Distillation, Embodiment, Vulnerability:

Expressing and Transforming Emotional States in Musical Composition Through the Lens of the Composer-Performer

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Abstract

The aim of this research is to use my own lived experience as a composer-performer to create a compositional language for both voices and instruments, one which uses embodied vulnerability in order to connect to different emotional states.

This thesis consists of a portfolio of thirteen compositions composed between 2016 and 2022, with supporting commentary. The submitted works address two key areas of composition: composing quarter-tonally, and using breathing as a musical idea. These two areas, focusing on composing for both voices and instruments, are connected by a thread of the exploration of embodied vulnerability in music, influenced by my lived experience as a composer-performer. In supporting the submitted pieces, it also describes the two major influences behind my compositional approach, namely my experiences and abilities as a singer, and the development of my 'minimal' compositional approach.

The commentary, divided into the two key area sections, discusses the success of the research through the thirteen written pieces, as well as through the context of their rehearsals and performances. It aims to address two research questions: 'How does the composer-performer develop a personal compositional language for voices and instruments, drawing directly upon their own lived experience in embodied performing?', and 'how can the vulnerability experienced in solo performance be translated and foregrounded within music composition?'

Acknowledgements

It has been a long road to get here, and I have so many people to thank for it.

First and foremost, I'd like to dedicate this doctoral research project to my amazing and supportive family members – and especially to my dad, aunt Shula, and uncle Zeevi, without whom I would not be here today.

A massive thanks to Joe Cutler and Howard Skempton, my incredibly supportive and open-minded supervisors, who have taught and supported me since my masters and always made me feel safe to show them any music I wanted to write. Also to Michael Wolters, who was always a realistic ray of sunshine I could trust.

To my singing teacher, Wendy Nieper, who supported all the crazy music I wanted to perform, and helped me gain the technical skills to pull it off.

To my friends Michael Taplin, Angela Slater, and Jess Kelly – who were always there, even from afar, sometimes with snacks.

To Késia Decoté, my friend and collaborator, who encouraged me to keep writing for the toy piano, and even somehow managed to get me to write some solo piano music in the end!

To Nonclassical, and to Gabriel Prokofiev and Natalia Franklin Pierce in particular, for all the opportunities and support they gave as me part of the Associate Composer scheme, especially during the lockdowns.

And to my former teachers, Rob Fokkens and Peter Jaekel, each of whom helped and supported me when I needed it most. I will never forget it.

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Introduction

When deciding to pursue this doctoral research project, it was because I wanted to address a gap in knowledge I felt sorely needed to be filled, and felt uniquely placed, as both a composer and singer, to research – composing microtonally for both voices and instruments. This was something I knew would also necessitate creating a step-by-step method to teach singers to hear and sing microtones. As my research progressed and focused from microtones into quarter-tones, I also began to gradually focus my compositional approach into one that was more 'minimal' and distilled, supported by composing for the toy piano, seeing how effective this approach was in more closely connecting to emotions in music in a vulnerable and embodied way.

My unique point of view as a composer-performer, which inspired the original aims of this research, was also the one that inspired the next phase of my doctoral research, once I realised that I had no choice but to set quarter-tonal writing aside.

In following the embodied approach I had with quarter-tones, and how physical feelings such as the 'biting point' – the physical feeling created by singing quarter tones – connected in my head to emotional expression, I decided to build on my quarter-tonal composing and explore an even more embodied and vulnerable element in my music: using breathing as a musical idea. Inspired by my struggles with anxiety, especially during the COVID-19 lockdowns, I strived to use breathing to create an even deeper connection to emotions in my music. This was done by using different types of breathing elements to explore the psychological concept of Mimetic

Participation[1], in an attempt to compose pieces that connect their performers and audience to various emotional states and journeys.

In this thesis, I will discuss the two distinct layers of my compositional approach – my experiences and skills as a singer, and my 'minimal' compositional approach – as well as the two major focuses of my research: composing quarter-tonally for voice and instruments, and composing using breathing as a musical idea, connected by the ongoing thread of embodied and vulnerable composing. Using a select thirteen pieces from this seven and a half-year-long doctoral research project, I will explore the answers to my research questions, namely 'how to develop your own personal compositional language for voices and instruments, drawing upon lived experience in embodied performing?', and 'how can vulnerability experienced in solo performance be translated and foregrounded within music composition?'.

[1] Cox, A., Fülöp, R. (2010) "What rhymes with lungs?" When Music Speaks Louder than Words. In: Attinello, P., Halfyard J. K., Knights, V., eds. *Music, Sound, and Silence in Buffy the Vampire Slayer*. Farnham: Ashgate, pp. 62-65

Chapter 1: Connecting to Emotions through Embodied Vulnerability – My Compositional Approach and Ideology

1.1 Background

As a teenager, due to mental and emotional abuse, I struggled for several years with connecting to my own emotions. It was many years later though, in the summer of 2016, when I started therapy, which made me decide to enhance my connection to emotions through my own compositions.

1.2 Why Vulnerability?

From my own personal experience, I have learned that it was only through being vulnerable and allowing myself to feel past emotional pain I had been avoiding that I could get better. I had experienced, numerous times, the success of being able to release difficult emotions by connecting to and feeling them, and had decided to begin mirroring that cathartic approach in my own music.

As both a composer and performer, I know that vulnerability in performance cannot be faked. It must be 'lived'. As a singer with past acting experience, I treat each performance as 'living in character' – the emotions and expressions are all true for that character, and in the performance, especially one where difficult emotions must be expressed, the performer must embody that character and nobody else.

While the vulnerability itself cannot be faked, the space for it, however, can be created and facilitated. By writing pieces with a minimal and focused texture, where nothing distracts from the bare essentials of the expression required, a 'spotlight' on the performer/s is achieved where they have nowhere 'to hide', and have no choice but to connect to their 'character' and its emotions as part of the performance. This approach was largely inspired by performing Laurence Crane's *The Hall is Good*, from *Weirdi*[2] (which I will expand on in the next chapters), in order to compose pieces where the performers are set up so their performance is as embodied, vulnerable, and expressive as possible.

The reason for creating this space where only vulnerability could be performed was in order to attempt to connect more deeply to the audience. Through making my pieces more performative and 'actor-like', I aimed to make them more approachable to many audience members. My experience has shown me that audiences connected to my solo unaccompanied voice concerts relatively easily, despite them consisting entirely of contemporary repertoire, simply because of their performative and emotional / human elements – especially with the lack of accompaniment creating a vulnerable atmosphere that could perhaps be described as closer to theatre than music.

My hope and belief was that the audience would be able to connect much more easily and deeply to the emotional journey of the piece as they, like the performers, would have no distraction away from it – contrasting with the experience of listening to a much denser piece. My ultimate goal in composing pieces that connected to difficult emotions was to create a journey in the piece, throughout which both the performers

[2] Crane, L. (1992) Weirdi: for soprano, clarinet, cello and piano. No publisher listed.

and the audience would connect to these emotions, work through them, and then be able to release them, creating a sense of catharsis.

Chapter 2: The Importance of Being a Composer-Singer

2.1 Background

Being a performer, notably a soprano singer, has played a significant role in shaping my approach towards composing over the years. I have been a singer for as long as I can remember, which provided my only real musical experiences while growing up without a classical music education.

After commencing my classical music education, I found the standard classical singing repertoire enjoyable but not quite challenging enough. This changed during my undergraduate studies at Cardiff University, when I began to explore more and more contemporary repertoire, starting with pieces such as Judith Weir's *Don't Let That Horse*, for soprano and horn[3]. This further developed, during my Postgraduate Diploma studies, into performing excerpts of Laurence Crane's song cycle *Weirdi*[4]. Experiencing the focus expected of the singer by the extremely minimal material and texture of the piece, especially in the movement *The Hall is Good,* in which the singer only sings two different notes throughout, was very influential, and made a tremendous impact on me as both a singer and composer, though it took several years for that impact to truly manifest. I will further expand on this impact in chapter 4.

When I began my masters in Composition at Royal Birmingham Conservatoire, my teacher, Howard Skempton, convinced me to keep being a singer rather than only

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[3] Weir, J. (1990) *Don't Let That Horse, for soprano and horn*. Chester Music.
[4] Crane, L. (1992) Weirdi

focusing on composition. His reasoning was that, like the accordion was for him, being a singer would give me an added perspective that would, over time, make my music more unique and interesting, adding an extra dimension to it. I am very glad I followed his advice.

It was shortly after that time that I discovered that one of the lecturers at the Conservatoire, Dr Steve Halfyard, was actually an expert on Luciano Berio's *Sequenza III for Female Voice*[5], and had previously guided students in approaching and learning to perform the piece. I asked for her assistance, and then spent the next year and a half gradually learning to perform, and then basing an entire concert of solo unaccompanied voice pieces around, the Berio *Sequenza III*.

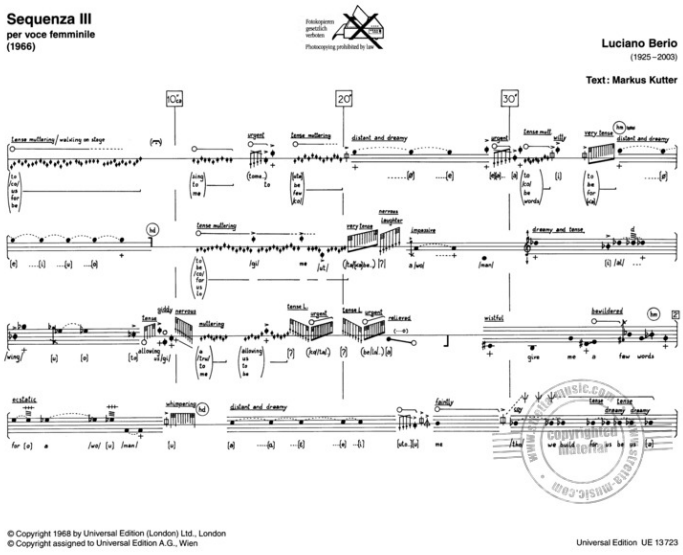
Described by Steven Connor as Berio's attempt to assimilate connotative elements of the voice, which *"now appear both as a kind of unmanageable human opulence and as an ugly, indeterminate kind of waste"*, Connor quotes Berio, stating that his aim in the piece was *"to assimilate and control not only every aspect of 'classical' singing, but also those aspects which, both because of acoustic considerations and because they disturbed the message, had necessarily been excluded from tonal music"*. To that, Connor adds his description of the vocal setting in the piece, writing that *"The voice that is heard is fragmented, not electronically, but through acts of verbal and phonetic analysis"*, and claiming that *"The ambivalence of the piece depends upon*

[5] Berio, L. (1966) Sequenza III per voce femminile. London: Universal Edition (London) Ltd.

the fact that the voice insists on its wild, unruly singularity, even and especially in the condition of its disintegration." [6]

Working on learning the many new extended techniques and approaches to performing the Sequenza, alongside my composing projects, for such an extended period of time really helped me gradually explore aspects of embodied performing on my own. This experience of specialising in and getting very comfortable with performing many pieces for solo unaccompanied voice made me connect much more to the physicality of performing, achieving expression through extended techniques – all of which were very physical to perform, and connecting to the vulnerability of performing alone, in silence. It brought me back to the experience of performing Crane's *The Hall is Good*, with its zoom-in effect, with nothing to distract from what you are performing.

Figure 1: Luciano Berio: *Sequenza III for female Voice* – page no. 1



[6] Connor, S. (2001) The Decomposing Voice of Postmodern Music. *The John Hopkins University Press*, 32(3), p. 478

The following year, in 2015, I studied several movements of Georges Aperghis' *Recitations*[7], performing *Recitations 8* and *9*, and spending a significant time working on *Recitation 5*, in which the singer is not allowed to stop singing in order to breathe, instead having to breathe in while continuingly singing. This, like the Berio, had a significant effect in showing me examples of expressive physicality in virtuosic singing, and even examples of extreme types of performative breathing, which I would be inspired by years later when beginning to compose using breathing as a musical idea.

2.2 The Influence of Being a Singer

The influence of being a singer can be seen throughout this entire thesis, and acts as one of the main threads running through it. The original intent of the doctoral research project, composing microtonally for voices and instruments, centred on using my own skills and experience as a singer to help develop a microtonal compositional language that was practical for singers. As the research focused from microtones into quarter-tones, this focused in on the 'biting point' – the 'crunchy' feeling of singing a quarter-tone between two semi-tones. That physical feeling of 'crunch' and tension was what informed the initial approach to quarter-tones in my music, which the rest of this doctoral research project was built upon, with that physical and embodied gesture then developing into the use of breathing as a musical idea.

[7] Aperghis, G. (1978) Récitations: pour voix seule. Salabert Editions.

2.3 Being a Composer who Sings, Not a Composer-Singer

After struggling during 2016-2018 with my identity as both a composer and singer, and with my singer part at one point overtaking my compositional voice, I had to set clear boundaries regarding who I was: a composer first, and a singer second.

While there are many composer-singers such as Maja Ratkje (with her *Concerto for Voice*[8]*),* Laura Jayne Bowler (known for pieces such as *FFF*[9], where she pushes the limits of her voice and physicality), Héloïse Werner (known for the use of extended vocal techniques, such as in her piece *Crossings*, for solo voice and symphony orchestra[10]), as well as Meredith Monk (known for her operas, music theatre works, films, and installations), who mostly focus on composing for themselves or for other singers, I was adamant to instead be seen as a composer who is also a singer. Since then, I have carried on with my voice lessons, and have, on occasional, taken projects I found interesting. However, I have made sure that my being a singer is merely an added skill and point of view to my compositional voice, rather than the focus of my compositional approach.

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[8] Ratkje, M. S. K (2006) *Concerto for Voice (moods IIIb)*. Norway: Music Information Centre Norway.

[9]Music On Main (2019) Laura Bowler: *FFF*. [video] Performed by Laura Bowler, Janna Sailor, Silas Friesen, Liam Hockley, Peggy Lee, Katie Rife, Paolo Bortolussi, Mark Haney, Rachel Kiyo Iwaasa, and Jenny Lim, 3 November 2018. Available at: https://youtu.be/LCL8Fqh6kxc [Accessed on 3 April 2023]

[10] Werner, H. (2022) Crossings, for solo voice and symphony orchestra.

2.4 Breathing

When it came to the use of breathing as a musical idea, it felt like it came more from the physicality of me as a person, and its connection to emotions through the concept of Mimetic Participation[11] (explored later on in chapter 5), rather than being influenced by my experiences as a singer. This is in spite of my prior experimentation with performing different breathing techniques, particularly in pieces for solo unaccompanied voice. I am very aware, though, that it was my familiarity with these types of extended techniques and performative repertoire that made me so open to exploring breathing elements in my music, feeling very comfortable with pushing the expression and vulnerability of breathing as a performer. It was also a fascinating concept to explore – breathing, in all my years as a classical singer, was a thing to be controlled, to be made as inaudible as possible during performances between singing – it felt exciting and freeing to explore and push it to new and expressive levels.

It was easy to compose breathing elements for singers to record and perform in *Hear*, for 4 singers and electronics, but it was in attempting to transfer these breathing techniques over to instrumentalists that I began to experience the difference in breathing familiarity and skills between instrumentalists and singers. This is still an element to keep exploring, in order to see what the best approaches are towards learning new breathing techniques alongside playing.

It is interesting to note that this doctoral research project began with the intention to make microtones / quarter-tones, which were easier to play for many instruments like

[11] Cox, A., Fülöp, R. (2010) pp. 62-65

strings and winds, possible and practical for singers to perform. It now concludes, however, by taking the idea of breathing – a staple for singers, which they can experiment with relatively easily – and exploring ways of practically transferring it to instrumentalists, essentially showing both sides of a similar process.

