Liminality*, 114.

<sup>254</sup> *Ibid.*, 27.

<sup>255</sup> *Ibid.*, 115–116.

<sup>256</sup> *Ibid.*, 115.

but also results in self-alienation.’<sup>257</sup> Another reference-point here could be Baudrillard’s ‘simulacrum’, the copy without an original:<sup>258</sup> both halves of the piece can be regarded as deliberately-altered copies (the first a reordering, the second a reflection with small parts edited out) of an original that is never heard, and indeed never existed.

Stylistically, a similar approach to *Frostcrows* and *Riven* is followed: predetermined processes that govern certain parameters of the music according to modernist logic are placed in tension with intuitive writing in a more nostalgic style (which, as in *Riven*, often gravitates towards tonality but can never quite attain closure), resulting in music that is simultaneously pulled in different directions.

At the aesthetic level, *Darkshrikes* is off-kilter and slightly uncomfortable. The underlying processes result in rhythms that are often wonky and unintuitive, jarring against a self-consciously archaic soundworld. As with the harmony in *Riven*, here the rhythms move into and out of clear focus, sometimes coalescing into something almost graspable, but dissolving back into instability before they can become entirely settled. The piece feels as if it is built on unstable, shifting sands.

\* \* \*

The structure of *Darkshrikes*, like that of *Frostcrows*, is underpinned by an interest in the similarities and differences between the sonic properties of the two instruments. Here, however, the similarities relate not to timbre but to sheer mass of sound. Both the harpsichord and the bass clarinet produce the most volume in their lower registers; however, the harpsichord, having a sharp attack and a fast decay, produces more volume when it plays quickly, whereas the bass clarinet, with its deep, sonorous timbre and slower attack, has a greater sonic presence on long notes that have plenty of time to speak. In *Darkshrikes*, the harpsichord begins quickly and gradually slows down, while the bass clarinet, playing the same music (or a version thereof) backwards, does the opposite. Both, however, begin low and ascend gradually into their upper registers. As a result, *Darkshrikes* moves gradually from a low and loud opening to a high and quiet ending (albeit with some smaller-scale nuances). Paradoxically, then, the piece is both palindromic and unidirectional, continuing on its course even as it reflects back upon itself. As in *Beyond/Between/Beneath*, multiple contradictory trajectories overlap and transgress one another’s paths.

I began by mapping out a rhythmic structure. I constructed a sequence of rhythmic values, which lengthen gradually from a single sextuplet semiquaver to a duration of seven crotchet beats. I then superimposed three instances of this sequence on top of one another, each beginning at a

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<sup>257</sup> Klapcsik, *Liminality*, 113.

<sup>258</sup> Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser (Ann Arbor: University of Michigan Press, 1994). See also Klapcsik, *Liminality*, 133–134.

different point. The result is a sequence of 32 sets of durations, each set consisting of three different values. Each duration-set determines what durations are available in one instrument in a given passage, meaning each passage is written using only three different durations in each instrument. The full sequence of duration-sets can be found in Appendix 5. The harpsichord moves through the sequence in order (1 to 32), while the bass clarinet moves through it in reverse order. The difference between consecutive duration values in the sequence is small, and each set of durations shares either one or two values with the sets before and after it, so the rhythmic character shifts gradually, rather than changing abruptly. One of the instances of the sequence restarts from the shortest duration value a little after the half-way point in the sequence (at the 20th duration-set), in order to allow for some faster rhythmic activity even in the slower portions.

*Darkshrikes* employs two specially-constructed modes, one the inversion of the other. These modes are shown on the left-hand side of Figure 29, while the right-hand side shows all the instances available within each mode of a particular symmetrical chord used prominently in the piece (first appearing at b.2).

The figure displays musical notation for modes and chord instances in *Darkshrikes*. It is organized into two main sections: modes on the left and chord instances on the right.

**Modes (Left Side):**

- 1a:** Mode bb.1-18, 282-299. Treble clef, key signature of one sharp (F#). Scale: F#-G-A-B-C-D-E-F#.
- 1b:** Mode bb.19-47, 253-281. Treble clef, key signature of one sharp (F#). Scale: G-A-B-C-D-E-F#-G.
- 1c:** Mode bb.48-83, 222-253. Treble clef, key signature of one sharp (F#). Scale: A-B-C-D-E-F#-G-A.
- 2a:** Mode bb.98-126, 184-208. Treble clef, key signature of one sharp (F#). Scale: B-C-D-E-F#-G-A-B.
- 2b:** Mode bb.127-183. Treble clef, key signature of one sharp (F#). Scale: C-D-E-F#-G-A-B-C.

**Chord Instances (Right Side):**

- 2ia:** B. Cl. bb.98-126, Hpsd bb.184-208. Treble clef, key signature of one sharp (F#). Chord: B-C-D-E-F#-G-A-B.
- 2iia:** Hpsd bb.98-126, B. Cl. bb.184-208. Treble clef, key signature of one sharp (F#). Chord: C-D-E-F#-G-A-B-C.
- 2ib:** B. Cl. bb.127-148, Hpsd bb.163-183. Treble clef, key signature of one sharp (F#). Chord: D-E-F#-G-A-B-C-D.
- 2iib:** Hpsd bb.127-148, B. Cl. bb.163-183. Treble clef, key signature of one sharp (F#). Chord: E-F#-G-A-B-C-D-E.

The notation shows the melodic lines for each mode and the corresponding chord instances for the B. Cl. and Hpsd instruments. The right side of the figure shows the chord instances for the B. Cl. and Hpsd instruments, with the Hpsd part in the upper voice and the B. Cl. part in the lower voice.

Fig. 29. Modes used in *Darkshrikes*, with instances in each of a chord used prominently in the piece

The outer sections (bb.1–83 and 222–299, utilising duration-sets 1–9 and 24–32) use three different transpositions of mode 1, while the central section (bb.98–183, utilising duration-sets 11–22) uses two different transpositions of mode 2, which is split into two subsets (2i and 2ii), each assigned to a different instrument. There are gradual transitions between modes 1c and 2a in bb.83–97 and 209–222 (utilising duration-sets 10 and 23), in which the instruments shed notes of their old mode and adopt notes of their new mode one by one. In bb.148–163 (duration-set 17), the instruments transition in the same way between the two subsets of mode 2b. The modes were constructed in order to provide many instances both of pitch class set {0,1,4} (also used in *Voidsnakes* and *Frostcrows*) and of the symmetrical chord, which is itself constructed from this pitch class set – for example, the first transposition of the chord shown in mode 1a above is formed from C–C-sharp–E and E–G–G-sharp, revoiced into a stack of perfect fourths and minor thirds. This voicing is fundamental to the identity of the chord as used in the piece, and accords with the general prevalence of quartal harmony.

Given that the bass clarinet is (essentially) monophonic and the harpsichord is not, the palindromic line is manifested differently in each instrument. If the harpsichord is viewed as a reflection of the bass clarinet, the bass clarinet's notes may be placed either at the top or the bottom of the harpsichord texture; conversely, if the bass clarinet is viewed as a reflection of the harpsichord, it may draw notes either from the top or bottom of the harpsichord texture. In both cases, notes in the harpsichord are considered to last only until the next onset, i.e. it is the *resultant* line (sometimes monophonic, sometimes dyadic) that is used; in the score, harpsichord notes are often sustained beyond the onset of the following note, but this is not factored into the palindrome. The palindrome also includes many octave displacements, necessitated by the trajectory of both instruments from low to high. Some of the melodic shape is preserved, but it is the pitch class and rhythm that are of primary importance.

Figures 30–32 show some examples of how the palindrome operates.

**Allegretto propulsivo** ♩ ≈ 90

The image displays a musical score for two systems of music. The top system, labeled 'Allegretto propulsivo' with a tempo marking of approximately 90 beats per minute, consists of a Bass Clarinet (B. Cl.) part and a Harpsichord (Hpsd) part. The B. Cl. part begins with a forte (f) dynamic and a half note, followed by a series of eighth notes. The Hpsd part begins with a 'prevalentemente legato' instruction and a series of sixteenth notes. The bottom system, labeled 'pp', consists of a Bass Clarinet (B. Cl.) part and a Harpsichord (Hpsd) part. The B. Cl. part begins with a piano (pp) dynamic and a series of sixteenth notes. The Hpsd part is split into two staves: 'Hpsd' and 'Hpsd (Res.)'. Dotted arrows connect the first notes of the B. Cl. and Hpsd parts in both systems, illustrating palindromic lines. The score includes various musical notations such as dynamics (f, ff, pp), articulation (legato), and fingerings (6, 7, 3, 5).

Fig. 30. Palindromic lines in *Darkshrikes*, bb.1-4 and 296-299

Figure 30 shows the beginning and end of the piece: bb.1-4 (top system) and bb.296-299 (bottom system). The duration-sets used here are 1 (harpsichord top system; bass clarinet bottom system) and 32 (bass clarinet top system; harpsichord bottom system). The staves labelled 'Hpsd (Res.)' show the resultant line of the harpsichord part, with small noteheads indicating the notes not used for the palindromic line. The dotted arrows highlight how the beginnings and ends of each passage correspond: the first note in the bass clarinet becomes the last note in the harpsichord, and vice versa. The lines can be traced in opposite directions from these points.

The image displays two systems of musical notation for the piece *Darkshrikes*. The top system covers measures 120-125, and the bottom system covers measures 184-189. Each system features three staves: Bass Clarinet (B. Cl.), Harpsichord (Hpsd), and Harpsichord (Resonance) (Hpsd (Res.)).

In the top system (bb.120-125):

- B. Cl. (Bass Clarinet):** The top staff shows a melodic line starting with a *mf* dynamic. It features several triplet markings (3) and sextuplet markings (6). The bottom staff of this system is mostly silent.
- Hpsd (Harpsichord):** The top staff contains a complex melodic line with various rhythmic values and accidentals. The bottom staff contains a bass line with some triplet markings.
- Hpsd (Res.):** The top staff has a melodic line with triplet markings. The bottom staff is mostly silent.

In the bottom system (bb.184-189):

- B. Cl. (Bass Clarinet):** The top staff shows a melodic line starting with a *mp* dynamic, reaching a *f* dynamic, and ending with a *sub p* dynamic. It includes triplet (3) and sextuplet (6) markings.
- Hpsd (Harpsichord):** Both the top and bottom staves are highly active, featuring complex rhythmic patterns, including many triplet (3) and sextuplet (6) markings.
- Hpsd (Res.):** Both the top and bottom staves are active, with the bottom staff featuring prominent triplet (3) markings.

Dotted lines connect specific notes and markings across the systems, illustrating the palindromic structure of the music. For example, a triplet in the B. Cl. of the top system is mirrored in the B. Cl. of the bottom system.

Fig. 31. Palindromic lines in *Darkshrikes*, bb.120-125 and 184-189

Figure 31 shows bb.120-125 (top system) with bb.184-189 (bottom system). The duration-sets used here are 13 (harpsichord top system; bass clarinet bottom system) and 21 (bass clarinet top system; harpsichord bottom system).



The image displays a musical score for two instruments: Bass Clarinet (B. Cl.) and Harpsichord (Hpsd). The score is divided into two systems, each containing three staves. The top staff in each system is for the B. Cl., and the bottom two are for the Hpsd (Res.). The music is written in a key with one sharp (F#) and a 3/4 time signature. The first system (bb. 153-155) features dynamic markings of *f*, *ff*, and *mf*. The second system (bb. 156-158) features a dynamic marking of *mp*. A double barline is placed between the two systems, indicating an inflection point. Dotted lines connect the notes of the B. Cl. staff in the first system to the notes of the Hpsd staff in the second system, illustrating the palindromic structure. The notes are grouped with '3' above them, indicating triplets. The inflection point occurs at the end of the first system, where the two lines cross over.

Fig. 32. Palindromic lines in *Darkshrikes*, bb.153–158, showing inflection point

Figure 32 shows the mid-point of the piece, bb.153–158; here both instruments are using duration-set 17. The double barline indicates the inflection point where the two palindromic lines cross over. These lines do not meet on a central note in some teleological culmination, but rather pass one another by; a separating space between the instruments, however small, is always maintained. (As mentioned previously, a small amount of material is trimmed from the second half of *Darkshrikes*; alongside the changes in time signature, this accounts for the inflection point being slightly over the halfway mark in terms of bar number.)

There are six ‘errors’ in the palindrome in the first half of the piece. These take the form of three pairs of passages between which the harpsichord part has been ‘swapped’, such that certain passages are not in their ‘correct’ locations according to the sequence of duration-sets. This is illustrated in Figure 33. (The width of the boxes is not proportional to passage length.)

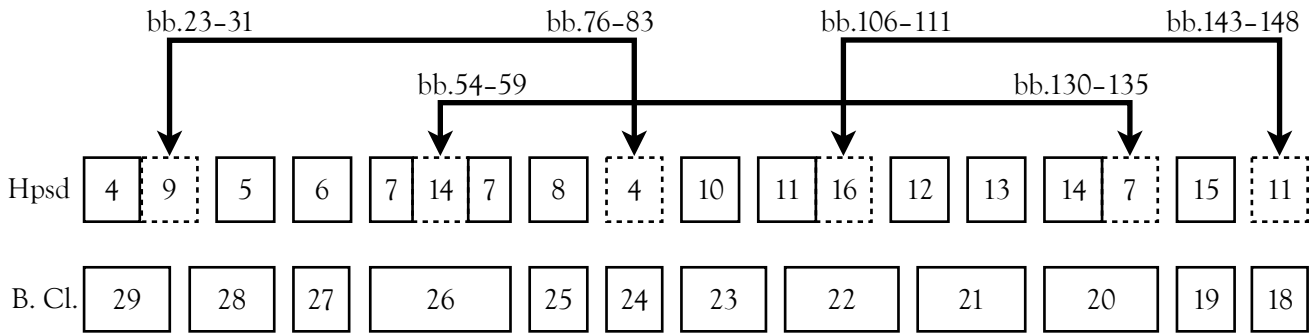


Fig. 33. ‘Swapped’ passages creating ‘errors’ in palindrome in first half of *Darkshrikes*

The numbers here indicate the duration-sets used in each passage. In the second half of the piece, the passages corresponding to these ‘errors’ are restored to their ‘correct’ positions in the sequence. Because this places them within the domain of a different mode, these passages are written using only the notes common to the modes of both the locations in which they appear. Figure 34 shows how these swapped harpsichord passages in the first half of the piece (and the bass clarinet passages that co-occur with them) correspond to the equivalent passages in the second half.

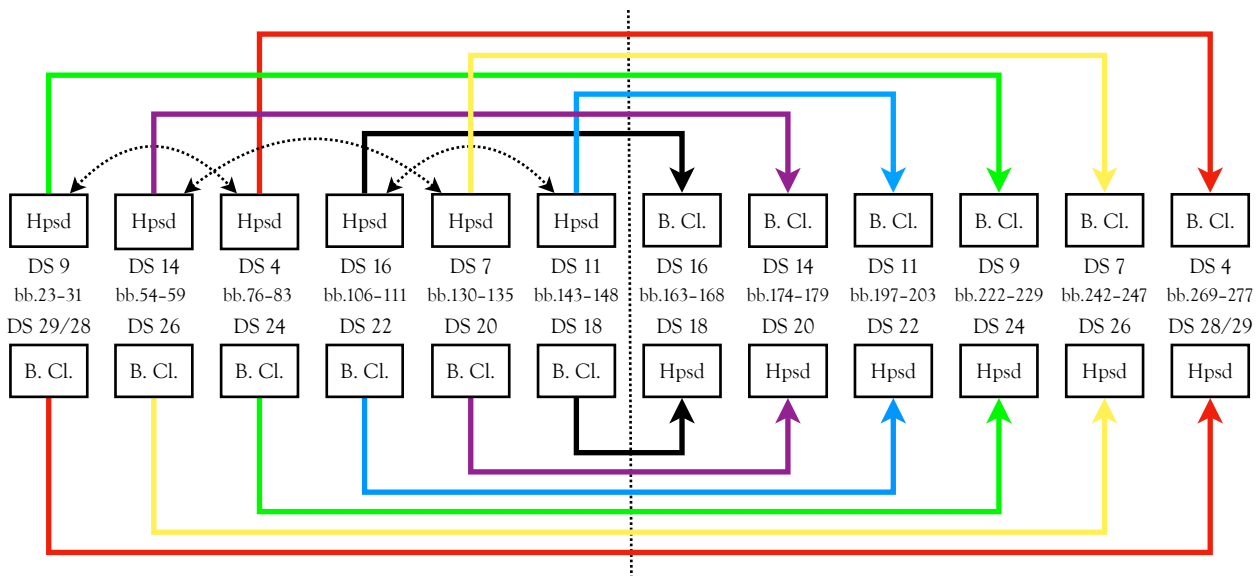


Fig. 34. ‘Errors’ in palindrome in first half of *Darkshrikes* and their ‘corrections’ in its second half

‘DS’ here stands for duration-set. The dotted arrows correspond to the arrows in Figure 33, showing which harpsichord passages are swapped with which in the first half, while the dotted line through the middle indicates the inflection point of the palindrome (i.e. the half-way point in the piece). For the sake of visual clarity, the instruments are vertically swapped in the second half of Figure 34. Note how, in the first half, the harpsichord moves through duration-sets out of order and the bass clarinet moves through them in (reverse) order, while in the second half both instruments move through them in order. A larger version of this chart can be found in Appendix 6.

Figure 35 illustrates one example of such a ‘swapped’ passage and its corresponding ‘corrected’ passage (only part of the passage is shown).

The figure displays four systems of musical notation for the piece *Darkshrikes*, illustrating a 'swapped' passage and its 'correction'. The systems are labeled on the left as bb.23-26, bb.76-79, bb.226-229, and bb.274-277. Each system includes staves for B. Cl. (Bass Clarinet), Hpsd (Harp), and Hpsd (Res.) (Harp Resonance). The B. Cl. part is written in bass clef, while the Hpsd parts are in treble and bass clefs. The music is in 2/4 time and features various dynamics (p, mp, f, pp) and articulations (accents, slurs). Fingerings (3, 5) and breath marks (DS) are indicated throughout. Dotted lines connect specific notes and phrases across the systems, highlighting the 'swapped' passage and its 'correction'.

Fig. 35. Example of a ‘swapped’ passage and its ‘correction’ in *Darkshrikes*

In order to reduce visual clutter, only the correspondences between the beginnings of the first two passages and the ends of the second two are indicated by arrows in Figure 35 (unlike in Figures 30–32); however, the palindrome can still be followed in both directions. In bb.226–229, the harpsichord part from bb.23–26 is paired with the bass clarinet part from bb.76–79 (the instruments now swapped), while in bb.274–277, the harpsichord part from bb.76–79 is paired with the bass clarinet part from bb.23–26.

The ‘errors’ in the first half of *Darkshrikes* are not perceived as errors, but they are audible as abrupt changes to the amount of rhythmic activity in the harpsichord part, disrupting its gradual slowing-down. As a result, the rhythmic process underlying the structure is noticeably smoother in the second half of the piece. Similarly, the palindrome is not necessarily audible as a palindrome, but the structural symmetry of the piece is noticeable, particularly towards the end, when the bass clarinet begins to play figurations clearly linked to those played by the harpsichord near the beginning.

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*Darkshrikes* is quite different in character from *Voidsnakes* and *Frostcrows* – it is angular, rather than fluid, and eschews unusual sounds in favour of recontextualising familiar ones. Nevertheless, I think *Darkshrikes* produces its own sort of instability, tension and discomfort, evoking the aesthetic qualities of the liminal. In this way, I hope to have demonstrated that a range of expressive possibilities is available to music concerned with liminality. As for stylistic liminality, *Darkshrikes* foregrounds melody, harmony (sometimes quasi-functional) and familiar-sounding textures, but these aspects constantly strain against the extreme constraints placed upon rhythm; the result is a stylistic tension that frequently throws the listener off-balance – the surface features of the music seem graspable, but its motion can never quite be anticipated, and it never quite settles into something stable. Meanwhile, the harmony often pushes towards tonality, but is dissonant and tends to emphasise the fourth, acquiring an almost jazzy quality that jars against the archaic timbre of the harpsichord. The thematic liminality here is perhaps more abstract than elsewhere, but it nonetheless provides the impetus for a system of rhythmic organisation that I think has produced unusual and effective results.

VIII.  
**ALTARED**  
 for Computer-Generated Sound (2014–15/21)

Where *Voidsnakes* explored the space between the notes through the use of *glissandi*, *Altared* and the other electronic pieces in this portfolio pursue the same goal through the use of microtonal temperaments that divide the octave into more than 12 steps. These three pieces employ constructed scales that allow for chords closely resembling those of tonal harmony, but in slightly distorted forms, and which move in unexpected ways, producing an effect that is simultaneously familiar and strange. To quote Turner again, ‘in liminality people “play” with the elements of the familiar and defamiliarize them. Novelty emerges from unprecedented combinations of familiar elements.’<sup>259</sup>

*Altared* is heavily steeped in the styles of Baroque church music. Its outer sections (roughly 0:10–0:58 and 3:06–4:21), with their simple, four-part counterpoint, were conceived as Bachian chorales (though they are in fact even plainer, resembling species counterpoint), while the middle section, in which two themes are developed freely in more complex, imitative counterpoint, was modelled loosely on Purcell’s Voluntary in D minor for Double Organ, Z718.<sup>260</sup> (One of these themes is introduced in a brief introduction, roughly 0:00–0:10.) These archaic styles, and particularly the chorale textures, with all their associations of harmonic pedagogy, serve multiple purposes. Firstly, they help to create stylistic liminality: the music attempts to operate by the logic of early tonality, but the chords are always slightly ‘off’ and cannot move in the ‘correct’ ways, creating tension, while the electronic timbres are incongruous and anachronistic. Secondly, these styles provide a kind of induction into the new harmonic realm, encouraging the listener to focus on and attune to what is different – the chords and intervals and their relationships – by placing it in a familiar historical context associated with the early development of tonality. Lastly, the piece constitutes an exercise in alternate history, an impossible ‘what if’ scenario in which practices from multiple timelines co-exist.

Klapcsik discusses alternate histories mainly in reference to the works of Philip K. Dick,<sup>261</sup> arguing that the genre weakens historicity and undermines both the authority claims of historical accounts and the ontological priority of our own reality. ‘Teleological history, history as a linear set of events, and the idea of a true account of events are questioned’, while ‘reality is altered and fractured

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<sup>259</sup> See note 99. See also note 73.

<sup>260</sup> Henry Purcell, ‘A Voluntary for the Double Organ’, in *Harpsichord Music and Organ Music*, ed. William Barclay Squire and Edward John Hopkins (London: Novello, Ewer and Co., 1895), 64–67.

<sup>261</sup> See note 176.

[...] and the future, present, and past are merged, creating labyrinthine timelines.<sup>262</sup> In Klapcsik's view, the coexistence and interconnectedness of multiple timelines and realities in many of Dick's works<sup>263</sup> reveals the constructed nature of our own history: 'the fifties do not exist. There is a fifties that is the result of (re)construction: not something that is existent in its own right, but a man-made structure created by authority figures and maintained by fantasies and narratives.'<sup>264</sup>

Prior to the emergence of common-practice-era tonality and the enshrinement of its various 12-note tuning systems, many alternative systems were proposed, such as Vicentino's division of the octave into 31 steps.<sup>265</sup> *Altared* uses 15 equal divisions of the octave (15edo), a system which, to my knowledge, was never suggested at this time – and indeed almost certainly would not have been, since its approximation of the perfect fifth, at 720¢, is substantially wider than a pure fifth, and cannot form a circle of fifths. By using this tuning system (and those used in *Ursus Subductus* and *Run C: \empathy.exe*) alongside Baroque references, I am engaging in an alternate history project, imagining that tonality had developed along radically different lines from the outset. Not only could this alternate history never have happened, but, if it had, the influences I draw upon would not exist in the same form: the music of Bach and Purcell belongs to our timeline. Despite imagining a world in which the system of tonality as we know it did not emerge, the music of *Altared* is still governed by the logic and stylistic trappings of that system, suggesting a liminal oscillation between timelines.

My primary interest in devising the harmonic approach used in these three pieces was in creating systems that resembled tonal harmony, but which warped and estranged that familiar referent. Because I was less interested in exploring the physical properties of sound, my harmonic practice here has little in common with the systems based in just intonation and frequency ratios used by composers in the classical tradition such as Ben Johnston and James Tenney.<sup>266</sup> A much closer comparison would be to artists such as Sean Archibald (better known as Sevish), who writes electronic

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<sup>262</sup> Klapcsik, *Liminality*, 151–152.

<sup>263</sup> See *ibid.*, 150–151, 153.

<sup>264</sup> *Ibid.*, 169; emphasis in original.

<sup>265</sup> Jonathan Wild, 'Genus, Species and Mode in Vicentino's 31-tone Compositional Theory', *Music Theory Online* 20, no. 2 (2014). See also Martin Kirnbauer, "'Viertönigkeit" instead of Microtonality: The Theory and Practice of Sixteenth- and Seventeenth-Century "Microtonal" Music', in *Experimental Affinities in Music*, ed. Paulo de Assis (Leuven: Leuven University Press, 2015), 68.

<sup>266</sup> See Bob Gilmore, 'Changing the Metaphor: Ratio Models of Musical Pitch in the Work of Harry Partch, Ben Johnston, and James Tenney', *Perspectives of New Music* 33, no. 1/2 (Winter – Summer 1995): 458–503.

music in the popular tradition using a variety of tuning systems, most of which are ‘edo’ systems with a number of divisions other than 12.<sup>267</sup>

At the aesthetic level, the not-quite-right chords of *Altared* produce a sense of tension and discomfort. Meanwhile, the harmonic progressions create a feeling of movement, initially seeming to operate according to familiar conventions, but, especially in the outer ‘chorale’ sections, often lead to places that cannot readily be located within a functional harmonic context, and hence do not produce a strong push in any particular direction, creating a feeling of disorientation and directionlessness. As Klapcsik writes, ‘liminal and multiple space is often approached by aimless wandering.’<sup>268</sup>

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15edo was chosen for the character of its harmony – specifically, for its minor seventh chords and its fifths. Each of the steps measures 80¢ (as opposed to the 100¢ steps of 12edo). This results in an approximation of the minor third of 320¢, which is very close to a pure minor third (roughly 315.6¢), and therefore has a pleasant and consonant sound. Meanwhile, the closest approximation of a perfect fifth is 720¢ – much wider than a pure fifth of around 702¢, making it quite unstable. As mentioned, a functioning circle of fifths cannot be formed, because a sequence of 720¢ steps wraps back around to the starting note after only five steps ( $720 \times 5 = 3,600$ ; an octave is 1,200¢). These two intervals allow for minor seventh chords that are pleasant but somewhat unstable, while the fifth-approximation results in harmonic movement that does not function in a way comparable to conventional tonality. The major thirds of 15edo are the same as those of 12edo (400¢), while there are two available minor sevenths: 960¢ (close to a harmonic seventh of 968.8¢) and 1040¢ (a fifth plus a minor third).

After choosing the temperament, I constructed a scale that would serve my purpose of supporting harmony based around minor seventh chords. My decision to use four-note chords was made largely for reasons of personal taste; I have a general preference for four-note harmony over three-note harmony, and I had selected 15edo because I liked the way its seventh chords sounded. However, there is a distinct advantage to the use of tetrads over triads in the context of the aims of this piece: the addition of the seventh tends to soften the dissonance of the wide fifth, producing chords that sound richer and more familiar, with more of the warmth that triadic harmony in more conventional Western tuning systems possesses, while still allowing for the unusual harmonic

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<sup>267</sup> For example, see Sevish, *Rhythm and Xen*, Bandcamp, digital album, 10 May, 2015, <https://sevish.bandcamp.com/album/rhythm-and-xen>. See also Adam Hart, ‘Microtonal Tunings in Electronic Dance Music: A Survey of Precedent and Potential’, *Contemporary Music Review* 35, no. 2 (2016): 242–262.

<sup>268</sup> Klapcsik, *Liminality*, 166.

movement that results from the wide fifth. (Triads are used in a few places in *Altared*, particularly in the faster-moving and more dissonant middle section, but I think that a chorale texture written primarily using triadic harmony in 15edo would have sounded overly stark for my purposes.)

My original intention was to generate a scale using an interval cycle analogous to the circle of fifths in 12edo (of which there are several in 15edo); however, none of these scales proved satisfactory, and so I constructed a scale from two sizes of interval: one and two steps (i.e. 80 and 160¢) respectively. This scale is shown in Figure 36.

0		2	3	4		6		8	9	10		12	13		(15=0)
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Fig. 36. Scale used in *Altared*

The numbers in Figure 36 correspond to degrees of the ‘chromatic’ scale consisting of all the notes of the 15edo temperament (henceforth ‘temperament degrees’, to avoid confusion with scale degrees, where ‘scale’ refers to my constructed scale). 0 is used as the ‘tonic’ here for ease of calculating intervals. Figure 37 shows a transcription of this scale into conventional staff notation with cent adjustments.

0      2      3      4      6      8      9      10      12      13      (15=0)

♩      ♩      ♩      ♩      ♩      ♯♩      ♩      ♩      ♩      ♩      (♩)

-40¢    +40¢    +20¢    -20¢    +40¢    +20¢                      -40¢    +40¢

Fig. 37. Transcription of scale used in *Altared* into staff notation with cent adjustments

I have transposed the scale onto a ‘tonic’ of A for ease of display (the actual ‘tonic’ is closer to B). The numbers above the stave in Figure 37 indicate temperament degree, while cent adjustments are shown below.

Next, I constructed a system of tetrads based on each scale degree. A minor third (320¢) is made up of four 80¢ steps, a major third (400¢) of five, and a perfect fifth (720¢) of nine, so a minor seventh chord on temperament degree 0 (using the wider of the two minor sevenths) comprises temperament degrees 0, 4, 9 and 13. Hence, there are two scale degrees between each harmony note (rather than one, as in tonal harmony in 12edo). The full harmonic system is shown in Figure 38.



	0	2	3	4	6	8	9	10	12	13	0									
<b>4-5-4</b>	0			4			9			13										
4-4-5		2			6			10			0									
<u>5-4-5</u>			3			8			12			2								
<u>5-4-5</u>				4			9			13			3							
<b>4-5-4</b>					6			10			0			4						
<b>4-5-4</b>						8			12			2			6					
4-5-5							9			13			3				8			
<u>5-4-5</u>								10			0			4				9		
5-4-4									12			2			6				10	
5-5-4										13			3				8			12

Fig. 38. Principal harmonic system used in *Altared*

The leftmost column in Figure 38 shows the interval structure of each chord. 4-5-4 is a minor seventh chord (three instances, shown in bold), while 5-4-5 is a major seventh chord (three instances, underlined). The remaining four chords are unique. (One of them, 5-4-4, with temperament degree 12 as its root, approximates a dominant seventh chord.)

This is the harmonic system used for most of *Altared*. Figure 39 shows the chord sequence used in the first chorale section (roughly 0:10–0:58) in simple four-part counterpoint (a fifth voice, below the bass, joins on the penultimate chord, around 0:40).

S	9	6	9	9	6	6	9	9	2↑	2↑	0↑	3↑	3↑	2↑	0↑	0↑
A	4	4	4	3	2	2	4	3	3	6	4	4	8	6	6	4
T	13↓	10↓	13↓	13↓	12↓	0	0	8↓	8↓	10↓	10↓	13↓	13↓	10↓	10↓	9↓
B	0↓	0↓	0↓	8↓↓	8↓↓	10↓↓	10↓↓	13↓↓	12↓↓	12↓↓	9↓↓	9↓↓	12↓↓	12↓↓	4↓	4↓
Sub B															6↓↓	0↓↓
Chord	0a	6c	0a	9d	8a	2c	10a	9b	3c	12a	10d	4b	13d	12a	6a	0a
Change	+4	-4	-4	-1	-4	-4	-1	-4	-4	-1	-4	-4	-1	-4	-4	

Fig. 39. Chord sequence of first chorale section from *Altared*, approximately 0:10–0:58

Arrows next to the temperament degree in Figure 39 indicate octave (so, for example, 13↓↓ is temperament degree 13, two octaves below the middle octave). Chords are identified by their root, with a letter denoting inversion, as usual. The row labelled 'Change' indicates the movement between

chord roots in scale degrees (not temperament degrees), so, for example 6 is four scale degrees above 0. Note that the final chord has no seventh. Figure 40 shows a transcription of most of this passage into staff notation.

Fig. 40. Partial transcription of first chorale section of *Altared*, approximately 0:10–0:35

Again, this music has been transposed onto a ‘tonic’ of A. Note that functional harmonic relationships have not always been preserved in the ‘spellings’ of the notes. Figure 40 shows all but the last three chords of the sequence shown in Figure 39.

The chord sequence shown in Figure 39 includes every chord in the system shown in Figure 38. The movement is mostly downwards by intervals of four scale degrees, equivalent to six scale degrees upwards (since the scale has 10 notes). Six scale degrees is in most cases equal to 15edo’s fifth of 720¢ (with some exceptions, owing to the distribution of large and small steps in the scale). To put it another way, a movement of four scale degrees is usually equal to 15edo’s fourth-equivalent of 480¢, significantly narrower than a pure fourth of roughly 498¢. This chord sequence is predicated on moving between chords that have either one or two of their four notes in common (one note in the case of movement by one scale degree, and two in the case of movement by four scale degrees). This creates smooth harmonic movement similar to that of the circle of fifths in tonality, in which each chord has one note in common with those on either side (or two notes, if sevenths are added).

The harmonic movement in the first chorale section, then, is mostly analogous to the circle of fifths, moving downwards by the equivalent of fourths, which creates a plagal character, further evoking church music. However, in order not to return to its starting point after five chords, the sequence must ‘slip’ down by one scale degree every third chord, to compensate for the wideness of the fifth/narrowness of the fourth. The result is that the sequence sometimes arrives back at the same chord but by a different route – for example, the chord with root 10 appears as both the 7th and 11th chords in the sequence, preceded in the first instance by 2, and in the second by 12. This allows the chord sequence to move through all of the chords in the ‘key’, like the circle of fifths in tonal music,

but in a way that feels circuitous and disorientating, moving in meandering loops rather than with a purposeful stride.

As I have suggested, this harmonic system accounts for only part of *Altared*. Since there is another minor seventh available in 15edo, one 80¢ step narrower than that appearing in the minor seventh chords of the harmonic system shown in Figure 38, I also constructed a supplementary harmonic system in which the top note of each tetrad is one scale degree lower, i.e. the top two notes are separated by only one scale degree, rather than two. This system is shown in Figure 41.

	0	2	3	4	6	8	9	10	12	13	0								
<b>4-5-3</b>	0			4				9		12									
<b>4-4-3</b>		2			6			10		13									
<u>5-4-3</u>			3				8			12		0							
<u>5-4-4</u>				4				9			13		2						
<b>4-5-3</b>					6				10			0		3					
<b>4-5-2</b>							8			12			2	4					
<b>4-5-3</b>								9			13			3		6			
<u>5-4-4</u>									10			0		4			8		
<u>5-4-3</u>										12			2		6			9	
<b>5-5-2</b>											13			3				8	10

Fig. 41. Supplementary harmonic system used in *Altared*

4-5-3 is the narrower minor seventh chord (three instances, shown in bold). 5-4-4 and 5-4-3 are two different approximations of a dominant seventh chord (two instances each, underlined). The remaining three chords are unique. The chords in this system are, generally speaking, more dissonant than those in the system shown in Figure 38; they begin to appear in the middle section of *Altared* (roughly 0:58–3:06), and form the basis of the second chorale section, the chord sequence of which is shown in Figure 42.