While I had to make sure to centre myself as primarily a composer, my experiences and abilities as a singer have played an important part throughout this doctoral research project, providing me with an interesting and unique point of view that I have consistently strived to explore and develop, and will continue to do so. Being a singer is simply a part of my lived-in experience, making me very aware of the performative aspects of each piece I write, and making me want to always push their limits by creating embodied, vulnerable experiences for both the performers and the audience to connect to.

Chapter 3: Composing Quarter-tonally for Voices and Instruments

In this chapter I will examine the works in the portfolio that focus on the exploration of using microtones as a means of achieving embodied vulnerability.

3.1.1 Introduction

This doctoral research project began with the aim of composing microtonally for voices and instruments. That also included the creation of a step-by-step method, aimed at teaching singers (and instrumentalists) to hear and sing microtones. Titled 'The Microtonal Singing Method', it was meant to support the compositional process throughout my doctoral research project and beyond it. The aim was to use my own voice and experience, as well as collaborating with other singers, to create a gradually expanding microtonal (later focused into quarter-tonal) compositional language, which would be tailor-made specifically for voices.

This idea started in 2015, during the second year of my masters degree, when I realised that there was no way for singers to learn how to hear and sing microtones without straining their voices to push notes up or down, or through an excess use of specialist MIDI software. I wanted to build on the Western well-tempered tuning and simply add on to it, in order to create a way for singers to practice singing microtones using only a standard piano. I even created a survey of singers who have sung microtonal music (which can be found in the appendix) but the results, besides

showing a keen interest in finding a better way of learning to sing microtones, did not yield any helpful advice towards tackling this issue.

3.1.2 From Spectralism to Quarter-tones

I originally became fascinated with microtonal Spectral music back in 2013, just before beginning my masters at Royal Birmingham Conservatoire. This fascination began after listening to Horatiu Radulescu's *Piano Concerto Op. 90 "The Quest"*[12] and Kaija Saariaho's opera *L'Amour De Loin*[13], and feeling mesmerised by the 'sparkling' and 'ringing' soundworld they managed to create using Spectralism.

It was especially Radulescu's *Piano Concerto*, described by Mark R. Taylor as containing much of *"Radulescu's classical manner: from the most obvious spectral harmony at the opening of the second movement, to his tendency to regard even massed forces as an agglomeration of solo line"*[14], that had captured my interest in Spectralism from its very opening, being so very different from anything I had ever listened to before.

I spent the majority of my 2-year masters writing Spectral music, at first enjoying creating these 'ringing' soundworlds, but quickly growing bored of them. The magic of Spectralism had dissipated for me when I realised that, in my eyes, it severely lacked dissonance – something I did not realise I needed so badly before. I attempted,

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[12] Radulescu, H. (1998) *Radulescu: Piano Concerto Op. 90 "The Quest"' (Live)*. Radio-Sinfonie-Orchester Frankfurt, cond. Lothar Zagrosek. Chandos CX 9589.
[13] Saariaho, K. (2000) *L'Amour de Loin: opera in five acts*. Chester Music.
[14] Taylor, M. R. (1999) Horatiu Radulescu: *Piano Concerto Op. 90 'The Quest'* by Ortwin Stürmer, Frankfurt Radio Symphony Orchestra and Lothar Zagrosek. *Cambridge University Press*, Tempo, New Series, 209, p. 53

in a chamber piece titled *Poke*, to create dissonance by putting two different harmonic series against one another, with one beginning its attack by 'poking' at the other, before increasing to a gradually mixed soundworld in which both harmonic series coexisted. This attempt at dissonance within a Spectral soundworld failed – the only effect achieved by any mixing of the two soundworlds was an absence of the Spectral 'ringing' sound. Instead of a sense of dissonance, this approach only created an empty, dull sound. This was when I realised that I could not go any further with Spectralism, though I was unsure of how to otherwise proceed – I was still interested in microtonality, with its unique colours, but missed the expressive use of dissonance, which I felt Spectralism sorely lacked.

That was the point at which I began this doctoral research project – with the knowledge that I wanted to create my own microtonal compositional language, one that was suitable for both voices and instruments, and that could be expressive by using dissonance. At this point, I had only written two quarter-tonal pieces – one for recorder quartet and one for viola and cello duo – with only the latter using quarter-tones expressively. I knew that this piece, *Postlude*, was effective – due to its very embodied, vulnerable, and expressive use of quarter-tones – and that this was something I wanted to emulate and build upon. However, I was unsure as to how, especially since the piece was written very quickly, and without much thought, during a composition course.

I spent the first year of the doctoral research project doing preliminary research into microtonal singing and looking at composers who composed microtonally for voices, all the while continuing my work as a singer, specialising in both 'solo

unaccompanied voice' repertoire and extended techniques. I struggled to find a solution to the issue of creating a microtonal language capable of both dissonance and a wide range of expression. The existing research on teaching microtonal singing was extremely limited, with the only similar research done prior being the short '*Concrescence Project*' in 2008-2010, wherein Lasse Thoresen, professor of composition at the Norwegian Academy of Music, initiated a project based in the Nordic / Baltic regions which included two seminars for microtonal ear training for students, as well as two public concerts by Norwegian Sextet 'Nordic Voices'.[15]

The first piece presented in this thesis, *Hidden Elegy*, for alto flute and piano, only used quarter-tones because of the practicalities of the instrumentation – it was commissioned by flautist Carla Rees, who specialises not only in low flutes but also in the specialised 'Kingma' method low flutes, especially built to play quarter-tones. The Kingma system alto flute, developed by Dutch flutemaker Eva Kingma in the early 1990s, uses a standard open-holed key system, with a C sharp trill key, and six extra keys that allow for even quarter-tones to be played across the range of the instrument.[16]

This piece shows the struggle of creating a quarter-tonal compositional language and soundworld where there was none before, with the opening flute phrase trying to ease

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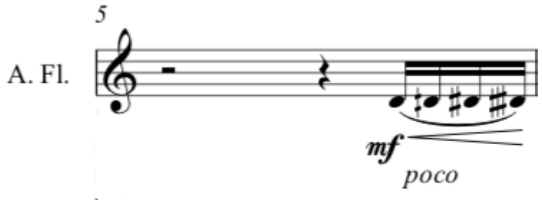
[15] Thoresen, L. (2012) The Concrescence Project 2008-2010: Ideas, processes, experiences, and musical works (Extracts from a Manuscript to be Published). https://www.lassethoresen.com/concrescence/files/concrescenceproject.pdf

[16] Rees, C (2013) *The Kingma System Alto Flute: A Practical Guide for Composers and Performers*. Available at: http://www.altoflute.co.uk/01-background/history.html [Accessed 3 April 2023].

into quarter-tones by playing an ascending quarter-tonal scale, as if trying to 'feel' your way through the darkness.

Figure 2: *Hidden Elegy*, b. 5, alto flute

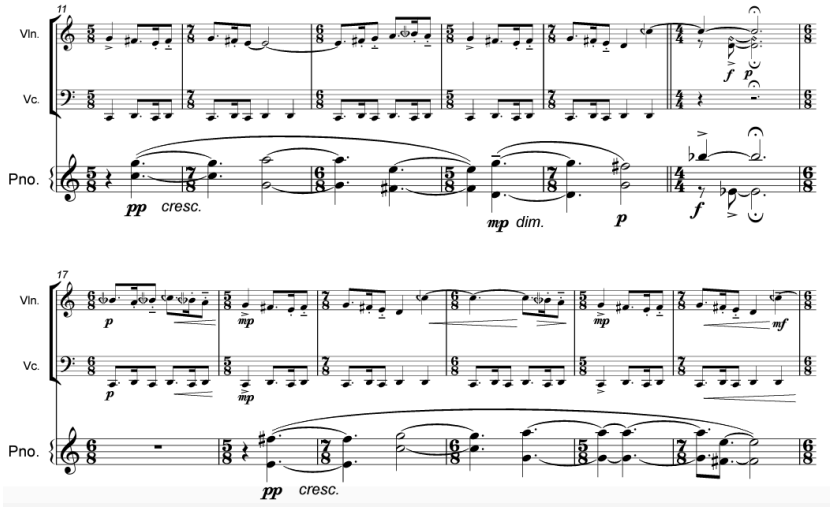


The decision to focus on quarter-tones, rather than general microtones, was in part influenced by the music of Robert Fokkens, my former teacher at Cardiff University. Fokkens, who draws influence from the South African Xhosa people's bow music, often uses quarter-tones as expressive accent notes within a melodic phrase.

Describing Fokkens' viola and cello duo *Tracing Lines*, Edward Venn comments that *"The use of mutes on the strings generates a characteristically furtive, strained sound-world; the use of melodic cycles and quartertones, both drawing on precedents in Xhoso bow music, provide direction and colour respectively".*[17]

[17] Venn, E. (2014) Tracing Lines; Inyoka Etshanini; Mammals of Southern Africa; Nine Solitudes; On Disruption and Displacement; Irreconcilable Truths; Africa by Robert Fokkens, Darragh Morgan, Robin Michael, Mary Dullea, Patricia Rozario and Carla Rees. *Cambridge University Press*, *Tempo,* 68 (269), pp. 82-83

Figure 3: Example of the use of quarter-tones as expressive dissonant notes in Robert Fokkens' *Mammals of Southern Africa* – I. Ingwe (Leopard), bb. 11-22[18]

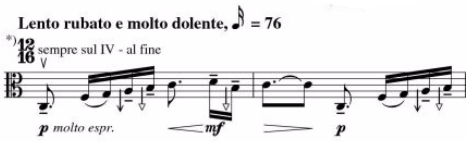


It was through both my past experience of using quarter-tones expressively and seeing Fokkens' achievement of expression and dissonance through quarter-tones – alongside the knowledge that microtonality was far too broad-a-field to try to explore in a single doctoral research program – that made me decide to focus on composing using quarter-tones.

Another composer who initially influenced my expressive approach to quarter-tonal writing was György Ligeti, with his *Sonate for Viola Solo*. In this piece, Ligeti uses microtones in an a very melodic and expressive manner, which had a strong effect on me, changing what I thought was possible to achieve while using microtones

[18] Fokkens, R. (2011) *Mammals of Southern Africa: for piano trio*. Oxford: Composers Edition.

Figure 4: György Ligeti – *Sonate for Viola Solo*[19], movement I, bb. 1-2. Note that arrows are used to annotate microtones.



3.1.3 Other Microtonal Composers

Other composers composing microtonally for voice, whose music I explored during the beginning of my doctoral research program, included the Czech Alois Hába, who composed the quarter-tonal opera *Matka* ('The Mother') between 1927 and 1929[20] – an impressive piece but sadly one which, in my opinion, lacked melody and was written in a very impractical way for voices. I also explored the vocal music of Swedish composer Karin Rehnqvist (with pieces such as *Thus Goes a Day*, for solo voice[21]).

While most other contemporary composers who use microtonality seem to do so in a textural, rather than melodic and expressive, way, Luke Bedford's piece *Wonderful Two-headed Nightingale*[22] is one example of using microtones in an expressive way, even within the context of a large ensemble.

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[19] Ligeti, G. (1994) *Sonate: for Viola Solo*. Mainz: Schott.
[20] Vysloužil., J. 'Hába, Alois'. In *Grove Music Online* in *Oxford Music Online*. Available at http://www.oxfordmusiconline.com/subscriber/article/grove/music/12113 [Accessed 3 April 2023].
[21] Rehnqvist, K. (2000) *Thus Goes a Day: for solo voice*. Stockholm: Edition Reimers.
[22] Bedford, L. (2014) 'Wonderful Two-headed Nightingale'. Arditti Quartet. In: *Pandora's Box*. [audio stream] Col Legno. Available through: https://open.spotify.com/track/1II1YGq2EDTwL0Oki18Ygl?si=b07471aa23944cc1 [Accessed 3 April 2023].

3.1.4 Quarter-tonal Compositions – an Overview

After the previously mentioned *Hidden Elegy*, for alto flute and piano, which began my exploration of quarter-tonal composing, the decision to focus in on quarter-tonal writing was cemented in *Ode*, for violin and piano, which succeeded in using quarter-tones as expressive dissonant notes within a melodic phrase. This piece, in my opinion, truly pushed the use of the quarter-tonal interval as a way of creating a very pained expression, and showed that this use was strong enough to carry a piece without an excessive use of extended techniques.

Naamah, for soprano and recorder sextet, was my first opportunity to explore quarter-tonal melodic writing for voice, alongside recorders on which quarter-tones are very easily played. This piece shows a further developed, and slightly more refined example – compared to the bluntness of *Ode* – of melodically using quarter-tones. It also showcases the use of quarter-tones for voice, alongside a very colourful and textural accompaniment in the recorders.

Distant Lament, for clarinet, viola, and piano, further developed the melodic and expressive use of quarter-tones, especially by expanding the range of quarter-tonal intervals beyond just the quarter-tone.

I am dust, for soprano and cello, further built on that expressive quarter-tonal compositional language. This was done by using a very minimal texture to truly focus on the expressiveness achieved by the quarter-tones, as well as highlighting one of their best features – to create dissonance with only one note played at a time.

Together, alone, for string quartet, marks the final submitted piece using quarter-tones, before I made the decision to begin focusing on exploring the use of breathing as a musical idea instead. With this piece, I simply wanted to use quarter-tones, and the idea of creating dissonance through them, in a completely contrasting way. The piece gradually 'alienates' a non-quarter-tonal melody by having the other players abandon it for their own quarter-tone note, one-by-one, until only one non-quarter-tonal line remains. Instead of the quarter-tones feeling dissonant and 'out of tune', it is the 1st Violin's line, unchanged since the beginning, when it made perfect sense with everybody else playing alongside it, that has the same dissonant effect quarter-tones usually have within a non-quarter-tonal soundworld.

My final quarter-tonal piece, which could be found in the appendix, was an unfinished and untitled piece for solo recorder, with only one movement having been completed. Written during the very beginning of the first COVID-19 lockdown, it actually represented a real step-up in terms of an expanded use of quarter-tonal intervals. While it did show a significant development in my quarter-tonal writing, which I had been aiming for over the several years leading up to it, it also highlighted the fact that this development was not supported by my Microtonal Singing Method research, and could therefore no longer proceed.

3.1.5 The Microtonal Singing Method

I knew that the development of a singer-appropriate quarter-tonal compositional language relied heavily on also creating the research to make the singing of these expanded intervals possible. This meant that it was a necessity to develop the

Microtonal Singing Method alongside the compositional aspects of the doctoral research project. This was due to the fact that if a new quarter-tonal interval had not been tested in a vocal context, I was, firstly, unable to use it in vocal writing, and secondly, unable to fully hear and compose with it myself. Anything more than the original quarter-tone interval needed to be gradually added in, in order to later integrate it into my own compositional language. This was the issue that ended up blocking the development of my quarter-tonal compositional language, forcing me to find another way, namely using breathing as a musical idea, to create a vulnerable experience using embodied performance in my music.

The original plan was to experiment with my own voice and other interested singers, creating sets of levels of exercises; including listening exercises, singing exercises, and study pieces. I began with the creation of listening exercises in 2017, which needed to be listened to for several weeks as a starting point in order to begin hearing quarter-tones. These were recorded by recorder player Chris Orton, and I listened daily to them for several weeks, documenting my progress.

However, problems arose when some of the quarter-tones recorded were not exact, necessitating a re-recording.

Figure 5: Listening exercise (2017): 2-octave ascending quarter-tonal scale

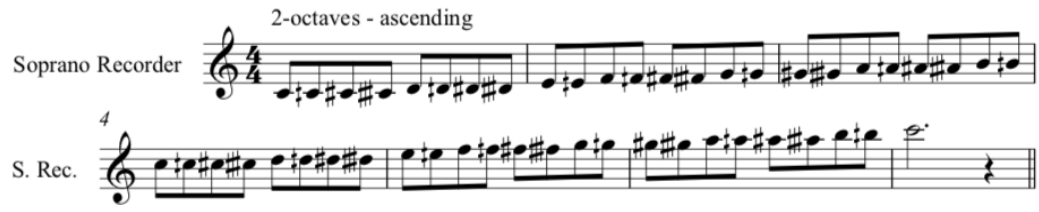
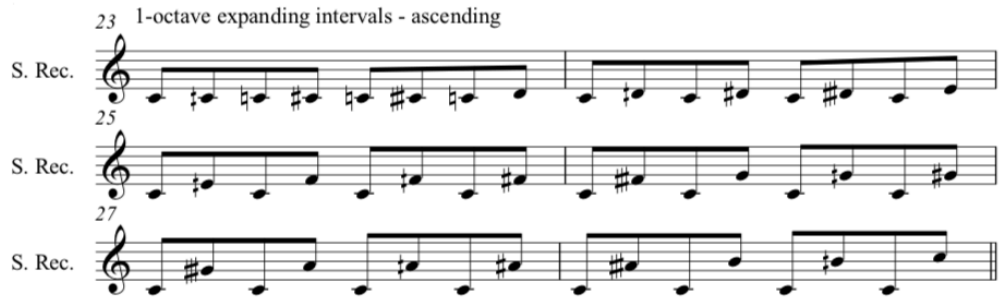


Figure 6: Listening exercise (2017): 1-octave expanding quarter-tonal interval scale - ascending



In 2020, after deciding to drop the quarter-tonal research from my doctoral research project, I managed to make further progress in the form of several listening exercises, but later on decided to put them aside until the doctoral research project was completed. Unfortunately, at that point I had realised that the compositional aspect of my quarter-tonal research had to be paused as well, since it required the support and advancement of the Microtonal Singing Method in order to develop, and without it the use of quarter-tone intervals was stilted and unpredictable.

This was what I had experienced in the unfinished solo recorder piece, and, as I mention later on, while composing *Distant Lament*. It made me seek out an alternate way of achieving my goals of drawing upon my own lived experience in embodied performing to develop my own personal compositional language, as well as exploring the translation and foregrounding of the vulnerability of solo performance within my music.

3.2 The commentaries

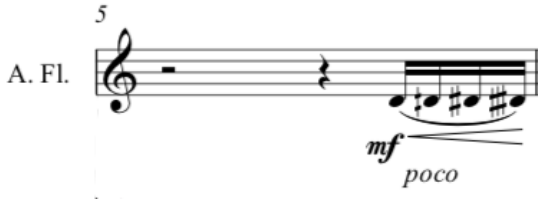
3.2.1 I. *Hidden Elegy*, for alto flute and piano

This piece was written in the summer of 2016, at the end of the first year of my doctoral research program. I was asked by Rarescale (flautist Carla Rees and pianist Xenia Pestova) to write a piece for their September 2016 concert in London, and was particularly excited to have the opportunity to write for one of the Kingma method quarter-tonal flutes that Carla specialises in, choosing to compose for the alto flute.

This commission came at a personally difficult time, as my paternal grandmother Lili was on her deathbed due to cancer. I believe that this 'step up' in the expressive use of quarter-tones came from experiencing sadness and grief at the time.

Even though this piece was written before I had decided to focus on quarter-tonal (rather than the more broad microtonal) writing, it was writing for the Kingma system flute that made it solely a quarter-tonal piece. It was difficult to find my footing in a quarter-tonal world that early on in my doctoral research project – the only pure quarter-tonal pieces I had written before then were *Postlude*, for viola and cello, and *Expansions and Contractions*, for recorder quartet, both during my masters – the first coming from a very emotional place after hearing a friend's mother had passed away, and the second using quarter-tonal scales in a very unemotional manner. The opening alto flute gesture (in b. 5) of a quarter-tonal ascending scale was simply my attempt to set up the quarter-tonal soundworld – for both the listeners and myself.

Figure 7: *Hidden Elegy*, b. 5, alto flute



Much of the writing for this piece was instinctive – rather than fully planned out, as the majority of my pieces were at the time, and still are today – working with the opening ideas in both the flute and the piano, and very slowly moulding them from slow-moving and relatively neutral into emotional and energetic. This shows just how new this quarter-tonal territory was to me back then. In its instinctive approach, the piece mostly centres on and develops the opening quarter-tonal ascending idea as a vehicle of development and expression throughout. This development seemingly moves backwards in rehearsal mark C, 'dark, sinister', as the flute line appears stuck between two semitones instead of ascending, yet this setback acts as a catalyst for the sudden explosion of expression in rehearsal mark E, which finally brings forth more development on the original quarter-tonal scalic idea.

Figure 8: *Hidden Elegy*, bb. 35-36, 'dark, sinister'

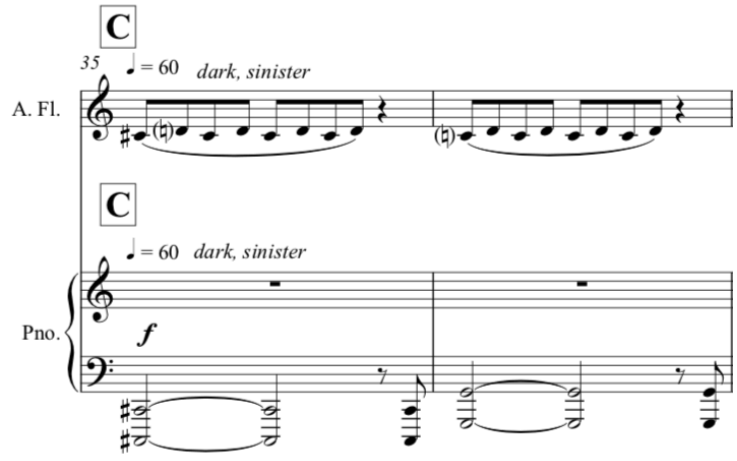
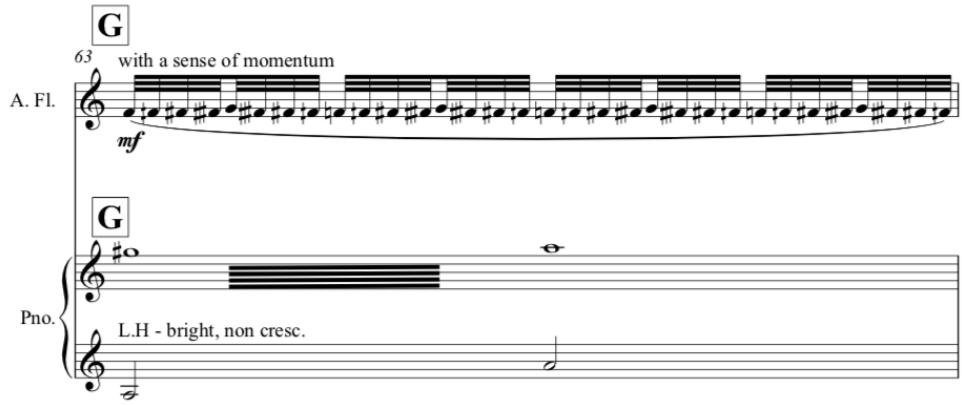


Figure 9: *Hidden Elegy*, b. 63, the quarter-tonal idea finally developing



The most successful moment in the piece, in my opinion, is its ending, as well as the journey of the 'calm, serene, bright' musical idea throughout. Functioning as a B section, these sections provide moments of clarity and expressiveness by using the quarter-tones in the flute on top of the non-quarter-tonal notes on the piano. This creates a kind of 'double' soundworld – the flute and piano have such different musical colours that the adage of quarter-tones in the flute pushes it so far that it feels like two different pieces being played simultaneously, rather than creating a sense of dissonance between the instruments.

Figure 10: *Hidden Elegy*, bb. 20-22, the 'calm, serene, bright' B section, as it first appears

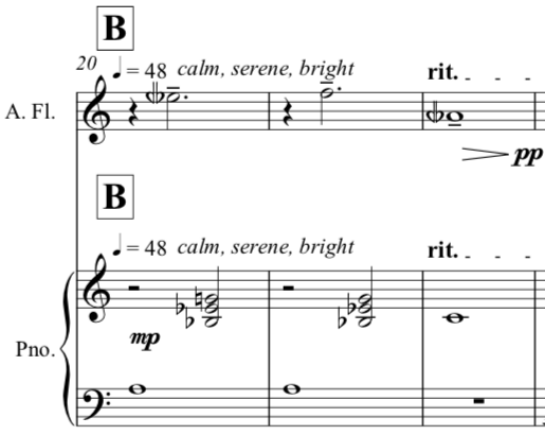
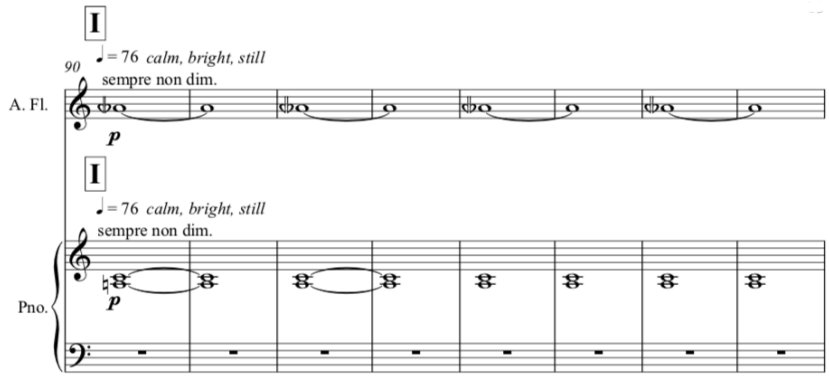


Figure 11: *Hidden Elegy*, bb. 90-97, The 'calm, serene, bright' B section at the end of the piece



I view this piece as a very important step towards creating an expressive, embodied, and vulnerable quarter-tonal compositional language, one that is very much melodic and influenced by the voice, both in terms of its melodic aspects and its expressiveness. I believe that the embodied vulnerability comes through the performance of the piece, most notably in the B sections, where each player only plays one or two notes (see the next chapter) and is essentially playing on their own, just at the same time.

3.2.2 II. *Ode*, for violin and piano

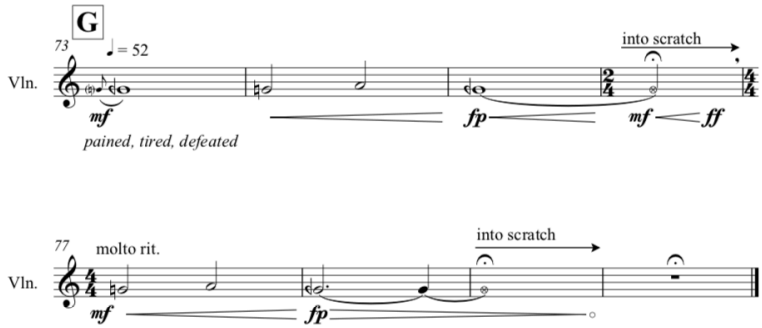
This piece was written in the autumn of 2016 for a workshop at *Royal Holloway*, *University of London*, with violinist Darragh Morgan and pianist Mary Dullea, under the direction of composer Michael Finnissy, as part of the *RHUL* celebrations for his 70th birthday.

It marked the first instance during this doctoral research project of my using quarter-tones, and the quarter-tone interval in particular, to portray pain, anguish, and frustration. My very first emotional quarter-tonal piece, *Postlude*, written in 2014

during my masters degree, had begun this trend of using quarter-tones in an expressively 'painful' way, which I saw as effective but was unable to replicate right away. This particular use was directly influenced by my experiences during that time – the music is extremely direct in its portrayal of my frustration, anger, and need to 'scream out loud'.

This piece was never performed in public, therefore the submitted recording differs from the latest version of the score, with the biggest changes being not using the 'into scratch' directive arrows until the very end of the piece. This was due to them feeling unnecessary – the quarter-tones were already clear in their portrayal of the given emotions without the scratch tones, and adding them throughout made them sound less real / human, and therefore less effective. The added scratch tones also meant that the quarter-tones were not sounding for as long, which lessened their expressive effect. Only at the end of the piece (b. 76 and b. 79) did I keep the scratching effect – after so many repeats of this highly-emotional musical idea, the scratch tones feel like a shouting voice that has exhausted itself into hoarseness, another example of embodied vulnerability taken from the voice.

Figure 12: *Ode*, bb. 73-80, Violin, only use of 'into scratch' kept in the piece



The opening piano chords are extremely apt in describing my feelings during that time, those being ‘feeling like repeatedly bashing my head against a wall’-type anger, while the high violin line, with its quarter-tone descending interval, expresses my pain and frustration at that situation – a type of ‘screaming into the abyss’.

Figure 13: *Ode*, bb. 1-2, piano opening material

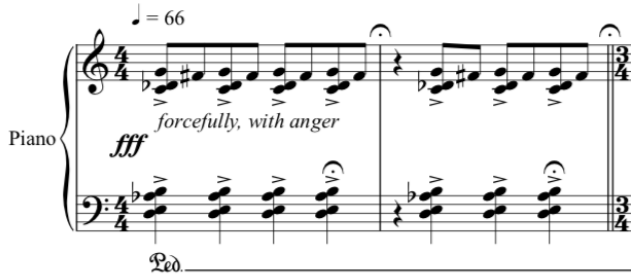
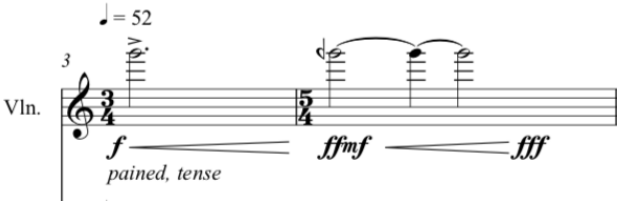
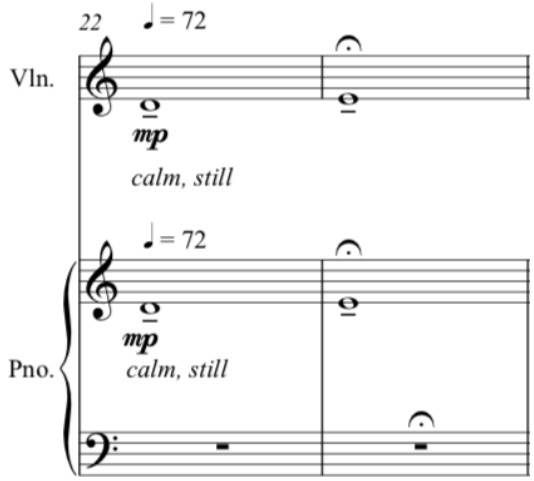


Figure 14: *Ode*, bb. 3-4, violin opening material



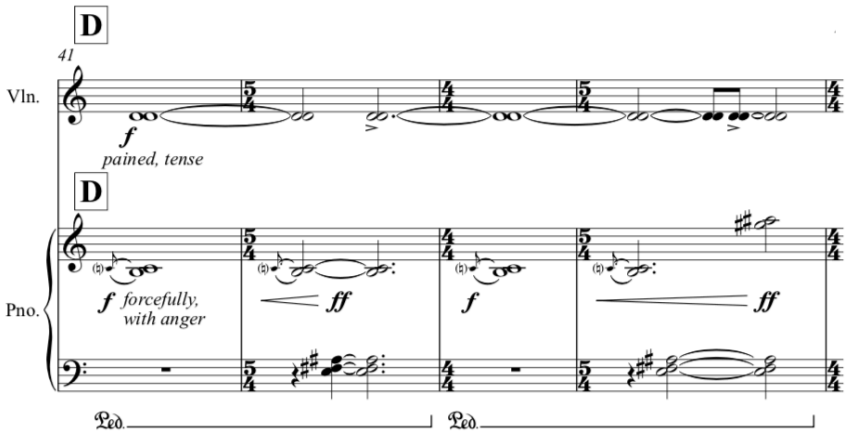
The calm B material (first heard in bb. 22-23), felt like a practical necessity to balance out the piece, an effect I had used many times before, including the previously mentioned *Hidden Elegy*, for alto flute and piano. It is meant to feel hollow emotionally, unlike its previous aim of creating a sense of contrasting calm. The logic in that, from my point of view, is that when you are this angry and frustrated, trying to calm yourself down would only achieve a sense of apathy.