S	13	12	12	10	10	9	9	10	10	9	6	9	8	10
A	9	9	8	8	6	6	6	6	6	4	3	4	4	6
T	4	4	4	4	4	4	3	2	3	12↓	10↓	12↓	12↓	13↓
B	0	0	0	0	0	0	0	13↓	0↓	0↓	0↓	0↓	2↓	2↓
Sub B							0↓	13↓↓	0↓					
Chord	0a	0*a	3*d/ 10*b sus	10*b	6c	9*b sus	9*b sus	2*d	6*c	0*a	6*c	0*a	8*c	2*a
Change	0	+2/ -3	±5 /0	-3	+2	0	±5	+3	-4	+4	-4	±5	-4	



S	9	9	9	3↑	3↑	3↑	2↑	4↑	3↑	3↑	0↑	0↑		
A	3	2	2	10	10	6	6	8	8	8	6	4		
T	13↓	13↓	12↓	0	13↓	13↓	13↓	0	0	10↓	10↓	9↓		
B	6↓↓	4↓↓	6↓↓	6↓↓	8↓↓	9↓↓	10↓↓	10↓↓	12↓↓	13↓↓	3↓	4↓		
Sub B											6↓↓	0↓↓		
Chord	9*d	4*a	12*c	6*a	13*c	9*a	2*c	10*a	3*c	13*a	6*a	0a		
	±5	-3	±5	-4	±5	-3	±5	-4	±5	-3	±5	-4		

Fig. 42. Chord sequence of second chorale section from *Altared*, approximately 3:06–4:21

(N.B. There is a passing note, 2↑, in the Soprano, between the antepenultimate and penultimate chords; this is not shown in Figure 42.) Asterisks denote chords taken from the system in Figure 41 (as opposed to that in Figure 38).

After a cascade of suspensions, this section settles into a progression comparable to that shown in Figure 39, but with significant differences. Owing to the different intervallic structure of the chords, the relationships between chords are different in this system: chords 2, 3 or 5 scale degrees apart have two notes in common, while chords 4 scale degrees apart have one note in common. 5 scale degrees is an interval of either 7 or 8 temperament degrees, i.e. 560 or 640¢, both very approximately equivalent to a 12edo tritone (600¢), while 3 scale degrees is a third (either major or minor). The harmonic movement here is, therefore, considerably stranger than in the first chorale section, making it even more disorientating, while the more dissonant chords produce a greater feeling of tension and unease. As with the first chorale section, every chord in the relevant harmonic system appears, with some chords appearing multiple times, but approached via different routes.

Sketch material for *Altared*, including partial notation (notably for the middle section, not detailed here), can be found in Appendix 7.

\* \* \*

*Altared* was initially conceived as a kind of proof-of-concept study, to establish whether my approach to microtonal composition would be successful in producing the desired effect of harmony that sounded familiar yet strange (evoking Turner's liminality),<sup>269</sup> and indeed whether it was viable at all. I was satisfied with the results of this experiment, and carried forward much of the technique used here into *Run C:\empathy.exe* and *Ursus Subductus*, which both employ considerably more complex harmony. The feelings of unease, disorientation and aimless wandering that *Altared* engenders derive to a large degree from this same source: a combination of tonal logic drawn from historical styles with microtonal harmony that only loosely approximates tonality. The combination of Baroque church music with (arguably quite outdated-sounding) synthesiser tones that would more ordinarily be found in music of the popular tradition also touches upon Klapcsik's cultural/institutional liminality,<sup>270</sup> combining high and popular culture with a certain degree of irony. This could perhaps be seen as an example of what Turner calls 'the blend [...] of lowliness and sacredness' that characterises liminal phenomena.<sup>271</sup>

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<sup>269</sup> See notes 99, 259.

<sup>270</sup> See note 95.

<sup>271</sup> Turner, *Ritual Process*, 96.

IX.  
**RUN C:\EMPATHY.EXE**  
 for Computer-Generated Sound (2015/21)

*Run C:\empathy.exe* was inspired by the concept of the ‘uncanny valley’: the idea, originating in robotics, that something that very closely but *not quite perfectly* resembles a human prompts reactions of profound unease.<sup>272</sup> As hinted at by its title, in this piece I imagine how an artificial intelligence might attempt to reproduce particular expressive musical devices after having had them badly explained by a human – in other words, the piece consists of a human imitating a computer imitating a human.

*Run C:\empathy.exe* is written in 21edo, a temperament chosen for its ‘bluesy’ character, deriving largely from its very narrow minor thirds, its minor sevenths that very closely approximate the harmonic seventh, and the availability of small melodic inflections somewhat resembling blue notes. It is from this latter feature that the idea for the piece arose. Recalling Haraway’s argument that the postmodern era has involved ‘*the translation of the world into a problem of coding*, a search for a common language in which [...] all heterogeneity can be submitted to disassembly, reassembly, investment, and exchange’,<sup>273</sup> which she characterises as the ‘imposition of a grid of control’,<sup>274</sup> it seemed to me that the codification and standardisation of blue notes as an interval of a precise number of cents would constitute just such an imposition. To my mind, there is something perversely ironic about taking an expressive device so characterised by suppleness and fluidity and defining it as a precise value, just one step in a perfectly-evenly-spaced scale, a control grid of frequencies. In *Run C:\empathy.exe*, these melodic inflections abound, acquiring by their standardisation a mechanical, rigid quality that is slightly disconcerting, sitting uneasily within the stylistic context. The timbre of the melody ‘instrument’ somewhat resembles a saxophone, trumpet, or perhaps an electric guitar, but where those instruments would bend notes expressively, it produces only discrete, stable pitches.

The second expressive device that is reinterpreted in this piece is *rubato*: rather than the pulse being pushed and pulled in a natural-sounding way for expressive effect at certain moments, the tempo of *Run C:\empathy.exe* continually shifts and lurches, with the locations of these changes being largely arbitrary and detached from affect. Again, the result sounds mechanical, recalling the

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<sup>272</sup> See Jari Kätsyri et al., ‘A Review of Empirical Evidence on Different Uncanny Valley Hypotheses: Support for Perceptual Mismatch as One Road to the Valley of Eeriness’, *Frontiers in Psychology* 6 (2015): 390. See also Klapcsik, *Liminality*, 115.

<sup>273</sup> Haraway, ‘Manifesto’, 164; emphasis in original. See note 208.

<sup>274</sup> *Ibid.*, 154. See note 210.

speeding-up and slowing-down of a record more than that of a human performer. This constant tempo fluctuation produces a feeling of instability and discomfort, and in its exaggerated character there is a suggestion of parody. Turner writes, of the liminal stage of certain types of initiation ritual, 'Innumerable are the forms of topsy-turvydom, parody, abrogation of the normative system, exaggeration of rule into caricature or satirizing of rule.'<sup>275</sup>

I have previously only touched upon the topic of irony, but it is an important part of Klapcsik's understanding of liminality, and a recurrent theme in Haraway's 'Cyborg Manifesto'. Inherent to irony is the act of simultaneously maintaining multiple, potentially conflicting, interpretations, without decisively embracing of any of them; as Haraway writes, 'Irony is about contradictions that do not resolve into larger wholes, even dialectically, about the tension of holding incompatible things together'.<sup>276</sup> Klapcsik connects this to his idea of narrative liminality, in which 'the reader oscillates among various perspectives',<sup>277</sup> and irony features prominently in many of his analyses, particularly of the works of Gaiman and Lem.<sup>278</sup> Since irony is constructed by the interpreter of a work, and relies upon the holding open of multiple readings, I am reluctant to proclaim my own work to be ironic, thereby shutting down alternative interpretations. Nevertheless, I will note that I do consider many of the works in this portfolio to potentially support ironic interpretations, and, of these, it is probably in *Run C:\empathy.exe* that the basis for an ironic reading is most apparent.

Stylistically, *Run C:\empathy.exe* draws mainly upon funk, as well as the related styles of blues and jazz. I had originally planned on a more blues-based style, but quickly concluded that funk was better-suited to my aims, since it tends towards much greater harmonic complexity, and typically involves a steady beat that would make any tempo distortions more noticeable. However, the piece also incorporates stylistic elements of chiptune (mainly in the timbres used, particularly the drums) and the Baroque, resulting in an incongruous assortment of styles that situates the piece largely, but not entirely, outside of the classical tradition. Given that the piece's context, both within this trilogy of electronic works and within my portfolio more generally, suggests a stronger affiliation with the classical tradition, from which the piece does not entirely dissociate itself, *Run C:\empathy.exe* exhibits

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<sup>275</sup> Turner, 'Liminal', 73.

<sup>276</sup> Haraway, 'Manifesto', 149.

<sup>277</sup> Klapcsik, *Liminality*, 21.

<sup>278</sup> See *ibid.*, 55-59, 66-68, 98-104, 148.

Klapcsik's cultural/institutional liminality more strongly than any of the pieces I have discussed so far. The institutional categorisation of the piece is ambiguous, as is its intended audience.<sup>279</sup>

\* \* \*

I began by constructing a scale and harmonic system within 21edo, using much the same approach as for *Altared*. This scale and harmonic system, along with an explanation for their construction, can be found in Appendix 8.

As mentioned, 21edo was chosen partially for the availability of small inflections comparable to blue notes. In *Run C:\empathy.exe*, the temperament degrees most often used as these 'blue' notes are 1 (pushing down onto 0) and 9 (pushing onto 8). Both 8 and 9 approximate the fourth, at roughly 457.1 and 513.4¢ respectively (a pure fourth being almost exactly 498¢), so this usage imitates the blue note found between the fourth and fifth, pushing down onto the fourth; however, since 9 is only very slightly above a pure fourth, and 8 considerably below, this 'blue' note sounds much flatter and more 'squashed' than that on which it is modelled. Temperament degrees 5 and 17 could also be considered 'blue' notes, but, since they appear within the 'tonic' chord, they often function as consonances; nonetheless, where they are used as melodic dissonances, they could be considered 'blue' notes, and the narrowness of the minor third and minor seventh intervals does still give these notes a 'bluesy' character. Indeed, because the steps of the scale used in *Run C:\empathy.exe* are so small (roughly 57.1¢, much narrower than a 12edo semitone of 100¢, and 171.4¢, significantly narrower than a 12edo tone), most melodic dissonances, of which there are many in this piece, have something of the character of a blue note. Figure 43 shows the opening phrase of the piece, which exhibits the use of temperament degrees 1 and 9 as 'blue' notes.

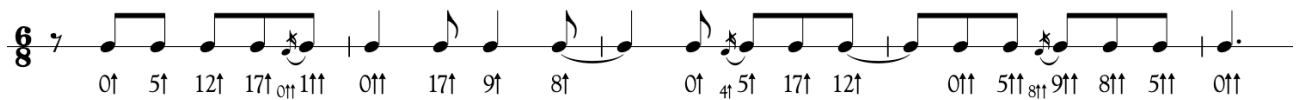


Fig. 43. Opening phrase of *Run C:\empathy.exe*

The numbers below each note in Figure 43 correspond to temperament degree. Again, the arrows indicate octave. The beginning and end of this phrase recur throughout the piece as motifs. Figure 44 shows a transcription of this phrase into staff notation with cent adjustments.

<sup>279</sup> See Klapcsik, *Liminality*, 20, 82.



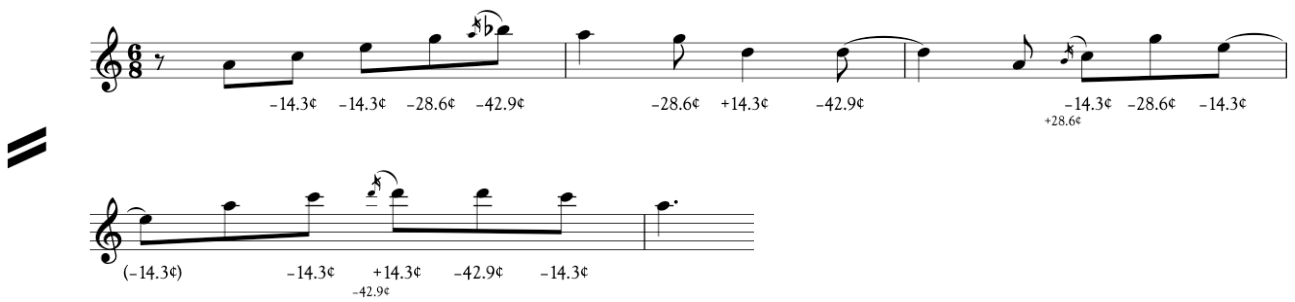


Fig. 44. Transcription of opening phrase of *Run C:\empathy.exe*

Again, the music in Figure 44 has been transposed onto a ‘tonic’ of A for ease of presentation (the actual ‘tonic’ is closer to F-sharp), and functional relationships have not always been preserved. Non-integer cent values here and henceforth are rounded to one decimal place.

I have mentioned that the tempo in *Run C:\empathy.exe* fluctuates constantly. This is illustrated in Figure 45.

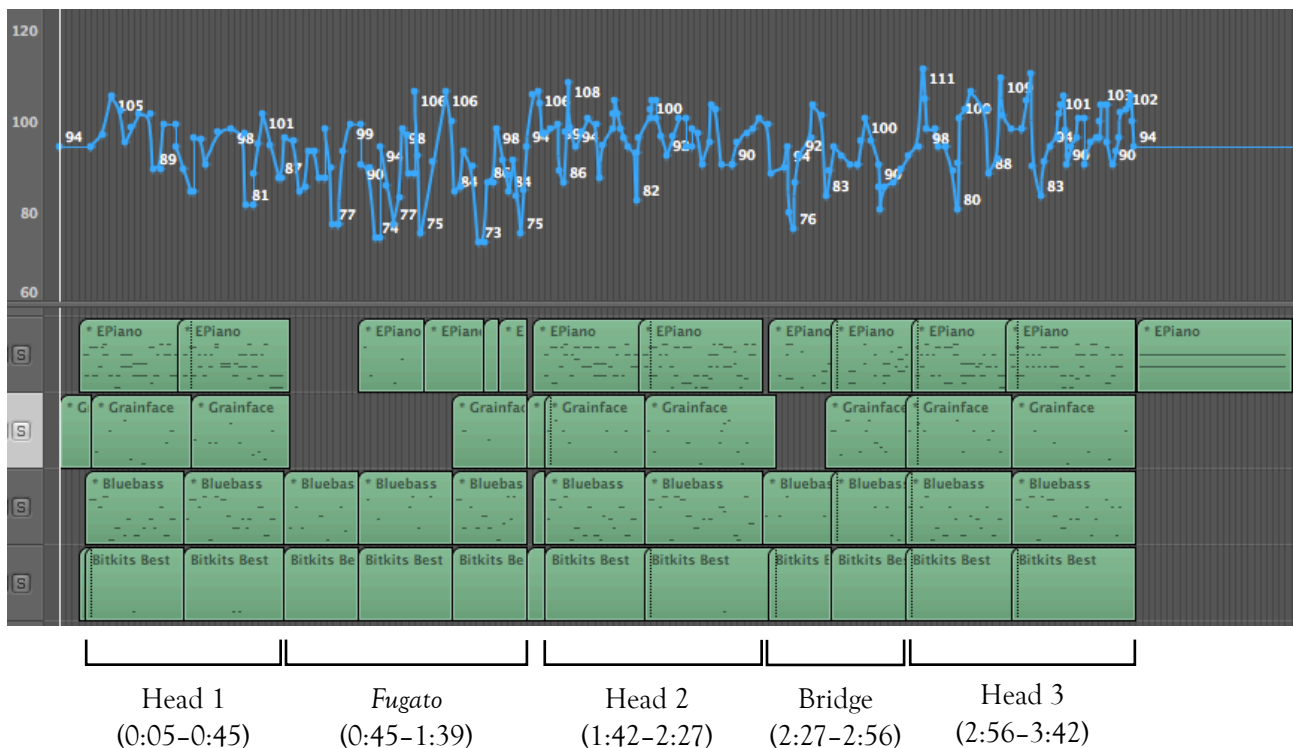


Fig. 45. Tempo fluctuations in *Run C:\empathy.exe*

Figure 45 is a cropped screenshot taken in the Logic session for the piece (Logic being the digital audio workstation used to create these three electronic pieces). The blue line indicates the tempo; as can be seen, from a base of dotted crotchet = 94, it veers wildly and unevenly, reaching as low as 73 and as high as 111. The green blocks are ‘stems’, segments of recording or sequencing, and are included for context, so that the tempo changes can be tied to their locations in the piece.

(‘EPiano’ is the electric piano-like synthesiser that mostly plays chords; ‘Grainface’ is the lead melody voice; ‘Bluebass’ is the bass; ‘Bitkits Best’ is the drums.) The main sections are annotated below the image to further illustrate the structure. These tempo fluctuations were created by drawing a zig-zagging line more or less at random, with only occasional consideration for the musical context, and then tweaking this line until I was happy with the results. The effect is that the tempo changes are erratic and largely unconnected to musical affect, making them disconcerting – perhaps in a way that is not entirely dissimilar to a humanoid robot producing unnaturally-exaggerated facial expressions.<sup>280</sup> A similar technique is employed in Karlheinz Stockhausen’s *Klavierstück VI*,<sup>281</sup> but the changes in *Run C:\empathy.exe* are more erratic; the effect sounds more mechanical and unnatural than a human performer could achieve, and, owing to the otherwise-steady beat, it is much more conspicuous than in *Klavierstück VI*.

As can be seen from Figure 45, *Run C:\empathy.exe* is structured as three ‘Head’ sections (each slightly varied), alternating with other material, plus a brief introductory section and a long coda. The chord sequence of the first Head is shown in Figure 46.

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<sup>280</sup> See Kätsyri et al., ‘A Review of Empirical Evidence on Different Uncanny Valley Hypotheses’, 11.

<sup>281</sup> Karlheinz Stockhausen, *Klavierstück VI* (London: Universal Edition, 1965).

EPiano	17	17	20	0↑	0↑	3↑	4↑	1↑	1↑	1↑	1↑	0↑	0↑	20	0↑
	12	13	13	16	17	17	20	17	17	20	17	17	16	13	17
	5	8	8	9	12	12	13	13	12	13	12	12	9	9	12
	0	1	4	4	5	8	8	8	5	8	8	5	4	4	5
															0
Bass	0↓↓	8↓↓	4↓↓	9↓↓	12↓↓	17↓↓	13↓↓	13↓↓	12↓↓	20↓↓	17↓↓	12↓↓	4↓↓	13↓↓	0↓↓
Chord	0a	17c	8d	4b	0c	12*b	8b	17d	5b	1d	12b	0c	4a	13a	0a
Change		-2	-5	-2	-2	-5	-2	+5	+5	-2	+5	+5	+2	+5	+4



EPiano	17	17	20	0↑	5↑	7↑	8↑	8↑	5↑	4↑	4↑	4↑	4↑		0↑
	12	13	13	16	0↑	0↑	1↑	1↑	0↑	0↑	20	20	0↑	20	17
	5	8	8	9	17	17	20	17	16	14	13	13	16	13	12
	0	1	4	4	12	10	13	12	12	9	9	8	9	9	5
						8						4	4	0	
Bass	0↓↓	8↓↓	4↓↓	9↓↓	12↓↓	10↓↓	8↓↓	17↓↓	16↓↓	0↓	20↓↓	8↓↓	4↓↓	13↓↓	0↓↓
Chord	0a	17c	8d	4b	0c	0*c	1b	12b	16a	4*d	13b	8a	4a	13a	0a
	0	-2	-5	-2	-2	0	+1	+5	+2	+5	+5	-3	-2	+5	+4

Fig. 46. Chord sequence of first Head from *Run C:\empathy.exe*, approximately 0:04-0:45

Asterisks in Figure 46 indicate chord alterations (for example, the sixth chord, marked '12\*b' has a raised fifth: 12-17-3-8 rather than 12-17-1-8). Note that the bass plays many fills that are not shown here, and that these chords are played in an uneven rhythm, and so have substantially different durations. Note also that the first four chords and last three chords of each line are the same – the Head contains some internal repetition. As in *Altared*, the harmonic movement is based mainly around moving between chords with one or two notes in common; here this results in movement mostly by intervals of two and five scale degrees (chords separated by these intervals having one and two notes in common respectively). Five scale degrees is usually equal to nine temperament degrees, the wider of the two fourth-approximations (which is the inversion of the narrow fifth), meaning that much of the movement here imitates the circle of fifths. The final three chords of both lines (4, 13, 0) form a cadential figure, imitating a tonal ii-V-i progression; however, in order for this chord sequence to close in the way it is expected to, it needs to 'slip' down a step. This is because temperament degree

4, functioning as the supertonic, is 228.6¢ above 0, higher than the supertonic in 12edo, whereas the fifth is narrower, with the result that the distance between the two is only four scale degrees, not five, and moving up five scale degrees overshoots 12 and lands on 13. Since 13 is a dominant seventh chord (7-5-5), unlike 12, I chose to keep 13 as the dominant and place the ‘slip’ between 13 and 0, rather than after 4. This results in a slightly disconcerting cadence in which the root of the ‘dominant’ slips down a step onto the fifth of the ‘tonic’, rather than being the same note, creating a feeling somewhat akin to missing a stair.

In the first Head, the lead melody instrument and rhythm section share focus, with a sparse, somewhat improvisatory melody interjecting where the rhythm section is less active. Following this is a *fugato* section, the sole clear trace of Baroque style in this piece, appearing as extremely incongruous in the context. This perhaps heightens the suggestion of an ironic or satirical reading of the piece, but also ties it to the rest of the trilogy. The second Head places a new, more structured melody over the same rhythm section parts from the first Head (with slight variations), but adds a ‘modulatory’ passage towards the end, leading into the Bridge, which begins with temperament degree 5 as the new ‘tonic’. A transcription of the beginning of the second Head is shown in Figure 47.

The figure displays a musical score for the second Head of *Run C:\empathy.exe*, approximately 1:42–1:51. The score is divided into two systems, separated by a double bar line. Each system contains three staves: Lead (treble clef), EPiano (grand staff), and Bass (bass clef). The music is in 6/8 time. The Lead part features a melodic line with various intervals and accidentals. The EPiano part consists of chords and arpeggios, with some notes tied across measures. The Bass part provides a rhythmic foundation with a mix of eighth and quarter notes. Below each note in the Lead and Bass staves, a temperament degree value is indicated in cents (¢). The values range from -42.9¢ to +42.9¢. The EPiano part does not have individual note values but shows chord structures. The second system ends with the word 'etc.' on the right side.

Fig. 47. Partial transcription of second Head from *Run C:\empathy.exe*, approximately 1:42–1:51

Again, the music in Figure 47 has been transposed onto a ‘tonic’ of A. *Acciaccature* have been omitted as a space-saving measure. The chord sequence played by the EPiano in Figure 47 is identical to that found at the beginning of the first Head, shown in Figure 46. Note that the top note of the sixth chord in this sequence (temperament degree 3, transcribed as a B with an adjustment of  $-28.6\text{¢}$ ) is a chromatic alteration, not present in the scale, as mentioned earlier. The bass part in Figure 47 contains only small alterations as compared with the first Head. The second Head later diverges more significantly, as described above.

The Bridge is highly syncopated and considerably more ‘chromatic’ than most of the piece, gradually ‘modulating’ back to 0 for the last Head. This final Head is largely the same as the second (again with slight variations), but without the modulatory passage, instead ending with a modified repetition of the final phrase. Following this last Head is a coda consisting solely of a complex spread chord, held for around 30 seconds. This is an exaggerated version of a stock ending gesture in jazz and related styles, in which an abrupt false ending is followed by a long, held tonic chord, typically with a number of added notes and with the melody instruments improvising freely over the top. In *Run C:\empathy.exe* this gesture is extended and without rhythmic activity, with the result that the chord is held for an uncomfortably long time, before abruptly cutting off, undermining the sense of closure and again suggesting parody. The notes of this chord are, from lowest to highest,  $0\downarrow-17\downarrow-5-9-16-20-4\uparrow-12\uparrow-8\uparrow\uparrow$ . This can be understood as a superimposition of the chords with roots 0 (0-5-12-17) and 20 (20-4-9-16), with temperament degree 8 added on top (the equivalent of an added 11th to the chord with root 0). It could also be viewed as a highly extended version of the chord with root 20, since continuing to add thirds on top of this chord would produce 20-4-9-16-0-5-12-17-1-8, identical to this ending chord except for the additional inclusion of temperament degree 1. A transcription of the notes of this ending chord is shown in Figure 48, again transposed onto a ‘tonic’ of A.

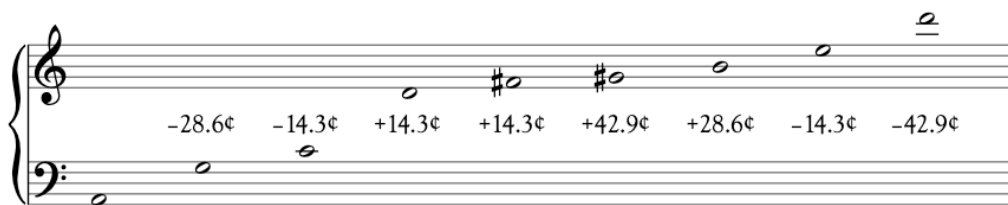


Fig. 48. Transcription of notes of ending chord of *Run C:\empathy.exe*, heard at approximately 3:42–4:15

Sketch material for *Run C:\empathy.exe*, including partial notation, can be found in Appendix 9.

The uncanny valley is a quite specific psychological phenomenon, which it may well not be possible to actually induce through music (at least without some extramusical aspects of performance). Nevertheless, by taking this idea as inspiration, I think *Run C:\empathy.exe* produces a comparable feeling of disconcertion, mainly through its unnatural tempo fluctuations, which also evoke the instability associated with the liminal. While there is perhaps some tension between styles, stylistic liminality is not a central concern here; instead, the combination of elements of different styles serves to create cultural/institutional liminality, situating the piece somewhere in the ambiguous zone between the classical and popular traditions, while also making ironic readings more readily available than in any of the other pieces in this portfolio. Compared with *Altared*, *Run C:\empathy.exe* also constitutes a considerable refinement of my microtonal compositional techniques, employing considerably more complex and ‘chromatic’ harmony.

## X.

**URSUS SUBDUCTUS**  
**for Computer-Generated Sound (2021)**

*Ursus Subductus* was written to be placed between *Altared* and *Run C:\empathy.exe* in running order, at a time when both of those pieces were only partly written. Stylistically, it is closer to *Altared*, drawing again upon the music of Bach and Purcell, but begins to incorporate subtle jazz influences, paving the way for *Run C:\empathy.exe* (though hopefully without undermining its unexpectedness).

At the core of *Ursus Subductus* is a section inspired by the geological process of subduction, in which one tectonic plate is drawn down below another at a convergent boundary zone, often generating volcanic and seismic activity.<sup>282</sup> The central section of *Ursus Subductus* (roughly 1:24–3:36) consists of a kind of harmonic prolation canon in which two musical layers play through the same chord sequence at slightly different rates, with one sinking down below the other in register, creating tension as the layers move in and out of harmonic and rhythmic alignment.

There is also a spatial element to *Ursus Subductus* that is not present to such a significant degree in the other works presented here. The two main layers (a *staccato* arpeggiated texture and a sustained, organ-like chordal layer) are initially presented as if they were each being produced by a physical instrument, originating from a single physical location. Over the course of the piece, both layers (especially the former) become spatially dispersed through the use of panning, breaking down into multiple components that move independently. This is a remnant of the original idea behind the piece, which was to portray a destabilising encounter between Self and Other, but one in which the instability was always present from the start, and was only brought to the surface by this encounter. That idea is also the reason for the ‘gaps’ in the arpeggiated layer, which disrupt its momentum, rendering it unstable from the outset. In the course of writing the piece, I decided that this original idea was overly vague and generic, and would not produce results that were particularly discernible to the listener, and so I allowed it to be superseded; however, these traces remain, rendering *Ursus Subductus* something of a palimpsest. A further spatial technique is the use of varying levels of reverb to manipulate the sense of space. Both panning and reverb sometimes change very abruptly, creating a disorientating effect.

*Ursus Subductus* is written in 16edo; to provide contrast with *Altared* and *Run C:\empathy.exe*, this temperament was chosen for the quality of its major (rather than minor) thirds. Like 15edo and 21edo, however, 16edo has a very inaccurate approximation of the fifth, producing harmonic movement that often feels familiar but does not quite ‘join up’ the way it ought to.

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<sup>282</sup> Robert J. Stern, ‘Subduction Zones’, *Reviews of Geophysics* 40, no. 4 (2002): 3-1–3-38.

The scale and harmonic system used in *Ursus Subductus*, and an explanation of their construction, can be found in Appendix 10.

The opening section of *Ursus Subductus* is modelled directly upon the C major Prelude, BWV 846 from J. S. Bach's Well-Tempered Clavier.<sup>283</sup> However, owing to the nature of the temperament, it is forced to change course almost immediately, on the third chord. Figure 49 shows the harmony and voice leading of the opening 12 chords, compared with the first 11 chords of the Bach (for which only the harmony and bassline are shown, since the other contrapuntal lines are less directly related).

5↑	7↑	3↑	5↑	2↑	0↑	12	15	11	11	14	0↑
14	0↑	15	14	10	9	8	8	7	6	10	12
9	7	11	9	5	5	4	4	3	2	5	5
0	12↓	15↓	0	14↓	12↓	12↓	12↓	11↓	14↓	2	0
5↓	3↓	7↓	5↓	5↓	5↓	8↓	4↓	7↓	11↓	10↓	9↓
0↓	0↓	0↓	0↓	0↓	0↓	0↓	15↓↓	15↓↓	14↓↓	5↓↓	12↓↓
0a	3d	11/0	0a	5/0 #3rd	12b	12b ♭5th ♭7th	15a #3rd #5th	11b	14a	5a #3rd	12a
+2	+5	+4	+3	+5	0	+2	-3	+2	+5	+5	

C	C	B	C	C	C	B	B	A	D	G
Ia	ii <sup>7</sup> d	V <sup>7</sup> b	Ia	vib	ii <sup>7</sup> d #3rd	Vb	I <sup>7</sup> d	via	ii <sup>7</sup> a #3rd	Va
+1	+3	+3	-2	+3	+3	+3	-2	+3	+3	

Fig. 49. Harmony and voice leading of opening of *Ursus Subductus*, compared with harmony and bassline of opening of C major Prelude from Bach's Well-Tempered Clavier

'/0' indicates that the chord is over a pedal of temperament degree 0, which does not belong to that chord. Figure 50 shows a harmonic reduction of the same passage, transcribed into staff notation, and compared with a harmonic reduction of the Bach.

<sup>283</sup> Johann Sebastian Bach, 'Praeludium I, BWV 846', in *Das Wohltemperierte Klavier, Teil I, Urtext ed.*, ed. Ernst-Günter Heinemann (Munich: G. Henle Verlag, 1997), 2-3.



Fig. 50. Transcription of harmonic reduction of opening of *Ursus Subductus*, compared with harmonic reduction of opening of C major prelude from Bach's *Well-Tempered Clavier*

The upper two staves of Figure 50 show the chord sequence from *Ursus Subductus*, transposed onto a 'tonic' of C (the actual 'tonic' is closer to C-sharp). The lower two staves show the Bach. Note that temperament degrees 15 and 14, the bass notes respectively of the ninth and tenth chords in the upper two staves, are both represented by a B, but with different cent adjustments. Indeed, while these two chords appear the same in the transcription at first glance, they in fact share only one note (temperament degree 11), as can be seen more clearly in Figure 49.

Comparing the opening of *Ursus Subductus* and its Bach model, the first two chords of each progression are directly equivalent: from the tonic chord, the harmony moves to a minor seventh chord that has the tonic as its seventh, retaining the tonic in the bass. The third chord, however, cannot maintain the correspondence: in the scale used in *Ursus Subductus*, an interval of five scale degrees is usually a fourth-equivalent (occasionally a tritone), but if the third chord here were the 'dominant' (root 9, a fifth above the 'tonic'), the movement between the roots of the second and third chords would be only four scale degrees. Chords four scale degrees apart have no notes in common, so the harmonic movement would feel disjointed. Instead, the root moves up five scale degrees to 11, but 0 is retained in the bass as a pedal, meaning that when the harmony returns to the 'tonic' on the fourth chord (the root here moving up four scale degrees), a note is maintained across the chord change, despite the chords themselves having no notes in common.

After returning to the 'tonic', *Ursus Subductus*, like the Bach, moves to the 'relative minor' (12, a minor chord with the 'tonic' as its third). An additional chord is interpolated between the two, because the chords with roots 0 and 12 have three notes in common, and so moving directly between them would not produce a strong sense of motion. The following three chords differ from the Bach, but his descending stepwise bassline is preserved, C-C-B-B-A becoming 0-0-15-15-14. The last three chords follow Bach in moving by descending fifths (or ascending fourths), all in root position, but,

because the steps in the aforementioned descending bassline were narrower, as are the descending fifths, the ending point is much higher – not the ‘dominant’, 9, but rather the ‘relative minor’, 12.

Attempting to adapt music written in a 7-note scale within a 12-note temperament to this 11-note scale within a 16-note temperament involved a constant negotiation between following the character of the voice leading, following the contours of the harmony, and following the internal logic of my constructed harmonic system; the result is music that feels very familiar, but ends up in unexpected places, without the points of divergence necessarily being obvious.

As I have mentioned, the central section of *Ursus Subductus* (roughly 1:24–3:36) is constructed around a harmonic prolation canon. In this section, the arpeggiated layer and sustained chordal layer, initially presented as separate and contrasting, enter into a complex interaction. Both layers play through the same chord sequence, but the arpeggiated layer changes chord every six beats (two bars of 3/4), while the chordal layer changes every five and a half beats, meaning that they drift gradually out of and then back into rhythmic synchronisation, meeting on the downbeat every 22 bars. Harmonically, they continue to move further apart along the chord sequence, but this sequence is designed so that at the rhythmic convergence points the harmony aligns to create extended chords. At the first convergence point, the chordal layer reaches the chord with root 7 (7-12-0-5), while the arpeggiated layer reaches the ‘tonic’ (0-5-9-14), creating an extended chord on 7: 7-12-0-5-9-14 (equivalent to adding the ninth and eleventh). At the second convergence point, 3 (3-7-12-0) and 7 combine to create 3-7-12-0-5, and at the third, 12 and 5 combine to create 12-0-5-9-14-2. (The fourth convergence point is the end of the canon in the chordal layer, and does not involve a harmonic alignment; rather, the chordal layer holds the tonic chord while the arpeggiated layer catches up.) Figure 51 corresponds approximately to 1:24–1:56, and shows the harmony and voice-leading of the first 22-bar cycle (up to the first convergence point, which begins the second cycle).

9	12	15	10	13	0↑	4↑	6↑	4↑	6↑	6↑	9↑	
5	5	7	2	2	8	8	11	15	15	2↑	5↑	
14↓	0	3	6↓	9↓	12↓	15↓	15↓	8	10	14	14	
0↓	7↓	12↓↓	15↓↓	5↓	5↓	11↓	2↓	12↓	3	10	0	
0a	7a	15d	2d ♭5th	5a ♭5th	7d ♯root	11a ♯5th ♯7th	2a	15d ♯3rd ♯5th	6d ♭3rd	14d ♭7th	0a	
5↑	5↑	3↑	2↑	2↑	0↑	15	11	8	6	6	5	12
14	12	12	10	9	8	8	6	15↓	15↓	14↓	14↓	5
9	7	7	6	5	5	4	15↓	12↓	10↓	10↓	9↓	0
0	0	15↓	15↓	13↓	12↓	11↓↓	2↓	4↓	3↓	2↓	0↓	7↓↓
0a	7c	15a	2d ♭5th	5c ♭5th	7b ♯root	11a ♯5th ♯7th	2a	15b ♯3rd ♯5th	6d ♭3rd	14b ♭7th	0a	7a

Fig. 51. Harmony and voice-leading of first 22-bar cycle of central section of *Ursus Subductus*, approximately 1:24–1:56

The top table in Figure 51 corresponds to the arpeggiated layer, and the bottom to the chordal layer. Not shown in Figure 51 are the melodic fills that occasionally ornament the chordal layer; these fills occur throughout this middle section, and introduce a subtle jazz influence, especially since they tend to emphasise the syncopation that arises from this layer moving every five and a half beats. Figure 52 shows a transcription of the first eight bars of this passage, corresponding to the first four chords in the arpeggiated layer (the chordal layer reaches the fifth chord in the last bar of Figure 52).

The image displays a musical score for the beginning of the central section of *Ursus Subductus*, approximately 1:24–1:35. The score is divided into two systems, each containing an Arpeggiated (Arp.) layer and a Chordal (Chd.) layer. The Arpeggiated layer consists of two staves (treble and bass clef) with a consistent semiquaver pattern. The Chordal layer consists of two staves (treble and bass clef) with chords and some melodic movement. Cent adjustments are indicated by cent signs (¢) above or below notes and bar lines. The first system shows adjustments of -25¢ and -50¢ in the Arpeggiated layer, and (-25¢) and +25¢ in the Chordal layer. The second system shows adjustments of +25¢ and -50¢ in the Arpeggiated layer, and (+25¢) and -50¢ in the Chordal layer. A double bar line is present between the two systems.