Figure 15: *Ode*, bb. 22-23, first appearance of the 'calm, still' B material



This is what happens here – it is calmer, but not calm. Instead, it is a sense of quietly stewing in anger, refusing to truly let it go since the anger is justified and the cause for it is still ongoing. This so-called 'calmness' is then exposed and truly explored as a sense of embodied 'tenseness' in the violin, starting from rehearsal mark D until b. 50.

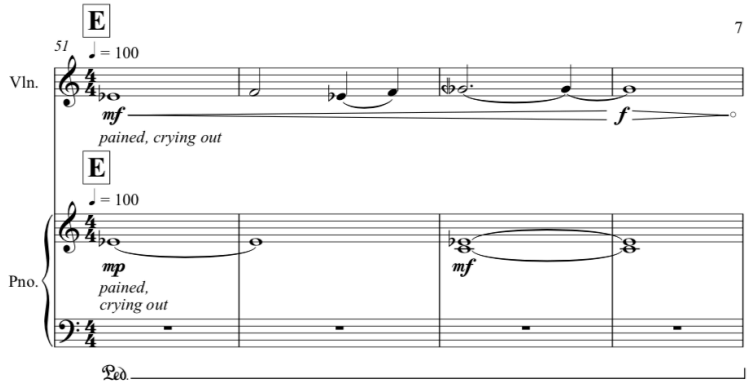
Figure 16: *Ode*, bb. 41-44, development of B material



In rehearsal mark E, we see the first extremely emotional and vulnerable use of quarter-tones, with the apt 'pained, crying out' expression underneath. This is a moment of what I perceive as 'distilled vulnerability' – the use of minimal notes (only

up to three notes in the piano accompaniment) helps 'focus' this moment so that only the violin and its expression matter. The vulnerable embodiment is centred in the violin, as each quarter-tone interval in the melody creates a painful and emotional focus onto itself. This melody was first used in a different piece written in the year prior for *Ensemble Paramirabo* as part of a miniature movement, but felt improperly utilised in that piece, which is why I wanted to re-use it here.

Figure 17: *Ode*, bb. 51-54, 'pained, crying out'



The 'calm, still' in bb. 60-61 then feels more genuine, since the painful emotions have been expressed – unlike before, when only anger was felt and expressed. The intent being that it is only through feeling the pain and anger emotions that catharsis could be achieved.

The ending of the piece, unlike many of my pieces, where there is a very clear resolution at the end, is slightly different. Yes, we have been through a journey, and are arguably in a better emotional state for having been through it. However, there is also the sense that nothing has truly changed. You are still stuck in the same situation – the only difference is that you are physically and mentally exhausted from experiencing it, trying to fight against it, or even expressing your feelings about it.

The piece reflects and embodies this emotional state, which I was experiencing during that time, and does so in a very vulnerable and direct way.

It was through the process of creating and workshopping this piece that I truly learned the importance – and perhaps superiority, in my opinion, at least for my own compositional language – of creating a vulnerable, human, and expressive melodic line rather than a loud, angry one, as well as preferring the use of 'minimal' melodic lines with fewer or no extended techniques. Listening back to the workshop recording (which is sadly the only recording I have of this piece), I believe the excessive use of scratch tones ruins the expressive capacity of the piece, taking moments of embodied and vulnerable beauty away from it.

Despite not ever being properly performed, this piece was very important in my journey of learning to use quarter-tones in a melodic and expressive way. It also taught me that the use of quarter-tones melodically was, in itself, extremely effective in portraying expression, and that the approach of using quarter-tones without anything to distract from them, in a more 'minimal' setting, was actually a much more effective way of achieving my own musical goals of creating an expressive, vulnerable, and embodied compositional language.

3.2.3 III. *Naamah*, for solo soprano and recorder sextet

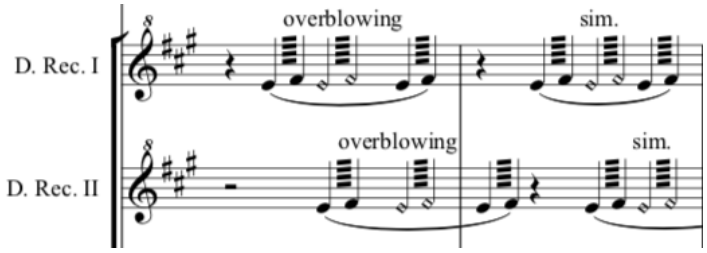
After feeling like I was finally making progress with using quarter-tones in a melodic and expressive way, I knew that my next step needed to be composing quarter-tonally for voice for the first time. This was a scary new concept for myself to both write

AND perform, and working with the Conservatoire Recorder Department again felt like the most comfortable and practical way of making that big step. This was due to my knowledge that recorders can easily play quarter-tones, and could therefore create a supportive quarter-tonal harmony for me to more easily sing alongside. Another big selling point for choosing this ensemble for my first quarter-tonal vocal piece was knowing that pitch vibrato would be less of a risk with recorders than it is with string instruments – straight tones are much easier to achieve with recorder players, especially since a large part of their repertoire is early music.

Written in the winter of 2016-2017 for myself to perform with the entire Recorder Department (six players at the time), this piece set a text by poet Alice Seville. The opening (repeated) texture, with its overblown tremolos (achieved by alternating between normal tremolos and tremolos that are overblown, using the same fingerings), builds on *Expansions and Contractions* (2014), my first recorder ensemble piece.

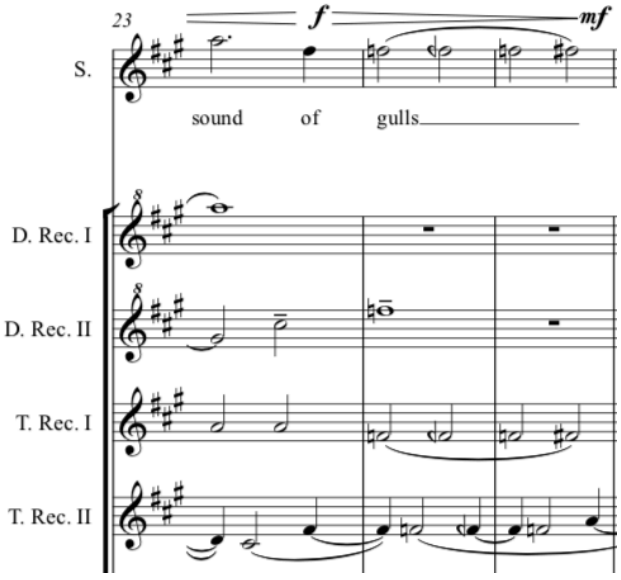
However, while the earlier piece was very unemotional, and more so based on the development of material happening throughout – with the overblown tremolos being part of the later stages of the piece's development – here they were used to create a colourful and mysterious atmosphere, repeated throughout. Please note that due to how recorders function – being unable to perform dynamics, and instead relying on different ranges and textures to create variation in pieces – dynamics are not used in the recorder parts in the piece.

Figure 18: *Naamah*, bb. 3-4, tremolos alternating between normal playing and overblowing



Knowing that I was writing this piece for myself to perform, and that this was my first real foray into quarter-tonal vocal composition, I was able to make sure that I as a singer felt truly supported when in need of it (or when I thought I might be). This meant adding octave unisons in the ensemble when necessary, such as in bb. 24-25, when I worried the quarter-tonal vocal line, which then goes back into half-tones, might be too high to easily pitch, being based around the 'break' of my voice.

Figure 19: *Naamah*, bb. 23-25 octave doubling of quarter-tones to support the vocal line

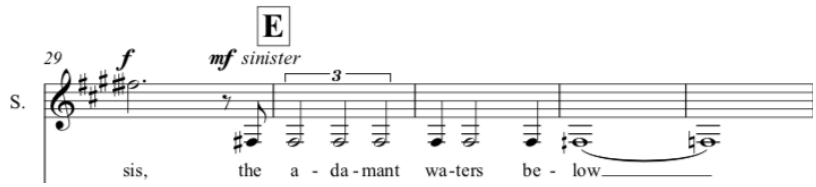


I did not feel the need to add this kind of 'support' to lower sung quarter-tones, as long as there was a clear note to anchor the sung quarter-tone interval, and not much going on to distract from it. In retrospect, the higher sung quarter-tones were not as

difficult to pitch as I had feared, though having the octave unison certainly made me feel more at ease with performing them for the first time, especially in that range of my voice.

This piece was definitely written for my own voice – the ultra-low sequence in rehearsal mark E (upbeat to bb. 30-33) shows off my extended lower range – not very common for a high soprano – which, at the time, I enjoyed exploring for its very 'breathy' colour.

Figure 20: *Naamah*, bb. 29-33, extremely low and breathy soprano range



I must also note that, listening to the recording, my voice sounds strained on the top C in bb. 48 and 61, though it is important to know that this was only due to a lack rehearsal time leading up to the concert on my part, and not any error in writing for voice – I hope to get a chance to re-record this piece someday to fix that.

All in all, this was a fairly 'simple' and short (4-minute) piece, used as an opportunity to tread the waters of quarter-tonal singing. This explorative piece was made easier by working with an ensemble I had already written for in the past – which was easily capable of quarter-tones without too much vibrato, as well as having an evocative and colourful text for which a quarter-tonal vocal line was very well-suited for. The text lent itself to a more 'pop-song adjacent' structure, with a highly expressive bridge and my commonly used return to the original idea at the end, only instead of repeating the

whole phrase, it was merely completing it after it had been partially sung in the high and intense ‘bridge’ section.

Only simple quarter-tone intervals were used in the piece, either ascending or descending, with plenty of non-quarter-tonal melody in between. The quarter-tonal intervals were always used with the intent to add colour, intensity, and expression, like pushing or pulling on an already-exposed nerve in order to experience even more feelings from it.

It could be argued that, in contrast to the pieces discussed before, this piece was not as effective in terms of creating an embodied and vulnerable performative experience, especially when considering that it was written for voice. However, it must be taken into consideration the huge leap into quarter-tonal singing that this piece represents as part of my research. It had to be written in a fairly simple and straightforward way in order to test the waters for the future, and all of the quarter-tonal pieces I composed after it had built on the stable foundation that it created, and on the surprising ease I had found in singing it – which perhaps I should not have been as surprised by, as I had researched microtonal music and singing for several years at that point.

3.2.4 IV. *Distant Lament*, for clarinet, viola, and piano

Written in the winter of 2017 for the Incus ensemble, this piece was written shortly after the completion of *Naamah*, with both pieces performed as part of the 2017 Frontiers Festival. It was composed extremely quickly due to lack of time – following my supervisor Joe Cutler’s advice, I went to a practice room and wrote one long

melodic line for the piece, which I then orchestrated and only slightly revised to make sure the structure worked. I took my friend, fellow composer Ben Lunn's, advice and used both extreme octave unison in some places (such as bb. 21-24 in the piano), plus added textural variety to the ascending line in rehearsal mark E by creating a temporal canon of that line, played by the entire ensemble.

Figure 21: *Distant Lament*, bb. 21-24 extreme octave unison in the piano

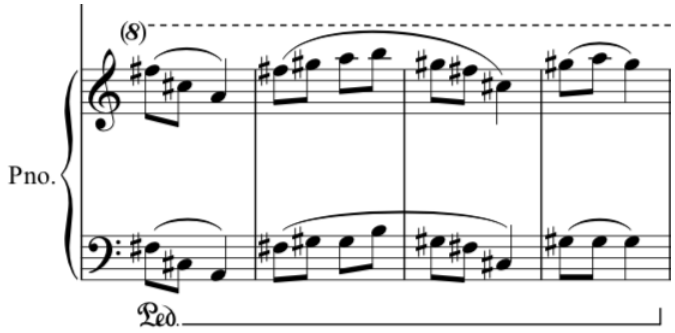
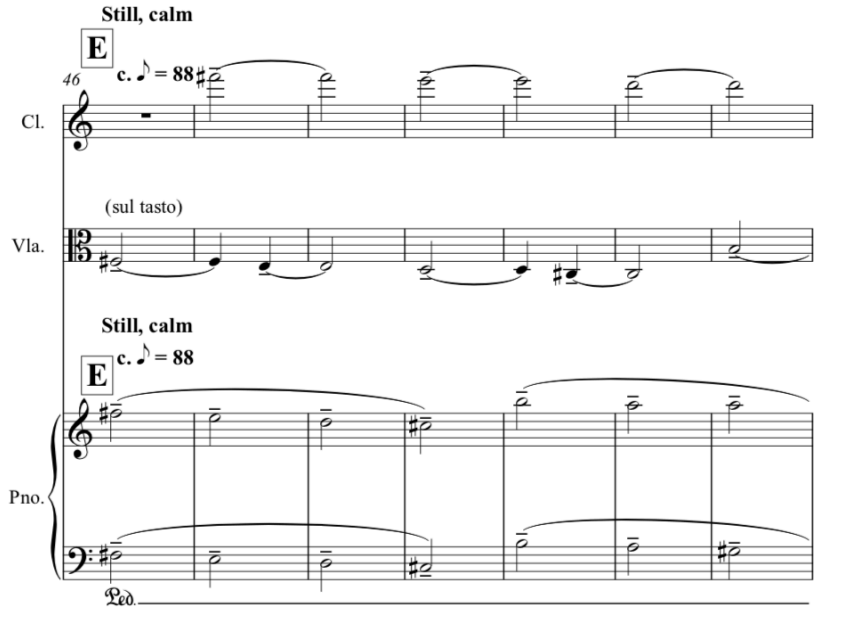
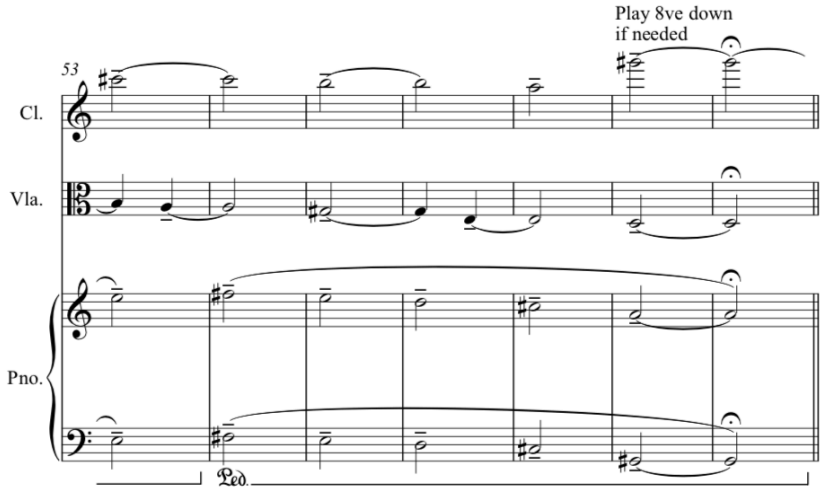


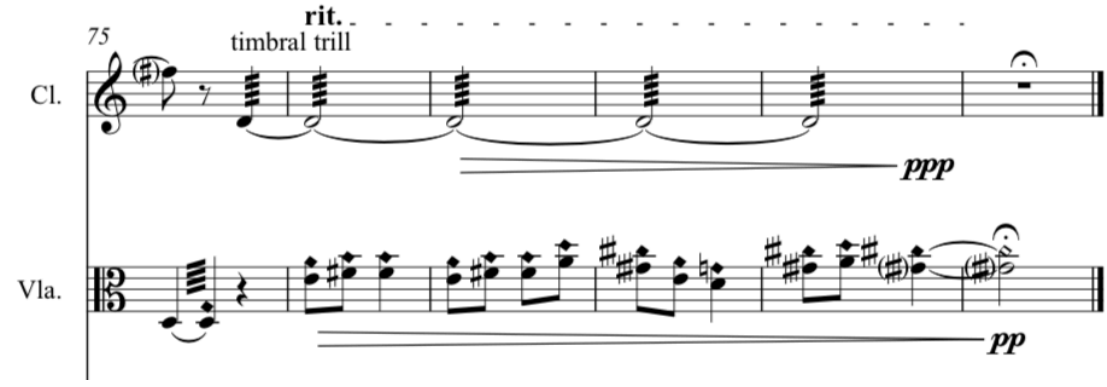
Figure 22: *Distant Lament*, bb. 46-59 – temporal canon





The final melodic phrase of the piece (in bb. 76-the end) was originally written, in that same octave, for the clarinet. During rehearsals, however, the clarinet player expressed discomfort at playing quietly in that range, and the viola player offered the compromise of switching the parts around between the clarinet and viola, playing it as artificial harmonics. I was very happy with this compromise, which I believe works even better than the original clarinet line.

Figure 23: *Distant Lament*, bb. 75-80, clarinet and viola at the very end of the piece



Written as a very instinctual through-composed piece – which is very rare for me as far as non-miniature pieces go – I am still honestly baffled by the step-up in my own

use of quarter-tones here. It bares a stark difference to the other quarter-tonal pieces I had written at the time (and even after it) – while the previous pieces had all been about connecting to very ‘pained’ expressions such as sadness, anger, and anguish, this piece, in contrast, is very serene in its use of quarter-tones. Despite its name referring to a ‘lament’, it actually feels as close to joy in its use of quarter-tonal melody as I have ever been to achieving, which both confounds and gives me hope for the future.

The use of quarter-tones in the piece, in my opinion, is extremely embodied and vulnerable, which is even more emphasised in the extremely ‘separated’ orchestration of far-apart octaves in the different instruments. The melody itself is one singable line throughout, and each instrument playing has such a 'minimal' line that the physicality of their playing is enhanced and ‘spotlighted’ each and every time – this is in order to create an embodied and vulnerable experience of playing alone, even within an ensemble.

This piece remains a sort of mystery to me – this magical moment of using quarter-tones in a serene, almost joyful, manner, which I was only able to come close to much later on, when I finally started more comfortably using intervals larger than the simple quarter-tone (which to me is such a ‘pained’ interval).

In hindsight, it shows that using a more expanded vocabulary of quarter-tonal intervals was necessary in order to create more ‘positive’ quarter-tonal expressions. Due to the lack of progress on my Microtonal Singing Method, though, I was unable

to properly progress my compositional research to include these extra intervals that I myself was unable to sing.

3.2.5 V. *I am dust*, for soprano and cello

Building on my quarter-tonal vocal writing in *Naamah*, *I am dust* was commissioned by the Post Paradise concert series in the autumn of 2017 and dedicated to my paternal grandfather Itzu, who passed away while I was composing it. At 19 minutes, it was, at the time, my longest piece, although it was written and premiered in only about a month.

While it was written in a very short amount of time, it was also just after a whole summer of working on a very short 5-minute – comedic, unlike *I am dust* – opera (*Hi Sam*, for soprano, violin, and trombone), which I also wrote the text for. That meant that working on this piece was a great opportunity to use all the skills I had learnt from composing the previous mini-opera, and through working with Birmingham Opera Company, in order to create a longer opera that was completely mine. Also, seeing as the piece was going to be performed by me, it meant that I could finally compose quarter-tonally for voice again, which was not an option in the mini-opera – this piece was therefore a chance to once again develop my quarter-tonal vocal writing skills in an expressive, vulnerable, and embodied way.

For the sake of practicality, I decided from the start that it would be easier to write for myself and one other instrument, choosing the cello. I wrote the entire text for the

piece myself – something I had done many times before – with the starting point being the image of the singer and cello on a dark stage.

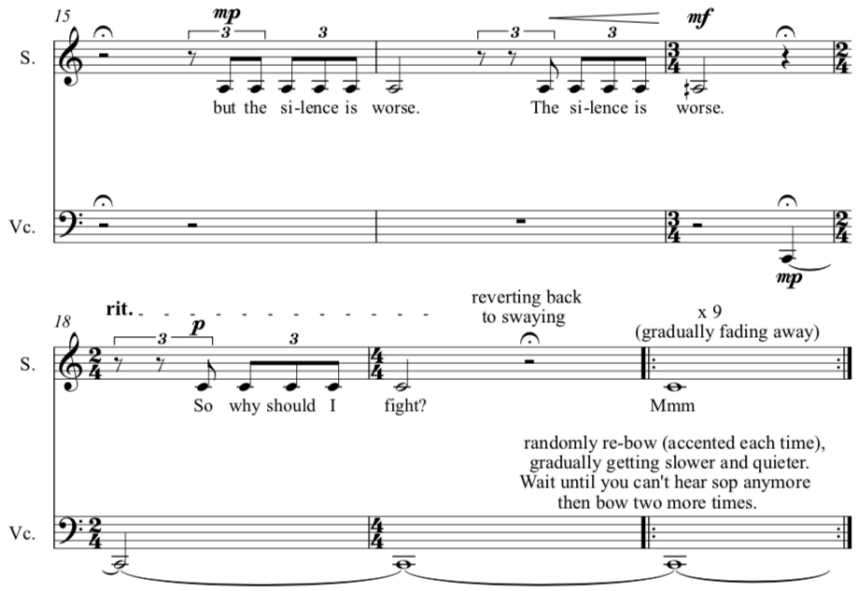
From this scenario, and due to my personal experiences at the time, I chose to explore a character with Schizophrenia, who was living an extremely empty existence in which the 'voices' in her head have essentially taken her own voice away. I also added the extra scenario of 'what would happen if these 'voices' then went away?', the question being 'when you associate who you are to how your brain works, even if you keep fighting against it every day, would you even recognise yourself without it?'.

This struggle, in the context of the debilitating Schizophrenia in the piece, becomes heart-breaking as, after the 'voices' disappear, the character begs them to come back. This is then made even worse when they return and she resolves to forever accept that life, since "the silence is worse, so why should I fight?", signalling she has now given up the fight for a life free of the 'voices'.

Throughout the piece, the cello represents the 'voices' in the protagonist's head, falling silent in Act II. Interlude II represents the transition from the silence back to the noise of the 'voices', and the end of Act III represents the singer giving in to the 'voices' and joining the cello on the C, which is then repeated until her voice completely disappears before the start of the postlude (which is solo cello). This shows that the piece is only a glimpse into a moment in the singer's character – an instance of her daring to try and regain her own voice and independence, but then,

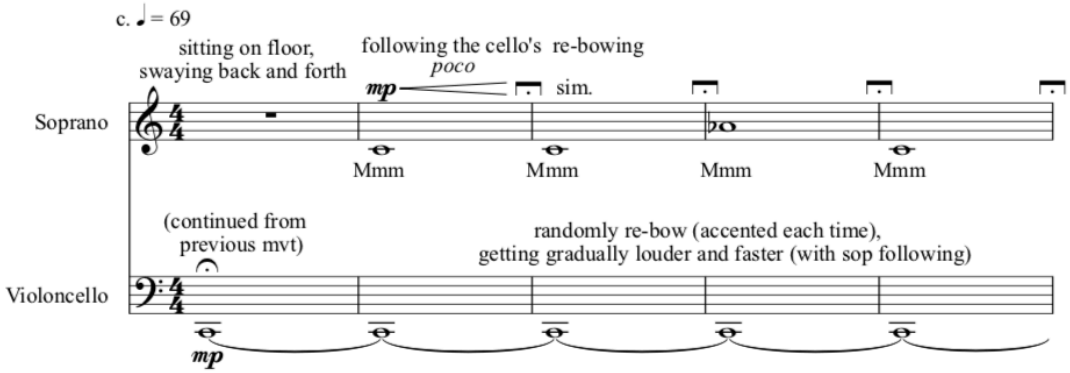
faced with the reality of what that might look and feel like, deciding against it, and giving up the fight.

Figure 24: *I am dust*, Act III bb. 15-20, soprano giving up and gradually fading into nothing



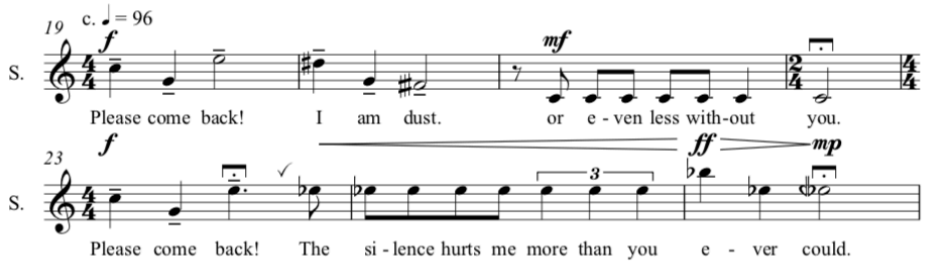
The use of quarter-tones in the piece very much builds on *Ode* and *Naamah*, using quarter-tonal intervals to convey pain and anguish, and supporting the idea of quarter-tones as 'hyper-dissonant' notes, achievable in a single melodic line. The piece, as a whole, explores the embodiment of these very difficult emotions, particularly in the voice. It was written to be semi-staged, with stage directions for the vocalist in order to create a truly embodied and vulnerable experience. These instructions include sitting on the floor – sometimes swaying, with her face in her hands – and standing up, which only occurs at act II when the voices stop, signifying the soprano finally being in full control.

Figure 25: *I am dust*, Act I, bb. 1-5 example of stage directions



Act II is arguably my most successful attempt at composing for solo unaccompanied voice to date. At the time, I had already written myself two pieces for solo unaccompanied voice to perform, but was struggling with the idea of composing solely for myself, with no boundaries or limitations. As discussed in the previous chapter, I felt stuck between my abilities as a vocalist who specialises in extended techniques and enjoys performing them, and the reality of being a composer who rarely feels the need to use extended techniques. This piece, with only one solo unaccompanied voice movement, served as an excellent way to properly write for myself as a composer and not get distracted by my extended vocal abilities. The brightly-coloured "Please come back!" melodic phrases in this movement (e.g. bb. 19-25) are possibly my favourite ever example of my own vocal writing, eliciting a very bright and vivid soundworld, despite it only being solo unaccompanied voice.

Figure 26: *I am dust*, Act II, bb. 19-25 expressive and colourful quarter-tonal writing for solo voice



As with most of the pieces I had written text for, the text was written before or alongside the music, mostly materialising in my head as sung text which I wrote down in only a day or two, before taking another 1-2 days to properly write down the entirety of the music (including the prelude, interludes, and postlude). The sung music was therefore a deeply connected vessel of the text and its meaning, both of which were completely embodied throughout in the piece via the singer's vocal line and body movement. Act II feels like the highlight of this text-music-body connection, especially since it is not rooted in only 'painful' emotional expression – instead, it is an entire journey, exploring various emotions in a new situation – freedom.

While being devastatingly sad, I believe this piece is also extremely effective in the emotional journey it attempts to portray. Although it mostly uses quarter-tonal writing stemming from and expressing much more 'difficult' emotions, it does have its moments of slight brightness and emotional exploration, however short they may be. Unlike *Naamah*, where the voice is arguably not used in a very embodied and vulnerable way, *I am dust* builds on the confidence achieved through the quarter-tonal writing (and performing) of the earlier piece. In my opinion, it truly pushes the limits of using quarter-tones, a minimal compositional approach, as well as performative operatic movement and acting, all in order to achieve a very embodied and vulnerable experience, which is 'lived' by the vocalist.

3.2.6 The Winter 2017 to Summer 2019 Gap

As we now jump to a piece written in the summer of 2019, it is not easy to directly connect this piece back to the ones previously discussed, most of which were written

in the space of only about a year and a half – between the summer of 2016 and autumn of 2017. As partially mentioned in chapter 2, the years 2017-2018 were ones in which a combination of health issues and a 'composer VS singer' identity crisis were taking place in my life, leading to many pieces I felt had failed to go in the right direction of my research and artistic vision. After resolving these issues and deciding to take a step back from singing, I had to once again find my compositional path. The next piece, therefore, might feel slightly removed from the previously discussed quarter-tonal pieces. It does, however, in my opinion, show a leap in compositional approach and maturity, all the while still feeling trapped by the same level of quarter-tonal writing available, due to the lack of progress with the Microtonal Singing Method.

3.2.7 VI. *Together, alone*, for string quartet

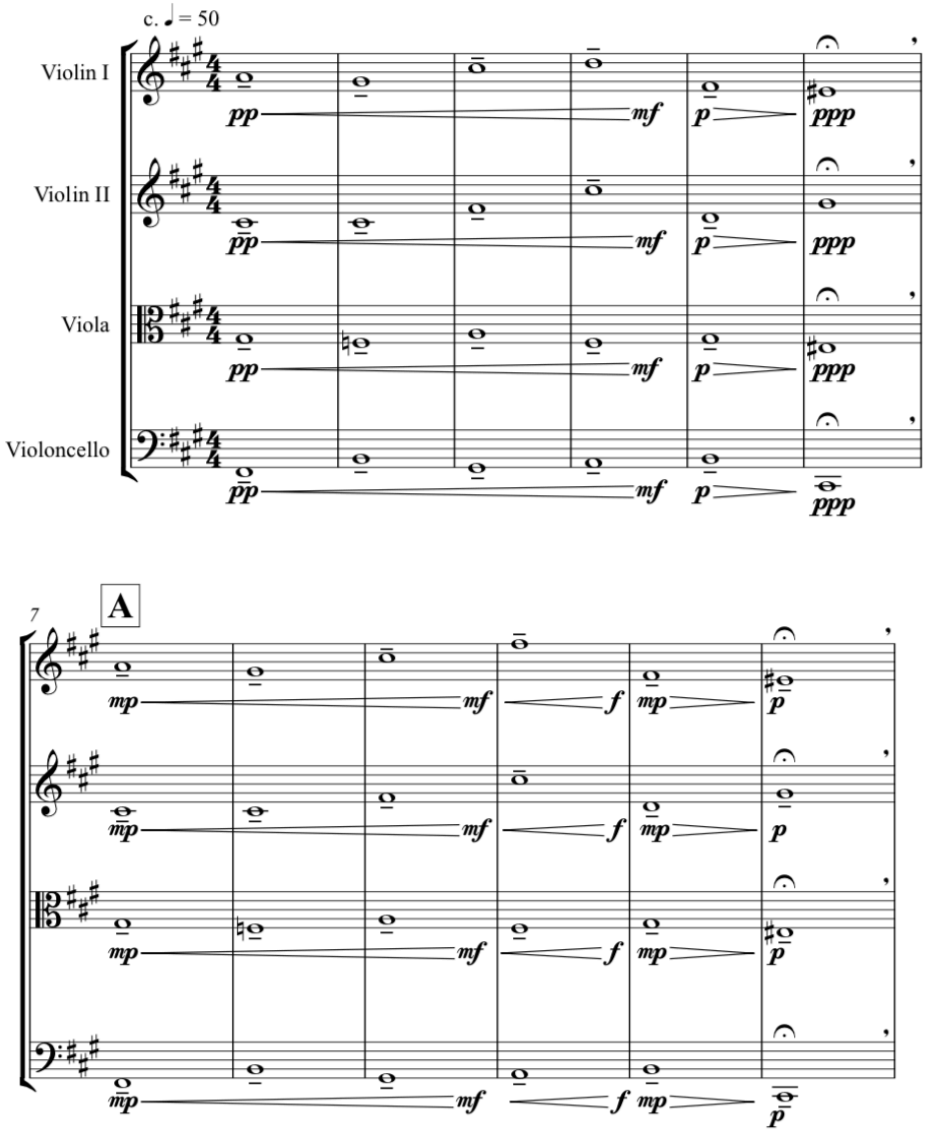
Commissioned by my friend Dr Angela Elizabeth Slater's 'Illuminate Women's Music' concert series, this piece was composed in the summer of 2019 during a very difficult time in my life.