Fig. 52. Transcription of beginning of central section of *Ursus Subductus*, approximately 1:24–1:35

Again, the music in Figure 52 has been transposed onto a ‘tonic’ of C. Cent adjustments in the arpeggiated layer apply for the whole bar. The first chord in the chordal layer is tied over from the previous passage.

At the start of this canon, the chordal layer is above the arpeggiated layer in register, but the former gradually sinks down while the latter is pushed up, emulating the movement of tectonic plates in subduction zones. The result of this canon is a constant ebb and flow of tension as the layers move into and out of alignment. The metre also becomes thoroughly ambiguous: the consistent semiquaver pattern of the arpeggiated layer maintains a steady crotchet pulse, but the barlines are undermined by the chordal layer, whose chord changes are more rhythmically decisive than those of the arpeggiated layer. Since this creates a feeling of irregular metre (5/8, alternating with 3/4), it becomes difficult to follow the crotchet pulse, but the pulse of the chordal layer is hard to pin down, because its rhythmic activity is sparse and inconsistent. Here Klapcsik’s narrative liminality is evoked: the listener must oscillate between hearing the music in 3/4 and hearing it in alternating bars of 3/4 and 5/8, because

it is not possible to follow both metric patterns at once, but both layers compete for the listener's attention, making it difficult to follow only one.

At the second and third convergence points (roughly 2:23 and 2:53), another layer is introduced, consisting of a highly-ornamented melody and a bassline. There is a further jazz influence here, particularly in the bassline, while the ornamentation of the melody is also influenced by Purcell (especially, again, the D minor Voluntary, Z718, itself influenced by the ornamentation style of the French Baroque). These two lines are caught in the tension between the arpeggiated and chordal layers. Harmonically, they draw upon both, often bringing out the dissonances between the two. By this stage, the chordal layer is lower in register than the arpeggiated layer, and so tends to drive the harmony, with the arpeggiated layer often creating dissonances above; these dissonances, however, are softer for being produced by staccato notes. Where the sustained melody and bassline emphasise these dissonances, they become more strident, and where the bassline is dissonant against the chordal layer, it destabilises the harmony. Rhythmically, the melody aligns with the arpeggiated layer, helping to reassert the barlines; the bassline, meanwhile, mediates between the chordal and arpeggiated layers, playing melodic fills that start when the former moves and end when the latter moves, thus becoming longer and more elaborate as those layers move further out of synchronisation.

Sketch material for *Ursus Subductus*, including partial notation, can be found in Appendix 11.

\* \* \*

Of these three electronic pieces, it is probably in *Ursus Subductus* that the tension between the microtonal harmonic system I constructed and the attempt to follow tonal logic was most pronounced in the compositional process, likely as a result of the fifth being even further from pure than those used in *Altared* and *Run C:\empathy.exe*. That is not to say, however, that this particular tension necessarily carries across to the listening experience. While the harmony does produce tension, this is not necessarily the constant, unresolving tension of liminality – there is certainly less strangeness to the harmony here than in *Altared*. There is, however, a certain amount of ambiguity and disorientation arising from the rhythmic divergences in the central section, and several other forms of liminality are present in the piece. While there is still perhaps a little less aesthetic/experiential liminality than I was aiming for, I do not think this particularly harms the piece; the construction of a microtonal harmonic prolation canon of considerable length remains a significant technical feat, and one which I think produces a compelling musical result.

## XI. CONCLUSIONS

Over the course of this project, I have explored liminality through a number of different avenues. All nine pieces presented here are underlain by thematic concerns related to the liminal, and each responds to these themes through different technical means (though with some commonalities). In each piece, the compositional techniques employed were crafted specifically to address the thematic concerns in question, leading to a considerable degree of heterogeneity in the contents of this portfolio. This approach is informed by a postmodern ‘incredulity towards metanarratives’,<sup>284</sup> which entails a resistance to the idea that any one technical approach might be suitable for addressing every theme, even when those themes all relate to the same core concept.

In many ways, the evocation of the aesthetic and experiential qualities associated with liminality was the easiest level on which to realise a liminal character, and it is this level that I suspect is most apparent to listeners. That is not to say, necessarily, that I think most listeners would hear this music and make an *explicit* connection to the concept of liminality, but rather that the music engenders experiences that align with experiences of the liminal.

The stylistic level was the most difficult arena in which to accomplish a liminal approach, and the one in which I think I made the most progress over the course of this project. The approach to style I have developed, whereby different parameters of the music are governed by the logics of different styles (typically involving some parameters being constrained by highly organised systems and others being approached more freely and intuitively), has proven effective both in creating the liminal stylistic tension for which I was aiming, and in addressing the stylistic impasse that led me to the idea of liminality to begin with. I have often found that, for me, composing completely freely and intuitively produces less interesting and more ‘obvious’ results, because my musical intuition is so shaped by musics of the past, leading to an inherent nostalgia that can risk verging on the reactionary. Like George Oppen, I am ‘suspicious of lyric cadence, both tempted and resistant.’<sup>285</sup> Conversely, I often find that musics that are highly organised and more concerned with novelty can lack graspable features, making them less engaging (again, for me), and I am equally suspicious of a conscious modernist drive towards some notional stylistic ‘progress’. In my liminal approach to style, I feel I have found a way to produce, from this tension, interesting musical results, by implementing systems that force me into less obvious decisions, a strategy that allows me to follow my musical instincts by

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<sup>284</sup> See note 15.

<sup>285</sup> John Wilkinson, ‘The Glass Enclosure: Transparency and Glitter in the Poetry of George Oppen’, *Critical Inquiry* 36, no. 2 (2010): 235.

safeguarding against the risks of doing so. This approach retains graspable features, but renders them slippery, hopefully providing listeners with a ‘way in’, but one that often proves elusive or tenuous. The technique I have developed for microtonal composition is a different iteration of this same idea, in which constructed harmonic systems with an element of strangeness inbuilt allow me to compose more freely without risking obviousness, because the notes I would instinctually write are simply not present. I have sometimes speculated that my preference for this approach is connected to my experience of anxiety: because I cannot trust my instincts (in this case, my sense of risk), I often attempt to rely instead upon external, ‘objective’ systems and rationalisations, but cannot fully trust these either.

\* \* \*

There are, of course, further avenues to explore. I have begun to question my decision largely not to pursue Klapcsik’s category of generic liminality, and to collapse questions of cultural and institutional liminality into my category of stylistic liminality. While style and institution are closely interrelated, there are real and important differences between stylistic boundaries and institutional boundaries, and it is the latter that are, I believe, more difficult and more necessary to challenge.

There are ideas relating to liminality upon which I have only touched, such as irony, that certainly warrant further investigation. Furthermore, some approaches I have taken are in need of additional refinement – for example, while I have demonstrated the viability of my microtonal compositional techniques, the microtonal pieces in this portfolio are not quite as strange and unfamiliar as I would have liked; applying these techniques to temperaments even more dissimilar to those used in conventional Western tonality may produce results more in keeping with my aims. There are also many themes beyond those featuring in this portfolio that offer clear opportunities for exploration through the prism of liminality – most obviously, I have only indirectly (via Haraway) touched upon ideas relating to gender, but this is an area increasingly conceptualised in liminal terms.

If I were to identify one recurrent shortcoming in the works presented here, it would be that I have perhaps been too beholden at times to binary thinking. In some cases this was influenced by external factors (for instance, I did not choose the instrumentation for *Voidsnakes* and *Frostcrows*, which explore binary relationships), but in others it is a result solely of my own decisions. In particular, *It Is Not Made Of Mud* and *Ursus Subductus* are arguably over-reliant on binary oppositions; although I have tried to deconstruct and complicate these oppositions, there is a risk of lending legitimacy to binary thinking by adopting this framing at all. This is a problem Klapcsik also identifies: ‘What creates the most complex conundrum for this work is the following: *how to understand liminality if we have managed to free ourselves from dual structures and we conceptualize and live on*

*the multiplicity of spatial, temporal, and social plateaus?*<sup>286</sup> His conclusion is that liminality itself offers a path towards multiplicity: 'A liminal space can open up gates to multiple worlds'.<sup>287</sup> In future, I will seek to explore these thresholds that join and separate multiple, rather than dual, domains. As Haraway writes, 'One is too few, and two is only one possibility.'<sup>288</sup>

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<sup>286</sup> Klapcsik, *Liminality*, 4; emphasis in original.

<sup>287</sup> *Ibid.*, 165.

<sup>288</sup> Haraway, 'Manifesto', 180.



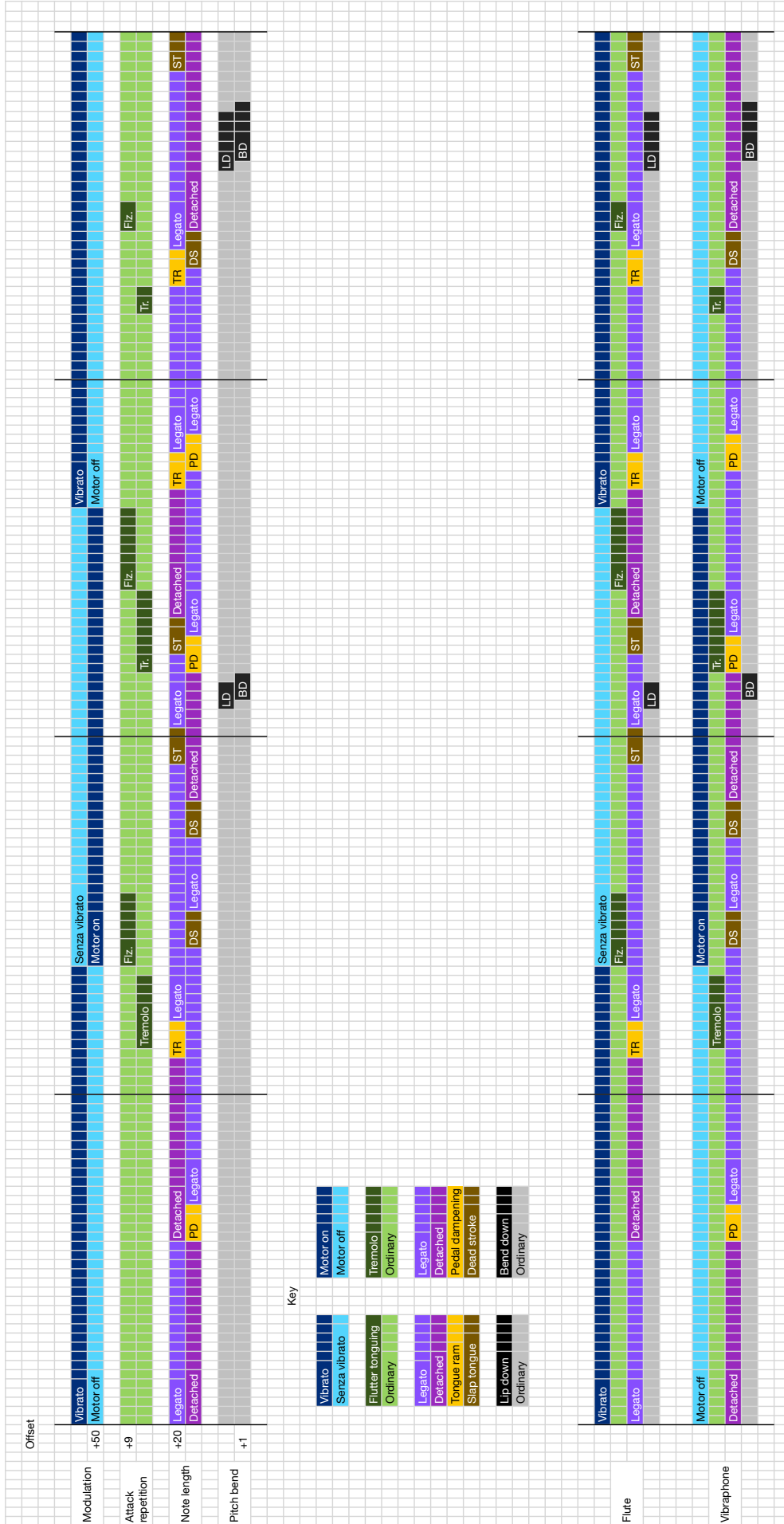
APPENDICES

APPENDIX 1: *It Is Not Made Of Mud* modular systems

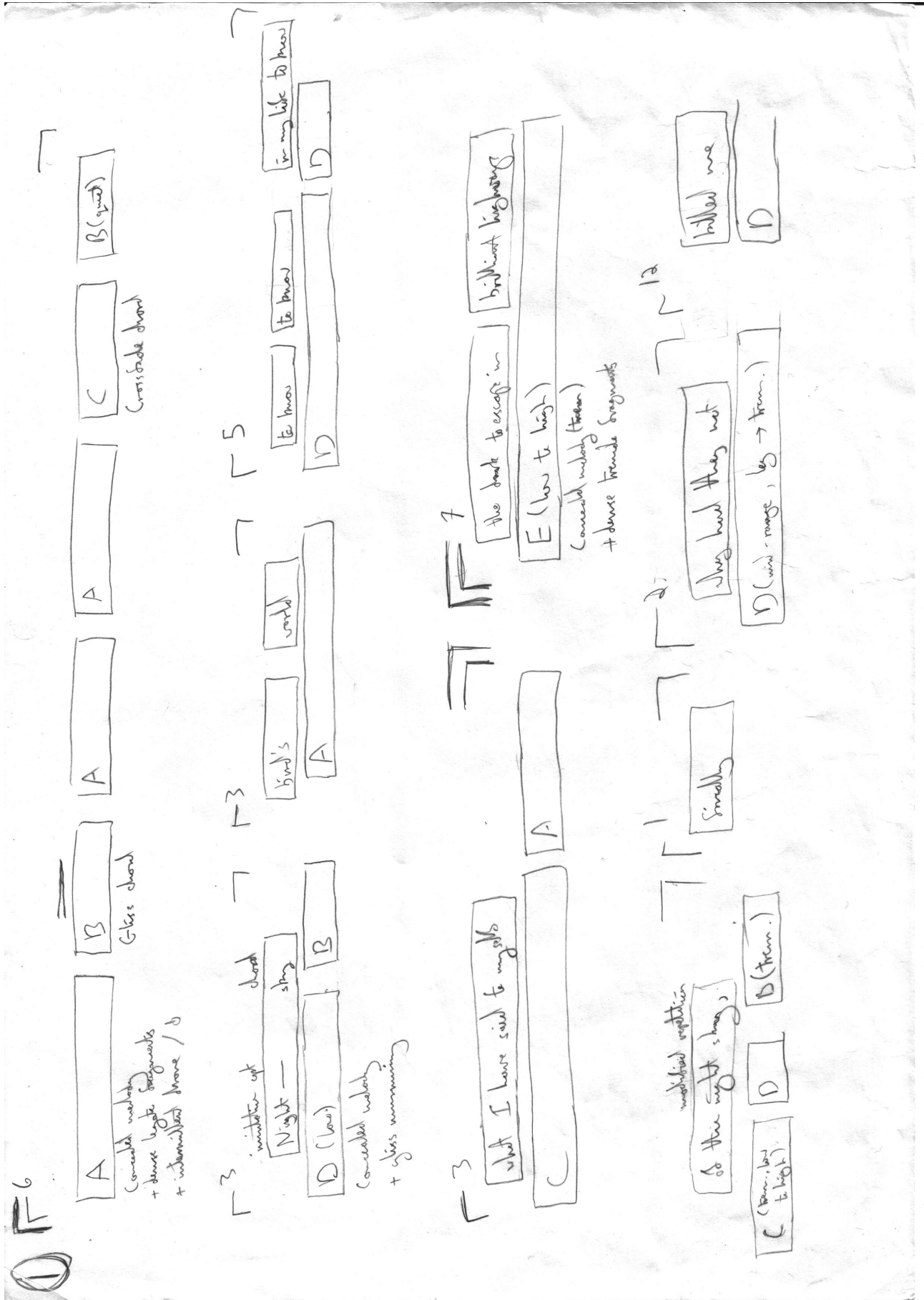
This image displays a handwritten musical score for the piece "It Is Not Made Of Mud" modular systems. The score is organized into three main systems, each consisting of three staves. The notation is dense and includes various rhythmic and melodic elements, such as notes, rests, and complex groupings. The systems are labeled with numbers 1 through 3 at the bottom. The first system (1) includes sub-labels 'a', 'b', and 'c'. The second system (2) includes sub-labels 'a', 'b', and 'c'. The third system (3) includes sub-labels 'a', 'b', and 'c'. The notation is written in black ink on aged, slightly wrinkled paper. There are some additional markings, including a large 'R' at the top left and a 'z' at the top right, which may indicate specific performance instructions or structural markers. The overall layout is a grid of staves and systems, with horizontal lines connecting the staves across the systems.

This image shows a page of handwritten musical notation on ten staves. The notation is organized into two systems of five staves each. The left system contains staves 1 through 5, and the right system contains staves 6 through 10. Each staff features complex musical notation, including notes, rests, and large, sweeping curved lines that span across multiple measures. The notation is written in black ink on aged, slightly yellowed paper. Various annotations are present throughout the score, including the letters 'L', '2', '3', '4', '5', '6', '7', '8', '9', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', and '20' written in the left margin. There are also several small symbols and markings, such as 'L', '2', '3', '4', '5', '6', '7', '8', '9', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', and '20' written in the left margin. The overall appearance is that of a working draft or a composer's sketch for a musical piece.

APPENDIX 2: *Frostcrows* structure



APPENDIX 3: Riven structure



I held a  
 I hold a  
 canner only the one round  
 I hold a

Lyre and Peri's  
 Ugh's  
 E

wounded  
 F

lost  
 to be lost  
 H -> mid  
 high mutations  
 D -> mid

because of this  
 A

in the destroyed  
 (and gully) Theatre  
 of the War  
 I  
 A

High five, dusting dust  
 + b  
 6

supposition  
 G ->  
 readout for  
 + b

running thru my mind  
 B  
 E

degradation  
 A

vegetation  
 D

boobed  
 D

and remember  
 C  
 D (mid)

different voice together  
 high mutations  
 + b

I'd cried

4

these

degradations

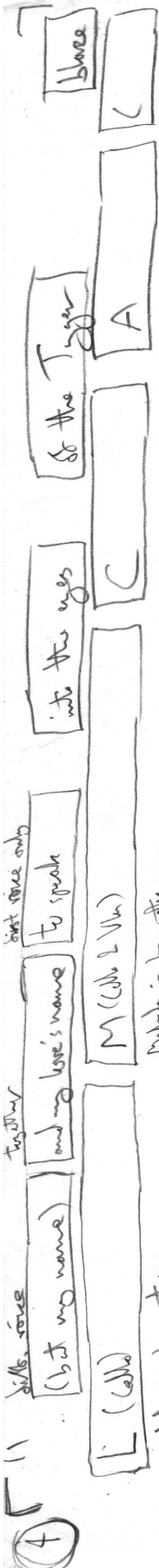
3) altered voice  
 and this came I will not recover  
 C D  
 Some that whisper I will be in my mind I will fill my mind and this is horrible  
 F J

(overlaid melody + phrase 'imitative light texture')

death bed G →  
 parent F  
 the secret taste D (leg → train)  
 & being G →  
 lost H  
 H A H A H A  
 D (minus melody?) A (minus melody?) J (minus melody?)  
 wind - range

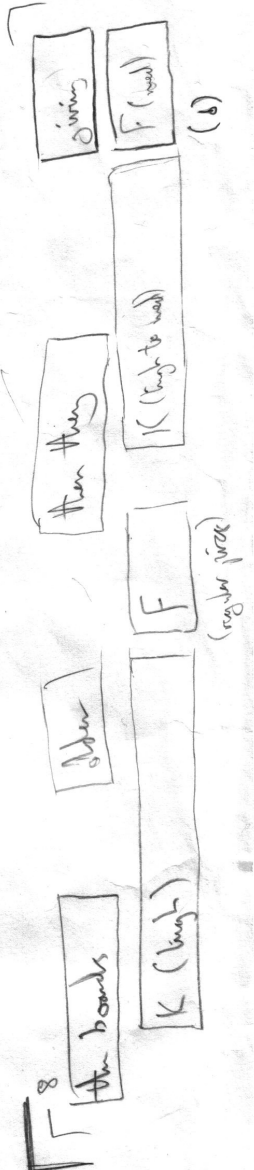
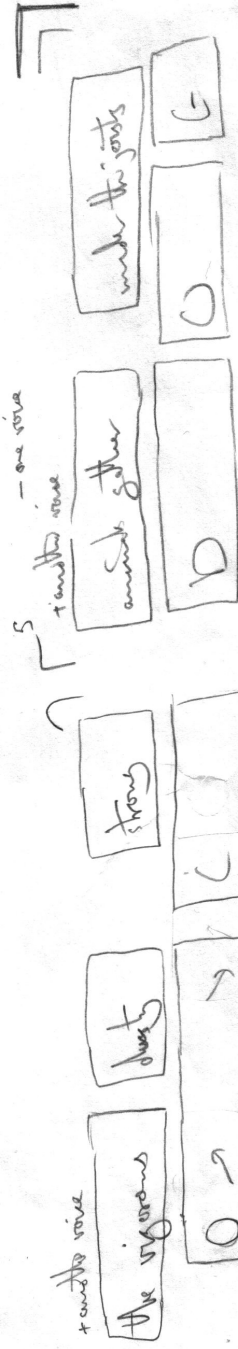
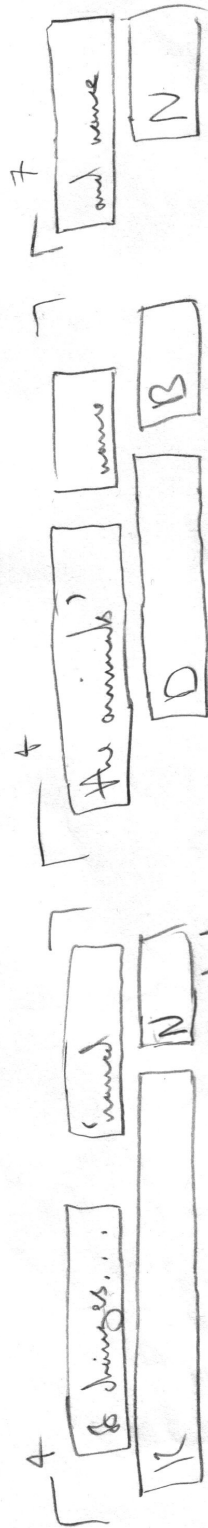
H A H A H A  
 death

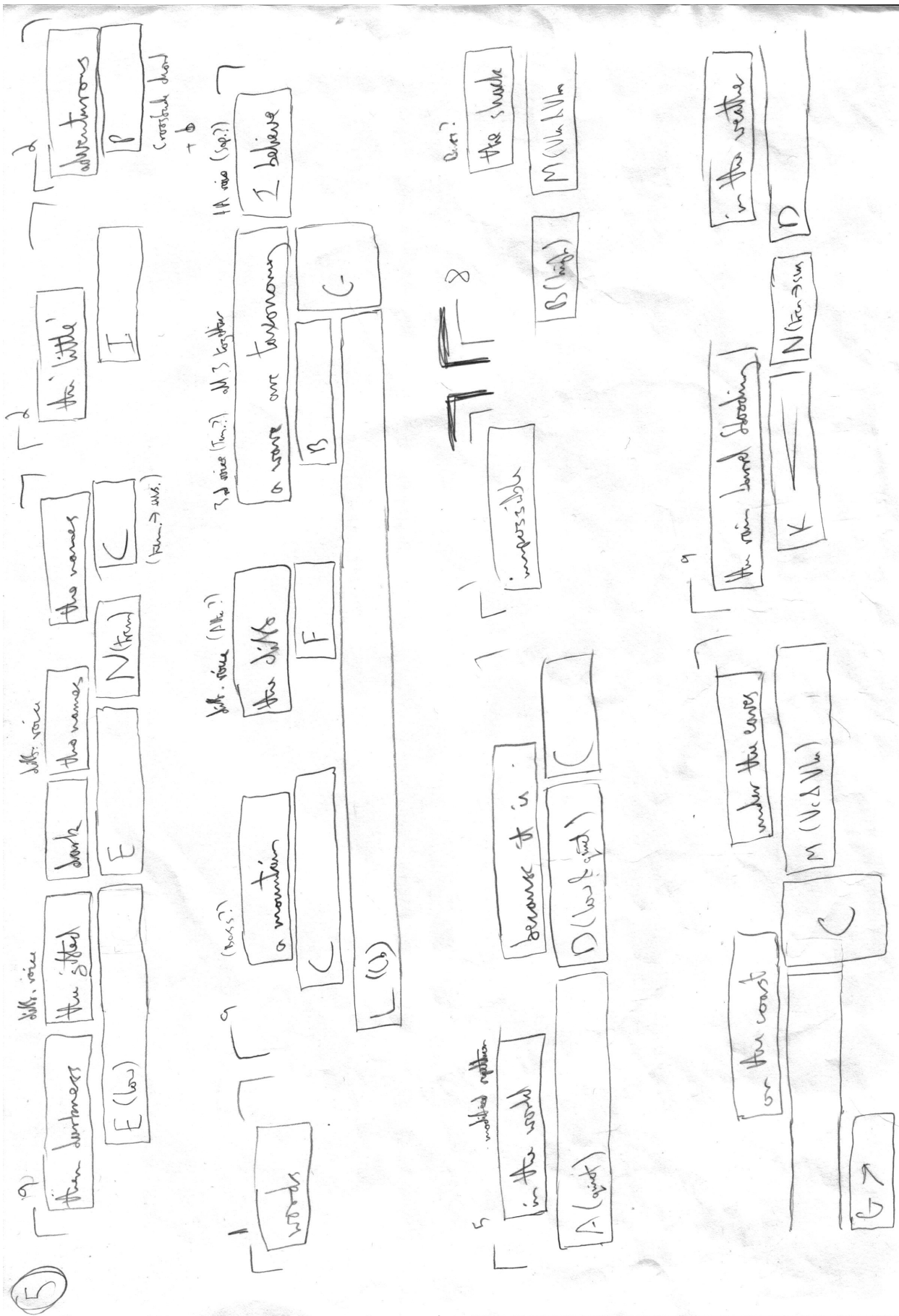
3  
 C C → G →  
 (under piece)  
 5  
 clean in the birds' world what names  
 K B (train)  
 (overlaid melody (from) + piece, pathway)



Melody in long notes, broken up by short, fast phrases in a diff. register (solo)

Melody in long notes, similar between instruments, interspersed with faster notes







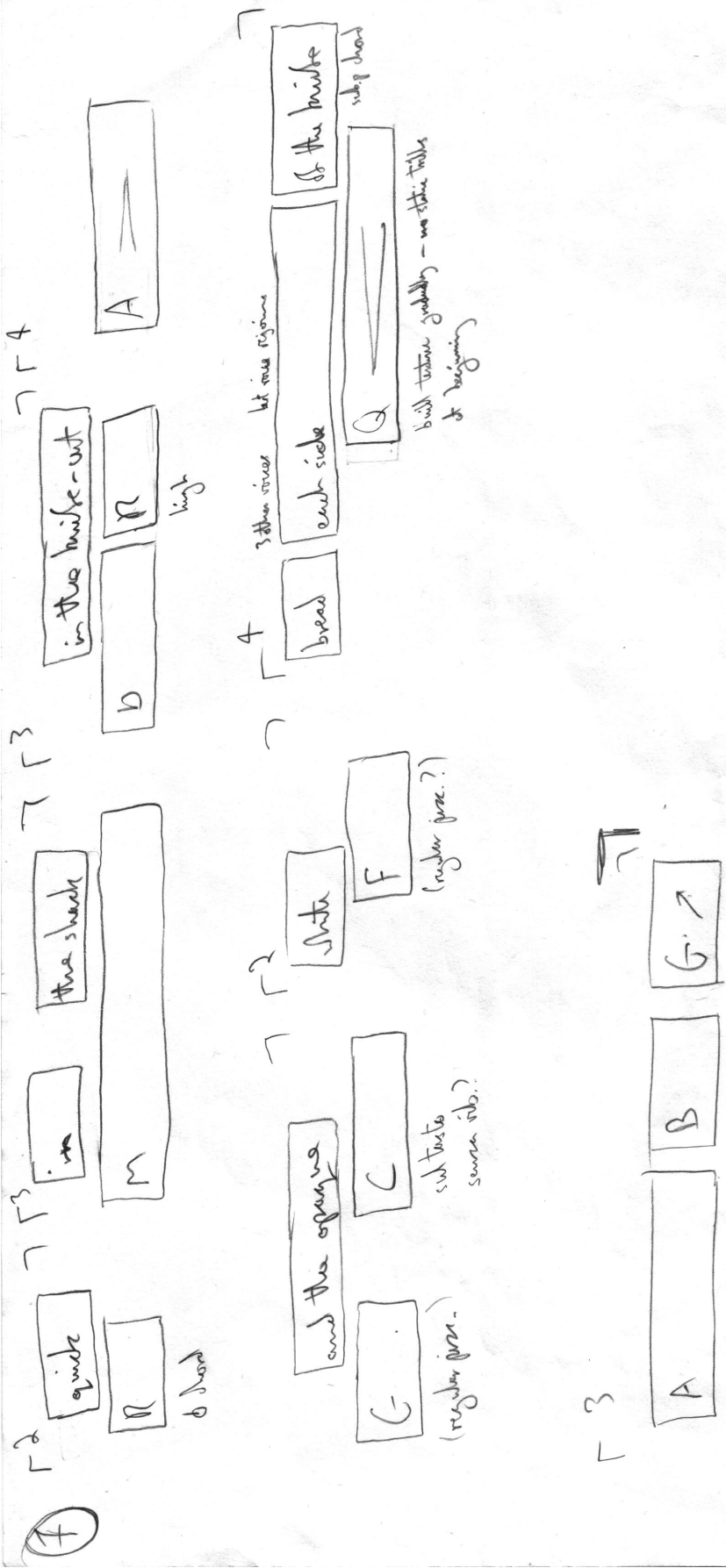
⑥  
 Tenor  
 [and no light] E  
 + another voice  
 [across rough water - diminished] (from → sw)  
 M (N.V.) B A

sub. p  
 5  
 [end of the sound] [what are the names] N  
 I D  
 3  
 [do the tiger] A

8  
 [to speak] [to the eyes] [to the tiger] [blare] E  
 M (N.V.) C D C

sub. p  
 2  
 [she moves in the secret bearing] [no sound] [but the pine needles] [his eyes blink] G  
 G C G

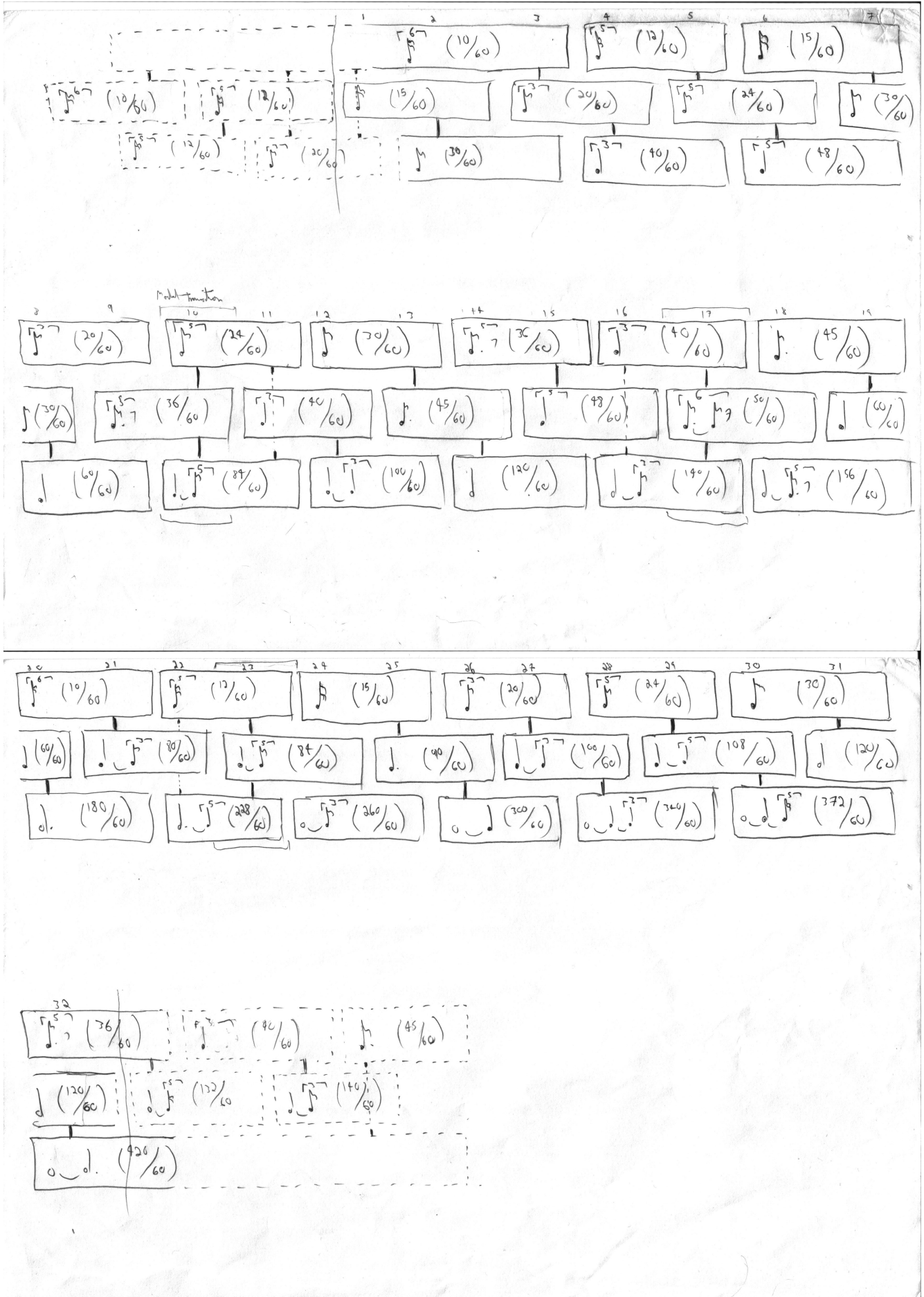
static & glancing talks



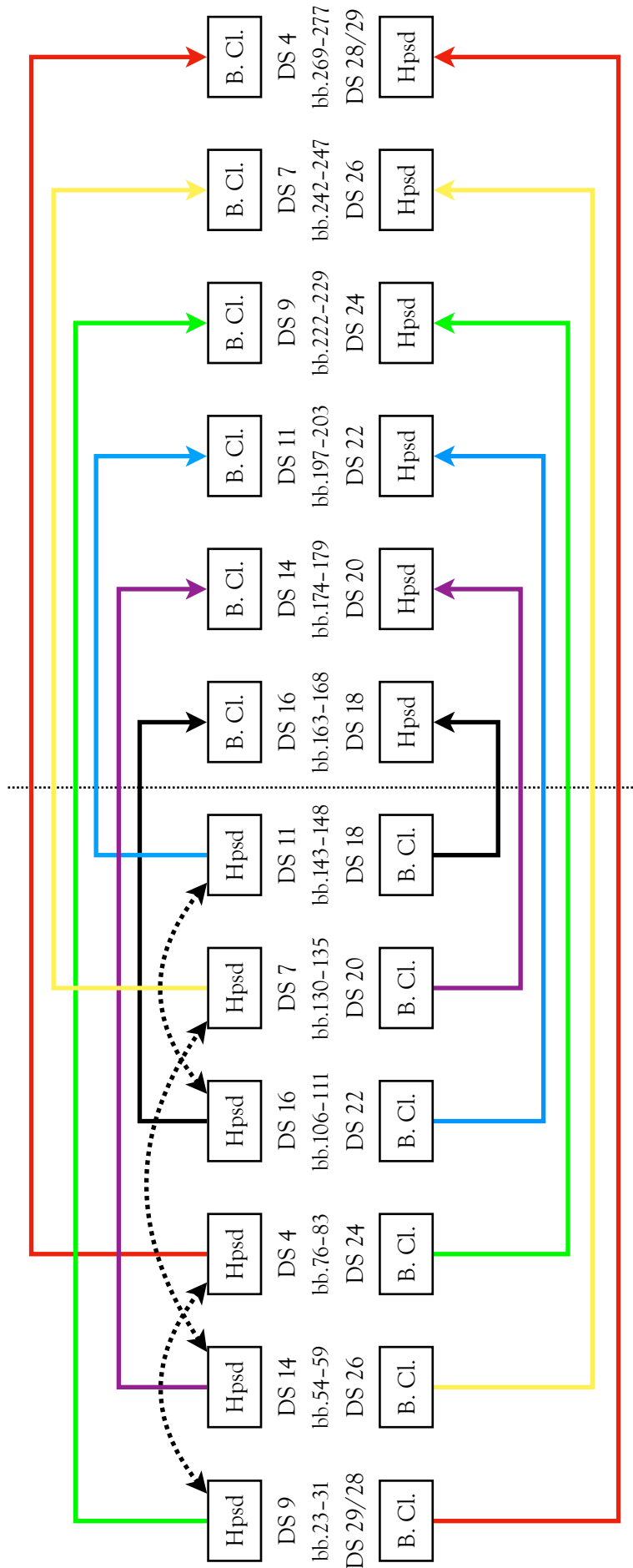
**APPENDIX 4:** *Riven* numeric sequence (running top to bottom, left to right)

6	11	5	3
3	6	8	8
3	2	9	2
5	2	2	2
3	4	2	2
7	11	1	4
1	1	9	2
2	3	5	3
12	5	1	3
6	11	8	4
6	4	9	2
5	4	4	4
4	7	5	3

APPENDIX 5: Darkshrikes rhythmic structure

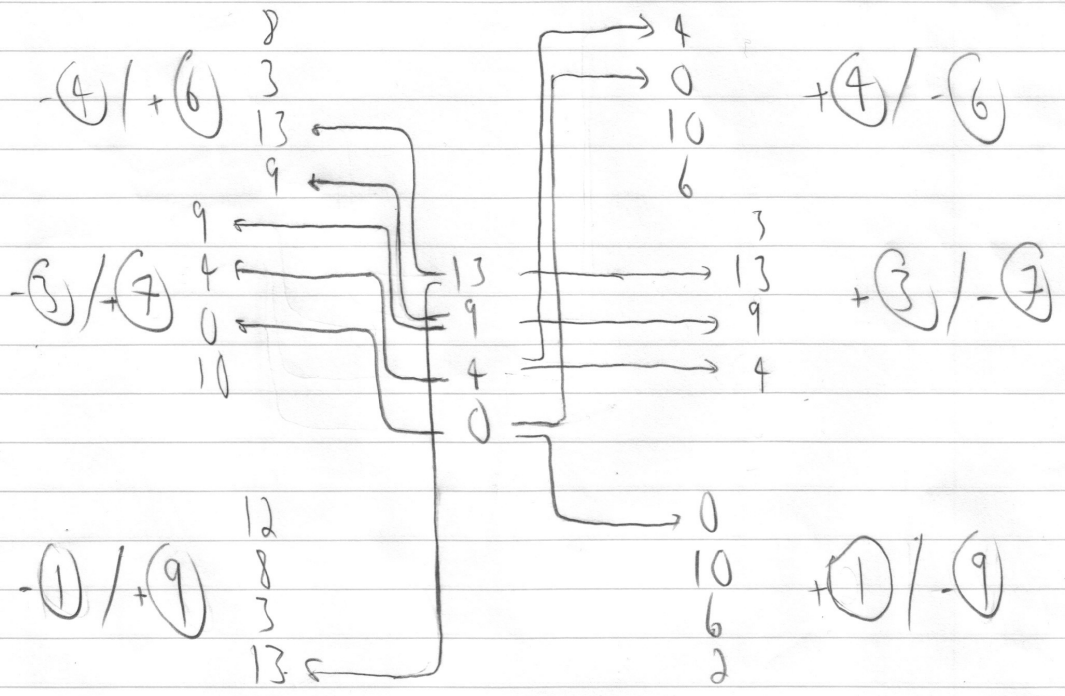


APPENDIX 6: *Darkshrikes* 'errors' and 'corrections'



APPENDIX 7: Altered sketch material. Note that, in this notation, octave is indicated by circumflex-like diacritic markings above and below the numbers, rather than arrows beside them.

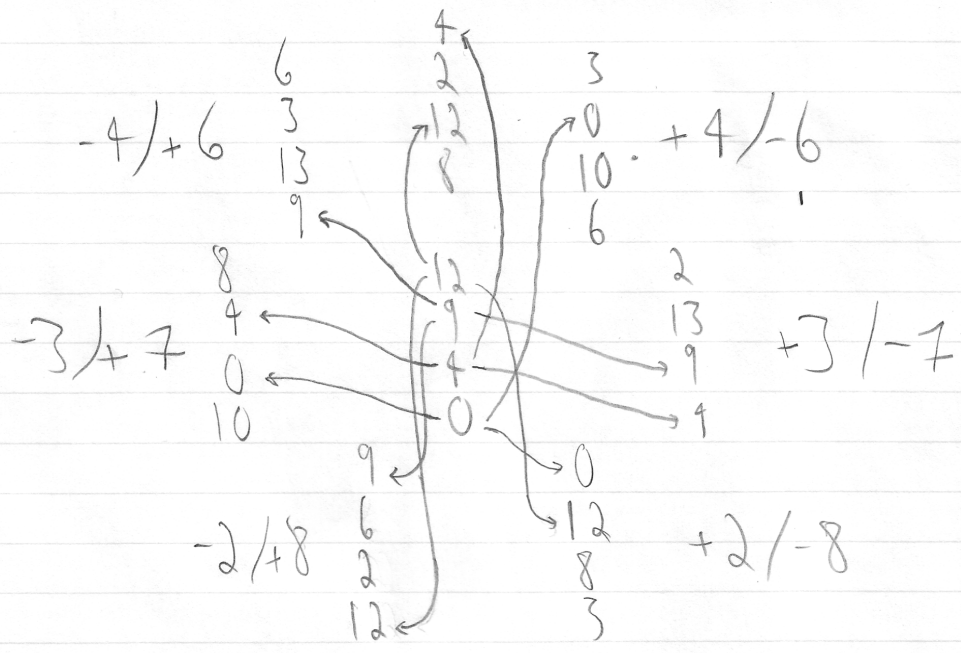
	0	2	3	4	6	8	9	10	12	13	(0)		
4-5-2	0	4	4	5	9	4	13						
4-4-5		2	4	6	4	10	5	0					
5-4-5		3	5	8	4	12	5	2					
5-4-5		4	5	9	4	13	5	3					
4-5-4			6	4	10	5	0	4					
4-5-4				8	4	12	5	2	4	6			
4-5-5					9	4	13	5	3	5	8		
5-4-5						10	5	0	4	5	9		
5-4-4							12	5	2	4	6	10	
5-5-4								13	5	3	5	8	12



0 2 3 4 6 8 9 10 12 13 (15)

4-5-3	0	4	5	9	12		
4-4-3	2	6	10	13		(= 4-4-4)	
5-4-3	3	8	12	0			
5-4-4	4	9	13	2			
4-5-3		6	10	0	3		
4-5-2		8	12	5	2	4	(= 4-4-5)
4-5-1		9	13	5	3	6	
5-4-4		10	0	4	4	8	
5-4-3		12	5	2	6	9	
5-5-2		13	3	5	8	10	

+5



0-6-13-4-12-3-10-2-9

1+25 [0-6-]0-9-2-10-3-12-4-13-6-0

1+14+5 [0-6-]0-9-3-10-4-13-6-0-9-2-10-4-12-6-0-8-2-10-3-12-6-13-  
 -8-2-9-3-12-4-13-8-0-9-3-10-4-13+6-0-9-2-10-4-12+6-0-  
 -8-2-10-3-12-6-13-8-2-9-3-12-4-13-8-0

0 234 6 8910 1213 15

0-13-4-3-9-8-13-12-3-2-8-6-12-10-2-0-6-4-10-9-0

0-13-4-10-9-0-6-4-10-2-0-6-12-10-2-8-6-12-3-2-8-13-12-3-9-8-13-4-3-9-0

0-6-4-13-12-3-2-10-9-0-13-8-6-12-10-4-3-9-8-2

0-4-13-3-12-2-10-0-9-13-8-12-6-10-4-9-3-8-2-6-0

→ (0) [6-0-9]-8-2-10-9-3-12-10-4-13-12-6-0

9	→	6	→	9	→	9	→	6	→	6	→	9	→	9	→	2	→	2	→	0	→	3	→	3	→	2	→	0	→	0
4	→	4	→	4	→	3	→	2	→	2	→	4	→	3	→	3	→	6	→	4	→	4	→	8	→	6	→	6	→	4
13	→	10	→	13	→	13	→	12	→	0	→	0	→	8	→	8	→	10	→	10	→	13	→	13	→	10	→	10	→	9
0	→	0	→	0	→	8	→	8	→	10	→	10	→	13	→	12	→	12	→	9	→	9	→	12	→	12	→	4	→	4
	↘	2		↘	3		↘	2		↘	1		↘	2		↘	3		↘	1		↘	2		↘	6		↘	0	

12 12 44

8 66 13

27306



Handwritten musical notation on a four-staff system. The notation includes notes, stems, beams, and various symbols.

Staff 1 (Soprano):  $\overset{!}{\cancel{5}} \overset{52}{0}$  followed by a slur over a bar line. To the right, notes  $\overset{!}{4}$ ,  $\overset{!}{3}$ ,  $\overset{!}{8}$  are written with "etc." below them.

Staff 2 (Alto):  $A \overset{0}{f}$  followed by a slur over a bar line. To the right, notes  $\overset{!}{13}$ ,  $\overset{!}{12}$ ,  $\overset{!}{8}$ ,  $\overset{!}{9}$  are written.

Staff 3 (Tenor):  $T \overset{!}{9}$ ,  $\overset{!}{8}$ ,  $\overset{!}{9}$  followed by a slur over a bar line. To the right, notes  $\overset{!}{0}$ ,  $\overset{!}{14}$ ,  $\overset{!}{0}$  are written.

Staff 4 (Bass):  $B \overset{!}{f}$  followed by a slur over a bar line.

1: 54 (P=108)

2 3 7

S  
 1 4 9 8 | 10 9 7 6 | 10 14 3 4

A  
 8 9 | (9) 8 9 3 4 | 6 9 10

T  
 0 14 0 | 10 0 4 3 | 0

B  
 10 9 7 6 | 10 6

S  
 10 14 0

A  
 6 5 9 10

T  
 0 4 10 9 etc.

B  
 4 3 4 14 | 0 2 | 5 6 | 0

Detailed description: This is a handwritten musical score on a page numbered 137. The score is written on a system of five staves, labeled S (Soprano), A (Alto), T (Tenor), B (Bass), and an unlabeled staff at the bottom. The music is written in a shorthand notation using numbers and symbols. The first staff (S) has a tempo marking '1: 54 (P=108)' and a rehearsal mark '2'. The score is divided into measures by vertical bar lines. Various musical symbols are present, including stems, beams, and accents. The numbers are often grouped with vertical lines underneath them, possibly indicating fingerings or specific notes. The bottom staff contains a sequence of numbers: 4, 3, 4, 14, 0, 2, 5, 6, 0. The T staff ends with 'etc.'.

! = 54 (D = K8) (o loco più basso? 120?)

7  
8

A ? → ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

0 → 4 → 10 → 9 → 8 → 13 → 4 → 3 → 0 → 9 → 13 → 12 → 10 → 9 → 0

T ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

0 → 4 → 10 → 9 → 6 → 13 → 4 → 3 → 0 → 9 → 13 → 12 → 10 → 9 → 0 → 6 → 4 →

10  
8

S ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

6 → 10 → 8 → 8 → 2 → 4 → 3 → 9 → 9 → 2 → 0 → 4 → 3 → 0 → 4 → 9 → 14 → 8

A ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

6 → 10 → 8 → 8 → 13 → 10 → 9 → 8 → 9 → 3 → 4 → 6 → 5 → 9 → 16 → 0 → 13 → 9 → 8

T ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

2 → 6 → 10 → 9 → 6 → 0 → 10 → 9 → 16 → 5 → 6 → 9 → 8 → 10 → 13

S ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

2 0 5 6 | 13 12 0 13 12 0 | 13 12 13 8 9 | 10 9 6 | 10 9 6 8 9

A ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

6 5 6 1 2 | 3 2 6 8 | 3 | (3) | ! ♯ | ! ♯

T ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

10 9 10 | 8 6 8 2 3 | 6 4 12 13 | 0 | ! ♯ | ! ♯

2 3 (13) 9\*

B ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯ | ! ♯

6 10 0 10 6 8 9

6\* 10 0 10 6 8 9

4

7

S: 7! 1! 1! | 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

9 12 13 | 10 0 9 8 | 12 13 12 | 10 0 6 4

A: 7! 1! | 1! 7! 1! | 1! 1! 1! | 1! 1! 1! |

4 | 12 9 8 | 9 8 | 6 9 10 2 9

T: 7! 1! | 1! 7! 1! | 1! 1! 1! | 1! 1! 1! |

0 | 2 | 13 3 2 | 5 6

B: 1! 1! 1! 1! | 1! 7! 1! | 1! 1! 1! | 1! 1! 1! |

0 4 10 9 | 6 6 4 | 3 10 4 9 | 0 14 13 12 | 11

0/10 6 8\*(112\*) 3 (13)(13\*) 4\*(12\*) 2(\*) 12 (6)

S: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

(14) 3 4 3 3 | 10 9 | 0 14

A: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

0 14 13 12 14 0 | 14 | 5 6 | 10 9

T: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

8 0 5 9 10 | 10 8 9 | 0 14 | 5 6

B: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

10 | 9 8 | 9 6 4 | 3 2 | 2 1

10\*

B: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

0 4 10 9 | 6 4 | 3 2 3 | 10 9 | 8

B: 1! 1! 1! 1! | 1! 1! 1! | 1! 1! 1! |

9 | 9 | 9 |

$\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$   
 $13 \rightarrow 12 - 12 \rightarrow 10 - 10 \rightarrow 9 - 9 \rightarrow 10 - 10 \rightarrow 9 \rightarrow 6 \rightarrow 9 \rightarrow 8 \rightarrow 10 \rightarrow 9 - 9 - 9 \rightarrow$   
 $9 - 9 \rightarrow 8 - 8 \rightarrow 6 - 6 - 6 - 6 - 6 \rightarrow 4 \rightarrow 3 \rightarrow 4 - 4 \rightarrow 6 \rightarrow 3 \rightarrow 2 - 2 \rightarrow$   
 $4 - 4 - 4 - 4 - 4 - 4 - 3 \rightarrow 2 \rightarrow 3 \rightarrow 12 \rightarrow 10 \rightarrow 12 - 12 \rightarrow 13 - 13 - 13 \rightarrow 12 \rightarrow$   
 $0 - 0 - 0 - 0 - 0 - 0 - 0 \rightarrow 13 \rightarrow 0 - 0 - 0 - 0 \rightarrow 2 - 2 \rightarrow 6 \rightarrow 4 \rightarrow 6 -$   
 $0 \rightarrow 13 \rightarrow 0$   
 $2d \ 6c \ 0a \ 6c \ 0a \ 8c \ 2a \ 9d \ 4a \ 12c$

$\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$   
 $\rightarrow \hat{3} - \hat{3} - \hat{3} \rightarrow \hat{2} \rightarrow \hat{4} \rightarrow \hat{3} - \hat{3} \rightarrow 0 - 0$   
 $\rightarrow 10 - 10 \rightarrow 6 - 6 \rightarrow 8 - 8 - 8 \rightarrow 6 \rightarrow 4$   
 $\rightarrow 0 \rightarrow 13 - 13 - 13 \rightarrow 0 - 0 \rightarrow 10 - 10 \rightarrow 9$   
 $- 6 \rightarrow 8 \rightarrow 9 \rightarrow 10 - 10 \rightarrow 12 \rightarrow 13 \rightarrow 3 \rightarrow 4$   
 $6a \ 13c \ 9a \ 2c \ 10a \ 3c \ 13a \ 6\frac{1}{2} \ 0a$

425 ↓ 385



$\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$   
 $0 - 8 - 2 - 9 - 4 - 12 - 6 - 13 - 9 - 2 - 10 - 3 - 13 - 6 - 0$   
 $29 \downarrow 15 \downarrow 15 \downarrow 15 \downarrow 14 \downarrow 15 \downarrow 13 \downarrow 15 \downarrow 14 \downarrow 15 \downarrow 15 \downarrow 14$

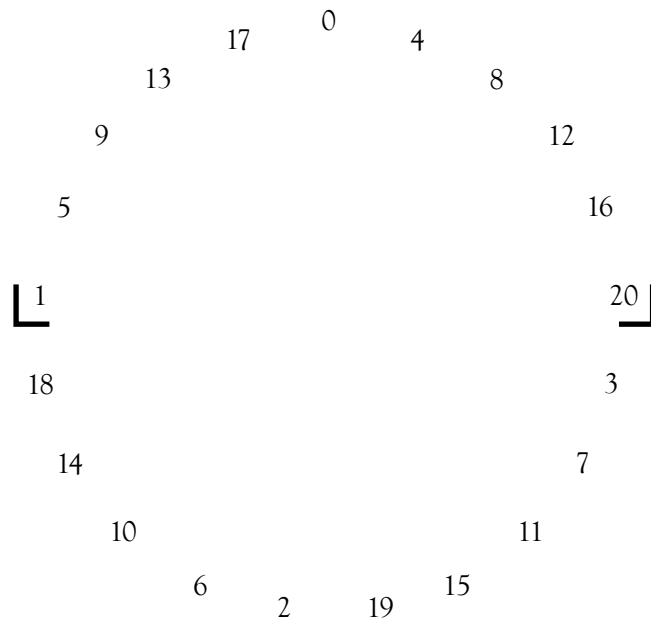
1135 ↑ 13 15

$\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$   
 $[0 - 6 - 0] \downarrow 6 - 13 - 3 - 10 - 4 - 12 - 2 - 9 - 3 - 10 - 0 - 8 - 2 - 9 - 13 - 6 - 0$   
 $15 \uparrow 13 \uparrow 15 - 14 \uparrow 15 \uparrow 13 \uparrow 15 \uparrow 14 \uparrow 15 \uparrow 14 \uparrow 15 \uparrow 13 \uparrow 15 \uparrow 14$

**APPENDIX 8:** An explanation of the scale and harmonic system used in *Run C:\empathy.exe*

A single step in 21edo measures approximately 57.1¢ (here and henceforth, all non-integer interval sizes are rounded to one decimal place). This temperament was selected in part for its minor thirds, which measure 285.7¢, much narrower even than the already-narrow 300¢ minor thirds of 12edo. As with 15edo, a pure fifth is only imprecisely approximated, but here it is narrow, rather than wide, at 685.7¢. This is, to my ear, a more pleasant interval than the 720¢ fifth of 15edo, but still possesses some of the same instability that I hoped would lead to strange and unfamiliar harmonic progressions. The smaller of the two available minor sevenths, at 971.4¢, is functionally indistinguishable from a harmonic seventh (968.8¢).

As with *Altared*, my first step after choosing a temperament was to construct a scale, and again I planned to base the piece's harmony around minor seventh chords. This time, however I was able to construct a scale with the characteristics I sought from a segment of an interval cycle, specifically a cycle constructed from intervals of 4 temperament steps (228.6¢). This cycle is shown below.



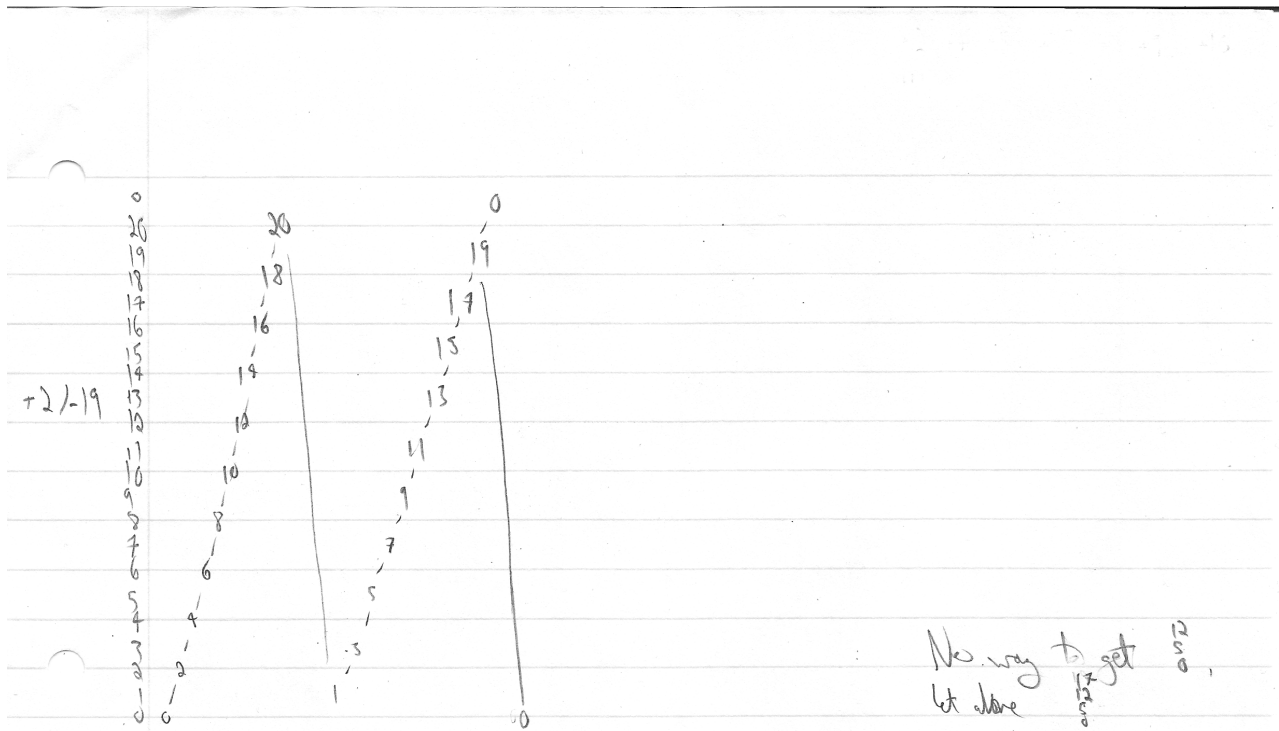
Taking the bracketed segment of this interval cycle, from 1 clockwise to 20, and arranging them in ascending order, I produced the following scale:

0	1			4	5			8	9			12	13			16	17			20	(21=0)
---	---	--	--	---	---	--	--	---	---	--	--	----	----	--	--	----	----	--	--	----	--------

This scale is formed from intervals of 1 and 3 temperament steps (57.1 and 171.4¢ respectively). Below is a transcription of this scale into staff notation with cent adjustments, transposed onto a 'tonic' of A (the actual 'tonic' is closer to F-sharp).

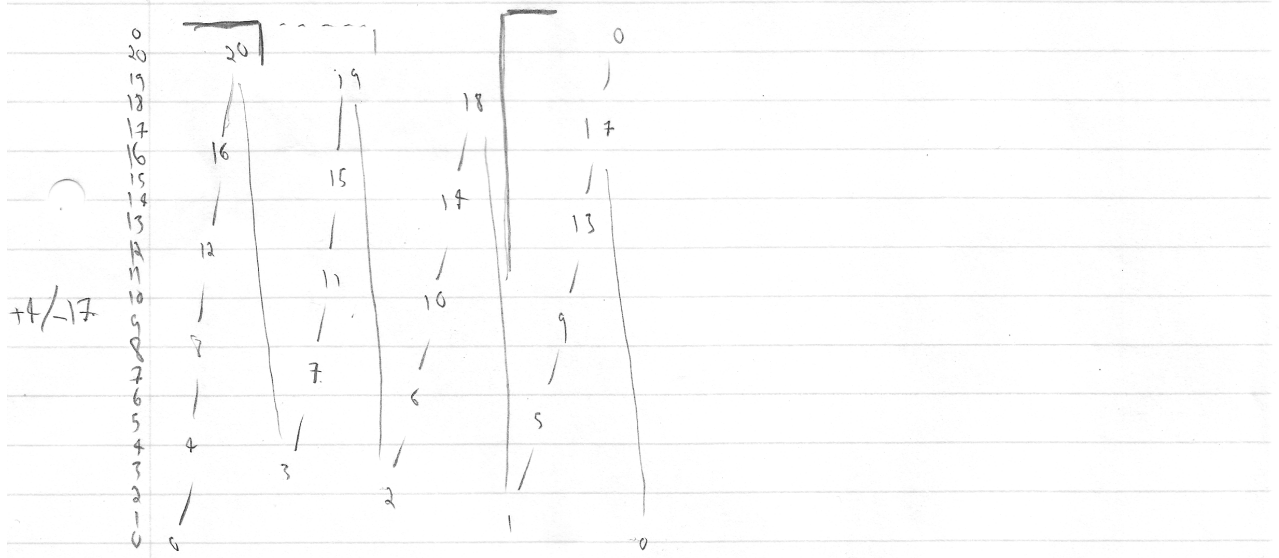


APPENDIX 9: Run C:\empathy.exe sketch material



0 1 3 5 7 9 11 13 15 17 19 0      10L1s  
 < L L L L L L L L L L

0 2 4 6 8 10 12 14 16 18 20 0      0 2 4 6 8 10 12 13 15 17 19 0  
 < L L L L L L L L L L      L L L L L L L L L L



0 1 5 9 12 13 16 17 20 0      5L6s  
 < L L L L L L L L L

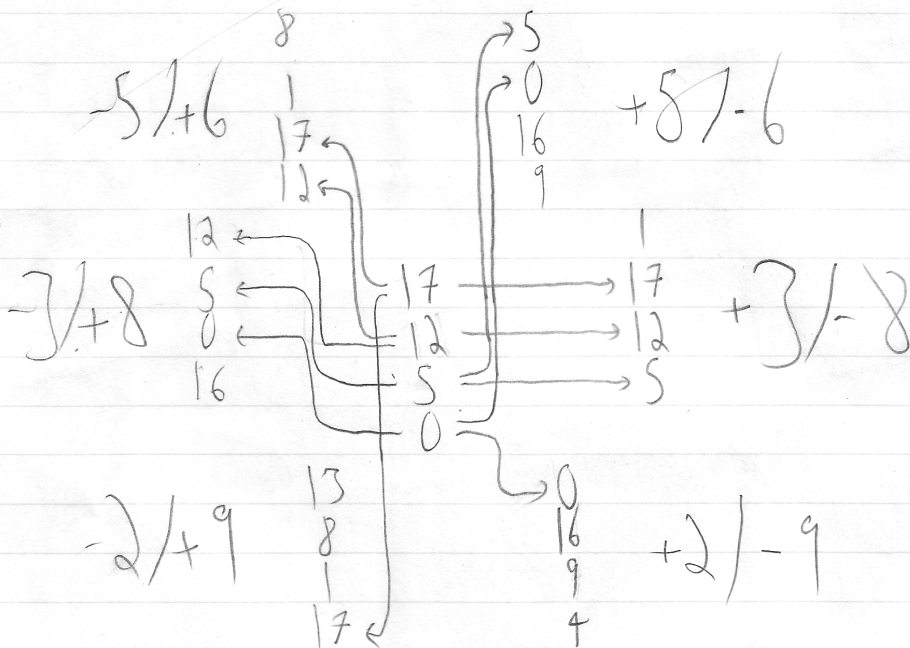
0 1 3 5 7 8 9 11 12 13 15 16 17 19 20 0      5L11s  
 < L L L L L L L L L L L L L L



5L6s

	01	45	89	1213	1617	200						
5-7-5	0	5	8	7	12	5	17					
7-5-7	1	7	8	5	13	7	20					
5-7-5		4	8	9	7	16	5	0				
7-5-5		5	7	12	5	17	5	1				
5-7-5			8	5	13	7	20	5	4			
7-5-5			9	7	16	5	0	5	5			
5-5-7				12	5	17	5	1	7	8		
7-5-5				13	7	20	5	4	5	9		
5-5-7					16	5	0	5	5	7	12	
5-7-5					17	5	1	7	8	5	13	
5-5-7						20	5	4	5	9	7	16

GOOD



0(11=3)

0 - 17 - 8 - 4 - 0 - 12 - 8 - 17 - 5 - 1 - 12 - 0 - 4 - 13 - 0  
-2 -5 -2 -2 -5 -2 +5 +5 -2 +5

0 - 8 - 4 - 9 - 12 - 17 - 13 - 13 - 12 - 20 - 17 - 12 - 4 - 13 - 0  
20-9-8

4(5=7)  
6(12=10)

0 - 17 - 8 - 4 - 0 - 0 - 1 - 12 - 16 - 9 - 13 - 8 - 4 - 13 - 0  
-2 -5 -2 -2 -2 +5 +2

6(16=14)

0 - 8 - 4 - 9 - 12 - 10 - 8 - 17 - 16 - 0 - 17 - 8 - 4 - 13 - 0  
6-8-13 6-5-12-16 4-9-8

0 12 0 4

0 5 12 13 12 17 12 1 1 6 6 11 13 12 6 5 17 1

136(20=18) 4 96(16=14) 13

0 17#(1=7) 12(4) 0#(5=7)

120(1=3) 3(10=7) 86(20=18) 17#(1=7)

4 16#(5=7) 0 4/13

12 notes: 0 1 4 8 12 13 16 17 20 (10)  
 0 3 4 7 8 11 12 13 16 17 20 (0)

Handwritten musical notation on a single staff. Above the staff is a circled '6' and a vertical line. The notation consists of a sequence of notes and rests, with some notes having stems pointing upwards. Below the staff, there are several numbers: 0, 5, 12, 17, 8, 17, 9, 8, 0, 13, 17, 12, 0, 5, 17, 8, 5.

Handwritten musical notation on a multi-staff system. The system is divided into four measures by vertical bar lines. Above the first measure is a circled '0'. Above the second measure is the text '13 16 17 17'. Above the third measure is '20'. Above the fourth measure is '5 7 0'. The notation includes notes with stems, some with exclamation marks above them, and some with horizontal lines below them. Below the staves, there are several numbers: 17, 12, 5, 0, 17, 13, 8, 1, 20, 13, 8, 9, 0, 8, 9, 0, 17, 8, 4b.

Handwritten musical notation on a multi-staff system. The system is divided into four measures by vertical bar lines. Above the first measure is '5 0'. Above the second measure is '9 8 4'. Above the third measure is '8 4 13'. Above the fourth measure is '17'. The notation includes notes with stems, some with exclamation marks above them, and some with horizontal lines below them. Below the staves, there are several numbers: 0, 17, 12, 5, 3, 17, 12, 8, 4, 20, 13, 8, 17, 13, 8, 12, 16, 17, 13, 20, 4, 8, 12, 13, 0, 12#5b, 8b, (8c), 17d.

2

		20 $\hat{1}$ 12		12 $\hat{1}$ 5 8
!	!	!	!	!
(1)	(1)		1	(1)
(17)	(17)		20	17
(13)	12		13	12
(8)	5		8	(8)

!	!	!	!	!
(13)	12	17	0	5
(17d)	5b	(5c)	1?	1d

9	0	4	20	9	8	5	5	4	0	17	12	9	12
!	!	!	!	!	!	!	!	!	!	!	!	!	!
0		20				0							
16		13				17							
9		9				12							
4		4				5							
						0							
													0 5 9 8 5

!	!	!	!	!	!	!	!	!	!
4		13				0			12
4 <sub>a</sub>		13 <sub>a</sub>				0 <sub>a</sub>			(0 <sub>c</sub> )

3

(12)		13 16 17 ↑	17	2 5 4 20
! — !	! — !	! —	! — !	! — ! — 7
17	17		20	0
12	13		13	16
(5)	8		8	9
0	1		4	4
! — !	! — !	! —	! — !	! — ! — 7
0	8		4	9
0 <sub>a</sub>	17 <sub>c</sub>		8 <sub>d</sub>	4 <sub>b</sub>

||

0 17 ↑	20 0 17	20 ↑ 20 12	13 17 8
! — !	! — !	! —	! — ! — !
3	7	8	8
0	0	↑	↑
17	17	20	17
12	10	→ 13	12
		→ 8	
! — !	! — !	! — !	! — ! — !
12	10	8	1 13 17
0 <sub>c</sub>	0 <sub>c</sub> #7, b5th	1 <sub>b</sub>	(1 <sub>a</sub> ) 12 <sub>b</sub>

4

$\hat{0} \hat{1}$	$\hat{0}$	$\hat{1} \hat{2}$	$9 \hat{1} \hat{3} \hat{1} \hat{7}$	$\hat{1} \hat{4}$	$\hat{4}$	$\hat{1} \hat{3} \hat{1} \hat{7}$
! — !	! —	! —	! —	! —	! —	! —
(8)	5		7	(4)	(7)	
(1)	0		0	20	(20)	
(17)	16		14	13	(13)	
(12)	12		9	9	8	↗
! — !	! —	! —	! —	! —	! —	! —
(17)	16	0	5	12	16	20
(12b)	16 <sub>a</sub>			4b 5a	13b	8 <sub>a</sub>

//

$\hat{1} \hat{6}$	$\hat{1} \hat{7}$	$\hat{0}$	$\hat{1} \hat{3}$	$\hat{1} \hat{2}$	$9 \hat{0}$	$5$	$\hat{1} \hat{7}$	$\hat{1} \hat{2}$	$0 \ 5 \ 9 \ 8 \ 5$
! —	! —	! —	! —	! —	! —	! —	! —	! —	! —
7		20		↗	0				
0		13		↘	17				
16		9			12				
→ 9		9			5				
→ 4		4			0				
! —	! —	! —	! —	! —	! —	! —	! —	! —	! —
4		13		0		12		17	0
4 <sub>a</sub>		13 <sub>a</sub>		0 <sub>a</sub>		(0 <sub>c</sub> )		17	0

# SUBJECT

12 17 18

S	0 7 7 12 7 7   17 13 12 0 5   5 12 17 0 16   16 0 5 9 8 5
CS1	17 12 16 17   1 17 13 12 0   12 5 9   9 9 16 9
CS2	5 8 8 8 17 17   0 5 0 0 16

S	0 7 7 5 7 7   12 13 12 17 12 1   1 6 6 1 13   12 6 5 17 1
CS1	5 0 9 12   7 17 1 8   6 13 17 6 5   5 5 1 1 5
CS2	17 0 1 1 1 17 17   13 17 1 12 12

S	18 7 7 13 7 7   0 4 9 16 14   14 5 0 14 13   13 20 0 20 4 9   5
CS1	9 13 17 18   1 0 16 16 7   0 1 5 9   1 17 9 7 0
CS2	13 16 18 18 13 9   9 0 0 1 9   0 3 20   20 9 13 13   0

ANSWER

20  
17 3 8 13

Handwritten musical notation for system 1. The top staff (A) contains notes and numbers: 1 2 1 1 0 1 1 | 8 7 3 12 17 | 17 1 8 12 7 | 7 12 17 0 20 17. The bottom staff (CS1) contains notes and numbers: 5 0 4 5 | 7 13 8 4 3 12 | 17 0 0 7 0.

((S2))

Handwritten musical notation for system 2. The top staff (A) contains notes and numbers: 1 2 1 1 17 11 | 3 4 3 8 3 13 | 13 18 18 13 4 | 3 18 17 8 13. The bottom staff (CS1) contains notes and numbers: 17 12 0 3 | 1 8 1 20 | 18 7 8 18 17 | 17 17 1 13 17.

((S3))

4

Handwritten musical notation for system 3. The top staff (A) contains notes and numbers: 9 7 7 4 7 7 | 12 16 0 7 5 | 5 17 12 5 4 | 4 16 17 16 4 9. The bottom staff (CS1) contains notes and numbers: 0 4 8 9 | 7 12 7 7 16 | 12 7 17 0 | 7 4 9 4.