My original plan, for a big performative piece inspired by the theatricality of Birtwistle's *Cortege*, for 14 musicians[23], simply refused to work. I had, however, written what was meant to be a simple musical idea to be developed throughout, which eventually became the first 12 bars of *Together, alone*. I showed it to my friend, composer Michael Taplin, who loved the simplistic yet powerful harmony and assured me that it was strong enough to build the entire piece on. I agreed, and, in

[23] Birtwistle, H. (2007) *Cortege: A Ceremony for 14 Musicians in Memory of Michael Vyner*. Vienna: Universal Edition.

only a couple of days, wrote this simple piece about finding your own voice – or risking staying behind.

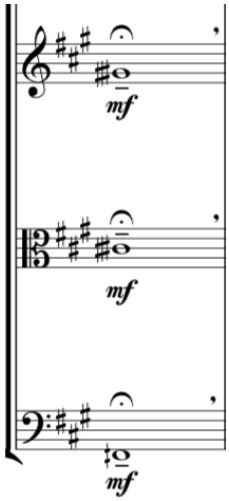
Figure 27: *Together, alone*, bb. 1-12, the opening of the piece, originally meant as material for a far more complicated and theatrical piece



The idea was to gradually build up a simple quarter-tonal chord, which, as the piece progresses, gradually clashes with and alienates the remaining 1st violin, which is still playing the original melodic line. I really liked the idea of subverting my previous use of quarter-tones by not creating a clash using quarter-tones, like I usually did, but

instead having the clash be created by the insistence on a *non*-quarter-tonal melodic line or note.

Figure 28: *Together, alone*, b.56, an example of the completed quarter-tonal chord, played by Violin II, Viola, and Cello

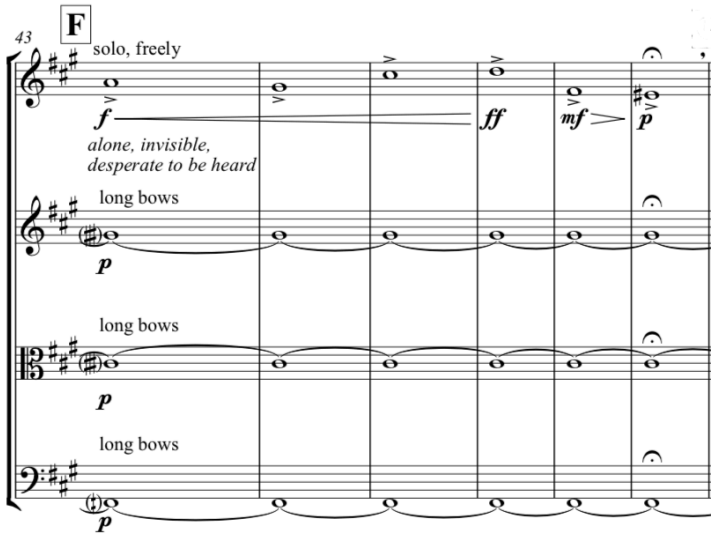


This very powerful and emotionally difficult piece truly conveys the feelings I was struggling with at the time – each player apart from the 1st violin gradually finds their own voice, leaving the 1st violin stuck in a world that they used to belong in but no longer do, with nothing left to do but insist on where they still are in the hope that things get back to 'normal'. The ending of the piece is not a resolution, but a cry for help, for a voice of one's own, full of pain, anger, and frustration. Just like *I am dust*, there is no positive resolution, no 'happy ending'.

The embodiment in this piece mostly focuses on the 1st violin as a sort of protagonist, and on the gradual alienation they experience as the piece progresses. The final repeat of the original musical idea, from rehearsal mark F, is soloistic and intense, with a lot of vibrato to enhance the expressive gestures.

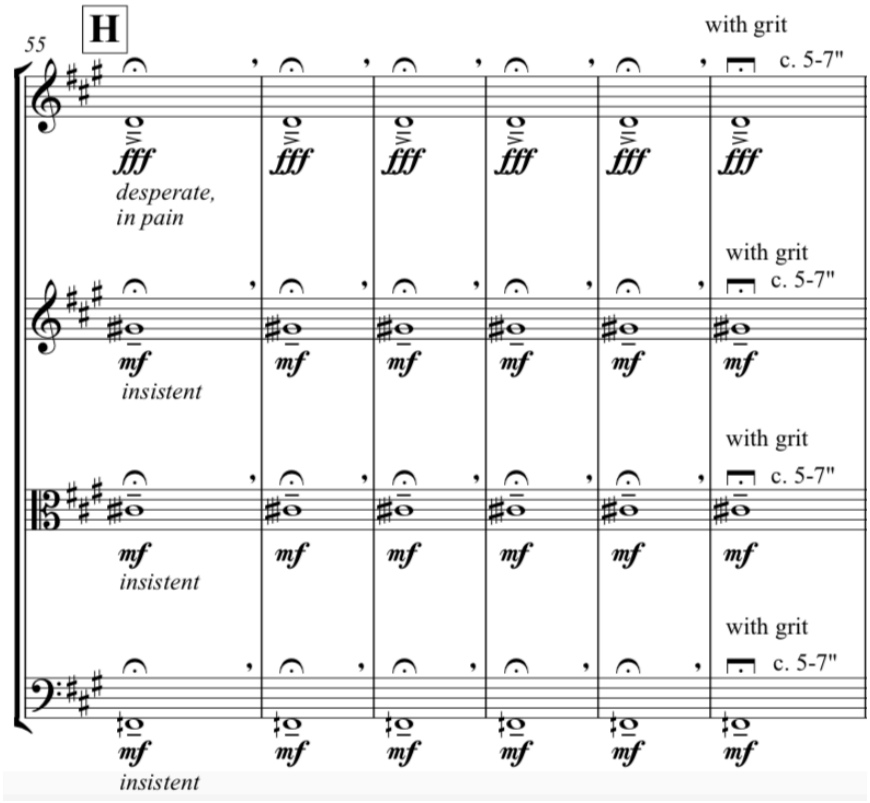
Figure 29: *Together, alone*, bb. 43-48, Violin I, alienated,

keeps repeating the melodic line it had before, though everyone else had moved on



The repeated chord from rehearsal mark H becomes increasingly more physical in the 1st violin part, with my intent for the pain and desperation to be embodied in the piece through gradually increasing pressure on the violin, creating a more 'gritty' and scratchy effect, especially for the very final chord.

Figure 30: *Together, alone*, bb. 55-60, Violin I, alienated, repeats the same note with repeatedly more pressure, while the other players simply insist on their quarter-tonal note, only adding grit on the final note.



While we see and hear the rest of the quartet, they all 'belong' with one another in the world of quarter-tones, and we therefore relate to and focus on the 1st violin, which has become the ultimate lone protagonist. With this use of focus and embodied vulnerability, my intent was that the audience see themselves in this character and connect to it, since, at one point or another, we have all struggled to find our own voice, and to feel like we belonged.

This piece tackles my research questions by transmuting my own emotions of questioning my own identity in the world into a musical structure. This was done with the intent of creating a musical experience of gradually increasing vulnerability and

discomfort in the 1st Violin, which begins the piece as part of an integrated ensemble but finishes it completely alone, despite not changing any of what they were playing.

The gradual 'zooming-in' into the 1st Violin as the protagonist of the piece is meant to intensify this process, as the audience begin the piece viewing the quartet as one coherent ensemble, and are then meant to become as confused as the 1st Violin when each of the other players suddenly abandons the ensemble to find their own quarter-tonal note to play, creating a new chord that has no connection to the opening material anymore.

Like a vocalist playing a character we can relate to, this gradual process makes sure that we understand who the protagonist is and connect to their journey and struggle, despite the lack of text one usually has in a vocal piece with a leading character to follow. This is a clear example of using my experience as a solo performer and transmuting and foregrounding it into embodied and vulnerable instrumental music.

Chapter 4: My ‘Minimal’ Compositional Approach, and the Importance of Writing for the Toy Piano

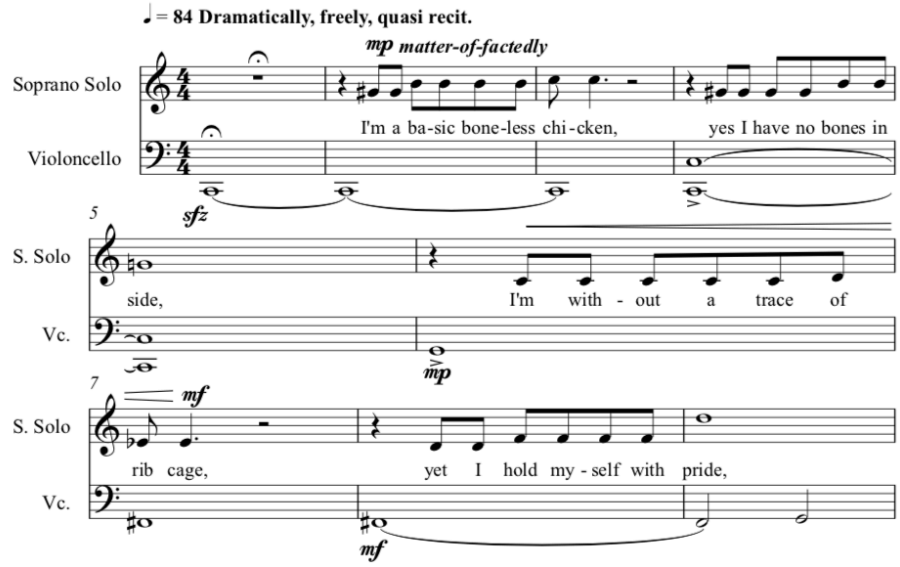
A major thread you will be able to notice in the pieces included in this thesis is a general shift towards a more 'minimal' and focused approach to composition. This gradual shift can mostly be seen throughout the quarter-tonal pieces, after which it stabilises into what it is today. This shift in approach was due to three main influences, which I will discuss in this chapter.

4.1 Background

When it comes to composing in a ‘minimal’ manner, this was not something I had only attempted for the first time during my doctoral research project. In fact, I had tried to explore this approach during my undergraduate degree but was harshly criticised for it. This first example of my ‘minimal’ writing for voice, titled *Ballad of a Boneless Chicken*, was a recitative-like piece for soprano and cello, which, while it may appear as overly simplistic on the page, was in reality a very effective tool for the singer’s expression, written with my singing skills and experience in mind.

Despite the criticism, I, believing in the power of the piece, still performed and recorded it, knowing that it would be extremely effective and expressive in concert. However, it did make me feel too apprehensive to explore writing any more ‘minimal’ pieces during that time.

Figure 31: Excerpt from my piece *Ballad of a Boneless Chicken* (2012)



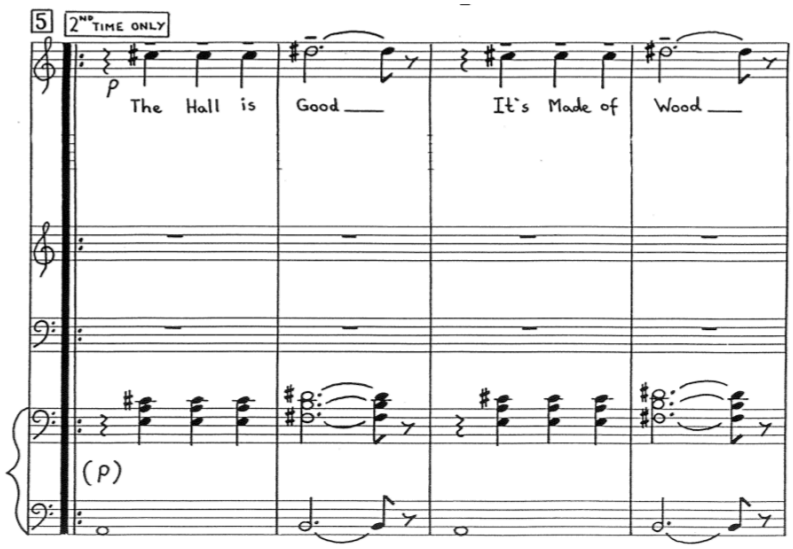
It took several years for me to finally gain the courage to experiment with a more 'minimal' and focused compositional approach. This was helped by seeing other 'minimal' composers succeed, and being taught and supported by composer Howard Skempton. I had also begun composing many short pieces for the toy piano – where the 'minimal' approach was also the most practical. It was that progression and sense of support – from both Howard and my other supervisor, Joe Cutler – that gave me the courage to explore composing in a more 'minimal' and direct way without fear of judgement.

4.2 Laurence Crane's *Weirdi*

My first hugely influential experience as a singer, after years of finding singing to be enjoyable, yet lacking in challenge and excitement, was in 2013, during my year of Postgraduate Diploma at Cardiff University. As part of the University's *Contemporary Music Group* concert, I was assigned to perform excerpts of Laurence

Crane's *Weirdi* song cycle[24]. The piece as a whole showed me just how expressive a 'minimal' piece could be, but the movement that had the biggest effect on me by far was *The Hall is Good*. In this movement, the soprano only sings two different pitches throughout. It seems extremely simple on paper, yet once you start rehearsing it, you realise that it means that those two pitches have to be absolutely *perfect* throughout in terms of pitching, technique, and, most importantly, expression. The text about the beauty of the Wigmore Hall, with the 'Religioso' tempo marking, gives the singer the very high expectation of making those two repeated notes – a C sharp and D sharp, close to the soprano voice 'break' between ranges, a challenging range to perform well in – sound extremely serene and perfect. The only accompaniment, consisting of very simplistic chords on the piano, makes the vocal line feel extremely exposed, with every slight imperfection being very noticeable.

Figure 32: Laurence Crane – *Weirdi*: 4. *The Hall is Good*, bb. 5-8



[24] Crane, L. (1992) *Weirdi: for soprano, clarinet, cello and piano*. No publisher listed.

At first, while rehearsing the piece, I felt extremely stressed out by how perfect it needed to be, focusing on eliminating any minor imperfections that might make me sound bad during the performance. After performing it, however, the experience of the concert itself stuck with me – the feeling of absolute focus on such minimal material while performing, the way that focus changed the way I approached the live performance – and therefore must have changed the way the audience experienced it too, and the surprising freedom I felt, being able to inject expression into the minimal material with nothing else being in the way.

It took some time, but the experience of that single performance changed the way I approached composing for performers. While I had already been thinking physically when composing for different instruments – particularly in solo pieces where I would compose on the instrument itself if possible – this experience shifted my focus from merely physical – i.e. extended techniques – into a focus on the performer itself, and on giving them the opportunity to express themselves in a more embodied, vulnerable, and focused way, like I myself had experienced when first performing *Weirdi*.

4.3 The Music of Howard Skempton

While my performance of *Weirdi* in 2013 planted the seed of my fascination with the 'minimal' composition approach, it was through watching countless performances of Howard Skempton's music, as well as his guidance and support during our tutorials, that helped me gain the courage to begin composing music that was more 'minimal' and focused.

Writing about Skempton's piano music, Peter Hill describes him as *"a deeply serious composer, but his art is modest and makes no self-conscious effort to impress. Precisely because it is so natural the music seems to tell us a lot about the private person behind the notes"*. Hill goes on to write: *"Skempton's music is full of such paradoxes. If one tries to explain why these miniatures seem so curiously substantial, one discovers that it is futile to expect an answer from analytical dissection... On the page it looks simple, even innocuous. There are few notes and the composer is extremely reticent with performing indications. This is because the notes often suggest many possible – often contradictory – shapes and relationships which no single set of markings could encompass".*[25] I agree with this description of Skempton's music, which showed me that so much could be achieved by the use of a 'minimal', distilled approach to composing and musical material.

4.4 The importance of the Toy Piano

In a similar way to how my abilities and experiences as a singer have helped provide me with a unique point of view as a composer, so has composing numerous pieces for the niche instrument that is the toy piano. While no solo toy piano pieces have been submitted as part of this thesis – you will instead be able to find them all in the appendix – the toy piano has actually been a main thread going through the majority of my doctoral research, helping both hone and validate my exploration of a 'minimal' compositional approach.