16 (16)

96 (16 → 14)

16 17 ?

Handwritten musical notation for system 4. The top staff (A) contains notes and numbers: 5 0 4 5 9 | 9 0 9 14 5 | 4 9 4 20 13 | 17. The bottom staff (CS1) contains notes and numbers: 7 16 0 1 0 | 16 14 7 0 | 7 13 20 20 4 8 | 5.

13 20 17 ?



5

$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $\hat{3} \hat{5} \hat{0} \hat{9} \hat{7} \hat{0}$	$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $3 \hat{17} \hat{16} \hat{9} \hat{13}$	$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $\hat{17} \hat{20} \hat{0} \hat{20} \hat{5} \hat{19}$ <small>(?)</small>
	$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $0 \quad 0$	$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $0$
	$17 \quad 16$	$14$
	$10 \quad 9$	$9$
	$5 \quad 5$	$4 \quad 8 \quad 1 \quad 8 \quad 5$
	$\uparrow \downarrow \uparrow \downarrow \uparrow \downarrow$ $10 \quad 9$	$\uparrow \downarrow \uparrow \downarrow$ $9$
	$0^{b5k} \quad 9$	$4^{b5k} \quad (9 \hat{6} \hat{3} \hat{1} \hat{6} \hat{5} \hat{4})$

6

!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	! (1)   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
17   5   1   20   13   20   17   9   8   13   8   1   7   16   4   0	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
17   17   17   17   17   17   17   17   17   17	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
12   13   12   13   12   13   12   13   12   13	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
5   8   5   8   5   8   5   8   5   8	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
0   1   0   1   0   1   0   1   0   1	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
0 <sub>a</sub>   17 <sub>c</sub>   0 <sub>a</sub>   17 <sub>c</sub>   0 <sub>a</sub>   17 <sub>c</sub>   0 <sub>a</sub>   17 <sub>c</sub>   0 <sub>a</sub>   17 <sub>c</sub>	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !

!   !   !   !   !   !   !   !   !   !	! (1)   !   !   !   !   !   !   !   !   !	! (1)   !   !   !   !   !   !   !   !   !	! (1)   !   !   !   !   !   !   !   !   !
(0) 16   17   5   17   8   12   17   12   5   5   8   5   8   7   20   17   20   8   7   8   17	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
0   3   4   0   3   4   0   3   4   0	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
17   17   20   17   17   20   17   17   20   17	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
12   12   13   12   12   13   12   12   13   12	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
5   8   8   5   5   8   5   5   8   5	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !
0   12 <sub>b</sub>   8 <sub>b</sub>   0   12 <sub>b</sub>   8 <sub>b</sub>   0   12 <sub>b</sub>   8 <sub>b</sub>   0	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !	!   !   !   !   !   !   !   !   !   !

7

!   !   !   !	!   !   !   !	(1)   !   !   !	!   !   !   !
17   13   8   7	20   17   16   17   5	1   4   20   1	5   8   17   4   5
!   !   !	!   !   !	!   !   !	!   !
(17)	(1)	↑	(17)   0
(17)	(17)	20	17   (17)
(13)	12	13	12   (12)
(8)	5	8	(8)   5
!   !   !	!   !   !	!   !   !	!   !   !
(13)	12	12   20	17   12   13   12
(17)	5b	1d	12b   0c

!   !   !   !	!   !   !   !	!   !   !   !	!   !   !
0   0   16   9	4   16   13   4   5	0   5   12   17   0   1	0   12   0
!   !   !	!   !   !	!   !   !	!   !   !
0	20	0	6   5   9   8   5
16	13	17	
9	9	12	
4	4	5	
		0	
!   !   !	!   !   !	!   !   !	!   !   !
4	13	0	12
4a	13a	0a	17   5





10

! A! ! ! ! | A! ! ! ! | 7 ! ! ! ! | ! ! ! ! !

14 18 3 9 | 14 14 10 9 4 | 5 10 17 1 3 | 10 4 5 17 14 8

! ! ! |

5 4

0 18

14 14

9 9

! 7 7 3

5

1

17

10

5

! ! ! | ! ! ! |

9 18

9 17 18

9<sub>a</sub> 18<sub>a</sub>

(20b)

! 7 7 3

5

5<sub>a</sub>

! ! ! | ! ! ! |

17 17

17 17

! 3

17

! 7 | ?

5 6

17 18

10 13

? 7 |

6

17

10

! 7 7 | ! 7 | ! 7 | ! 7 |

5 17 19

19 10 14

14 5 9

10 1 5

! ! !

18

(14)

(9)

4

! ! ! ! ! | 7 ! ! ! !

5 9 10 17 18

5<sub>a</sub> 18<sub>a</sub>

! 5 6 |

10<sub>a</sub>

(12b)

! ! ! ! ! | ! ! ! ! !

19 14 5 10 14 9

14<sub>a</sub> 5<sub>a</sub> 9<sub>a</sub>

(16b)

! ! ! !

5 14 18

18<sub>a</sub>

(20b)

11

	<p>5<sub>a</sub> <sup>63rd</sup> (17<sub>c</sub>) <sup>65th</sup> 13<sub>b</sub> <sup>63rd</sup></p>	<p>1<sub>a</sub> <sup>63rd</sup> 5<sub>b</sub> <sup>63rd</sup></p>	<p>14<sub>a</sub> <sup>67th</sup> (166)</p>	<p>5<sub>c</sub> <sup>63rd</sup> 17<sub>b</sub> <sup>65th</sup> 0<sub>c</sub> <sup>65th</sup> 9<sub>c</sub> <sup>63rd</sup></p>					
<b>II</b>									
	<p>18 (18)</p> <p>13 (13)</p> <p>9 8</p> <p>2 1</p>	<p>18</p> <p>13 8</p>	<p>5 3</p> <p>0 1</p> <p>14 17</p> <p>9 10</p>	<p>10</p> <p>3</p> <p>0</p> <p>14</p>					
	<p>13<sub>c</sub> <sup>63rd</sup> 1<sub>a</sub> <sup>67th</sup></p>		<p>9<sub>c</sub> <sup>63rd</sup> 5<sub>d</sub> <sup>63rd</sup></p>	<p>14<sub>c</sub> <sup>67th</sup> (166)</p>					

12

<p>! ! (17)</p>	<p>! ! ! 2 13 18</p>	<p>! (1) ! 0 17</p>	<p>! ! ! ! 8 10 5 10</p>
<p>! ! ! 2 3 2</p>	<p>! ! ! 8</p>	<p>! ! ? ! 3 0 1</p>	<p>! ! ! ! 10 5 5</p>
<p>18 0 18</p>	<p>(18)</p>	<p>14 17</p>	<p>↑ 0</p>
<p>14 14 13</p>	<p>(13)</p>	<p>9 13</p>	<p>15 14</p>
<p>! ! ! ! ! 2 18 9 14 18 13</p>	<p>! ! ! ! 9 18 1</p>	<p>! ! ! ! ! 9 13 14 0</p>	<p>! ! ! ! 5 14 9</p>
<p>18<sub>b</sub> 9<sub>b</sub> 13<sub>a</sub> 1<sub>a</sub></p>	<p>9<sub>a</sub> (0<sub>a</sub>) 17<sub>b</sub></p>	<p>5<sub>a</sub> 9<sub>b</sub> 13<sub>b</sub></p>	<p>(20b)</p>
<p>! ! ! 9 17</p>	<p>! ! ! 0 7 13</p>	<p>! ! ! ! 18 0 17</p>	<p>! ! ! ! ! 12 13 18 17 2</p>
<p>! ! ! 2 3</p>	<p>! ! ! ! 0 (0) 18</p>	<p>? ! ! 17 (17)</p>	<p>! ! ! 17</p>
<p>18 19</p>	<p>17 14 13</p>	<p>13 12</p>	<p>13</p>
<p>14 14</p>	<p>12 9 9</p>	<p>6 5</p>	<p>6</p>
<p>9 9</p>	<p>5 4 4</p>	<p>1 (1)</p>	<p>3</p>
<p>! ! ! ! ! 18 13 14 4 9</p>	<p>! ! ! ! ! 5 14 12 9 4</p>	<p>! ! ! ! ! 13 9 6 1 5</p>	<p>! ! ! 17 13</p>
<p>18<sub>a</sub> 9<sub>a</sub> 0<sub>b</sub> 4<sub>c</sub> 13<sub>c</sub></p>	<p>17<sub>c</sub> 5<sub>a</sub></p>	<p>17<sub>d</sub></p>	<p>(20b)</p>





14





15

Handwritten musical notation on a page numbered 15. The notation is organized into four systems, each consisting of a staff with notes and a corresponding row of numbers below it. The numbers are often enclosed in parentheses and have arrows pointing to specific notes in the staff above.

**System 1:**

- Staff 1: Notes with stems and flags. Numbers below: 4, 16, 13, 4, 5, 17, 9, 8, 0, 5, 12, 8, 0, 7, 17, 3, 5.
- Staff 2: Notes with stems and flags. Numbers below: (20), 0, 17, 17, 17, 12, 13, 5, 8, 0, 0.

**System 2:**

- Staff 1: Notes with stems and flags. Numbers below: (13), 9, 13, 0, 13, 17, 0, 5, 0, 8.
- Staff 2: Notes with stems and flags. Numbers below: (13<sub>a</sub>), 0, (0<sub>c</sub>), 0<sub>a</sub>, 17<sub>c</sub>.

**System 3:**

- Staff 1: Notes with stems and flags. Numbers below: 20, 13, 20, 17, 9, 8, 12, 13, 8, 4, 13, 16, 8, 7, 0, 4, 3, 12, 0.
- Staff 2: Notes with stems and flags. Numbers below: (17), 20, 0, 5, 7, (13), 13, 16, 0, 0, (8), 8, 9, 17, 17, (11), 4, 4, 12, 10.

**System 4:**

- Staff 1: Notes with stems and flags. Numbers below: (8), 12, 13, 4, 8, 9, 12, 10.
- Staff 2: Notes with stems and flags. Numbers below: (17<sub>c</sub>), 8<sub>b</sub>, 4<sub>b</sub>, 0<sub>c</sub>, 0<sub>c</sub> (with a small handwritten note above it).

16

Handwritten musical score for guitar, page 163, numbered 16. The score is written on six systems of five-line staves. Each system contains a melodic line with notes and stems, and a bass line with numbers and stems. The numbers in the bass line correspond to fret positions on the guitar strings. The score is divided into four measures by vertical bar lines. The first system starts with a double bar line. The second system begins with a double bar line and a double sharp sign (##). The notation includes various note values, stems, and ties, along with specific fret numbers like 16, 17, 18, 20, 13, 12, 8, 7, 5, 4, 3, 2, 1, 0, and 16a.

17

(20)	↑	4 3 (7)	4
(13)	17	18 17 (17)	0
(9)	13	13 (13) (13)	16
(4)	6	8 (8) 6	9
			4
(13)	↓	↓	↓
(13 <sub>a</sub> )	17 <sup>b</sup>	8 <sup>b</sup> 17 <sup>a</sup> 16 <sup>b</sup>	4
=			
(20)	0	14 12	12
(13)	17	9 5	7
(9)	12	5 0	20
(4)	5	19 7	16
	0		9
			5
(13)	0	↓	0
(13)	0	9 <sup>b</sup> 16 <sup>b</sup>	0

**APPENDIX 10:** An explanation of the scale and harmonic system used in *Ursus Subductus*

A single step in 16edo measures precisely 75¢. Its major third, at 375¢ (five steps) is somewhat narrower than a pure major third (386.3¢), but slightly more accurate than that of 12edo, 15edo and 21edo (400¢). Being narrow, rather than wide, it has, to my ear, a gentler character. The minor third (four steps) is the same as that of 12edo (300¢), since both are divisible by four. The fifth, at 675¢ (nine steps), is extremely narrow. Notably, the fifth does produce a full interval cycle, like the circle of fifths in 12edo, but this cycle is longer, since it has 16 pitch classes to get through. Because the fifth is so inaccurate, harmonic movement by fifths often ends up in slightly the ‘wrong’ place, since the errors of 27¢ (or 25¢ relative to 12edo) quickly add up to at least one full temperament step. (For example, an attempt to replicate a vi-ii-V-I progression by moving downwards by intervals of nine steps would result in 12, 3, 10, 1, ending up on temperament degree 1 instead of 0.) The major seventh produced by stacking a fifth and a major third is 1050¢, precisely halfway between the major and minor sevenths of 12edo, while the minor seventh, at 975¢, is a close approximation of the harmonic seventh (968.8¢). All of these intervals aside from the minor third, then, are narrower than their 12edo counterparts, giving 16edo a somewhat mellower quality.

As with *Altared*, I found that the scales produced by interval cycles did not fit my purposes, so I constructed one, again from intervals of one and two temperament degrees (75 and 150¢). This scale is shown below.

0		2	3		5	6	7		9		11	12		14	15	(16=0)
---	--	---	---	--	---	---	---	--	---	--	----	----	--	----	----	--------

A transcription of this scale into staff notation with cent adjustments, transposed onto a ‘tonic’ of C (the actual tonic is closer to C-sharp), is shown below.

A musical staff in treble clef showing the 16edo scale. The notes are represented by whole notes on a five-line staff. Above the staff, the scale degrees 0, 2, 3, 5, 6, 7, 9, 11, 12, 14, 15, and (16=0) are indicated. Below the staff, cent adjustments are provided for each note: -50¢ for degree 2, +25¢ for degree 3, -25¢ for degree 5, -50¢ for degree 6, +25¢ for degree 7, -25¢ for degree 9, +25¢ for degree 11, -50¢ for degree 14, and +25¢ for degree 15. The final note (16=0) is circled and has a small 'e' next to it.

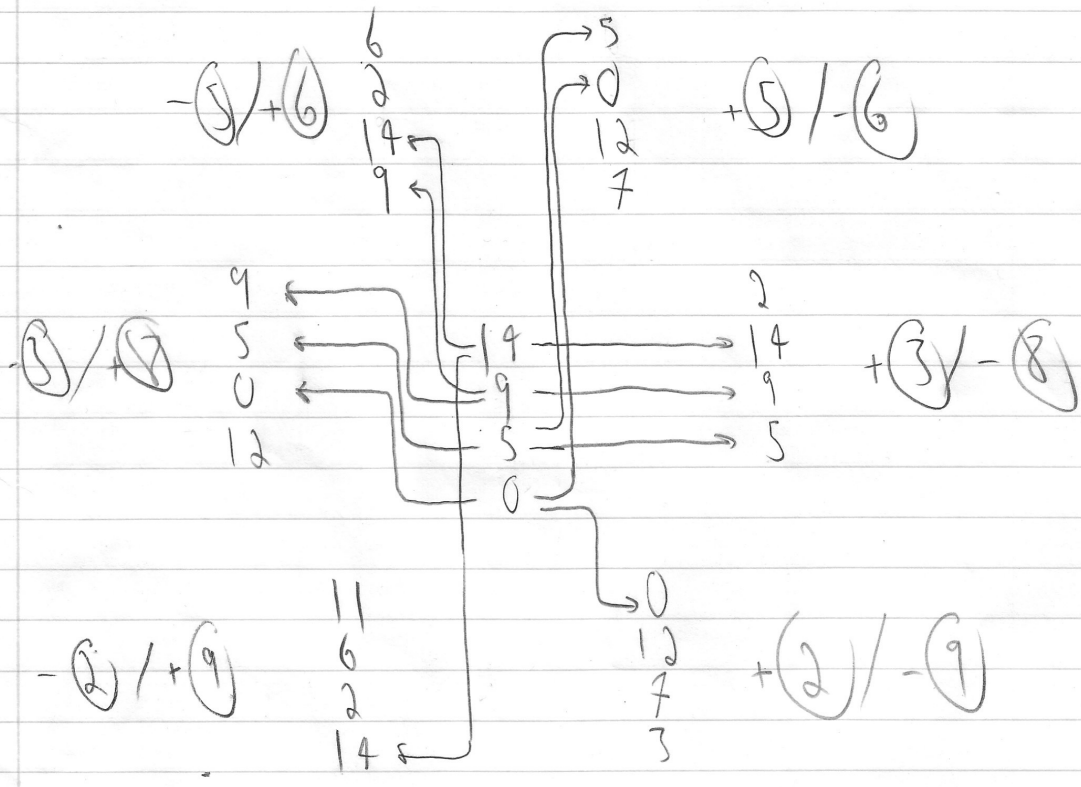
The harmony in *Ursus Subductus* is based around a major seventh ‘tonic’ chord, 0-5-9-14. The harmonic system was constructed in the same way as those of *Altared* and *Run C:\empathy.exe*, and is shown below.

	0	2	3	5	6	7	9	11	12	14	15	0									
<b>5-4-5</b>	0			5			9			14											
<u>4-5-4</u>		2			6			11			15										
<u>4-5-4</u>			3			7			12			0									
<u>4-5-4</u>				5			9			14			2								
5-4-4					6			11			15			3							
5-4-5						7			12			0			5						
5-4-4							9			14			2			6					
4-4-4								11			15			3			7				
<u>4-5-4</u>									12			0			5			9			
4-4-5										14			2			6					11
4-4-5											15			3			7				12

5-4-5 is a major seventh chord (two instances, shown in bold), 4-5-4 is a minor seventh (four instances, underlined), 5-4-4 is a dominant seventh (two instances) and 4-4-5 is a half diminished. (These interval structures are the same as those in 15edo, since the steps are only 5¢ smaller, but the character of the chords is substantially different.) There is one unique chord, 4-4-4 (root 11), a diminished seventh chord identical to that found in 12edo.

APPENDIX 11: *Ursus Subductus* sketch material

	0	23	567	9	1112	1415(0)
5-4-5	0	5	5 + 9	5	14	
4-5-9		2 + 6	5	11 + 15		
4-5-4		3 + 7	5	12 + 0		
4-5-9		5 + 9	5	14 + 2		
5-4-9		6	5	11 + 15 + 3		
5-4-5		7	5	12 + 0	5	
5-4-9			9	14 + 2 + 6		
4-4-4				11 + 15 + 3 + 7		
4-5-4				12 + 0	5 + 9	
4-4-5	YES			14 + 2 + 6	5	11
4-4-5				15 + 3 + 7	5	12





$\hat{5} \rightarrow \hat{7} \rightarrow \hat{3} \rightarrow \hat{5} \rightarrow \hat{2} \rightarrow \hat{0} \rightarrow \hat{12} \rightarrow \hat{15} \rightarrow \hat{11} - \hat{11} \rightarrow \hat{14} \rightarrow \hat{0} \rightarrow$   
 $14 \rightarrow \hat{0} \rightarrow \hat{15} \rightarrow \hat{14} \rightarrow \hat{10} \rightarrow \hat{9} \rightarrow \hat{8} - \hat{8} \rightarrow \hat{7} \rightarrow \hat{6} \rightarrow \hat{5} - \hat{5} \rightarrow$   
 $\hat{9} \rightarrow \hat{7} \rightarrow \hat{11} \rightarrow \hat{9} \rightarrow \hat{5} - \hat{5} \rightarrow \hat{4} - \hat{4} \rightarrow \hat{3} \rightarrow \hat{2} - \hat{2} \rightarrow \hat{0} \rightarrow$   
 $\hat{0} \rightarrow \hat{12} \rightarrow \hat{15} \rightarrow \hat{0} \rightarrow \hat{14} \rightarrow \hat{12} - \hat{12} - \hat{12} \rightarrow \hat{11} \rightarrow \hat{14} - \hat{14} \rightarrow \hat{12} \rightarrow$   
 $\hat{5} \rightarrow \hat{3} \rightarrow \hat{7} \rightarrow \hat{5} \rightarrow \hat{5} - \hat{5} \rightarrow \hat{8} \rightarrow \hat{4} \rightarrow \hat{7} \rightarrow \hat{11} \rightarrow \hat{10} \rightarrow \hat{9} \rightarrow$   
 $\hat{0} - \hat{0} - \hat{0} - \hat{0} - \hat{0} - \hat{0} - \hat{0} \rightarrow \hat{15} - \hat{15} \rightarrow \hat{14} \rightarrow \hat{5} \rightarrow \hat{12} \rightarrow$

$0_a \quad 3_d \quad 11(\hat{5}) \quad 0_c \quad 0_a \quad 12_b \quad 12_b \quad 15_c \quad 11_b \quad 14_a \quad 5_a \quad 12_c$

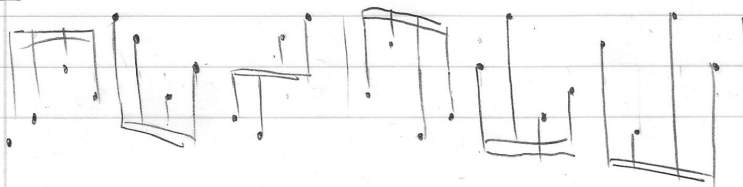
$\hat{4} \rightarrow \hat{3} \rightarrow \hat{7} - \hat{7} \rightarrow \hat{6} - \hat{6} - \hat{6} - \hat{6} \rightarrow \hat{5}$   
 $\hat{0} - \hat{0} \rightarrow \hat{15} - \hat{15} - \hat{15} \rightarrow \hat{14} - \hat{14} - \hat{14} - \hat{14}$   
 $\hat{0} - \hat{0} - \hat{3} - \hat{3} \rightarrow \hat{2} \rightarrow \hat{11} - \hat{11} \rightarrow \hat{10} \rightarrow \hat{9}$   
 $\hat{12} - \hat{12} - \hat{12} \rightarrow \hat{11} - \hat{11} \rightarrow \hat{2} - \hat{2} - \hat{2} \rightarrow \hat{0}$   
 $\hat{9} \rightarrow \hat{8} \rightarrow \hat{7} \rightarrow \hat{6} \rightarrow \hat{6} - \hat{6} \rightarrow \hat{9} - \hat{9} \rightarrow \hat{5}$   
 $\hat{3} - \hat{3} \rightarrow \hat{4} \rightarrow \hat{6} \rightarrow \hat{2} - \hat{2} \rightarrow \hat{9} - \hat{9} \rightarrow \hat{0}$

$3_a \quad 3_c \quad 15_b \quad 6_a \quad 2_c \quad 14_b \quad 9_a \quad 9_c \quad 0_a$

OR:

$\hat{11} - \hat{11} \rightarrow \hat{14} \rightarrow \hat{0} \rightarrow \hat{4} \rightarrow \hat{3} \rightarrow \hat{7} - \hat{7} \rightarrow \hat{6} - \hat{6} - \hat{6} - \hat{6} \rightarrow \hat{5}$   
 $\hat{7} \rightarrow \hat{6} \rightarrow \hat{10} \rightarrow \hat{12} \rightarrow \hat{0} - \hat{0} \rightarrow \hat{15} - \hat{15} - \hat{15} \rightarrow \hat{14} - \hat{14} - \hat{14} - \hat{14}$   
 $\hat{3} \rightarrow \hat{2} \rightarrow \hat{5} - \hat{5} \rightarrow \hat{12} - \hat{12} - \hat{12} \rightarrow \hat{11} - \hat{11} - \hat{11} \rightarrow \hat{10} \rightarrow \hat{9}$   
 $\hat{11} \rightarrow \hat{14} \rightarrow \hat{2} \rightarrow \hat{0} - \hat{0} - \hat{0} \rightarrow \hat{3} - \hat{3} \rightarrow \hat{2} - \hat{2} - \hat{2} - \hat{2} \rightarrow \hat{0}$   
 $\hat{7} \rightarrow \hat{11} \rightarrow \hat{10} \rightarrow \hat{9} - \hat{9} \rightarrow \hat{8} \rightarrow \hat{7} \rightarrow \hat{6} - \hat{6} - \hat{6} \rightarrow \hat{9} - \hat{9} \rightarrow \hat{5}$   
 $\hat{15} \rightarrow \hat{14} \rightarrow \hat{5} \rightarrow \hat{12} \rightarrow \hat{3} - \hat{3} \rightarrow \hat{4} \rightarrow \hat{6} \rightarrow \hat{2} - \hat{2} \rightarrow \hat{9} - \hat{9} \rightarrow \hat{0}$

$11_b \quad 14_c \quad 5_a \quad 12_a \quad 3_a \quad 3_c \quad 15_b \quad 6_a \quad 2_c \quad 14_b \quad 9_a \quad 9_c \quad 0_a$



		+⑤	+⑤	+②	+②	+⑤	+⑤
10	17	115	12 <sup>b5th</sup>	15 <sup>b5th</sup>	17 <sup>tr</sup>	1	
10	17	115	12 <sup>b5th</sup>	15 <sup>b5th</sup>	17 <sup>tr</sup>	111 <sup>#7th #7th</sup>	
	+⑤	+⑤	+②	+⑤	+②	+⑤	+②
111 <sup>b5th #7th</sup>	12	115 <sup>#7th #7th</sup>	16 <sup>b3rd</sup>	14 <sup>b7th</sup>	1		
(11 <sup>b5th #7th</sup> ) 12	115 <sup>#7th #5th #7th</sup>	16 <sup>b3rd</sup>	14 <sup>b7th</sup>	10	1		
	+⑤	-②	+⑤	-⑤	+②	+⑤	+②
10	17	112	15	17 <sup>tr</sup>	15 <sup>#7th</sup>	1	-③
1(?) 7	112	15	17 <sup>tr</sup>	115 <sup>#5th</sup>	111	114 <sup>#5th</sup>	
	+⑤	-⑤	+②	+⑤	-⑤ (-7 <sup>b3rd</sup> 15 <sup>b5th</sup> 14 <sup>b7th</sup> )	+②	
111	114 <sup>#5th</sup>	15	17 <sup>#3rd #3rd</sup>	115 <sup>#3rd #3rd</sup>	1		
(11 <sup>#5th</sup> ) 15	17 <sup>#3rd #3rd</sup>	115 <sup>#3rd #5th</sup>	17	10	1		
	+⑤	+② (-15 <sup>b5th</sup> 14 <sup>b7th</sup> )	+⑤	-⑤	+②	+⑤	+②
17	10	13	112	115	16	1	
13 <sub>a</sub>	112	115	16?	114 <sup>b7th</sup>	15 <sup>b5th</sup>	112 <sup>b5th</sup>	
	-⑤	+②	+⑤ ??	+⑤ 7 <sup>b3rd</sup> 4 <sup>b3rd</sup> ?	+⑤ 9 <sup>b3rd</sup> 11 <sup>b3rd</sup> ?	+⑤	
114 <sup>b7th</sup>	15 <sup>b5th</sup>	112 <sup>b5th</sup>	19 <sup>b5th</sup>	12 <sup>b5th</sup>	1		
(11 <sup>b5th</sup> ) 19 <sup>b5th</sup>	12 <sup>b5th</sup>	15	114 <sup>#2nd</sup>	15 <sup>#2nd</sup>	1		
	-② (-10 <sup>b3rd</sup> #2nd)	-⑤	-⑤ (-6 <sup>b5th</sup> )	+⑤	+⑤	+⑤	+②
15	114 <sup>#2nd</sup>	15 <sup>#2nd</sup>	112	19	10	1	
12 <sub>a</sub>	19	10	13	112 <sup>#3rd b5th</sup>	112 <sup>b5th b7th</sup>	13 <sup>b5th</sup>	
	-②	+⑤	+②	-⑤	+⑤ (-7 <sup>b3rd</sup> -6 <sup>b7th</sup> )	+⑤ (-11 <sup>#3rd</sup> )	
13	112 <sup>#2nd b5th</sup>	112 <sup>b5th b7th</sup>	13 <sup>b5th</sup>	115	1		
(13 <sup>b5th</sup> ) 115	16	12	114	19	1		
	-⑤	+⑤	-⑤	-⑤	+⑤		
16	12	114	19	10			
? 10							

1

$$\begin{array}{cccccccc}
 \hat{9} & \rightarrow & \hat{12} & \rightarrow & \hat{15} & \rightarrow & \hat{10} & \rightarrow & \hat{13} & \rightarrow & \hat{0} & \rightarrow & \hat{4} & \rightarrow & \hat{6} & \rightarrow \\
 5 & - & 5 & \rightarrow & 7 & \rightarrow & 2 & - & 2 & \rightarrow & 8 & - & 8 & \rightarrow & 11 & \rightarrow \\
 14 & \rightarrow & 0 & \rightarrow & 3 & \rightarrow & 6 & \rightarrow & 9 & \rightarrow & 12 & \rightarrow & 15 & - & 15 & \rightarrow \\
 0 & \rightarrow & 7 & \rightarrow & 12 & \rightarrow & 15 & \rightarrow & 5 & - & 5 & \rightarrow & 11 & \rightarrow & 2 & \rightarrow \\
 \hline
 0 & & 7 & & 15 & & 2^{67th} & & 5^{67th} & & 7^{67th} & & 11^{67th} & & 2 & 
 \end{array}$$

$$\left[ \begin{array}{cccccccc}
 \hat{3} & - & \hat{5} & \rightarrow & \hat{3} & \rightarrow & \hat{2} & - & \hat{2} & \rightarrow & \hat{0} & \rightarrow & 15 & \rightarrow & 11 & \rightarrow \\
 14 & \rightarrow & 12 & - & 12 & \rightarrow & 10 & \rightarrow & 9 & \rightarrow & 8 & - & 8 & \rightarrow & 6 & \rightarrow \\
 9 & - & 7 & - & 7 & \rightarrow & 6 & \rightarrow & 5 & - & 5 & \rightarrow & 4 & \rightarrow & 15 & \rightarrow \\
 0 & - & 0 & \rightarrow & 15 & - & 15 & \rightarrow & 13 & \rightarrow & 12 & \rightarrow & 11 & \rightarrow & 2 & \rightarrow \\
 \hline
 0_a & & 7_c & & 15_a & & 2_d^{67th} & & 5_c^{67th} & & 7_b^{67th} & & 11_c^{67th} & & 2_c & 
 \end{array} \right.$$

$$\begin{array}{cccccc}
 \hat{(6)} & \rightarrow & \hat{4} & \rightarrow & \hat{6} & - & \hat{6} & \rightarrow & \hat{9} \\
 (11) & \rightarrow & 15 & - & 15 & \rightarrow & 2 & \rightarrow & 5 \\
 (15) & \rightarrow & 8 & \rightarrow & 10 & - & 14 & - & 14 \\
 (2) & \rightarrow & 12 & \rightarrow & 3 & \rightarrow & 10 & \rightarrow & 0 \\
 \hline
 (2) & & 15^{67th} & & 6^{67th} & & 14^{67th} & & 0
 \end{array}$$

$$\left[ \begin{array}{cccccc}
 \rightarrow 8 & \rightarrow & 6 & - & 6 & \rightarrow & 5 & \rightarrow & (8)12 \\
 \rightarrow 15 & - & 15 & \rightarrow & 14 & - & 14 & \rightarrow & (8)5 \\
 \rightarrow 12 & \rightarrow & 10 & - & 10 & \rightarrow & 9 & \rightarrow & (8)0 \\
 \rightarrow 4 & \rightarrow & 3 & \rightarrow & 2 & \rightarrow & 0 & \rightarrow & (8)7 \\
 \hline
 15_b^{67th} & & 6_d^{67th} & & 14_b^{67th} & & 0_a & & 7_a
 \end{array} \right.$$

2

$\hat{9} \rightarrow \hat{12} - \hat{12} \rightarrow \hat{14} \rightarrow \hat{8} \rightarrow \hat{12} \rightarrow \hat{11} \rightarrow \hat{14} -$   
 $\hat{5} - \hat{5} \rightarrow \hat{0} \rightarrow \hat{5} - \hat{5} \rightarrow \hat{8} \rightarrow \hat{7} - \hat{7} \rightarrow$   
 $14 \rightarrow 7 \rightarrow 9 - 9 \rightarrow 12 \rightarrow 3 - 3 \rightarrow 2 -$   
 $0 - .0 \rightarrow .5 \rightarrow .2 \rightarrow .0 \rightarrow .15 \rightarrow .15 \rightarrow .11 \rightarrow$   
 $0 \quad 7 \quad 12 \quad 5 \quad 7^{#st} \quad 15^{#st} \quad 11 \quad 14^{#st}$

$\left[ \begin{array}{l} 12 \rightarrow (11) \rightarrow 9 \rightarrow (8) \rightarrow 9 \rightarrow 8 - 8 \rightarrow 7 - 7 \rightarrow 9 \rightarrow \\ 5 - 5 \rightarrow 2 \rightarrow (10) \rightarrow 6 \rightarrow 15 - 15 \rightarrow 2 - 2 \rightarrow \\ 0 - 0 \rightarrow 14 \rightarrow 12 - 12 \rightarrow 11 - 11 \rightarrow 14 \rightarrow \\ 7 \rightarrow 12 \rightarrow 5 - 5 \rightarrow 3 - 3 \rightarrow 14 \rightarrow 5 \rightarrow \end{array} \right.$   
 $7_a \quad 12_a \quad 5_a \quad 7_b^{#st} \quad 15_b^{#st} \quad 11_c \quad 14_c^{#st} \quad 5_c$

$\hat{14} - \hat{14} \rightarrow \hat{0} \rightarrow \hat{15} \rightarrow \hat{0} - \hat{0} \rightarrow \hat{12} \rightarrow \hat{5} \rightarrow$   
 $(\hat{7}) \rightarrow \hat{5} - \hat{5} \rightarrow \hat{4} \rightarrow \hat{5} - \hat{5} \rightarrow \hat{7} \rightarrow \hat{9} \rightarrow$   
 $(\hat{2}) - \hat{2} \rightarrow 13 \rightarrow 12 - 12 \rightarrow 9 \rightarrow 0 \rightarrow 12 -$   
 $(11) \rightarrow 9 \rightarrow 8 - 8 \rightarrow 7 \rightarrow 14 \rightarrow 3 \rightarrow 0 \rightarrow$   
 $(14^{#st}) \quad 5 \quad 7^{#st} \quad 15^{#st} \quad 7 \quad 0 \quad 3 \quad 12$

$\left[ \begin{array}{l} \rightarrow 5 \rightarrow 4 \rightarrow 5 - 5 \rightarrow 7 \rightarrow 9 \rightarrow (11) \rightarrow 12 \rightarrow 11 \rightarrow \\ \rightarrow 0 \rightarrow 15 \rightarrow 0 \rightarrow 14 \rightarrow 3 \rightarrow 5 \rightarrow 3 - 3 \rightarrow \\ \rightarrow 13 \rightarrow 12 - 12 \rightarrow 9 \rightarrow 12 \rightarrow 0 \rightarrow 15 - 15 \rightarrow \\ \rightarrow 8 - 8 \rightarrow 7 \rightarrow 0 - 0 \rightarrow (15) \rightarrow 12 \rightarrow (12) \rightarrow 7 \rightarrow 6 - \end{array} \right.$   
 $7_a^{#st} \quad 15_c^{#st} \quad 7_a \quad 0 \quad 3 \quad 12 \quad 15_c \quad 6_a$

$5 \rightarrow 3 \rightarrow 14 \rightarrow 7 \rightarrow 12$   
 $12 \quad 11$

3

$(5) \rightarrow 7 \rightarrow 3 \rightarrow 2 \rightarrow 5 \rightarrow 9 \rightarrow 9 \rightarrow 10 \rightarrow$   
 $(9) \rightarrow 3 \rightarrow 6 \rightarrow 6 \rightarrow 13 \rightarrow 12 \rightarrow 14 \rightarrow 6 \rightarrow$   
 $(11) \rightarrow 12 \rightarrow 11 \rightarrow 14 \rightarrow 2 \rightarrow 0 \rightarrow 6 \rightarrow 15 \rightarrow$   
 $(0) \rightarrow 15 \rightarrow 15 \rightarrow 10 \rightarrow 9 \rightarrow 4 \rightarrow 1 \rightarrow 2 \rightarrow$

$(12), 15, 6, 19^{b7H}, 5^{b5H}, 12^{b6H}, 9^{b5H}, 2^{b5H}$

$\rightarrow 10 \rightarrow 9 \rightarrow 9 \rightarrow 6 \rightarrow 6 \rightarrow 5 \rightarrow 6 \rightarrow 11 \rightarrow 10 \rightarrow$   
 $\rightarrow 2 \rightarrow 2 \rightarrow 0 \rightarrow 1 \rightarrow 2 \rightarrow 2 \rightarrow 3 \rightarrow 2 \rightarrow$   
 $\rightarrow 14 \rightarrow 13 \rightarrow 12 \rightarrow 14 \rightarrow 15 \rightarrow 14 \rightarrow 14 \rightarrow 14 \rightarrow$   
 $\rightarrow 6 \rightarrow 5 \rightarrow 4 \rightarrow 9 \rightarrow 10 \rightarrow 9 \rightarrow 6 \rightarrow 5 \rightarrow 5 \rightarrow$   
 $14^{b7H}, 5^{b5H}, 12^{b6H}, 9^{b5H}, 2^{b5H}, 5, 14^{b7H}, 5^{b5H}$

$12 \rightarrow 3 \rightarrow 10 \rightarrow 5 \rightarrow 12 \rightarrow 0 \rightarrow 11 \rightarrow 4 \rightarrow$   
 $9 \rightarrow 3 \rightarrow 5 \rightarrow 9 \rightarrow 6 \rightarrow 5 \rightarrow 12 \rightarrow 9 \rightarrow$   
 $5 \rightarrow 11 \rightarrow 10 \rightarrow 5 \rightarrow 14 \rightarrow 14 \rightarrow 3 \rightarrow 12 \rightarrow$   
 $14 \rightarrow 14 \rightarrow 14 \rightarrow 12 \rightarrow 2 \rightarrow 0 \rightarrow 0 \rightarrow 1 \rightarrow$   
 $2 \rightarrow 6 \rightarrow 2 \rightarrow 0 \rightarrow 9 \rightarrow 9 \rightarrow 7 \rightarrow 1 \rightarrow$   
 $5, 14^{b7H}, 5^{b5H}, 12, 9, 0, 3, 12^{b6H}$

$\rightarrow 5 \rightarrow 6 \rightarrow 5 \rightarrow (9) \rightarrow 7 \rightarrow 4 \rightarrow 4 \rightarrow 3 \rightarrow 3 \rightarrow (4) \rightarrow$   
 $\rightarrow 0 \rightarrow (15) \rightarrow 14 \rightarrow 14 \rightarrow 3 \rightarrow 12 \rightarrow 12 \rightarrow 11 \rightarrow (12) \rightarrow 5 \rightarrow$   
 $\rightarrow 12 \rightarrow 9 \rightarrow 9 \rightarrow (11) \rightarrow 12 \rightarrow 9 \rightarrow 8 \rightarrow 7 \rightarrow 7 \rightarrow (5) \rightarrow$   
 $\rightarrow 9 \rightarrow 2 \rightarrow 0 \rightarrow 0 \rightarrow 1 \rightarrow 0 \rightarrow 0 \rightarrow 12 \rightarrow$   
 $12, 9, 0, 3, 12^{b6H}, 12^{b6H}, 3^{b5H}, 15$

$12 \rightarrow 14 \rightarrow 9 \rightarrow 3 \rightarrow 12 \rightarrow 14 \rightarrow 0 \rightarrow 7 \rightarrow$   
 $6?, 4?, 11?$

4

(4)  $\rightarrow \hat{6}$

(9)  $\rightarrow \hat{0} - \hat{0} \rightarrow \hat{12} \rightarrow \hat{11} - \hat{11} - \hat{11} \rightarrow \hat{9} -$   
 (12)  $\rightarrow \hat{12} \rightarrow \hat{7} \rightarrow \hat{7} \rightarrow \hat{6} - \hat{6} - \hat{6} - \hat{6} \rightarrow$   
 (1)  $\rightarrow \hat{8} \rightarrow \hat{11} \rightarrow \hat{15} - \hat{15} - \hat{15} \rightarrow \hat{14} - \hat{14} -$   
 (4)  $\rightarrow \hat{4} \rightarrow \hat{3} - \hat{3} - \hat{3} \rightarrow \hat{2} - \hat{2} - \hat{2} \rightarrow$

(12)  $\rightarrow \hat{12}$     (12)  $\rightarrow \hat{12}$     (3)  $\rightarrow \hat{3}$     15    6    2    14    9

$\left[ \begin{array}{cccc|c} \rightarrow 6 & - & 6 & - & 6 & - & 6 & \rightarrow & 5 \\ -15 & - & 15 & \rightarrow & 14 & - & 14 & - & 14 \\ \rightarrow 3 & \rightarrow & 2 & - & 2 & - & 2 & \rightarrow & 9 \\ \rightarrow 11 & - & 11 & - & 11 & \rightarrow & 9 & \rightarrow & (13)0 \\ \hline & & 6 & & 2 & & 14 & & 9 & & 0 \end{array} \right.$

(2)  $\rightarrow 6$

$\hat{9} \rightarrow \hat{7} - \hat{7} \rightarrow (5)$   
 $\hat{5} - \hat{5} \rightarrow \hat{3} \rightarrow (14)$   
 $\hat{14} \rightarrow \hat{12} \rightarrow \hat{11} \rightarrow (9)$   
 $\hat{0} - \hat{0} - \hat{0} - \hat{0}$

0

The image displays a handwritten musical score consisting of four systems of staves. Each system includes a melody line (top staff) and a bass line (bottom staff) with figured bass notation. The notation is written in black ink on a white background.

- System 1:** The melody line starts with a quarter note G4, followed by a series of eighth notes: A4, B4, A4, G4, F4, E4, D4. The bass line starts with a quarter note G2, followed by a series of eighth notes: A2, B2, A2, G2, F2, E2, D2. The figured bass notation below the bass line is: 1 2, 1 5 0 1 5 0 1 5 1 2 1 5 0, 5, 1 5 0, 4 3 0 1 2 1 5 0.
- System 2:** The melody line starts with a quarter note G4, followed by a series of eighth notes: A4, B4, A4, G4, F4, E4, D4. The bass line starts with a quarter note G2, followed by a series of eighth notes: A2, B2, A2, G2, F2, E2, D2. The figured bass notation below the bass line is: 7, 1 0 1 1 7, 1 2, 7 3.
- System 3:** The melody line starts with a quarter note G4, followed by a series of eighth notes: A4, B4, A4, G4, F4, E4, D4. The bass line starts with a quarter note G2, followed by a series of eighth notes: A2, B2, A2, G2, F2, E2, D2. The figured bass notation below the bass line is: 1 2, 1 4 0 1 4 0 1 4 1 2 1 1 1 2, 3, 1 3 1 4, 2 1 3 1 4 1 0 9 0.
- System 4:** The melody line starts with a quarter note G4, followed by a series of eighth notes: A4, B4, A4, G4, F4, E4, D4. The bass line starts with a quarter note G2, followed by a series of eighth notes: A2, B2, A2, G2, F2, E2, D2. The figured bass notation below the bass line is: 1 0 9 1 0, 1 4, 0 9 1 0 1 5 0 1 5 0 4, 5, 4 3 4 3 4 3, 1 0 1 4 9, 0 4 1 3.

Handwritten musical notation on a staff. The notation includes notes with stems and beams, and various fingerings indicated by numbers 1-5. There are also some symbols like a double bar line and a sharp sign. The notes are arranged in a sequence across the staff.

//

6

6



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ALEXANDER MACHOVER-SCOTT

# Voidsnakes

A Slitherflesh Offering to the  
Great Unspeakable Ones

for Two Violins



# Performance Note

*Glissandi* often do not begin immediately after the onset of their starting note; the start of a *glissando* is concurrent with the notehead to which the leftmost end of the *glissando* line is attached. The *glissando* should begin not precisely on the beat (or beat subdivision) indicated, but rather immediately after it, such that the starting note is first allowed to sound briefly.

A straight line indicates a smooth *glissando*, covering the entire distance between the notes, with no gaps. Ideally this should be achieved without changing finger; if changing finger is necessary, it should be executed as seamlessly as possible.

A wavy line indicates a *glissando* combined with a wide *vibrato*, to create an effect similar to a chromatic *glissando*. However, the performer should not aim for specific intermediate pitches.

Duration approx. 4 mins

# Voidsnakes

A Slitherflesh Offering to the Great Unspeakable Ones  
for Two Violins

Alexander Machover-Scott

Adagio misterioso ♩ ≈ 56

Violin 1  
*p* *mf* *p* *mp* *p*

Violin 2  
*p* *mf* *p* *mp* *p*

Vln 1  
*mf* *p* *pp* *accel.*

Vln 2  
*mf* *p* *pp*

sul tasto

sul tasto

Vln 1  
8 → nat. *f* *sub.p*

Vln 2  
8 → nat. *f* *sub.p*

allargando

Andante etereo ♩ ≈ 72

Vln 1  
13 *f* *sub.p* *pp* sempre  
trasparente sul pont., poco vib.

Vln 2  
*f* *pp* sempre  
trasparente sul pont., poco vib.

Vln 1  
17 *p* *pp* *sul pont.*

Vln 2  
*p* *pp* *sul pont.*

nat. (poco vib. ancora)

sul pont.

21

nat. sul pont. nat. sul pont.

Vln 1

Vln 2

26

nat. sul pont. nat., vib. normale

Vln 1

Vln 2

poco

nat., vib. normale

poco

accel. . . . . Allegro ritmico ♩ ≈ 108

31

mp p mf pp mf pp mf pp p pp

Vln 1

Vln 2

pizz.

pizz.

allargando Allegretto capriccioso ♩ ≈ 60

37

arco f sub.p f p

Vln 1

Vln 2

arco f sub.p f p

leggiere mp

41

leggiere mf mp ff

Vln 1

Vln 2

mf ff

44

mf p mf f mf

Vln 1

Vln 2

mp mf p mf f mf

Vln 1  
Vln 2

*p* *mf* *mp* *mf*

**Con moto** (♩ = ♩)

Vln 1  
Vln 2

*ff* *p* *ff* *p*

→ sul pont. → sul pont.

**Meno mosso** ♩ ≈ 72

Vln 1  
Vln 2

*f* *pp* *f* *pp*

→ sul tasto → sul tasto

**Adagio misterioso** ♩ ≈ 56

Vln 1  
Vln 2

*mp* *mf* *mp* *mf*

nat. nat.

Vln 1  
Vln 2

*p* *mf* *p* *pp* *pp*

sul tasto sul tasto

Vln 1  
Vln 2

*mp* *p* *pp* *pp*

nat. nat.



ALEXANDER MACHOVER-SCOTT

# Beyond/Between/Beneath

for Quintet

# INSTRUMENTATION

FLUTE  
CLARINET in B $\flat$  (doubling BASS CLARINET in B $\flat$ )  
VIOLIN  
VIOLA  
PIANOFORTE

## PERFORMANCE NOTE

*Glissandi* from tied notes should begin at the point indicated by the leftmost end of the *glissando* line, rather than necessarily at the onset of the note.

A straight line indicates a smooth *glissando* (i.e. *portamento*), covering the entire distance between the notes, with no gaps. In the strings, changing finger or string should be avoided. In the woodwinds, the movement should be as smooth as possible.

A wavy line (used in the strings only) indicates a *glissando* combined with a wide *vibrato*, to create an effect similar to a chromatic *glissando*. The performer should not aim for specific intermediate pitches.

The parenthesised cross noteheads in b.66 indicate the destinations of the *glissandi*, thereby determining the speed of the movement. The pitches indicated by these noteheads should not themselves be played.

Accidentals apply to the whole bar, but cautionaries are often provided.

*Acciaccature* should be executed on the beat (or beat subdivision), not before.

Trills should begin on the lower note. All trills are of a semitone only.

In the clarinet/bass clarinet, *tremolo* markings indicate flutter-tonguing. The performer may use either the tip of the tongue or the uvula, so long as the sound is sufficiently coarse and aggressive.

In the strings, overpressure is abbreviated to 'ovp.'

In the pianoforte, markings indicating which hand to use are suggestions only, but each of the diads in the upper stave at Figure I should be played with two fingers of the same hand, not with one finger of each hand, wherever possible. The '8va' marking in b.120 applies to both hands.

Duration approx. 8 mins

# Beyond/Between/Beneath

Score in C

Allegretto ritmico ♩ ≈ 80

Alexander Machover-Scott

Musical score for the first system, featuring Flute, Clarinet in Bb, Violin, Viola, and Pianoforte. The time signature is 3/4, and the tempo is Allegretto ritmico (♩ ≈ 80). The Flute part begins with a *mp* dynamic, followed by a *f* dynamic with a trill, and then a *mf* dynamic. The Clarinet in Bb part starts with a *p* dynamic, followed by a *f* dynamic, and then a *mf* dynamic. The Violin and Viola parts are silent. The Pianoforte part starts with a *mf* dynamic, followed by a *f* dynamic, and then a *mf* dynamic. The section concludes with the instruction *senz'il Ped.*



Musical score for the second system, featuring Flute (Fl.), Clarinet (Cl.), Violin (Vln), Viola (Vla), and Pianoforte (Pf.). The Flute part starts with a *f* dynamic, followed by a *p* dynamic, and then a *f* dynamic. The Clarinet part starts with a *f sub.p* dynamic, followed by a *f* dynamic, and then a *p* dynamic. The Violin and Viola parts are marked *sul pont.* and *p*. The Pianoforte part starts with a *f* dynamic. The section concludes with a double bar line.



7 *tr.*  
Fl. *mf* *f* *sub.p*  
Cl. *mf* *f* *sub.p*  
Pf. *mf* *f* *sub.p*  
Ped.

**A**  
10  $\frac{3}{4}$   
Fl. *mp* *mf* *f* *ff* *tr.* *mf*  
Cl. *tr.* *mf* *ff* *mf*  
**A**  
 $\frac{3}{4}$   
Pf. *mf* *ff* *mf*  
senz'il Ped.

13 *f* *p* *mf*  
Fl. *f* *p* *f* *sub.p*  
Cl. *f* *p* *f* *sub.p*  
Pf. *f* *mp*  
Meno mosso  $\approx 72$   
 $\frac{2}{4}$   
col Ped.

16 4/4 3/4

Fl. *mp*

Cl. *mp*

Vln. *pp* nat. → sul pont.

Vla. *pp* nat. → sul pont.

Pf. *mf* *p* *sub.pp*



**B**  
 Allegretto ritmico ♩ ≈ 80

21 3/4

Fl. *mp* *ff*

Cl. *p* *f* *tr*

**B**  
 Allegretto ritmico ♩ ≈ 80

24 3/4

Pf. *mf* *f*

*senz'il Led.*



24 rit. . . .

Fl. *mp* *f* *ff* *mp*

Cl. *mp* *f* *p* *mp*

Pf. *mp* *ff* *mp*

*rit. . . .*  
*col Led.*

Musical score for Flute (Fl.), Clarinet (Cl.), and Piano (Pi.) from measures 27 to 32. The Flute part starts with a *ff* dynamic, then *f*, and *mp*. The Clarinet part starts with *ff*, then *f*, *mp*, and *mf*. The Piano part starts with *ff*, then *f*, *mf*, and *mp*. The key signature has one flat and the time signature is 4/4.

Musical score for Flute (Fl.), Clarinet (Cl.), and Piano (Pi.) from measures 30 to 32. The Flute part starts with *mf*, then *p*, *mp*, *p*, and *pp*. The Clarinet part starts with *mp*, then *p*, and *p*. The Piano part starts with *mf*, then *p*, and *pp*. The tempo changes from *molto rit.* to *Andantino* (♩ ≈ 72). The time signature changes from 4/4 to 3/4. A common time signature (C) is indicated above the Flute and Piano staves.

Musical score for Clarinet (Cl.), Flute (Fl.), and Clarinet (Cl.) from measures 33 to 36. The Clarinet part starts with *mp* and *p*. The Flute part starts with *mp*. The Clarinet part starts with *mp* and *p*. The key signature has one flat and the time signature is 4/4.

Fl. *tr*

Cl. *tr*

Fl. *sub. pp*

Cl. *mp*

Vln. *pp* sul pont. → sul tasto

Vla. *pp* sul pont. → sul tasto ovp. (subito) *ff*

Pf. *mp*

**D**

4/4 2/4 3/4

Fl. *mp* *mf*

Cl. *p* *mf* *mp* *mf*

Pf. *mf*

*senz'il Led.*

Fl. *tr*

Cl. *tr*

Pf. *tr*

poco rit. . . . . a tempo

Fl. *f*

Cl. *f*

poco rit. . . . . a tempo

Pf. *f* *p* *pp* *p* *mp*

*col Ped.*

**E**

Allegretto ritmico ♩ ≈ 80

Fl. *mp* *f* *mf*

Cl. *mf* *f* *mf*

*tr*

**E**

Allegretto ritmico ♩ ≈ 80

Pf. *f* *mf*

*senz'il Ped.*

**2/4**

**3/4**

**4/4**

Fl. *f* *p* *f*

Cl. *f* *p* *f*

**2/4**

**3/4**

**4/4**

Pf. *f*

62 **4/4** **3/4** **7/8** **2/4** **3/4**

Cl. *mp* *p* *f* *sub.p* *pp* *mp*<sup>3</sup>

Vln *ff* ovp. sul pont. ovp. sul tasto

Vla *ff* ovp. sul pont. ovp. sul tasto



**F**

Adagio misterioso (alla breve) ♩ ≈ 60

66 **3/4** **2/4** **2/2** **5/4**

Cl. *sfz*

Vln ovp. sul pont. sul A nat. *pp sempre*

Vla ovp. sul pont. sul D nat. *mp* *pp sempre*



71 **5/4** **3/4** **2/2** **5/4** **2/2**

Vln (7.)

Vla



76 **5/4** **2/2** **5/4**

Con moto ♩ ≈ 84

Vln *f* ovp. sul tasto *ff* nat. *f* *mp* ovp. sul tasto *ff* nat. *f* *ff*

Vla *f* ovp. sul tasto nat. *mp* *ff* *f* *ff*

G

Adagio misterioso  $\text{♩} \approx 60$

Vln  $\frac{5}{4}$   $\frac{2}{2}$   $\frac{5}{4}$   $\frac{3}{4}$

Vla  $\frac{5}{4}$   $\frac{2}{2}$   $\frac{5}{4}$   $\frac{3}{4}$

*mf* *ff* *p* *mp* *mf*

sul pont.



Vln  $\frac{3}{4}$   $\frac{2}{2}$   $\frac{3}{4}$   $\frac{2}{2}$

Vla  $\frac{3}{4}$   $\frac{2}{2}$   $\frac{3}{4}$   $\frac{2}{2}$

*p* *f* *pp* *ff*

nat.



Vln  $\frac{5}{4}$   $\frac{3}{4}$   $\frac{5}{4}$   $\frac{3}{2}$   $\frac{4}{4}$

Vla  $\frac{5}{4}$   $\frac{3}{4}$   $\frac{5}{4}$   $\frac{3}{2}$   $\frac{4}{4}$

*f* *ff* *mp* *pp*

sul pont.



Pf.  $\frac{4}{4}$   $\frac{7}{8}$   $\frac{4}{4}$

*pp* *p* *f*

Andante accarezzevole  $\text{♩} \approx 66$  molto rit. a tempo molto rit.

col Ped.

**H**

Adagio meno mosso  $\text{♩} \approx 54$

Vln

Vla

*ff* *pp* *mp* *pp*

ovp. sul pont. nat.

**H**

Adagio meno mosso  $\text{♩} \approx 54$

Pf.

*pp*



Vln

Vla

*mp* *pp* *mp* *pp* *mp* *pp* *mp*



## I

Moderato robusto  $\text{♩} \approx 88$ 

108

Fl.

Cl.

Vln

Vla

Pf.

4/4

*ff*

*p*

*f*  $\leftarrow$  *ff*  $\rightarrow$  *f*

*pp*

*ff*

*pp*

*ff*

*ff*

*f*

*p*

ovp. sul tasto

ovp. sul tasto

RH

LH

Ped.

Ped.

## I

Moderato robusto  $\text{♩} \approx 88$ 

111

Fl.

Cl.

Pf.

4/4

*mp*

*f*  $\leftarrow$  *ff*

*mp*

*mf*  $\rightarrow$  *mp*

*mf*  $\rightarrow$  *ff*

*mp*

*3* *p*

*mp*

*p*

*mp*

*p*

*mp*

*p*

LH

RH

Ped.

RH

114

Fl.

Cl.

Pf.

*ff* *p* *ff* *p* *mf* *mp*

*mp* *ff* *sub.p* *ff* *sub.p*

*p*

*tr*

*3*

*Red.*

2/4 3/4 4/4

118

Fl.

Cl.

Pf.

*f* *fff*

*mf* *fff*

*mf* *f* *ff* *fff*

*3*

*Red.*

*molto rit.*

4/4 2/4 4/4

*b* *tr*

*8va*

121

Cl.

Vln

Vla

*pp* *f* *sub.p* *fp* *fp* *fp* *fp*

*3* *5* *tr*

*p*

*3*

*Red.*

*Meno mosso* ♩ ≈ 76

3/4

125  $\frac{4}{4}$

Fl. *f p f p f*

Cl. *mf p f p f*

Vln *f p f*

Vla *f p p f*

Pf. *mp mf f*

*col Ped.*

**K**

rall. . . . Adagio misterioso  $\text{♩} \approx 60$

129  $\frac{2}{2}$

Fl. *p pp f*

Cl. *p* to B. Cl.

Vln *p mp f*

Vla *p mp f*

$\leftarrow \text{♩} = \text{♩} \rightarrow$

133  $\frac{4}{4}$

Fl. *p mf p*

Vln *p mf p*

Vla *p mf p*

137

Fl. *f* *p*

Vln *pp* *p* *f* *p*

Vla *pp* *p* *f* *p*

*sul tasto* *nat.*

4/4

accel. . . . .

140

Fl. *f* *mp* *f*

Vln *f* *p* *mp* *f*

Vla *f* *pp* *p* *f*

4/4 3/4

**L**

Allegretto ritmico ♩ ≈ 80

143

Fl. *mf* *f* *mf*

Vln *mp* *f* *mf*

Vla *p* *ff* *f*

*tr*

3/4 4/4

**L**

Allegretto ritmico ♩ ≈ 80

Pf. *mf* *f* *mf*

*senz'il Ped.*

3/4 4/4

Musical score for measures 146-148. The score is for Flute (Fl.), Bass Clarinet (B. Cl.), Violin (Vln), Viola (Vla), and Piano (Pf.).

- Fl.:** Measure 146:  $4/4$  time signature,  $f$  dynamic. Measure 147:  $3/4$  time signature. Measure 148:  $3/4$  time signature.
- B. Cl.:** Measure 146:  $ff$  dynamic, triplet of eighth notes. Measure 147:  $f$  dynamic, triplet of eighth notes. Measure 148:  $mf$  dynamic, triplet of eighth notes with a trill.
- Vln:** Measure 146:  $f$  dynamic. Measure 147:  $ff$  dynamic. Measure 148:  $p$  dynamic.
- Vla:** Measure 146:  $ff$  dynamic. Measure 147:  $mp$  dynamic. Measure 148:  $mp$  dynamic.
- Pf.:** Measure 146:  $4/4$  time signature,  $f$  dynamic. Measure 147:  $3/4$  time signature. Measure 148:  $3/4$  time signature.



Musical score for measures 149-151. The score is for Flute (Fl.), Bass Clarinet (B. Cl.), Violin (Vln), Viola (Vla), and Piano (Pf.).

- Fl.:** Measure 149:  $ff$  dynamic. Measure 150:  $f$  dynamic, trill. Measure 151:  $mf$  dynamic,  $4/4$  time signature.
- B. Cl.:** Measure 149:  $f$  dynamic, quintuplet of eighth notes. Measure 150:  $mf$  dynamic. Measure 151:  $f$  dynamic.
- Vln:** Measure 149:  $f$  dynamic. Measure 150:  $mf$  dynamic. Measure 151:  $f$  dynamic.
- Vla:** Measure 149:  $ff$  dynamic. Measure 150:  $mf$  dynamic. Measure 151:  $f$  dynamic.
- Pf.:** Measure 149:  $mf$  dynamic. Measure 150:  $mf$  dynamic. Measure 151:  $f$  dynamic,  $4/4$  time signature.

M

3/4

152

Fl. *sub.p* *f*

B. Cl. *mf* *p* *f* *mf* *ff*

Vln. *p* *mp* *mf*

Vla. *sub.p* *mf*

Pf. *sub.p* *mf*

*senz'il Ped.*

M

3/4

155

Fl. *ff* *mf* *p* *mf*

B. Cl. *mf*

Vln. *ff* *mf* *f* *p* *mf*

Vla. *ff* *mf* *f* *mp* *f*

Pf. *ff* *mf*

Musical score for measures 158-160. The score is for five instruments: Flute (Fl.), Bass Clarinet (B. Cl.), Violin (Vln), Viola (Vla), and Piano (Pf.).

- Fl.:** Measure 158 is a whole rest. Measure 159 has a half rest. Measure 160 has a half note with a trill (tr) and a fermata, marked *mf* and *f*. A box with the letter 'N' is above the staff.
- B. Cl.:** Measure 158 has a quarter note marked *f*. Measure 159 has a quarter note marked *mf* and a triplet of eighth notes marked *mp*. Measure 160 has a quarter note marked *mf* and a quintuplet of eighth notes marked *mf*.
- Vln:** Measure 158 is a whole rest. Measure 159 has a half note marked *mp*. Measure 160 has a half note marked *ff*.
- Vla:** Measure 158 has a half note marked *p*. Measure 159 has a half note marked *f*. Measure 160 has a half note marked *f*.
- Pf.:** Measure 158 has a half note marked *p*. Measure 159 has a half note marked *mp*. Measure 160 has a half note marked *mf* and a quarter note marked *f*. A box with the letter 'N' is above the staff.



Musical score for measures 161-163. The score is for five instruments: Flute (Fl.), Bass Clarinet (B. Cl.), Violin (Vln), Viola (Vla), and Piano (Pf.).

- Fl.:** Measure 161 has a quarter note marked *mp*. Measure 162 has a quarter note marked *mp*. Measure 163 has a quarter note marked *ff* and a triplet of eighth notes marked *sub.p*. A  $\frac{2}{4}$  time signature change is indicated above the staff.
- B. Cl.:** Measure 161 has a quarter note marked *p*. Measure 162 has a quarter note marked *p*. Measure 163 has a quarter note marked *p*.
- Vln:** Measure 161 has a quarter note marked *mp*. Measure 162 has a quarter note marked *f* and a quarter note marked *ff*. Measure 163 has a quarter note marked *ff*.
- Vla:** Measure 161 has a quarter note marked *mp*. Measure 162 has a quarter note marked *f*. Measure 163 has a quarter note marked *f*.
- Pf.:** Measure 161 has a quarter note marked *mp*. Measure 162 has a quarter note marked *mp*. Measure 163 has a quarter note marked *ff* and a triplet of eighth notes marked *mp*. A  $\frac{2}{4}$  time signature change is indicated above the staff.

Meno mosso  $\text{♩} \approx 72$

col Ped.



rit. . . . .

Allegretto ritmico ♩ ≈ 80

Pf. *mf* *f* *mf* *mp*

Measures 165-168 of the piano part. Measure 165 starts with a mezzo-forte (*mf*) dynamic. The music features a complex rhythmic pattern with eighth and sixteenth notes. Measure 166 continues this pattern. Measure 167 features a forte (*f*) dynamic and includes a trill in the right hand. Measure 168 concludes with a mezzo-piano (*mp*) dynamic.



Fl. *mf* *ff* *sub.pp*

Vln *p* *ff* *sub.pp*

Vla *f* *p* *mf* *ff*

Pf. *f* *p* *mf* *f* *ff* *sub.pp*

Measures 169-172 of the orchestral score. The Flute (Fl.) part begins in measure 169 with a mezzo-forte (*mf*) dynamic, reaching fortissimo (*ff*) and then pianissimo (*sub.pp*) by measure 172. The Violin (Vln) part starts in measure 170 with a piano (*p*) dynamic, reaching fortissimo (*ff*) and then pianissimo (*sub.pp*) by measure 172. The Viola (Vla) part starts in measure 169 with a forte (*f*) dynamic, moving to piano (*p*) in measure 170, mezzo-forte (*mf*) in measure 171, and fortissimo (*ff*) in measure 172. The Piano (Pf.) part starts in measure 169 with a forte (*f*) dynamic, moving to piano (*p*) in measure 170, mezzo-forte (*mf*) in measure 171, and fortissimo (*ff*) and pianissimo (*sub.pp*) in measure 172.

senz'il Led.

8<sup>ub</sup> . . .





ALEXANDER MACHOVER-SCOTT

# It Is Not Made Of Mud

for Pianoforte

# PERFORMANCE NOTE

Accidentals apply only to the note to which they are attached, but cautionaries are usually provided.

## **‘Disturbingly Lively’**

Sections marked with the tempo direction ‘Disturbingly Lively’, or ‘Disturbingly Lively (tempo primo)’, should be played at a strict tempo (i.e. *senza rubato*) that is as quick as is practically possible while a) maintaining a consistent speed across all passages with this tempo marking, and b) leaving room for a faster tempo that is not so fast as to lose detail. The pulse should certainly be no slower than ♩=420 (♩=210), and probably no faster than ♩=480 (♩=240). Quavers should be played in a dry, detached, ‘*meccanico*’ style, with slurs only where indicated. The sustain pedal should similarly be used only where indicated. While observing the beam groupings, the player should also allow accents to emerge naturally from the way the phrases sit under their hands.

Sections marked ‘Disturbingly Lively (più mosso)’ should follow the directions above with the exception of the speed, which should be considerably faster – somewhere in the region of ♩=520 (♩=260). Again, the tempo should be consistent across all sections that bear this marking.

## **‘Frighteningly Inert’**

Sections marked with the tempo direction ‘Frighteningly Inert’ should employ a lethargic tempo of no more than ♩=56. The tempo should be flexible, incorporating *rubato*, and it need not be consistent across different sections bearing this tempo marking. The playing should be expressive and rich in tone, but clear; the sustain pedal should be used sparingly, only where it is necessary in order to maintain a smooth *legato*, or where specifically indicated. This is especially important in places where specific sympathetic resonances are intended to arise, for example in bar 52, and in the passage from bar 159 to the end. The third (‘*sostenuto*’) pedal may be used if the player’s hands are not large enough to sustain chords for the full duration indicated. Quick flourishes, such as those at the beginnings of bars 30 and 36, should be played *leggiero*.

Duration approx. 7 mins 30 secs

# It Is Not Made Of Mud

Alexander Machover-Scott

**Disturbingly Lively** **Frighteningly Inert**

Pianoforte *f* *pp*

**Disturbingly Lively (più mosso)** **Frighteningly Inert** **Disturbingly Lively (tempo primo)**

Pf *mp* *pp* *ff*

**Disturbingly Lively (più mosso)**

Pf *mf*

Pf

**Disturbingly Lively (tempo primo)**

Pf

*Red.*

19

Pf

R.H.

22

Pf

**Frighteningly Inert**

*p*

Red.

27

Pf

*mp*

*f*

3

31

Pf

*mp*

*mf*

3

34

Pf

*ff*

*f*

*mp*

3

Pf

38

*p* *mp*

Pf

42

*mf* *p*

3

**Disturbingly Lively (più mosso)**

Pf

46

*mp* *mf*

3

**Frighteningly Inert**

Pf

49

*sub.p* *pp* *mp* *f*

3

**Disturbingly Lively (più mosso)**    **Disturbingly Lively (tempo primo)**

Pf

53

*ff*

3

57

Pf *mf*

Red.

60

Pf *fff sub f* *fff*

Frighteningly Inert

Disturbingly Lively

64

Pf *p* *ff*

68

Pf *f* *ff*

Frighteningly Inert

72

Pf *fff* *mf* *p*

76

Pf

8<sup>vb</sup>

*mf*

Detailed description: This system covers measures 76 to 80. The right hand starts with a melodic line in 3/4 time, featuring a triplet of eighth notes in measure 77. The left hand provides a bass line with a triplet of eighth notes in measure 77. A dynamic marking of *mf* is present in measure 80. A bracket labeled 8<sup>vb</sup> spans measures 76 through 80.

81

Pf

*p*

*mf*

(8)

Detailed description: This system covers measures 81 to 84. The right hand begins with a piano (*p*) dynamic. A triplet of eighth notes appears in measure 83. The left hand has a steady bass line. A dynamic marking of *mf* is shown in measure 84. A bracket labeled (8) spans measures 81 through 84.

85

Pf

*p*

*mp*

*p*

Detailed description: This system covers measures 85 to 88. The right hand features a melodic line with a piano (*p*) dynamic in measure 85, a mezzo-piano (*mp*) dynamic in measure 87, and returns to piano (*p*) in measure 88. The left hand has a bass line with a piano (*p*) dynamic in measure 88.

89

Pf

*sub.p*

Detailed description: This system covers measures 89 to 92. The right hand has a melodic line with a *sub.p* (sub-piano) dynamic in measure 90. A triplet of eighth notes is present in measure 91. The left hand has a bass line with a *sub.p* dynamic in measure 90. The time signature changes from 3/4 to 3/4 in measure 92.

93

Pf

*mf*

*p*

Detailed description: This system covers measures 93 to 96. The right hand starts with a mezzo-forte (*mf*) dynamic in measure 93. A triplet of eighth notes is in measure 94, and a quintuplet of eighth notes is in measure 95. The left hand has a bass line with a piano (*p*) dynamic in measure 95. The time signature changes from 3/4 to 2/4 in measure 96.



Pf

96

*f*

Measures 96-99: Treble clef, 2/2 time signature. Measure 96 starts with a treble clef, key signature of one sharp (F#), and a 2/2 time signature. The piece begins with a piano (p) dynamic. Measure 97 has a 7-measure rest in the bass line. Measure 98 has a 7-measure rest in the bass line. Measure 99 has a 7-measure rest in the bass line. The piece ends with a forte (f) dynamic. There are triplets in measures 97 and 99.

Pf

100

*p* *mf*

Measures 100-102: Treble clef, 2/2 time signature. Measure 100 starts with a piano (p) dynamic. Measure 101 has a mezzo-forte (mf) dynamic and a 5-measure rest in the bass line. Measure 102 has a mezzo-forte (mf) dynamic. There is a triplet in measure 102.

Pf

103

*pp* *mf*

*rit.*

Measures 103-104: Treble clef, 2/2 time signature. Measure 103 starts with a pianissimo (pp) dynamic. Measure 104 has a mezzo-forte (mf) dynamic. The piece ends with a ritardando (rit.) marking. There is a triplet in measure 104.

Disturbingly Lively (più mosso)

Pf

105

*pp* *f* *mf*

Measures 105-107: Treble clef, 2/2 time signature. Measure 105 starts with a pianissimo (pp) dynamic. Measure 106 has a forte (f) dynamic. Measure 107 has a mezzo-forte (mf) dynamic. The piece ends with a mezzo-forte (mf) dynamic. There are triplets in measures 105 and 107.

Frighteningly Inert

Pf

108

*sub.p* *mp* *pp*

Measures 108-110: Treble clef, 2/2 time signature. Measure 108 starts with a *sub.p* dynamic. Measure 109 has a mezzo-piano (mp) dynamic. Measure 110 has a pianissimo (pp) dynamic. There are triplets in measures 108 and 109.

Pf

111

*mp* *f* *mp*

Pf

115

a tempo

rit. . .

*ff* *fff* *ff* *mp*

Pf

119

Disturbingly Lively

*mf* *mp en dehors* *f*

8<sup>va</sup>

Pf

123

*mp*

(8)....|

Pf

127

8<sup>va</sup>

8<sup>va</sup>

**Frighteningly Inert**

8

Pf

130 *ff* *p*

**Disturbingly Lively  
(più mosso)**

Pf

134 *pp* *f*

**138 Disturbingly Lively (tempo primo)**

Pf

138 *ff* *mf*

Ped.

Pf

141 *ff* *f*

8<sup>va</sup>

Ped.

8<sup>vb</sup>

Pf

144 *fff* *f*

8<sup>va</sup>

*en dehors*

(8)

147 *mf* *8va*

Pf

**Frighteningly Inert** **Disturbingly Lively (più mosso)**

151 *fff* *p* *pp* *mp* *8va*

Pf

**Disturbingly Lively (tempo primo)**

156 *mf* *8va*

Pf

159 **Frighteningly Inert** **Disturbingly Lively**

*p* *f*

Pf

165 **Frighteningly Inert** **Disturbingly Lively (più mosso)**

*p* *mf*

Pf

10  
170 **Frighteningly Inert** **Disturbingly Lively (tempo primo)**

Pf

174 **Frighteningly Inert**

Pf

178

Pf

183 **Disturbingly Lively (più mosso)**

Pf

186 **Frighteningly Inert**

Pf

Disturbingly Lively (tempo primo)

190 *p* 8<sup>va</sup>

193 Frighteningly Inert

rit. . . . .