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[25] Hill, P. (1984) Riding the Thermals: Howard Skempton's Piano Music. *Cambridge University Press*, *Tempo*, 148, p. 8

Explaining the difference between the toy and standard pianos, Xenia Pestova Bennett writes: *"The mechanism of toy piano action is very different from the 'grown-up' grand piano. One of the most common mistakes made by composers and performers approaching this instrument for the first time is to assume that it is in fact a piano, but built on a smaller scale. This is simply not the case, and it may be psychologically and pedagogically easier to treat the toy piano as a completely different instrument with its own set of challenges, requiring an entirely different set of skills and technical considerations for performance".*[26] She describes the challenge of composing for the toy piano, stating that *"writing music for a very limited solo instrument as the toy piano presents a challenge for the composer. The results are exposed, with little timbral and textural variety to sustain colour and variety. However, working with limitations can also spur creativity and encourage the search for daring and imaginative solutions".*[27] It was this limitation that helped me get used to composing much more 'minimal' pieces, and become more comfortable with their results. This started with only pieces for the toy piano, but gradually began having an effect on my composing at large.

Ranging back from 2015 with *Recollection*, a solo toy piano piece commissioned by pianist and toy piano specialist Xenia Pestova Bennett, I have written a total of six solo toy piano pieces so far, with the latest having been written in 2020.

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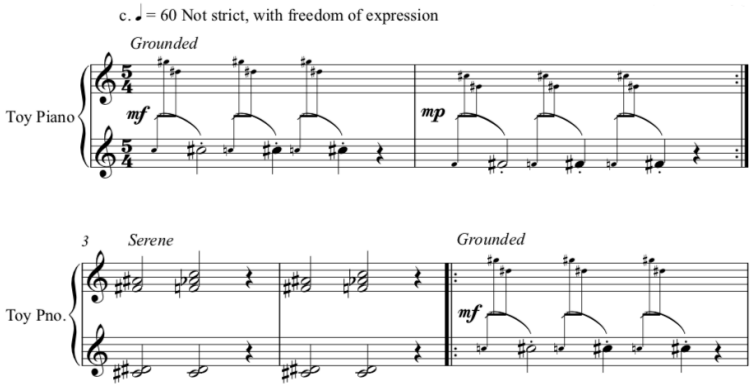
[26] Pestova, X. (2017) Toy Pianos, Poor Tools: Virtuosity and Imagination in a Limited Context. *Cambridge University Press*, Tempo, 71(281), pp. 29,
[27] Pestova, X. (2017) pp. 32-33

Figure 33: My 2-octave Schoenhut upright toy piano, on which I have written all of my toy piano pieces

All written on my 2-octave Schoenhut toy piano (pictured), these pieces began as mere fun miniatures, a way of composing for a keyboard instrument that did not have the historical weight and expectation that the standard piano did, while also providing the challenge of composing for such a limited range. As time went on, though, this 'sideline' series of pieces, mostly miniatures written without deadlines and performed by either Xenia or my long-time friend and collaborator Késia Decoté, began to influence the rest of my music – I was no longer afraid of composing 'simple' music, and, eventually, after struggling for years, no longer afraid of writing 'minimally' for the standard piano either. This led to the composition of *Breath*, for solo piano, discussed in the next chapter.

Figure 34: *Recollection*, for toy piano, bb.1-4. My first toy piano piece.



4.5 New Simplicity, Experimentalism, or just 'Minimal' Music?

Grouping yourself, as a composer, in a specific group or movement of creators, is always a complex – and in my opinion, quite unnecessary – thing to do. Descriptions can be interchangeable, develop differently over time, or simply be incorrect. In my case, according to Rutherford-Johnson, by following in the footsteps of Skempton and Crane I am actually building on the legacy of the 1960s Scratch orchestra, which was an important part of the English experimental music scene.

In his book *After the Fall*[28], Rutherford-Johnson describes Crane as *"One of the most remarkable "tonal" composers today"*, building on Skempton's music, which has a *"relatively straightforward (yet immaculately crafted) attractiveness"* while Crane's music is far odder. Rutherford-Johnson goes on to describe Crane's music as "*a "quietly crazy" rehabilitation of tonality… formed part of a wider and older trend within English so-called experimental music, which has roots in the music of Cornelius Cardew and the Scratch Orchestra in the 1960s"*, stating that Crane shares features with several former Scratchers – not only Skempton but also Gavin Bryars, Michael Parsons, Dave Smith, and John White.

Over the years, I have also experienced Skempton and Crane being mentioned as part of British New Simplicity, a term I perceive as misleading, almost offensively so, as it implies a lack of complexity – which I strongly disagree with. I do not find their music, or mine, to be simple, but instead focused and condensed – to quote Howard

[28] Time Rutherford-Johnson – Music After the Fall, p. 62

Skempton: "Not simple. Distilled"[29]. I therefore much prefer to describe my compositional approach as 'minimal'. Unlike the term 'minimalistic', used to describe music that is part of the minimalism movement, I see the term 'minimal' as describing music that is simple, yet focused and distilled, rather than simplistic in any way.

4.6 Building on Skempton and Crane

I feel as if, with my own music and in my own way, I am continuing and building on the works and legacy of both Howard Skempton and Laurence Crane. By adding my own unique point of view as a singer, along with my desire to compose music that connects strongly to different emotional states, I have taken influence from Skempton's minimal, yet melodic, approach, and Crane's 'spotlight effect' on performers. This has created, in my opinion, a vulnerable and embodied compositional language, whose melodic aspects have been pushed to include quarter-tones, and whose performative aspects have been heightened to include elements such as breathing – all done with the aim of transmuting my own lived experience as a composer-performer into music.

[29] In conversation with myself

Chapter 5: Composing Using Breathing as a Musical Idea

In this chapter I will examine the works in the portfolio that focus on the exploration of using breathing elements, together with musical ones, as a means of achieving embodied vulnerability.

5.1.1 Introduction – Approach to Breathing

As a young singer, breathing had always been an 'invisible' skill – one to be honed so that it could be practically silent during performance. Choral singing, especially, got me into the habit of breathing as silently as possible – especially when sitting on stage without performing.

It was only in recent years, around 2018-2019, that I began using breathing in different ways, starting with meditation. I experimented with various breathing techniques, from relaxed free breathing, to different counted block breathing such as 4-4-4 or 5-3-7, and more complex meditation breathing like ones used by Dr Joe Dispenza, in books such as *Becoming Supernatural*[30] and *Breaking the Habit of Being Yourself*[31]. It was through exploring various types of meditative breathing that I first experienced how breathing affects your mental and emotional states. These types of meditative breathing, and the idea of using meditation and breathing to feel connected to yourself and to the universe, influenced the initial ideas for *I am always myself*, for

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[30] Dispenza, J. (2017) Becoming Supernatural: How Common People are Doing the Impossible. London: Hay House.
[31] Dispenza, J. (2012) Breaking the Habit of Being Yourself: How to Lose Your Mind and Create a New One. London: Hay House.

symphony orchestra, in its very first (abandoned) iteration. The work on this piece began in late 2019 / early 2020, before the COVID-19 lockdowns began and had affected my compositional approach.

Once the COVID-19 lockdowns began in March of 2020, however, it became difficult to continue working on a piece whose concert was delayed indefinitely, and even more so when the use of breathing in the piece was meditative, and used structurally to unite a 'divided' orchestra. The reality I was living in was the complete opposite – the lockdown had caused me to experience anxiety, which at times included difficulty breathing. This included noticing my breathing becoming louder and faster, signalling an oncoming panic attack. While before, my breathing was always silent, going unnoticed unless I controlled it with different manners of meditative breathing, it was now much louder, and provided a window into my mental state.

These instances of panicked breathing brought to the surface the memory of a book chapter I had read years before, in 2014, during my masters, about the connection between physicality in recorded music performance and listeners' emotional states. This led to the beginning of my exploration of breathing elements, which arguably answers both of my research questions better than composing for quarter-tones did, as the physicality of breathing has much more potential for embodiment, as well as vulnerability.

In terms of developing a personal compositional language that drew upon my own lived experience in an embodied way, breathing strongly connected to both my experiences as a singer and my struggles with anxiety. In regards to exploring how

vulnerability experienced in solo performance could be translated and foregrounded in my music, building on my previously developed 'minimal' music approach by adding various breathing elements created, in my opinion, an even more embodied and vulnerable experience.

5.1.2 Mimetic Participation

During my masters, a chapter from a book about the music of the television show *Buffy the Vampire Slayer* made a lasting impression on me, which then took several years to fully manifest in my music and compositional approach. In this chapter, titled '*"What rhymes with lungs?" When Music Speaks Louder than Words*', by Arnie Cox and Rebecca Fülöp[32], I was introduced by the authors to a principle called 'Mimetic Participation', which explains how listeners connect to emotional states, such as tenseness, through the subconscious imitation of performers' physicality while playing.

According to Cox and Fülöp, humans, being imitative creatures since birth, learn through imitating those around them, whether that imitation is overt (actual) or covert (imaginary). As we age, that imitation becomes more covert, but, as counterintuitive as it might seem, there is a great deal of evidence that suggests cognition of observed actions relies on imagined imitation. This is what they describe as Mimetic Participation. With regards to music, this means that different aspects motivate different kinds of participation, though any kind of Mimetic Participation involves generating a visceral, affective response.

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[32] Cox, A., Fülöp, R. (2010) pp. 62-65

Akin to empathy or projection, though explained from a different perspective, it theorises that when we see and / or hear someone else doing something, we imagine ourselves doing the same thing as a part of how we understand that action. In the same way as motor functions and vocalizations learned through imitation become gradually more covert and entirely imagined, music is also performed through motor functions, whether that is the act of singing or playing instruments. They mention "Subvocalization", the "inner" speech one hears while not just reading, recalling, and rehearsing words, but also hearing somebody speak. This also has implications for music – subvocalization is not limited to words, though it does seem like we comprehend music through imagining what it would feel like to sing it, connecting to it physically in that way.

"But there is another form of mimetic participation that is perhaps the most important and yet the most elusive: the amodal exertions we feel when listening to and recalling music… the interior "clenchings" that are not goal-oriented and are not obviously related to observable motions of the body. For example, in listening to a guitarist, we would empathetically feel something of the relevant finger and arm movements and we would comprehend the sounds produced in part via subvocal imitation, but we would also feel something more visceral and ineffable that is not located in the specific modalities of limb, digit, and vocal exertions. This "gut" response is nevertheless an aspect of motor imagery: a comprehension of the musical exertions seen and heard which is manifest in inner, visceral exertions. We suspect that this feeling is physiologically connected to vocal experience, since vocal production involves contractions of the muscles of the torso… in listening to and recalling music

we empathize with the exertion dynamics that we see and hear, and this empathy is part of a broader process of human comprehension via mimetic participation."[33]
This psychological approach to how physicality in performance affects its listeners' emotional state had stayed with me for years, and, in 2020, it was my experience with breathing and anxiety during the first lockdowns that gave me the idea to begin exploring this enhanced version of vulnerable embodiment in musical performance and composition, as the continuation of my research into the development of my own compositional language.

As my own lived experience at the time included anxiety, which manifested physically in my breathing, I wanted to combine this experience, as well as my experience as a performer, to compose pieces in which the performers not only connected to the expression through the music, but also through the performative physicality that accompanied it. It was my intent that, through getting performers to tap into these physical and embodied breathing elements in a vulnerable way, they will get closer to a more actor-like performative approach, and therefore make audience members respond more strongly to them, in the same way they would respond to an actor embodying the emotional journey of a character.

5.1.3 Breathing Elements used by Other Composers

The most common use of breathing in music has been in pieces for voice/s, especially more virtuosic and actor-like pieces such as Berio's *Sequenza III for Female Voice* and Aperghis' *Recitations*, previously mentioned when speaking of my own

[33] Cox, A., Fülöp, R. (2010) pp. 62-65

experience as a singer. The approach to breathing in these pieces builds on singers' familiarity with breathing, pushing it to the extremes in performative ways in order to express different emotional states and achieve various effects.

In instrumental, and particularly chamber and / or orchestral music, however, the use of breathing is much rarer, though there are some examples. An effective example of solo writing which includes breathing elements is Garth Knox's *The Raven*, the seventh movement from the piece *Violin Spaces*[34]. It uses different types of breathing alongside playing, and even asks the player to whisper at the end, blurring the lines between breathing sounds and text. In this piece, Knox sometimes combines bowing with breathing, which is similar to my approach in pieces such as *I don't feel like myself*, for string quartet, and *I am always myself*, for symphony orchestra.

An interesting yet very simple, in my opinion, example of using breathing in a chamber context could be found in Frank Denyer's *String Quartet* (2017/18)[35], which uses breathing but seemingly only as straightforward long breaths between or alongside playing, not really varying the type of breathing throughout.

In terms of the use of breathing elements in orchestral pieces, they are pretty rare. One great example, though, is Michael Tippett's *Symphony no. 4*[36]. According to Toby Young, "*At first hearing in the context of 'high art' it comes across as a disconcerting gesture, even humorous, with the amplified heavy breathing more redolent of an out-dated porn film than symphony. But beyond the theatricality, it is quite clear that the*

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[34] Knox, G. (2018) *Violin Spaces*: *Contemporary violin studies*. Mainz: Schott.
[35] Denyer, F. (2019) 'Frank Denyer – 'String Quartet' (2017/18)' – Luna String Quartet [video online] Available at https://www.youtube.com/watch?v=QnVN8Wi9XCs [Accessed 9 January 2024]
[36] Tippett, M. (1977) Symphony No. 4: for orchestra. Mainz: Schott.

human breath is a signifier for life – the basic physiological function that maintains existence."[37]

This piece originally premiered with the breathing effect being performed by a wind machine, located alongside the orchestra's percussion section, but shortly after the premiere "*Tippett declared the wind machine to be unsuccessful in recreating the sound of live human breathing, and insisted that the sound had to be made by a human…assistant conductor Henry Mazer provided the sound offstage during the second performance, amplified with a microphone*."[38]

Tippett's approach to and use of breathing in this piece, though it did not inspire the initial use of breathing elements in my music, seems very similar to mine, as it centres on the embodied humanity of the breathing gesture, rather than using it as a mere sound or textural effect. The best example of that in *Symphony no. 4* is in the final moments of the piece, when we hear the musical embodiment of a dying body – repeated swelling breaths, followed by a drawn-out pause, which copy the breathing patterns of patients on their death-beds[39]. This, in my opinion, is Tippett's way of using breathing as an embodied and vulnerable gesture, alongside more straightforward musical ideas, in an attempt to connect the audience to the emotional journey of his piece (in this case, the human life-cycle). I believe that this approach is similar to mine, especially in pieces such as *Breath*, for chamber orchestra and *I am always myself*, for symphony orchestra, which I will expand on later in this chapter.

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[37] Young, T. (2016) Metaphysics and Heavy Breathing (or Tippett's Fourth Symphony). Cambridge University Press, Tempo, 70(276), p. 36
[38] Young, T. (2016) p. 37
[39] Young, T. (2016) p. 40

5.1.4 Breathing Compositions – an Overview

I was keen on exploring the principle of Mimetic Participation in action; especially by expressing and connecting to the anxiety I was experiencing during the 2020 lockdowns. This is what led to my very first use of breathing in my music, in *Steel to Smoke* – a collaborative multimedia piece created during the summer of 2020 with filmmaker Sasha Balmazi-Owen, using breathing elements, as well as visual ones, in an attempt to portray emotional states such as anxiety and claustrophobia.