*mp*

196 . . . . . Disturbingly Lively (più mosso)

*mf* *mf*

Ped. \_\_\_\_\_



ALEXANDER MACHOVER-SCOTT

# Frostcrows

A Chitinous Shuddersong over  
our Frozen Bones

for Flute and Vibraphone





# PERFORMANCE NOTE

Accidentals apply to the whole bar, but cautionaries are often provided.

## FLUTE



Tongue ram (a.k.a. tongue stop). The diamond notehead indicates the fingered pitch; the wedge notehead indicates the sounding pitch.



Tongue *pizzicato* (a.k.a. slap tongue). A hard 'T' sound is preferable.



Fall. The pitch should be bent downwards using the embouchure.



*Portamento*. In bars 4-5, the pitch should be bent using the embouchure. In the rest of the piece, it should be bent by sliding the fingers onto or off the tone holes.

When flutter tonguing, rolling the tongue is preferable to a uvular trill.

## VIBRAPHONE



Dead stroke.



Pitch bend.

Either medium or soft cord mallets should be used throughout the piece, depending on the preference of the performer and on the acoustic of the performance space. The hard mallet should be used only for pitch-bending, not for striking the bars.

Phrase markings indicate that a melodic line should be played *legato*, using mallet dampening.

The speed of the motor should be set to match as closely as possible the typical rate of the flautist's vibrato.

All desired pedalling is indicated.

Duration approx. 3 mins

# Frostcrows

A Chitinous Shuddersong over our Frozen Bones

for Flute and Vibraphone

Alexander Machover-Scott

Adagio flessibile ♩ ≈ 60

senza vibrato

Flute

Vibraphone

*f*

(motor off)

*mp*

*f*

senz'il Ped.

Ped.

A

Fl.

Vb.

con vibrato

*p*

*mf*

*p*

*mf*

*p*

*mf*

*p*

Fl.

Vb.

*mp*

*pp*

*p*

*mf*

*mp*

*mp*

*pp*

*p*

*f*

Ped.

Ped.

12 B 3

Fl. *pp* *ff* *sub.p* *pp*

Vb. *mp* *ff* *sub.p*

16

Fl. *p* *mp* *pp* *ff*

Vb. *f* *Red.*

20 C

Fl. *mf* *pp* *ff* *sub.p* (*f*)

Vb. *mp* *p* *Red.*

23

Fl. *mp* *f* *mf* *p* *mp* *mf*

Vb. *p* *f* *mp* *p* *Red.* *Red.* *mf*

senza vibrato

motor on

27 **D** con vibrato

Fl. *p* *mp* *mf* *mp* *p*

Vb. *mf* *p* *pp* *mp* *p*

*Ped.*

31

Fl. *mp* *f* *mf* *fff*

Vb. *mf* *f* *fff*

♩ mallet 4 to hard mallet

35 **E** senza vib.

Fl. *p* *mp* *pp* *mp* *mf* *mp* *mf*

Vb. *mp* *pp*

*Ped.*

39 con vibrato

Fl. *f* *mf* *mp* *mf* *f* *(f)* *p*

Vb. *mf* *mp* *f* *mp*

motor off

**F** senza vibrato

43

Fl. *pp* *p* *mp* *pp* *mf* *p* *mp*

Vb. *pp* *p*

Ped. \_\_\_\_\_

47

Fl. *f* *mp* *p* *mf* *p* *f* *p* *mf*

Vb. *mf* *p*

Ped. \_\_\_\_\_

mallet 4 to cord mallet

52

Fl. *pp* *mp* *mf* *pp* *f* *f*

Vb. *pp* *f*

Ped. \_\_\_\_\_

con vibrato

**G**

57

Fl. *mp* *ff* *mf* *mp* *p* *f*

Vb. *mp* *mf* *p* *mf*

Ped. \_\_\_\_\_

61

Fl. *mp* *mf* *p* *ppp* *pp* *mp*

Vb. *f* *p* *ppp* *pp* *mp*

mallet 4 to hard mallet

Red. Red. Red.

64

Fl. *mf* *mp* *pp* (*f*)

Vb. *mf* *mp* *mp*

mallet 4 to cord mallet

Red.

H

68

Fl. *mf* (*senza dim.*)

Vb. *p* *f*

Red.

ALEXANDER MACHOVER-SCOTT

# Riven

for Four Solo Voices  
and String Quintet





# INSTRUMENTATION

1 SOPRANO

1 ALTO

1 TENOR

1 BASS

2 VIOLINS

1 VIOLA

1 VIOLONCELLO

1 CONTRABASS

## PERFORMANCE NOTE

### GENERAL

Accidentals apply to the whole bar, but cautionaries are nonetheless often provided.

The symbol  $\wedge$  denotes a short pause. The symbol  $\frown$  denotes a medium-length pause. The symbol  $\dashv$  denotes a long pause.

Except where otherwise specified, irregular bars are treated as follows:

Where the prevailing metre is compound (i.e. sections C and F according to the rehearsal figures), irregular bars are formed by the subtraction of a quaver from the end of the bar, and so are grouped as one or more beats of a dotted crotchet, concluding with a beat of a crotchet.

Where the prevailing metre is simple (i.e. all other sections), irregular bars are formed by the addition of a quaver to the end of the bar, and so are grouped as one or more beats of a crotchet, concluding with a beat of a dotted crotchet.

Irregular bars not according with this pattern have their beat groupings indicated above the stave.

### VOICES

Where a note is succeeded by a rest, any final consonant(s) should always be placed on the rest. In cases where a syllable ends with a short note-value connected by a tie (such

as in the Alto part in b.118), the final note does not indicate consonant placement, and should be held for its full duration.

Commas in parentheses indicate suggested breathing places in particularly long phrases. As few as possible of these breathing places should be used, and the breaths in such places should be taken as unobtrusively as possible. These commas do not indicate a break in the phrase. (The preceding does not apply to the comma at the end of b.215, which is not in parentheses, and denotes a momentary gap between the beats, as usual.)

The expression instruction '*intenso*' suggests a dramatic, somewhat hushed delivery that is intense and emphatic despite the relatively low dynamic level. Consonants should be particularly strongly enunciated, but the dynamic level of voiced sounds should still accord with the dynamic indicated in the score. The vocal timbre is likely to be less refined (perhaps even becoming coarse), with a slightly more speech-like quality, but the notated pitches should still be adhered to.

It is not recommended that the Alto part be performed by a countertenor voice, as it was not written with this voice type in mind. If a countertenor voice is being considered, caution is advised, particularly with regard to whether the timbral qualities of the lower register are suitable to the part.

## STRINGS

All *tremolos* are unmeasured.

Some passages encompassed by a slur (and some individual notes) may be too long to play in one bowstroke. If the bow must be changed other than where indicated, this should be accomplished as seamlessly as possible.

The following points regard the ricochet gesture first occurring at b.132, and indicated by the technical instruction '*ric.*':

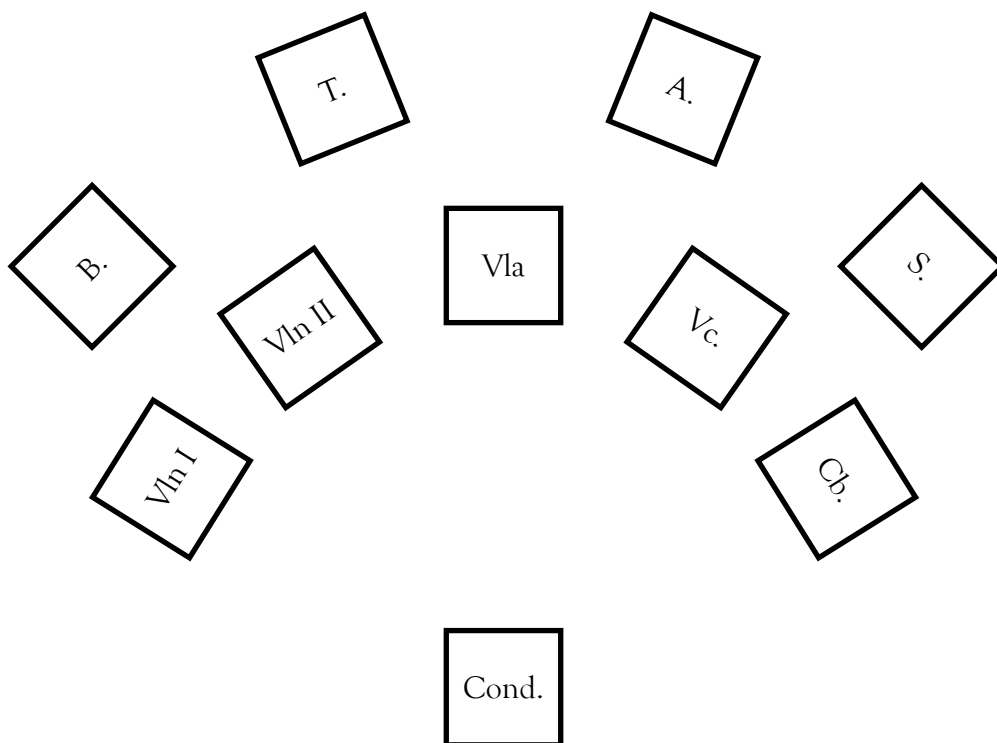
The rhythm of each ricochet is liable to be somewhat imprecise. What is most important is firstly to preserve the effect – the instruments together creating a 'clattering' rhythm that is largely unsynchronised between instruments – and secondly to ensure that each ricochet begins and ends at the correct moments, especially where these moments are synchronised with other instruments. Of secondary importance is the number of notes in each ricochet. The rhythms within each ricochet (i.e. aside from its start and end points) are of tertiary importance and may be interpreted more flexibly if necessary.

In some places it may be necessary to use *spiccato* bowing, rather than a true ricochet. In such cases, the effect of ricochet bowing should be emulated as closely as possible.

A small, parenthesised, stemless notehead indicates the destination of a *glissando*, and thereby its speed. These parenthesised notes should not themselves be played; the sound must stop upon the rest. (In the rare instance that the *glissando* is not immediately followed by a rest, it should continue until the onset of the following note, without settling on the parenthesised note.)

Because notes after the first in each ricochet *glissando* are indicated by headless stems, the notation to indicate *glissando* duration is modified here, in order to avoid visual confusion. In instances of this gesture, all note-values that extend the duration of a *glissando* beyond its first note but are not rearticulated are shown as small, parenthesised notes above the staff, whereas all headless stems are to be rearticulated. (Elsewhere in the piece, the normal convention is followed: note-values that extend the duration of a *glissando* are shown in the aforementioned manner only if they are of a minim's duration or longer; shorter note-values are shown as headless stems within the staff.)

## SUGGESTED POSITIONING



# TEXT

## MYTH OF THE BLAZE

night–sky      bird’s      world  
to know    to know      in my life to know

what I have said to myself

the dark to escape in brilliant highways  
of the night sky, finally  
why had they not

killed me why did they fire that warning  
wounding cannon only the one round I hold a  
superstition

because of this    lost to be lost    Wyatt’s  
lyric and Rezi’s  
running thru my mind  
in the destroyed (and guilty) Theatre  
of the War    I’d cried  
and remembered  
boyhood    degradation      other  
degradations and this crime I will not recover  
from that landscape it will be in my mind  
it will fill my mind and this is horrible  
death bed      pavement      the secret taste  
of being lost

dead

clown in the birds’  
world what names  
(but my name)

and my love’s name to speak

into the eyes  
of the Tyger      blaze

of changes...‘named

the animals’      name

and name the vigorous dusty strong

animals gather  
under the joists    the boards    older

than they giving  
them darkness the gifted

dark tho names the names the 'little'

adventurous  
words a mountain the cliff

a wave are taxonomy I believe

in the world

because it is  
impossible the shack

on the coast

under the eaves  
the rain barrel flooding

in the weather and no lights  
across rough water illumined  
as tho the narrow

end of the funnel what are the names  
of the Tyger to speak  
to the eyes

of the Tiger blaze  
of the tiger who moves in the forest leaving

no scent

but the pine needles' his eyes blink

quick  
in the shack  
in the knife-cut  
and the opaque

white

bread each side of the knife

— George Oppen

'Myth of the Blaze' by George Oppen, from NEW COLLECTED POEMS, copyright ©1975 by George Oppen. Reprinted by permission of New Directions Publishing Corp.

Score in C

Duration approx. 27 mins



# RIVEN

Alexander Machover-Scott

**A1** Moderato risoluto ♩ ≈ 84

Soprano  
Alto  
Tenor  
Bass

Violin I  
Violin II  
Viola  
Violoncello  
Contrabasso

Violin I  
Violin II  
Viola  
Vc.  
Cb.



9  $\frac{2}{4}$

Vln I *f*

Vln II *f sub.* *mp* *f*

Vla *f* *mf* *f* *mp*

Vc.

Cb. *ff* *f* *mp* *mf*



13  $\frac{2}{4}$

Vln I *mf*

Vln II *mp* *f* *mp* *f* *mp*

Vla *f* *mp* *mf*

Vc. *ff*

Cb. *f*

17 A2

Vln I  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$

Vln II  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$

Vla  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$

Vc.  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$

Cb.  $\frac{3}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$

*ff* *f* *p* *mp* *ff*

*ff* *f* *p* *mf > mp* *ff*

*ff* *f* *p* *mp* *ff*

*f* *ff* *f* *p* *mp* *ff*

*ff* *f* *p*



23  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vln I  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vln II  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vla  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vc.  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Cb.  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

*f* *mf* *f* *mp* *f*

*mp* *f* *mp* *f*

*f* *mf* *f* *mp*

*mp* *f* *mf*

*ff* *f* *mp* *mf*

Musical score for measures 27-30. The score is for five instruments: Vln I, Vln II, Vla, Vc., and Cb. The key signature has one flat (B-flat). The time signature changes from 2/4 to 3/4. Measure 27 starts with a treble clef and a key signature of one flat. Measure 28 has a treble clef and a key signature of one flat. Measure 29 has a treble clef and a key signature of one flat. Measure 30 has a treble clef and a key signature of one flat. Dynamics include *mp*, *ff*, *f*, and *mf*. Fingerings are indicated with numbers 3, 5, and 7. A double bar line is present at the end of measure 30.

Musical score for measures 31-34. The score is for five instruments: Vln I, Vln II, Vla, Vc., and Cb. The key signature has one flat (B-flat). The time signature changes from 3/4 to 2/4. Measure 31 starts with a treble clef and a key signature of one flat. Measure 32 has a treble clef and a key signature of one flat. Measure 33 has a treble clef and a key signature of one flat. Measure 34 has a treble clef and a key signature of one flat. Dynamics include *f*, *mp*, *mf*, and *f*. Fingerings are indicated with numbers 3 and 5. A double bar line is present at the end of measure 34.

35  $\frac{7}{8}$   $\frac{2}{4}$   $\frac{7}{8}$   $\frac{2}{4}$

Vln I *f*  $\rightarrow$  *mp* *f*  $\rightarrow$  *mf*  $\rightarrow$  *ff*

Vln II *f*  $\rightarrow$  *mf* *f*  $\rightarrow$  *mp*  $\rightarrow$  *ff*

Vla *f*  $\rightarrow$  *mf* *f*  $\rightarrow$  *mp*  $\rightarrow$  *ff*

Vc. *f*  $\rightarrow$  *mp* *f*  $\rightarrow$  *mp*  $\rightarrow$  *ff*

Cb. *f*  $\rightarrow$  *mp* *f*  $\rightarrow$  *mp*  $\rightarrow$  *ff*



39  $\frac{2}{4}$   $\frac{4}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{7}{8}$   $\frac{2}{4}$

A3

Vln I *pp*  $\rightarrow$  *ff* *p*  $\rightarrow$  *mp*

Vln II *pp*  $\rightarrow$  *ff*  $\rightarrow$  *pp* *p*  $\rightarrow$  *mp*

Vla *pp*  $\rightarrow$  *ff* *p*  $\rightarrow$  *mp*

Vc. *pp* *p*  $\rightarrow$  *mp*  $\rightarrow$  *mf*

Cb. *pp*  $\rightarrow$  *ff* *p*  $\rightarrow$  *mp*

45  $\frac{2}{4}$   $\frac{5}{8}$   $\frac{4}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{7}{8}$

Vln I *mf* *mp* *mf* *mp* *mf* *f* *mp*

Vln II *mf* *mp* *mf* *mp*

Vla *mf* *mp* *mf* *mp*

Vc. *mp* *mf* *f* *mp*

Cb. *mf* *mp* *mf* *mp*

**A4** Adagio lambente  $\text{♩} \approx 66$

51  $\frac{7}{8}$   $\frac{2}{4}$  *f*

S. night—

A. *mp* *mf* night... nigh...

T. *mf* nigh...

B. *mp* *mf* nigh...

**A4** Adagio lambente  $\text{♩} \approx 66$

$\frac{7}{8}$   $\frac{2}{4}$

Vla *f* *pp* *p*

Vc. *f* *p* *mp*

Cb. *f* *p* *mp*

56

S. *mp sub.* sky

A. *f* *f* *mp sub.* nigh... night— sky

T. *f* *mp sub.* night— sky

B. *f* *mp sub.* night— sky

Vln I *p* *mp*

Vln II *p* *mp*

Vla *mp* *f* *p* *mf* *mp*

Vc. *mf* *f* *p* *mp*

Cb. *mf* *f* *mp*

60

S. *mp* 3 *mf* *pp* *mp*

A. *mp* 3 *mf* *pp* *mp*

Vln I *mf* *mp* *p*

Vln II *mf* *mp* *p*

Vla 3 *mf* *pp* *mp*

Vc. *mf* *mp* *mf* *mf* *pp*

Cb. *mf* *ppizz.* *(mf)*

bird's

bird's

65

S. *f* *mf*

A. *f* *mf*

Vln I *f* *mf*

Vln II *f* *mf*

Vla *p* *mp* *pp* *f* *mp* *f* *mp* *mf*

Vc. *mp* *pp* *mp* *f* *mf* *f* *mp*

Cb. *arco* *mp* *pp* *ff* *f* *mp*

world

world

69  $\frac{3}{4}$   $\frac{7}{8}$   $\frac{2}{4}$   $\frac{7}{8}$

Vln I *ff*

Vln II *ff*

Vla *f mp < f > mp < f > mf ff*

Vc. *f mp < f > mp mf f ff*

Cb. *f mp ff f ff*

73  $\frac{5}{8}$   $\frac{2}{4}$   $\frac{7}{8}$   $\frac{2}{4}$   $\frac{7}{8}$   $\frac{5}{8}$

S. *p* to know

A. *p mp* to know

T. *mp* to know

Vln II *p mp*

Vla *mf > pp mp*

Vc. *mf > p mp p*

Cb. *mf > p mp*

A5



78 **15/8** **3/8** **3/4** **7/8** **4/4**

T. *p* *f non dim.*  
in my life to know

B. *p* *f non dim.*  
in my life to know

Vln I *pp* *mf*

Vln II *mf* *pp* *mf*

Vla *mf* *pp* *mf*

Vc. *mf* *mp*



83 **4/4** **15/8** **4/4** **7/8** **3/4** **2/4**

B. *ff* *mf*  
what I have said to my - self

Vln I *pp* *f* *pp* *f* *pp*

Vln II *pp* *f* *ff* *pp* *mf*

Vla *pp* *f* *pp* *f* *mf*

Vc. *pp* *f* *pp* *ff* *pp*

Cb. *pp* *f* *pp* *f* *mf*

Tempo primo (♩ ≈ 84)

89  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{8}$   $\frac{2}{4}$  11  $\frac{7}{8}$

Vln I *f* *mf* *f* *mp*

Vln II *ff* *mp* *f* *mp* *f*

Vla *ff* *mp* *f* *mf*

Vc. *f* *mf*

Cb. *ff* *f* *mp* *ff*



93  $\frac{7}{8}$   $\frac{3}{4}$  **B1** Adagio lambente, poco meno mosso (♩ ≈ 60)  $\frac{7}{8}$  *mp*  $\frac{3}{4}$

the

Vln I *f* *mp* *ff*

Vln II *mf* *ff* *mp*

Vla *ff* *mp*

Vc. *ff* *mp* *p* *mp*

Cb. *f* *ff* *mp*

97  $\frac{3}{4}$   $\frac{2}{4}$

S. *mp* *mf* *p* bril-li-ant high - ways

T. *mp* *mf* *p* the dark to e - scape in

B. *mp* *mf* *p* dark to e - scape in

Vln I *mp* *p* *pp*

Vln II *p* *mp* *pp*

Vla *p* *mp* *p* *mp* *pp*

Vc. *p* *mf* pizz.

Cb. *p* *mp* *pp*

101  $\frac{5}{8}$   $\frac{2}{4}$   $\frac{7}{8}$   $\frac{2}{4}$  *mf*

S. of the nigh...

Vln I *pp* *mp*

Vln II *pp* *mf* *mp*

Vla *pp* *mf* *pp* *mp* *pp* *mp*

Vc. arco *pp* *mf* *pp* *mf* *pp* *mp* *pp* *mf*

Cb. *pp* *mf* *pp* *mf*

107 *mp*  $\frac{3}{4}$  *mf* *mp sub.*  $\frac{2}{4}$  *f*  $\frac{3}{4}$   $\frac{4}{4}$

S. *mp*  $\frac{3}{4}$  *mf* *mp sub.*  $\frac{2}{4}$  *f*  $\frac{3}{4}$   $\frac{4}{4}$

A. *mp*  $\frac{3}{4}$  *mf* *mp sub.*  $\frac{2}{4}$  *f*  $\frac{3}{4}$   $\frac{4}{4}$

T. *mf*  $\frac{3}{4}$  *mp sub.*  $\frac{2}{4}$  *f*  $\frac{3}{4}$   $\frac{4}{4}$

B. *mf*  $\frac{3}{4}$  *mp sub.*  $\frac{2}{4}$  *f*  $\frac{3}{4}$   $\frac{4}{4}$

Vln I  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{4}{4}$

Vla *mp* *mf* *f* *mp* *mf* *ff* *f*

Vc. *p* *f* *mp sub.* *mf* *f*

Cb. *mp* *mf* *f* *mp* *mf* *f*

the night sky,  
nigh... nigh... night sky,  
nigh... night sky,  
the nigh... the night sky,

112 **B3**  $\frac{4}{4}$  *p*  $\frac{3}{4}$   $\frac{7}{8}$   $\frac{3}{4}$  *mf*  $\frac{5}{8}$  *f*  $\frac{5}{8}$   $\frac{7}{8}$

A. *p*  $\frac{3}{4}$   $\frac{7}{8}$   $\frac{3}{4}$  *mf*  $\frac{5}{8}$  *f*  $\frac{5}{8}$   $\frac{7}{8}$

Vln I  $\frac{4}{4}$   $\frac{3}{4}$   $\frac{7}{8}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{7}{8}$

Vln II  $\frac{4}{4}$   $\frac{3}{4}$   $\frac{7}{8}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{7}{8}$

Vla  $\frac{4}{4}$   $\frac{3}{4}$   $\frac{7}{8}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{7}{8}$

fi - - nal-ly why

**B4** Poco più mosso  $\text{♩} \approx 66$

117 *mp*  $\frac{7}{8}$   $\frac{3}{4}$   $\frac{2}{4}$  *f*  $\frac{7}{8}$

A. had they not killed me

T. why

*f*  $\frac{7}{8}$

**B4** Poco più mosso  $\text{♩} \approx 66$

Vln I *mp*  $\frac{7}{8}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{7}{8}$

Vln II *mf* *mp* *p* *ff* *mf*

Vla *mf* *mp* *p* *f*

Vc. *mp* *p* *f* *mf* *mp*

Cb. *f*

122 *mp*  $\frac{2}{4}$  *mf* *f*  $\frac{2}{4}$

T. did they fire that warn - ing

Vln I *mf* *mp* *f*

Vln II *mp* *mf* *mp* *f*

Vla *mp* *mf* *mp* *f*

Vc. *mf* *mp*

Cb. *mp* *mf* *ff*

126 *ff*  $\frac{2}{4}$  *f*  $\frac{3}{4}$  *ff* 15

T. wound - ing - can - non - on - ly the one

Vln I *f* *ff*

Vln II *f* *ff* *f* *ff* *f*

Vla *f* *ff* *f* *ff*

Vc. *fp* *f* *ff* *f* *ff*

Cb. *f* *ff*

130 *f*  $\frac{7}{8}$   $\frac{4}{4}$   $\frac{6}{8}$

T. round

B. I hold a su - per - sti - tion

Vln I *ff* *f* *ff* *mf* *f*

Vln II *ff* *f* *mf* *f*

Vla *f* *ff* *mf* *f*

Vc. *mf* *ff* *mf* *f*

Cb. *mf* *ff* *f*

16 **C1** Andante scorrevole ♩ ≈ 48 (♩ ≈ 72)

134

B. *mf* *f*

**C1** Andante scorrevole ♩ ≈ 48 (♩ ≈ 72)

be - - - cause

Vln I (nat.) *mf* > *mp* *mf*

Vln II (nat.) *mf* > *mp* *f* *mp*

Vla (nat.) *f* > *p* *f* *mf*

Vc. (nat.) *f* > *p* *mf* > *mp* *mf*

Cb. *f* *mf* *p* *f* *mp*

138

S. *fp*

lost

B. *mf*

of this

Vln I *mf* *f*

Vln II *f* *mf* *mp* *mf* *f*

Vla *f* *mp* *p* *mf* *f*

Vc. *mp* *f*

Cb. *f* *mp* *mf* *f*

141 *f* *mp* 150 160 17

S. *f* *mp*

A. *mf* *f* *mf* *mp* *p*  
to be lost

Vln I *mf*

Vln II *mf*

Vla *mf*

Vc. *mf* *f*

Cb. *mf*

145 *poco rit.* 150 160 170

Vln I *mp* *mf* *mp* *p* *mf* *p*

Vln II *mp*

Vla *mp* *p* *mf* *p*

Vc. *>mf* *mp* *mf* *mp* *p* *mf* *p*

Cb. *f* *mf* *mp* *mf* *p*



18 **C2** Più mosso ♩ ≈ 60

S. 150 *p* Wy - att's ly - ric and Re - zis

Vln I *p* *pp* *p* *pp*

Vln II *p* *pp* *p* *pp* *p*

Vla *p*

Vc. *p*



S. 154 *mp* *mf* run - ning thru

Vln I *p* *mf* *mp*

Vln II *p* *pp* *p* *mp*

Vla (*p*) *pp* *mf*

Vc. (*p*) *mf*

Cb. *p* *mf*

158 *mp* *mf* *p sub.*  $\square$   $\square$   $\triangle$

S. *my mind*

Vln I *p* *mf* *p* *mf* *mp* *p*

Vln II *> p* *mf* *mp* *mf* *mp* *p*

Vla *> pp* *p* *mf* *(mf)* *mp* *p*

Vc. *p* *mf* *p* *mf* *mp* *p*

Cb. *> p* *mf* *p* *mf* *mp* *p*

**C3** 163 *mf* *f* *mf*

S. *in the de - stroyed Thea - tre of the*

A. *in the de - stroyed Thea - tre of the*

B. *(and guilt - y) Thea - tre of the*

Vln I *f* *mp*

Vln II *f* *mp*

Vla *mf*

Vc. *mf*

Cb. *ff*

167 *ff*

S. War

A. War

B. War

Vln I *f* *mf* *ff*

Vln II *f* *mf* *ff* *f* *ff*

Vla *mp* *ff*

Vc. *mp* *f* *mf* *ff*

Cb. *mf* *ff*

171 **C4** **Meno mosso** ♩ ≈ 48 *mf* *mp* *f*

T. I'd cried and re -

**C4** **Meno mosso** ♩ ≈ 48

Vln I *mf* *mp*

Vln II *mf* *p* *mp* *f*

Vla *mf* *mp* *p*

Vc. *mf* *mp* *f*

175 *mp* *f*

T. mem-bered boy-hood de - gra - da - tion

Vln I *f* > *pp* < *mp* > *pp* *f*

Vln II *pp* < *mp* > *pp* < *mp* > *pp* *mp* *f*

Vla *f* > *mp* > *pp* < *mp* > *p* *mp* *p* *f*

Vc. *pp* < *mp* > *p* *mp* *f*

Cb. *f* > *mp* > *p* *f*



180 *mf* *p*

Vln I *mf* *p*

Vln II *mp* *mf* *p*

Vla *mf* *mp* *p*

Vc. *mf* *mp* *p*

Cb. *mf* *mp* *p*

183 **C5**

B. *p* *mf* *f*  
o - ther de - - - - -

Vln I *f* *p* *mf* *p* *mf* *f* *mf*

Vln II *mf* *mp* *f* *mp* *f*

Vla *mf* *mp* *mf*

Vc. *f* *p* *mf* *mp* *mf*

Cb. *f* pizz.

186 **C5**

B. *mf* *mp*  
gra - da - tions and

Vln I *mf* *p* *mf* *p* *f* *mp* *pp*

Vln II *mp* *mf* *mp* *f* *pp* *mf*

Vla *mp* *mf* *f* *pp* *mf* *pp*

Vc. *mp* *f* *mp* *mf* *pp*

Cb. *mf* *f* *pp*

arco

190 *ff* *mf* *ff*

A. *ff* *mf* *ff*

B. *ff*

Vln I *mf* *f* *ff* *f* *ff*

Vln II *f* *ff* *(ff)*

Vla *mf* *f* *mf* *ff*

Vc. *f* *mf* *ff*

Cb. *mf* *mf* *ff*

will not

this crime

194 *f* *p* *f* *mp*

A. *f* *p* *f* *mp*

Vln I *f* *mp* *f*

Vln II *f* *mp* *f*

Vla *f* *mp* *f*

Vc. *f* *mp* *ff*

Cb. *ff*

re - co - ver from that land - scape it will

C6

C6

199

S. *mf* *ff*  
it will fill my

A. *ff*  
be in my mind fill my

Vln I *mp* *f*

Vln II

Vla *mp* *f*

Vc. *mf* *f*

Cb. *f*

201

S. *ff*  
mind

A. *f* *intenso* *p sub.*  
mind and this is hor - ri - ble

Vln I *ff*

Vln II *ff*

Vla *ff*

Vc. *ff*

Cb. *ff*

**D1** Tempo primo (♩ ≈ 84)

204 *p* **4/4** **2/4** **7/8** *mp* **3/4** **2/2** *pp*

S. death bed pave-ment the

A. *p* *mp*  
death bed pave-ment

T. *p* *mp*  
death bed pave-ment

B. *p* *mp*  
death bed pave-ment

**D1** Tempo primo (♩ ≈ 84)

**4/4** ric. **2/4** **7/8** **3/4** (nat.) **2/2**

Vln I *p* *mp* *pp*

Vln II ric. *p* (nat.) *mp* *pp*

Vla ric. *p* (nat.) *mp* *pp*

Vc. ric. *p* (nat.) *pp*

Cb. pizz. *p* *mf*



209

S. *pp* *pp sub.* *p*

A. *pp* *pp sub.*

T. *p* *pp sub.*

Vln I *mf* *pp*

Vln II *mf* *pp*

Vla *pp sub.*

Vc. *pp sub.*

se - cret taste of

the se - cret taste

the se - cret taste

3/4 2/2 5/4

214

S. *mp* *p*

Vln I *mp* *p*

Vln II *mp* *p*

Vla *mp*

Vc. *mp*

Cb. *mp*

be - ing lost

ric. (nat.)

ric. (nat.)

ric. (pizz.)

5/4 3/4 2/2

218 *pp* rit.  $\frac{5}{4}$   $\frac{5}{8}$  D2 a tempo  $\frac{4}{4}$  27

S.  $\frac{5}{4}$   $\frac{5}{8}$  27

Vln I *p* rit. *pp* sul pont.  $\frac{5}{4}$   $\frac{5}{8}$  8<sup>va</sup> nat. *p* 3 3  $\frac{4}{4}$

Vln II *p* 3 3 3 3 3 *pp* sul pont.  $\frac{5}{4}$   $\frac{5}{8}$  8<sup>va</sup> nat. *p* 3 3  $\frac{4}{4}$

221  $\frac{4}{4}$  (8)  $\frac{3}{4}$

Vln I *mf* 3 3 3 *p* 3 3  $\frac{3}{4}$

Vln II (8) 3 3 3 3 3 *mf* *p*  $\frac{3}{4}$

Vla (nat.) *p* *pp*

Vc. (nat.) *p* 3 3 3 3  $\frac{3}{4}$

Cb. arco *p* 3 3 3  $\frac{3}{4}$

224  $\frac{3}{4}$  8  $\frac{3}{4}$  (h)  $\frac{5}{8}$

Vln I 3 3 3 *mf*  $\frac{3}{4}$   $\frac{5}{8}$

Vln II 3 3 3 3 3 *mf*  $\frac{3}{4}$   $\frac{5}{8}$

Vla *p* *mp* 3 3  $\frac{3}{4}$   $\frac{5}{8}$

Vc. *pp* *mp* *p* 3 3 3  $\frac{3}{4}$   $\frac{5}{8}$

Cb. *mp* 3 3 3  $\frac{3}{4}$   $\frac{5}{8}$

228

Vln I  $\frac{16}{8}$   $\frac{2}{4}$   $\frac{4}{4}$   $\frac{5}{4}$

Vln II

Vla

Vc.

Cb.

*mp* *mp* *f*

*mp* *mp* *f*

*f* *p*

*f*

*f*



D3

232

Vln I  $\frac{5}{4}$   $\frac{3}{4}$

Vln II

Vla

Vc.

Cb.

*mp* *mp*

*mf* *mp* *mf* *mp* *mf* *mp*

*p* *mf* *mp* *mf* *p* *mp*

*(f)* *mf* *mp* *mf* *p* *mp*

235 **4/4** **6/8** 29 **4/4**

Vln I *f*

Vln II *f*

Vla *mf*

Vc. *f* *mf* *f* *mp* *f* *mp* *mf*

Cb. *mf* *f* *mf* *f*



238 **4/4** **5/4** **3/4**

Vln I *mf*

Vln II *mf*

Vla *f* *mf* *f* *mp* *mf*

Vc. *f* *mf*

Cb. *mf*

**D4**

Musical score for measures 241-243. The score is for five instruments: Vln I, Vln II, Vla, Vc., and Cb. The time signature is 4/4. Measure 241 starts with a key signature change to one flat (B-flat). Measure 242 has a dynamic marking of *ff*. Measure 243 has a dynamic marking of *mf*. The Vln I part features a triplet of eighth notes in measure 241, followed by a triplet of eighth notes in measure 242, and a triplet of eighth notes in measure 243. The Vln II part has a triplet of eighth notes in measure 241 and a triplet of eighth notes in measure 243. The Vla part has a triplet of eighth notes in measure 241. The Vc. part has a triplet of eighth notes in measure 241 and a triplet of eighth notes in measure 243. The Cb. part has a triplet of eighth notes in measure 241 and a triplet of eighth notes in measure 243.



Musical score for measures 244-246. The score is for five instruments: Vln I, Vln II, Vla, Vc., and Cb. The time signature is 4/4. Measure 244 has a dynamic marking of *ff*. Measure 245 has a dynamic marking of *ff*. Measure 246 has a dynamic marking of *f*. The Vln I part has a triplet of eighth notes in measure 244, a triplet of eighth notes in measure 245, and a triplet of eighth notes in measure 246. The Vln II part has a triplet of eighth notes in measure 244 and a triplet of eighth notes in measure 245. The Vla part has a triplet of eighth notes in measure 244 and a triplet of eighth notes in measure 245. The Vc. part has a triplet of eighth notes in measure 244 and a triplet of eighth notes in measure 245. The Cb. part has a triplet of eighth notes in measure 244 and a triplet of eighth notes in measure 245.

247  $\frac{5}{4}$   $\frac{3}{4}$   $\frac{3}{4}$  31  $\frac{4}{4}$

Vln I *ff*

Vln II *ff*

Vla *ff*

Vc. *ff*

Cb. *ff*



249  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{5}{4}$

Vln I *fff*

Vln II *fff*

Vla *fff*

Vc. *fff*

Cb. *fff*

**E1** Adagio lambente ♩ ≈ 66

252

**5/4** **p**

**2/4** **10/8** **4/4**

S. dead

A. **p** dead

T. **p** dead

B. **p** dead

**E1** Adagio lambente ♩ ≈ 66

**5/4** **2/4** **10/8** **4/4**

Vln I *pp* *mp* *pp* *mp* *pp* *mp*

Vln II *pp* *mp* *pp* *mf* *pp*

Vla *pp* *mp* *pp*

Vc. *pp* *mf* *mp*

Cb. *pp* *mp* *mf* *mp*

257

S. *p* clown in the

A. *p* clown in the

Vln I ric. *mp* *p* *E2* sul tasto *pp*

Vln II ric. *mp* *p* pizz. *p*

Vla ric. *mp* *p* pizz. *p*

Vc. ric. *mp* *p* pizz. *p*

Cb. pizz. *mp* *p* *p*

260

S. *mf* birds' world.

A. *mf* birds' world.

Vln I *mf*

Vln II *mf*

Vla *mf*

Vc. *mf*

Cb. *mf*

2/4

mf

mf

mf

mf

mf

mf



263

S. *mp*  $\frac{2}{4}$   $\frac{4}{4}$  *mf*  $\frac{7}{8}$

A. *mp* *mf*  $\frac{7}{8}$

B. *mf* *mp* what names  $\frac{7}{8}$

Vln I *pp*  $\frac{2}{4}$   $\frac{4}{4}$  *mf* *mp*  $\frac{7}{8}$

Vln II *p* *mf* *mp*  $\frac{7}{8}$

Vla *p* *mf* *mp*  $\frac{7}{8}$

Vc. *p* *mf* *mp*  $\frac{7}{8}$

Cb. *p* *mf* *mp*  $\frac{7}{8}$

268

T. *mp*  $\frac{2}{4}$   $\frac{4}{4}$   $\frac{7}{8}$  (but \_\_\_\_\_)

Vc. *mp* *leggero*  $\frac{2}{4}$  *leggero*  $\frac{4}{4}$  (sim.)  $\frac{7}{8}$

271

T. my name)  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{7}{8}$

Vc.  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{7}{8}$

274  $\frac{15}{8}$   $\frac{4}{4}$   $\frac{3}{4}$   $\frac{4}{4}$  35

T. and my

B. *mp* and my

Vc.  $\frac{5}{8}$   $\frac{4}{4}$   $\frac{3}{4}$   $\frac{4}{4}$

277  $\frac{4}{4}$  *mf*  $\frac{5}{4}$

T. love's

B. *mf* love's

Vla.  $\frac{4}{4}$   $\frac{5}{4}$  *mf* *mp* *f*

Vc. *mf*

279 *f non dim.*  $\frac{7}{8}$   $\frac{2}{4}$  **E4**

T. name

B. *f non dim.* name to speak *mf*

Vla. *leggero*  $\frac{7}{8}$   $\frac{2}{4}$  *f* *mf* **E4**

Vc. *f* *mf*

281  $\frac{2}{4}$   $\frac{5}{4}$   $\frac{4}{4}$

B. in - to the

Vla. *leggero*  $\frac{2}{4}$   $\frac{5}{4}$  *leggero*  $\frac{4}{4}$  *f*

Vc. *f*



283  $\frac{4}{4}$  *mp sub.*  $\frac{5}{4}$  *mf < ff* *f*

B. eyes\_ of the Ty - ger

Vln I *pp < mp > pp* *mp* *f* *mf* *f* *mp*

Vln II *mp > pp* *mp* *f* *mf*

Vla. *pp* *mp* *pp < mp* *ff* *mp* *f* *mf*

Vc. *mp* *pp* *ff* *mp* *f* *mf*

Cb. *pp* *mp* *ff* *f*

E5

3/4

4/4

3/4

*f*

S.

A.

T.

B.

blaze

blaze

*mf*

blaze

*mf*

*ff*

blaze

3/4

E5

3/4

Vln I

Vln II

Vla

Vc.

Cb.

*f*

*mp*

*ff*

*pp*

*ff*

*mp*

*pp*

*ff*

*mp*

*ff*

*pp*

*mp*

*pp*

*pp*

*mp*

*ff*

*f*

*ff*

*mp*

*pp*

*mp*

*pp*

**E6** Tempo primo (♩ ≈ 84)

290 *ff* *più ff* *mp* **7/8** **4/4**

S. of chan - ges.....

A. *ff* *più ff*

T. *ff* *più ff*

B. *ff* *più ff*

**E6** Tempo primo (♩ ≈ 84)

**7/8** *mp* **4/4** *pizz.* *arco sul tasto* *pizz. (nat.)* *pizz.* *mp* *p* *mp* *p* *mp* *p*

Vln I *ff* *più ff* *mp* *pizz.* *arco sul tasto*

Vln II *mp* *pizz.* *arco sul tasto* *p*

Vla *ff* *più ff* *p* *pizz. (nat.)* *mp*

Vc. *ff* *più ff* *mp* *pizz.* *p*

Cb. *mp* *pizz.* *mp* *p*

294

A. *f* *mf* *7/8* *4/4*

Vln I arco sul tasto *p* *pp* *p* *mp* *7/8* *4/4*

Vln II pizz. (nat.) *pp* *p* *mp* *mf* *5* *3* *3* *3* *3*

Vla arco sul tasto *pp* pizz. (nat.) *mp* *mf* *5* *5* *5*

Vc. *mp* *mf*

Cb. *p* *mp* *mf*

297

A. *4/4* *3/4* *5/4* *3/4* *5/4*

the a-ni-mals'

Vln I *mf* *mp* *4/4* *3/4* *5/4* *3/4* *5/4*

Vln II arco *(mf)* *mp*

Vla arco *(mf)* *mp* *mf* *mp* *f*

Vc. arco *(mf)* *mp* *mf* *f*

Cb. arco *(mf)* *mp* *mf* *f*

301  $\frac{5}{4}$   $\frac{7}{8}$   $\frac{4}{4}$   $\frac{5}{8}$

A. *mf* name

T. *mf* name

Vln I *mf* *f*

Vln II *mf*

Vla *mf* *p*

Vc. *mp* 3

Cb. *mp* *mf*

304  $\frac{5}{8}$   $\frac{3}{4}$   $\frac{7}{8}$  *f non dim.*  $\frac{4}{4}$   $\frac{3}{4}$

A. and name the *f non dim.*

T. name the

Vln I *mp* *f*

Vln II *f* *mp* 3

Vla *f* *mp* *f*

Vc. *mf* *mp* *f*

Cb. *f* *ff* pizz. arco *f*

**E7**

309  $\frac{3}{4}$   $\frac{7}{8}$  *mp*  $\rightarrow$  *p*  $\frac{2}{4}$   $\frac{3}{4}$  *ff*  $\frac{4}{4}$   $\frac{2}{4}$

A. *vi-go-rous* dust - y strong—

T. *vi-go-rous* dust - y strong—

B. *vi-go-rous* dust - y strong

Vln I *ric.*  $\frac{3}{4}$   $\frac{7}{8}$  *(f)*  $\rightarrow$  *mp*  $\frac{2}{4}$  (nat.)  $\frac{3}{4}$  *pp*  $\rightarrow$  *ff*  $\frac{4}{4}$   $\frac{2}{4}$

Vln II *ric.*  $\frac{3}{4}$   $\frac{7}{8}$  *(f)*  $\rightarrow$  *p*  $\rightarrow$  *mp* (nat.)  $\frac{3}{4}$  *pp*  $\rightarrow$  *ff*  $\frac{4}{4}$   $\frac{2}{4}$

Vla *ric.*  $\frac{3}{4}$   $\frac{7}{8}$  *(f)*  $\rightarrow$  *mp*  $\rightarrow$  *p*  $\leftarrow$  *mp* (nat.)  $\frac{3}{4}$  *mf*  $\rightarrow$  *pp*  $\frac{4}{4}$   $\frac{2}{4}$

Vc. *ric.*  $\frac{3}{4}$   $\frac{7}{8}$  *(f)*  $\rightarrow$  *mf*  $\rightarrow$  *p*  $\leftarrow$  *mp* (nat.)  $\frac{3}{4}$  *mf*  $\rightarrow$  *pp*  $\frac{4}{4}$   $\frac{2}{4}$

Cb. *(f)*  $\rightarrow$  *p* (nat.)  $\frac{3}{4}$  *mf*  $\rightarrow$  *ff*  $\frac{4}{4}$   $\frac{2}{4}$



314  $\frac{2}{4}$  *f*  $\frac{3}{4}$  *> p*  $\frac{4}{4}$  *mp* ————— *f*

S. a - ni - mals ga - ther un - der the joists

A. *f* *> p* *mp* ————— *f*  
a - ni - mals ga - ther un - der the joists

T. *f* *> p* *f*  
a - ni - mals ga - ther the joists

B. *f* *mp* ————— *f*  
a - ni - mals un - der the joists

$\frac{2}{4}$   $\frac{3}{4}$   $\frac{4}{4}$  ric.

Vln I *mf* ————— *f*

Vln II *mf* ————— *f* *> p* *mf* *mf* *f*

Vla. *mf* ————— *f* *> p* *mf* *f* *mf*

Vc. *mf* ————— *f* *> p* *mf* *mp* *f*

Cb. *mf* ————— *mp* *< mf* *f*

**F1** Andante scorrevole ♩ ≈ 48 (♩ ≈ 72)

318

B. *p* the boards

Vln I *pizz.* *p*

Vln II *pizz.* *p*

Vla *pizz.* *p* arco poco sul pont. *pp* pizz. (nat.) *mp*

Vc. *pizz.* *p* arco poco sul pont. *pp*

Cb. poco sul pont. *pp* pizz. (nat.) *p*

322

B. *mp* old - er than

Vln I *arco* *mp*

Vln II *arco* *mp*

Vla *arco (nat.)* *mp*

Vc. *p* *mp*

Cb. *mp* *mf*

325  $\frac{9}{8}$  *mf*

B. they

Vln I *mf* pizz.  $\frac{9}{8}$   $\frac{6}{8}$

Vln II *mf* pizz.  $\frac{9}{8}$  *mp* arco poco sul pont.

Vla *mp* poco sul pont. *mf* pizz. (nat.) *p*

Vc. *mf* pizz. (nat.) *mp* arco poco sul pont. *mp* pizz. (nat.) *(mp)*

Cb. *mf*

328  $\frac{5}{8}$  *(mf)*  $\frac{6}{8}$  *mp*

B. giv - ing - them

Vln I *p*  $\frac{5}{8}$  arco *mf*  $\frac{6}{8}$

Vln II *pp* nat. *mf*

Vla *mf* arco (nat.) *mf*

Vc. *p* *mf*

Cb. *p* *f*

332

T. *mp* *mf*  
the gift - ed dark

B. *p*  
dark - - - - - ness

Vln I *mf*

Vln II *p* *mp* *mf*

Vla *p* *pp* *p* *mp* *mf*

Vc. arco (nat.) *p* *pp* *p* *mp* *p* *mf*

Cb. arco (nat.) *p* *mp* *mf*

336

S. *f* *mp*  
tho names

T. *mp*

Vln I *mp* *f* *mp* *mf*

Vln II *mp* *f* *p* *mf*

Vla *p* *mp* *mf* *mp* *mf*

Vc. *mp* *f* *mp* *mf*

Cb. *mp* *f* *mp* *f* *mf*

pizz. arco

340 **F3**

S. *f* *mp*  
the names the 'lit-tle'

Vln I *mp* *pp* *f* *mp* *pp*

Vln II *mp* *f* *pp* *mp* *pp*

Vla *mp* *pp* *f*

Vc. *mp* *f* *pp* *mf*

Cb. *mp* *pp* *f*



345 *f* *mf*

S. ad-ven-tu-rous words

Vln I *f* *pp* *f* *pp* *f* *pp*

Vln II *pp* *f* *pp* *f* *pp* *f* *pp*

Vla *f* *pp* *f* *pp* *f*

Vc. *ff* *pp* *f* *pp* *f*

Cb. *f* *pp* *f*

351 **F4** **6** **6** **6** **6** **2/4** **47**

A. *f* the

B. *f* a moun - tain

Vln I *pp* *f*

Vln II *f* *pp*

Vla *(f)* *pp*

Vc. *(f)*

Cb. *(f)* *ff* *leggero* *leggero* *f*

355 **2/4 (non dim.)** **6** **9**

A. cliff

T. *mp* *f* a wave

Vln I *f* *mp* *f*

Vln II *f* *mp* *f*

Vla *f* *mp* *f*

Vc. *ff* *mp* *f*

Cb. *leggero* *mf* *mp* *ff*

359

S. *ff* *mf*  
I \_\_\_\_\_ be - lieve \_\_\_\_\_

A. *f* *mf*  
are \_\_\_\_\_ tax - o - no - my \_\_\_\_\_

T. *f* *mf*  
are tax - o - no - my \_\_\_\_\_

B. *f* *mf*  
are \_\_\_\_\_ tax - o - no - my \_\_\_\_\_

Vln I *mf* ric.  
3

Vln II *mf* ric.  
3

Vla *mf* ric.  
3 3 3 3

Vc. *(f)*

Cb. *leggero* *mf* ric.  
3 5

F5

S. 362 *mp* in the

Vln I (nat.) *mp* *p* *mp* *p* *mp*

Vln II (nat.) *mf* *pp* *mp* *p* *mp*

Vla (nat.) *mp* *p* *mp* *pp*

Vc. *mf* *pp* *mp* *p*

Cb. *mf* *pizz.* *arco* *mp* *pp*



365

S. 365 world

Vln I *mf*

Vln II *pp* *mp* *p* *mf*

Vla *mp* *p* *mf*

Vc. *mp* *pp* *mf*

Cb. *mf* *pizz.* *arco* *mp* *pp* *mf*



368

S. *p* *mp* be - cause it is

Vln I *pp* *mp*

Vln II *pp* *mp* *pp*

Vla *p* *mp* *mp* *pp*

Vc. *p* *mp* *mp*

Cb. *p* *pp* *mp* *p* *pp*



372

S. *sotto voce* *pp* im - pos-si-ble

Vln I *pp* *mp* *pp* *mf* *pp*

Vln II *mf* *mp* *pp* *mp* *pp*

Vla *mf* *mp* *pp*

Vc. *pp* *mp* *pp* *mf* *pp*

Cb. *mf* *mp* *pp*

G1 Adagio lambente,  
poco meno mosso ♩ ≈ 60

377  $\frac{3}{4}$   $\frac{2}{4}$  *mp* the

Vln I *p*

Vln II *p* 3 *mp* *leggero*

Vla *p* *mp*

Vc. *p*

Cb. *p* 3



381  $\frac{2}{4}$  shack on the coast

Vln I *mf* ric. 5  $\frac{2}{4}$  (#) 2

Vln II *leggero*

Vla *leggero*

Vc. *mf* ric. 6

Cb. *mf*

384 7/8 2/4

B. un - der the

Vln I (nat.) *mp* *pp*

Vln II (*mp*) *mf* *p*

Vla (*mp*) *pp* *mf* *p* *leggero* *mp*

Vc. (nat.) *pp* *mp* *mf* *p* *mp*

Cb. *pp* *mp* *pp*



389 2/4 7/8 2/4

A. the

B. *mf* eaves

Vla *mf* *mp*

Vc. *leggero* *mf* *mp*

392 **G2**  $\frac{2}{4}$   $\frac{15}{8}$   $\frac{2}{4}$  53

A. *f* *mp*

rain bar - rel flood - - - ing

Vln I *p* *f* *mp* arco

Vln II *p* *f* *mp* arco

Vla *pp* *mf* *mp* nat.

Vc. *p* *f* *mp* arco

Cb. *p* *f* *mf*

397 **G3**  $\frac{2}{4}$   $\frac{15}{8}$   $\frac{3}{4}$  *mf*

A. in the

Vln I *f* *mf* *mp*

Vln II *ff* *f* *p* *mf*

Vla *f* *p* *mf*

Vc. *f* *p* *pp* *mf*

Cb. arco *(mf) < f* *mp* *mf*

403

A. wea - ther

T. and no lights a -

Vln I

Vln II

Vla

Vc.

Cb.

*f* *p* *sub.* *mp*

*f* *p* *mp*

*f* *p* *mp*

*f* *p* *mp*

*f* *p* *pp* *mp*

7/8 2/4

407

S. il - lu - mined

T. cross rough wa - ter il - lu - mined

Vln I

Vln II

Vla

Vc.

Cb.

*f* *pp* *ff* *f* *mp*

*mf* *pp* *ff* *pp*

*mf* *pp* *f* *pp* *f* *mp*

*p* *mf* *f* *pp* *ff* *f* *mp*

*f* *pp* *f* *mp*

3/4 2/4 3/4

412 **G4** **2/4** *leggero* **7/8** **2/4** 55

Vln I *p*

Vln II *p* *leggero*

416 *leggero* **2/4** **3/4** **2/4** **7/8**

Vln I *pp*

Vln II *pp*

419 **7/8** **2/4** *mf* **5/8** *f* **2/4** *p* **3/4**

S. as tho the nar - row

Vln I *mf* *pp* *mp* *pp* *f* *p*

Vln II *mf* *pp* *mp* *pp* *p*

Vla *mf* *pp* *mp* *pp* *f*

Vc. *mf* *pp* *f*

Cb. *pp* *mp* *pp*

425 **G5** Più mosso  $\approx 72$   $\frac{2}{4}$  *mp*  $\frac{3}{4}$

S.   
 end of the

Vln I   
 sul pont.   
 nat.   
 *pp* *mp*  $\frac{2}{4}$   $\frac{3}{4}$

Vln II   
 sul pont.   
 nat.   
 *pp* *mp*  $\frac{2}{4}$   $\frac{3}{4}$

Cb.   
 *mf*  $\frac{2}{4}$   $\frac{3}{4}$



430  $\frac{3}{4}$  *f*  $\frac{2}{4}$   $\frac{5}{8}$   $\frac{3}{4}$

S.   
 fun-nel

B.   
 what are the names

Vln I   
 *ff* *f* *mp* *mf*  $\frac{3}{4}$

Vln II   
 *f* *mp* *mf*  $\frac{3}{4}$

Vla   
 *f* *mp* *mf*  $\frac{3}{4}$

Vc.   
 *f* *mp* *mf*  $\frac{3}{4}$

Cb.   
 *ff* *f* *mf* *arco*  $\frac{3}{4}$

435 *f* *ff* *2f* 57

B. of the Ty - - - ger

Vln I *f* *mf* *2f*

Vln II *ff* *mp* *f* *mf*

Vla *f* *mf* *f* *mp* *f* *mp*

Vc. *ff* *mp* *f* *mf*

Cb. *ff* *f*

439 57

Vln I *f* *mf* *ff*

Vln II *f* *mp* *f* *mp* *f* *ff*

Vla *f* *mf* *f* *mp* *ff*

Vc. *ff*

Cb. *mp* *f* *mp* *ff* *f* *ff*



443  $\frac{7}{8}$   $\frac{2}{4}$   $\frac{7}{8}$

Vln I *f* *mf* *ff*

Vln II *mp* *ff*

Vla *f* *mf* *ff*

Vc. *mp* *f* *mf* *ff*

Cb. *(ff)* *f* *ff*



448  $\frac{7}{8}$   $\frac{2}{4}$   $\frac{3}{4}$

T. *mp* *leggero* *mf*

Vla *mp* *leggero* *mf*

Vc. *mp* *leggero* *mf*

G6 *Meno mosso*  $\text{♩} \approx 60$

to speak to the

451 *mf* **2/4** **3/4**

T. eyes

Vln I *pp* *mp* *pp* *mf* *pp* *f* *pp* *mp* *pp*

Vln II *pp* *mf* *pp* *mp* *pp* *f* *pp* *mf* *pp* *mp* *pp*

Vla *(mf)* *pp* *mp* *pp* *f* *mp*

Vc. *(mf)* *pp* *mp* *pp* *f* *pp*

Cb. *pp* *mp* *pp* *mp*

457 **3/4** **7/8** **2/4** **3/4**

T. of the Ti - - - ger - - - blaze

B. blaze

Vln I *mf* *mf*

Vln II *f* *mf*

Vla *mf* *f* *mf*

Vc. *mf* *f* *mf*

Cb. *mf* *f* *mf*

**G7**

462

S. *f* *ff* *fff* **3/4** **2/4**  
 blaze

A. *f* *ff* *fff*  
 blaze

T. *ff* *fff*

B. *ff* *fff*

Vln I *f* *pp* *ff* *pp* *ff* *pp* *ff* *fff* **3/4** **2/4**

Vln II *ff* *pp* *ff* *pp* *ff* *fff*

Vla *f* *ff* *pp* *ff* *fff*

Vc. *f* *ff* *pp* *ff* *pp*

Cb. *f* *pp* *ff* *fff*

Più mosso ♩ ≈ 72

467  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$  61  $\frac{3}{4}$

S. *f* *p sub.*

of the ti - ger

Vln I *p* *pp* *p*

Vln II *p* *pp* *p*

Vla *p*

Vc. *p*

Cb. *p* *pp*

H1 Tempo primo (♩ ≈ 84)

471  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{2}{2}$

Vln I *pp*

Vln II *tr* *mp* *pp*

Vla

Vc. *pp*

Cb. *tr* *tr* *tr*

(pp)

476

S.  $\frac{3}{4}$  *p*  $\frac{2}{2}$  who moves in the

Vln I *p*

Vln II *p*

Vla *pp* *p*

Vc. *p* *mp*

Cb. *p*

480

S. *mp*  $\frac{2}{4}$  *pp*  $\frac{3}{4}$   $\frac{2}{4}$  *p*  $\frac{3}{4}$  fo - rest leav - ing no scent

Vln I *mp* *pp* *mf* *ric.*  $\frac{3}{4}$

Vln II *mp* *mf* *ric.*  $\frac{3}{4}$

Vla *mp* *pp* *mf* *ric.*

Vc. *pp* *mf* *ric.*  $\frac{3}{4}$

Cb. *mp* *pp* *mf* *pizz.* *p*

487 **H2**  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{7}{8}$   $\frac{2}{4}$   $f$   $\frac{3}{4}$   $mp$  63

S. but \_\_\_\_\_ the pine nee - dles'

A.  $mp$  *intenso* his eyes—

Vln I  $\frac{3}{4}$  (nat.)  $\frac{2}{4}$   $\frac{7}{8}$   $\frac{2}{4}$   $\frac{3}{4}$  ric. 3 (b)  $f$

Vln II (nat.)  $mp$   $pp$   $mf$   $pp$   $f$  (f) 6

Vla (nat.)  $pp$   $mp$   $pp$   $f$  (f) 5

Vc. (nat.)  $mp$   $pp$   $f$

Cb.  $pp$   $f$  (f) ric.

493  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$  63

A. blink quick in

Vln I  $f$

Vln II (nat.)  $p$

Vla (nat.)  $f$  *leggero* 6  $p$  6 6

Vc.  $f$

Cb.  $f$

498

A.  $\frac{3}{4}$  *mf*  $\frac{2}{4}$

the shack

Vln II *leggero*  $\frac{3}{4}$  *mp*  $\frac{2}{4}$

Vla

Vc. *mf* *leggero*

Cb. (nat.) *leggero* *mf*



501

Vln I **H3** (nat.)  $\frac{7}{8}$   $\frac{2}{4}$  *mp* *p*

Vln II *mp* *p* *mp*

Vla *mp*

Vc. *mp* (*mp*)

Cb. *mp*

B. *mp* *f* *2/4* *3/4* *2/4*

in the knife-cut

Vln I *mf* *f* (*f*) *mf*

Vln II *p* *pp* *mf* *f* *ff* *mp*

Vla *p* *mp* *mf* *f* (*f*) *mf*

Vc. *p* *mf* *f* *ff* *mp* *f* *mf*

Cb. *f* *ff*



Vln I *mp* *2/4* *7/8* *2/4*

Vln II *f* *mp*

Vla *f* *mp* *p*

Vc. *mp*

Cb. *f* *mp* *f* *mf*



516

Vln I  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vln II  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vla  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Vc.  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

Cb.  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$

*mf* *p* *pp* *pp* *pp* *pp*

*mf* *mp* *pp* *pp* *pp* *pp*

*p* *mf* *p* *mp* *pp* *pp*



H4 **Meno mosso**  $\text{♩} \approx 72$

521

T.  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

and the o - paque

H4 **Meno mosso**  $\text{♩} \approx 72$

Vln I  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

*mp* *pp* *mf* *pp* *mp*

Vln II  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

*mp* *mf* *pp* *mf* *pp*

Vla  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

*mp* *pp* *mf* *pp*

Vc.  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

*mp* *mf* *pp* *mp*

Cb.  $\frac{2}{4}$   $\frac{3}{4}$   $\frac{6}{8}$   $\frac{2}{4}$

*mp* *arco* *mf* *pp*

*pizz.* *sul tasto*

526

3/4 7/8 2/4 3/4

Vln I *pp* *mf* *pp* *f*

Vln II *mp* *pp* *f*

Vla *mp* *pp* *f*

Vc. *pp*

Cb. *f*

532

H5

8/8 2/4 3/4 7/8

S. *mf* each

A. *mf* each side

T. *mp* white *p* bread *mf* each

B. *mf* each side

Vln I nat. *mp*

Vln II nat. *mp* tr *mf*

Vla nat. *mp*

Vc. nat. tr *mf*

Cb. pizz. (nat.) *mf*

536

rit.  $\frac{2}{4}$   $f$   $p$  sub.  $\frac{3}{4}$

S. side of the knife

A. of the knife

T. side of the knife

B. of the knife

Vln I  $mf$   $mf$   $ff$

Vln II  $ff$

Vla  $mf$   $f$

Vc.  $ff$

Cb. arco (nat.)  $f$   $ff$

**H6** Tempo primo (♩ ≈ 84)

542  $\frac{3}{4}$   $\frac{2}{4}$  69  $\frac{3}{4}$

Vln I *f* *mf*

Vln II *f* *mf* *f* *mp*

Vla *ff* *mp* *f*

Vc. *(ff)* *mp* *f* *mf*

Cb. *(ff)* *f* *mp*



546  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{2}{4}$

Vln I *f* *mf* *f* *mp*

Vln II *f* *mf* *f* *mp*

Vla *mf* *f* *mp* *f* *mf*

Vc. *f sub.*

Cb. *ff* *mf*

550

Vln I

Vln II

Vla

Vc.

Cb.

7/8

2/4

3/4

2/4

*f* *mf* *f* *mp* *f* *mp* *mp* *f* *mf* *ff* *mf*



554

Vln I

Vln II

Vla

Vc.

Cb.

2/4

3/4

7/8

3/4

*f* *mf* *ff* *mp* *f* *mp* *ff* *mp* *ff* *mp* *f* *ff* *mp* *mf*

558

Vln I  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$  ric. *mf*

Vln II *f* *mf* *ff* *f* ric. 3 *mf*

Vla *mf* *f* ric. 6 *mf* 6

Vc. *mf* *f* ric. 5 5 *mf*

Cb. *f* *mf*

Detailed description: This page of a musical score, numbered 558, features five staves for Vln I, Vln II, Vla, Vc., and Cb. The Vln I staff begins with a 3/4 time signature, followed by 2/4, 3/4, 2/4, and 3/4. It includes dynamics *mf* and *f*, and a *ric.* (ritardando) section. Vln II starts with a 3/4 time signature and includes dynamics *f*, *mf*, *ff*, and *f*, along with a *ric.* section and a triplet. Vla has a 3/4 time signature and includes dynamics *mf* and *f*, with a *ric.* section and a sextuplet. Vc. has a 3/4 time signature and includes dynamics *mf* and *f*, with a *ric.* section and quintuplets. Cb. has a 3/4 time signature and includes dynamics *f* and *mf*. The score is written in a key with one flat (B-flat) and includes various musical notations such as slurs, accents, and articulation marks.



ALEXANDER MACHOVER-SCOTT

# Darkshrikes

An Ancient Knowledge in the  
Shadow of the Bloodthorn  
for Bass Clarinet and Harpsichord





# INSTRUMENTATION

BASS CLARINET in B $\flat$   
HARPSICHORD

## PERFORMANCE NOTE

### GENERAL

The rhythms in this piece are notated unusually precisely. This is a product of the rhythmic processes underlying the music, and should not be taken to imply that the piece should be played in an overly mechanical manner. A little expressive flexibility in the rhythms and the pulse is preferable to strict metronomic accuracy, so long as the correct 'feel' of the rhythms is preserved, and the rhythms in different parts align in the correct places (and, conversely, do not align where they should not).

Accidentals apply to the whole bar, but cautionaries are nonetheless often provided.

### BASS CLARINET

Parenthesised commas are suggested breathing places. The pulse can be a little more flexible still in these places, in order to allow sufficient time to breathe, so long as the momentum of the music is not lost.

### HARPSICHORD

The performance instruction '*prevalentemente legato*' (as opposed to '*sempre legato*') indicates that *legato* playing should predominate throughout, but that this does not entail a completely unbroken line at all times. Phrase marks and *staccato* indications are provided in some places; elsewhere, the precise details of phrasing and articulation are left as a matter of interpretation, but a *legato* texture should, at least for the most part, be maintained.

The choice of stops is left to the player's discretion. Broadly speaking, the piece should begin loudly and grow gradually quieter, but there are many opportunities for smaller nuances within this trajectory.

Markings indicating which hand to use for particular notes are suggestions only.

Score in C

Duration approx. 8 mins 30 secs



# Darkshrikes

An Ancient Knowledge in the Shadow of the Bloodthorn  
for Bass Clarinet and Harpsichord

Alexander Machover-Scott

**Allegretto propulsivo** ♩ ≈ 90

Bass Clarinet in B $\flat$

Harpischord

*f* *prevalentemente legato* *ff*

B. Cl.

Hpsd

3 5 3 6 6

B. Cl.

Hpsd

5 5 5 5 6 6 6 6

B. Cl.

Hpsd

8 5 3 3 6 6 6 6

11

B. Cl.

Hpsd

*mp* *f*

13

B. Cl.

Hpsd

*mf* *mp*

16

B. Cl.

Hpsd

*ff* *f*

19

A

B. Cl.

Hpsd

*mp* *p sub.*

23

B. Cl.

Hpsd

*mf* *p* *mp*

r.h. l.h.

28

B. Cl.

Hpsd

*f*

**B**

33

B. Cl.

Hpsd

*mf*

36

B. Cl.

Hpsd

*f* *mf* *p* *f* *mf*

40

B. Cl.

Hpsd

Measures 40-43. B. Cl. part: 4/4, 2/4, 2/4, 3/4. Hpsd part: 3/4, 2/4, 2/4, 3/4. Includes triplets and slurs.

44

B. Cl.

Hpsd

*mp* *f* *mf*

Measures 44-48. B. Cl. part: 3/4, 3/4, 3/4, 3/4, 3/4. Hpsd part: 3/4, 3/4, 3/4, 3/4, 3/4. Includes triplets, slurs, and dynamic markings *mp*, *f*, *mf*.

49

B. Cl.

Hpsd

*mp* *f*

C

Measures 49-52. B. Cl. part: 3/4, 3/4, 3/4, 3/4. Hpsd part: 3/4, 3/4, 3/4, 3/4. Includes triplets, slurs, and dynamic markings *mp*, *f*. A section marker 'C' is present.

53

B. Cl.

Hpsd

*mp*

Measures 53-56. B. Cl. part: 2/4, 3/4, 2/4, 3/4. Hpsd part: 2/4, 3/4, 2/4, 3/4. Includes triplets, slurs, and dynamic marking *mp*.

58 D

B. Cl. *p* *mf* *mp* *f*

Hpsd

63

B. Cl. *mf* *f* *mf*

Hpsd

67

B. Cl. *ff*

Hpsd

71

B. Cl. *p* *f*

Hpsd



77 **E**

B. Cl.

Hpsd

80

B. Cl.

Hpsd

**F**

83

B. Cl.

Hpsd

86

B. Cl.

Hpsd

90

B. Cl.

Hpsd

*ff*

93

B. Cl.

Hpsd

*f*

97

B. Cl.

Hpsd

*mf*

*f*

101

B. Cl.

Hpsd

*f*

*p*

**G**

105

B. Cl. *mp* *pp* *p*

Hpsd

108

B. Cl. *mp*

Hpsd

112

B. Cl. *f* *pp* *f*

Hpsd

116

B. Cl. *mf* *f* *mp* *p* *pp*

Hpsd

120

B. Cl.

*mf*

Hpsd

125

B. Cl.

*f*

*mf*

Hpsd

129

B. Cl.

H

Hpsd

133

B. Cl.

*f*

*mp*

Hpsd

137 **I**

B. Cl. *pp* *p* *pp*

Hpsd

142

B. Cl. *p*

Hpsd

147 **J**

B. Cl. *f*

Hpsd

151

B. Cl. *mf* *f*

Hpsd

154

B. Cl.

Hpsd

*ff* *mf*

157

B. Cl.

Hpsd

*mp* *mf*

161

B. Cl.

Hpsd

*mf* *f* *mp* *mf*

166

B. Cl.

Hpsd

*mp*

170

B. Cl.

Hpsd

*p*

174 **K**

B. Cl.

Hpsd

*mf* *mp*

177

B. Cl.

Hpsd

180

B. Cl.

Hpsd

*mf*

184

B. Cl.

Hpsd

*mp*

3

6

3

6

187

B. Cl.

Hpsd

*f* *sub.p*

L

6

3

3

6

191

B. Cl.

Hpsd

*mf* *mp*

3

6

3

195

B. Cl.

Hpsd

*mf* *mf*

3

5

5



199

B. Cl.

Hpsd

*f* *mp* *p*

203

B. Cl.

Hpsd

*mp*

207

B. Cl.

Hpsd

*f* *mp* *mf*

211

B. Cl.

Hpsd

214

B. Cl.

Hpsd

*f* *mf*

217

B. Cl.

Hpsd

*f*

220

B. Cl.

Hpsd

*ff* *mf* *mp*

224 **M**

B. Cl.

Hpsd

*p*

228

B. Cl.

Hpsd

*pp*

232

B. Cl.

Hpsd

*mp* *f* *mf*

236

B. Cl.

Hpsd

*p* *ff* *mf* *f* *mp*

241

B. Cl.

Hpsd

*mf* *mp* *p*

245

B. Cl.

Hpsd

*mf* *p*

3 5 3 3

249

B. Cl.

Hpsd

*mp* *mf* *f*

3 3 3 3

254

B. Cl.

Hpsd

*mf*

3 3 3 3 3

259

B. Cl.

Hpsd

*f* *mp*

3 3 3 3 3

O

263

B. Cl. *p*

Hpsd

Measures 263-265. B. Cl. part starts with a piano (*p*) dynamic and features a series of five-note slurs. Hpsd part features chords and triplets.

266

B. Cl. *mp* *p* *mp*

Hpsd

Measures 266-268. B. Cl. part has dynamics of mezzo-piano (*mp*), piano (*p*), and mezzo-piano (*mp*). Hpsd part continues with chords and triplets.

269

B. Cl. *p*

Hpsd

Measures 269-272. B. Cl. part starts with a piano (*p*) dynamic. Hpsd part has rests in the first two measures.

273

B. Cl. *mp*

Hpsd

Measures 273-275. B. Cl. part starts with a mezzo-piano (*mp*) dynamic. Hpsd part features chords and triplets.

276 **P**

B. Cl. *p*

Hpsd

280

B. Cl. *pp* *p* *mp*

Hpsd

**Q**

284

B. Cl.

Hpsd

287

B. Cl. *mf* *mp* *p*

Hpsd

290

B. Cl.

Hpsd

6 6 6 6

5 5

292

B. Cl.

Hpsd

6 6 6 6 6 6 6 6

*pp mp mf p*

5 5 5 5

295

B. Cl.

Hpsd

6 6 6 6 6 6 6 6

*>pp mp mp pp*

5 5 5 5

297

B. Cl.

Hpsd

6 6 6 6 6 6 6 6

5 5