In my next piece, *Hear*, for 4 voices and electronics, I built on my prior use of breathing to explore additional types of it, each with the intention of connecting to a different emotional state – namely Solitude, Hope, Connection, Anxiety, and Everything Together. This was also the first time I had used live breathing as well as pre-recorded, compounding the effect by having the audience be surrounded by physical 'manifestations' of how I have perceived these different emotional states. This was also when I began my approach of treating breathing as a musical idea, operating on the same level of importance, as well as the same relative level of dynamics, as the music itself.

After exploring breathing in connection with anxiety and other difficult lockdown-related emotional states, I felt able to explore more meditative uses of breathing in my music. Thanks to a week-long Wild Plum residency at The Red House, Aldeburgh, I was able to compose two pieces that explored much gentler, calmer uses of breathing – *Breathless*, for chamber orchestra, which tackles only the slightest form of anxiety

and deals with it effortlessly, and *Breath*, for solo piano, a calm piece with no tension or resistance whatsoever.

After that, I carried on exploring a wider range of breathing types and techniques, attempting to create music that connects, through embodied vulnerability in both the music and the breathing, to a wide range of emotional states. This was achieved through both *I don't feel like myself*, for string quartet, and *I am always myself*, for symphony orchestra, written as separate movements of the same piece, to be played in the order they were composed in. Both of these pieces massively stretched my use of breathing as a musical idea – from inhales intended on inducing feelings of anxiety in the string quartet, to breathing meant to symbolise / connect to emotional disassociation in the symphony orchestra piece, and even an entire section symbolising a panic attack in the latter piece.

The breathing in *A Standing-stone*, for strings, percussion, and solo soprano, concludes this portfolio with a much simpler approach – this was partly due to practical necessity, with very minimal rehearsal time available. Only very basic long meditative breathing is used in the strings – this is alongside a build-up of anxious breathing in the voice, which aims to help the audience follow the emotional journey of the piece and connect to the singer's character, whose emotional state changes throughout.

While the use of breathing as a musical idea stemmed from the need to express the anxiety I was struggling with during the COVID-19 lockdowns, alongside my fascination with exploring the principle of Mimetic Participation, it also felt freeing

and empowering to take something that I, as a singer, was taught to do as silently as possible, instead shifting my focus onto it.

By pushing and stretching the use of breathing from silent into loud, expressive, and performative, and making it of equal importance to the musical material, I managed to zoom-in on an aspect of vocal performance that I believe is extremely effective and under-utilised. I was then able to move this exploration from voices onto instruments, where its use could be combined with the already-existing physicality of the instrumentalists' own playing, such as in the string instruments in *I am always myself*, where bowing and breathing were written as combined physical gestures.

I believe that breathing as a musical idea can be the most effective in connecting audiences to various emotional states and journeys when it is done through the embodied and vulnerable combination of playing (rather than singing) and breathing. This is because, in my opinion, there is something inherently more vulnerable in the physicality of performative breathing alongside playing, perhaps because the use of breathing is a much more 'actor-like' way of performing, usually only used by and expected of singers, rather than players, making it much more effective in players' performances.

5.1.5 Performative Breathing

I had realised quite early on in my attempts to compose for instrumentalists using breathing that 'performative breathing' must be used, otherwise it would not be audible enough for the audience to hear and be able to connect to. This means that,

similar to how a ‘stage whisper’ differs from a normal whisper, 'performative breathing' must be louder and more exaggerated than normal breathing. For dynamic purposes, it needs to be done exclusively through the mouth, otherwise it would not be audible enough. It may also necessitate more performative approaches in order to maintain, such as only giving the illusion of panicked breathing, rather than actually hyperventilating, achieved via acting rather than through actually replicating the physical effects of a panic attack (which could be too physically taxing on a performer).

5.1.6 Connecting to Embodied Vulnerability through the Physicality of Breathing

Even though I perceive my approach towards using breathing as a musical idea to be very performative and actor-like, it was very difficult to find writings about this type of embodied vulnerability approach to breathing as part of performing. Books such as ‘Voice into Acting’[40] and ‘The Vocal Arts Workbook’[41] explain, in great detail, how to bring your breathing to its most relaxed and effortless state, but surprisingly say nothing about using breathing in order to connect to specific characters or scenes. Even books such as ‘The Techniques of Singing’, focusing on contemporary extended techniques for voice, do not mention anything about breathing used in this way, the closest mention being about inhaled singing. [42]

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[40] Gutekunst, C., Gillett, J. (2014) Voice into Acting: Integrating Voice and the Stanislavski Approach. London: Methuen Drama.
[41] Carey, D., Clark Carey, R. (2008) The Vocal Arts Workbook: A Practical Course for Developing the Expressive Actor’s Voice. 2nd edn. London: Methuen Drama.
[42] Isherwood, N. (2013) The Techniques of Singing. London: Barenreiter, pp.76-77

It was only in Bloch et al's article[43] that I found mention of using a combination of respiratory, postural, and facial configurations that correspond to 'real-life' emotional behaviours in order to help actors connect to different emotions in performance. In the article, they determine that *"each basic emotion can be evoked by a particular configuration composed of: (1) a breathing pattern, characterized by amplitude and frequency modulation; (2) a muscular activation characterized by a set of contracting and/or relaxing groups of muscles, defined in a particular posture; (3) a facial expression or mimicry characterized by the activation of different facial muscle patterns".*[44] Using a set of six basic emotions: happiness, sadness, fear – including anxiety and panic, anger, eroticism, and tenderness[45]; they observed how this method helped actors connect to different emotional states, as well as help them *"recognize their own emotions more clearly and to face some of their personal conflicts, which may constitute a professional handicap".*[46]

This article, which I only discovered very late into my doctoral research project, shows how effective it is to use embodied performing elements such as breathing to enhance the performer's ability to connect to, and express, different emotions. While it relates to acting, I, as a performer myself, seek to bring these acting elements into contemporary classical music in order to create much more performative experiences. As a singer, who approaches most performances as an actor too, I wanted to bring these performative elements into pieces for instrumentalists too, exploring their own use of physicality through connecting to breathing, as well as their own physical

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[43] Bloch, S., Orthous, P., Santinañez H. (1987) Effector Patterns of Basic Emotions. *Journal of Social and Biological Structure*, 10, pp. 1-19
[44] Bloch, S., Orthous, P., Santinañez H. (1987), p. 3
[45] Bloch, S., Orthous, P., Santinañez H. (1987), p. 4
[46] Bloch, S., Orthous, P., Santinañez H. (1987), p. 16

playing, as a way of more effectively achieving a vulnerable and embodied performance experience.

5.2 The commentaries

5.2.1 I. Steel to Smoke, a collaborative multimedia project

Written in the summer of 2020 as a commission gained through the Nonclassical Associate Composer scheme, this was part of *66 Days*, a digital multimedia project marking 400 years since the Mayflower sailed to America. The project called for both collaborating with another creator and incorporating multimedia elements – i.e. both audio and video, which I had no experience working on before. My first thought was of filmmaker Sasha Balmazi-Owen, whom I had briefly met during a showcase of a collaboration between him and another composer on a piece for Birmingham Contemporary Music Group that contained audio, video, and dance elements.

The brief given for this project was "journeys, migration, and cultural identities", alongside the Mayflower journey itself, and I immediately thought of the Birmingham canals, which have been my only source of connection to nature and the outside world during the first two lockdowns. Sasha immediately echoed my sentiment, saying that he had also been visiting the London canals during the lockdowns, and was also feeling very inspired to create something based on them. We collaborated, in true 2020 COVID-19 lockdown form, completely remotely, only meeting again in person for the performance of my next piece, *Hear*, which he filmed.

We made a decision for the piece to explore the ways canals have been connecting us – to nature and other people – during the lockdowns, and also the historical connection they represent. This was done by structuring the piece around the visual images of a journey from Birmingham to London through the canal systems, hence the title *From Steel* (Birmingham) *to Smoke* (London). Sasha found map images of that journey, cut them up individually, and transformed them through a process of deterioration, happening gradually throughout the piece, interspersed with photos of signs and ads from the canals (many being historical), put through the same process.

While the structure of the piece was built around the physical journey from Birmingham to London through the canals system, it was being gradually 'corrupted' by difficult emotions I had experienced as part of the COVID-19 lockdowns – such as anxiety, stress, and claustrophobia. The contrast between the journey through the canals, the calmness of the water, and the psychological 'panic attack' sections fight each other throughout, symbolising my own experience of lockdown – the beauty of the canals versus the solitude and anxiety at home.

This was my first ever use of breathing in a piece. While the very first (abandoned) version of my symphony orchestra piece, which I was working on during the first two lockdowns, did have elements of breathing in it, they were meditative rather than anxiety-based. However, it did make the idea of using breathing as a musical idea even more prominent in my mind, making me really want to explore breathing as a way of connecting to different emotional states – namely anxiety and claustrophobia in this piece, which I was feeling a lot of at the time.

I also kept thinking back to the previously mentioned chapter I had read about Mimetic Participation, which inspired me to explore using breathing as a musical idea of equal importance to the other 'proper' musical ideas. I kept picturing an example of a film or television scene, in which you hear the protagonist's breathing getting louder and faster, signifying their emotional state, while you, as the viewer / listener, sub-consciously copy their breathing, and therefore their emotional state too, creating a transference of the emotional state of the scene to the viewer in a very physical and embodied manner. I was extremely curious to explore that in my own music.

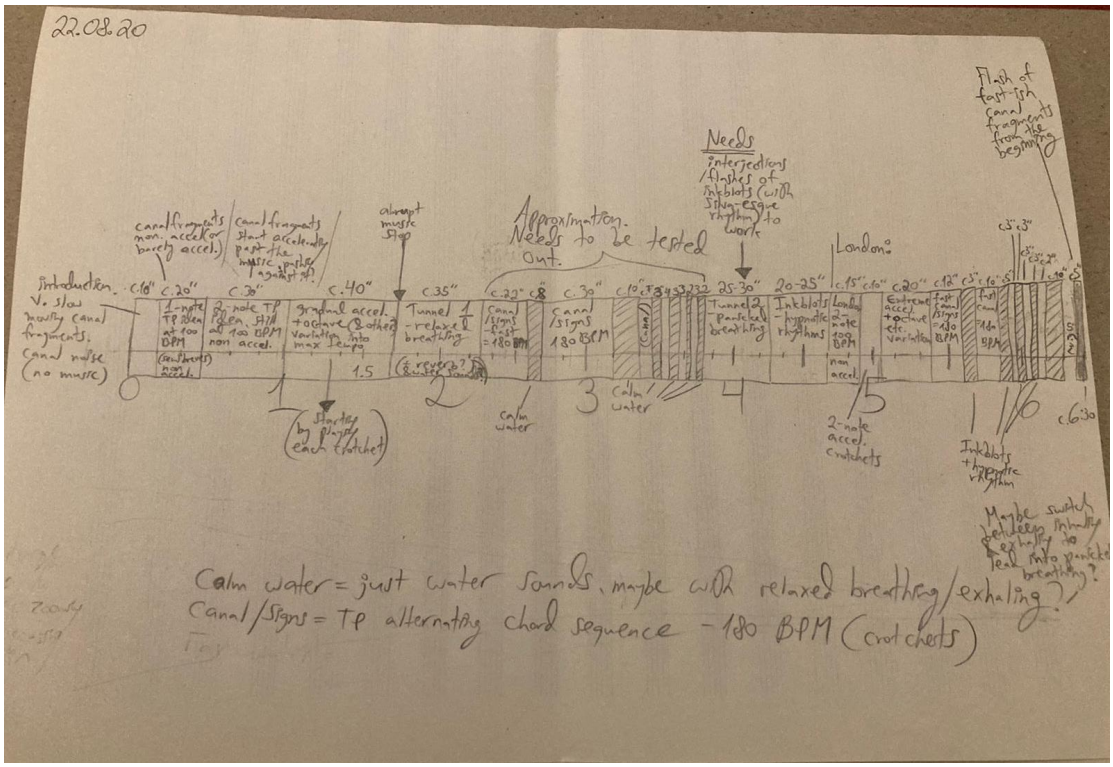
Apart from an existing recording of an older piece of mine for amplified harp, from which a short strumming clip was taken and effects were added to, all the music in the video was recorded by me, either at home or up to a short 5-minute walk outside to the nearest canal. The majority of the piece's music consists of toy piano and breathing, both of which were very physical to perform, connecting to the embodied vulnerability I had attempted to achieve before with the use of quarter-tones.

As mentioned in the previous chapter, while this portfolio contains no solo toy piano pieces, writing for the toy piano had actually been an important part of my composing during the doctoral research project. The toy piano was also perfectly suited for this piece, with its wooden keys even sounding similar to an old projector, complimenting the visual choice of presenting the map fragments as old-timey projections, constantly changing and degrading throughout. Even the lack of achieved sound caused by some repeated key plays became an embodied emotional release of what I perceive as despair and frustration.

Up to that point, I had always viewed myself as a composer who was unaccustomed to collaborating with other creators, apart from the usual collaboration between composer and performers. This collaboration with Sasha, however, was completely different. We were both very respectful of one another, and very wary of stepping on each other's toes. The result was a true collaboration – each person brought an idea to the table, got the other's agreement or notes, and then the other person built on it further and sent it back, and so forth. I created the timeline of the piece based on what we discussed so that he would know roughly how long each section needed to be, and he then sent me drafts of the video sections for me to write exact music for, after we had agreed on the different musical ideas used for different visual sections.

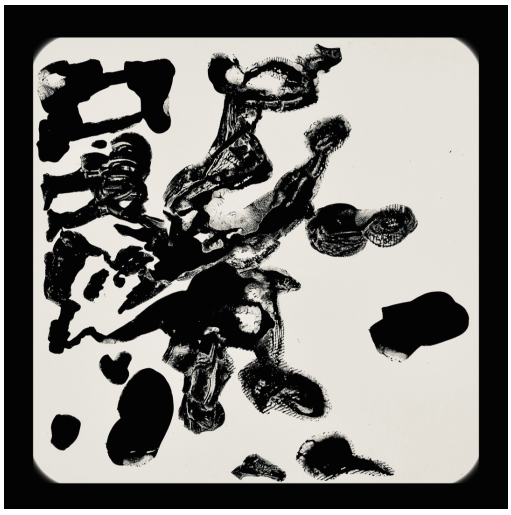
Unfortunately, I had realised too late in the process that my old copy of the Logic software no longer worked – it was too old for my current computer, which I only found out after I had reinstalled it. I therefore had to use *Garage Band* to edit and layer all the musical sections, which I then sent to Sasha as separate 'scenes'. Luckily, he had some editing software that included music editing, and was able to piece it all together, plus add some extra audio effects that I was not able to.

Figure 35: *Steel to Smoke* – Finalised timeline of the piece, created by me and sent to Sasha



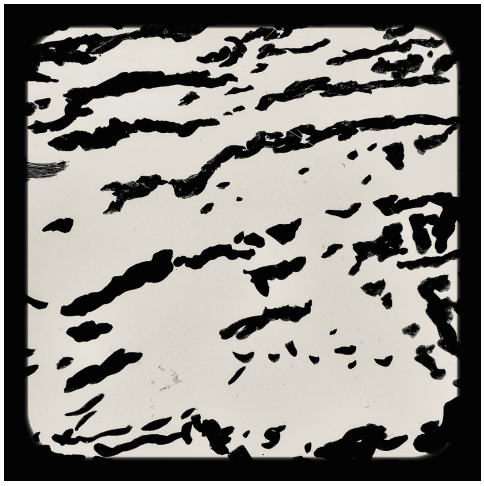
In line with the psychological nature of the piece, Sasha was very interested in creating inkblots (similar to the Rorschach Test) for us to use, which felt very fitting with the piece's themes of emotional exploration.

Figure 36: *Steel to Smoke* – Example of early ink-blot idea, created by Sasha Balmazi-Owen



Sasha also created graphics based on the movement of water, something I was fascinated by.

Figure 37: *Steel to Smoke* – Example of early Canal water idea, created by Sasha Balmazi-Owen



As the first piece of mine to use breathing after using quarter-tones for so long, this felt like a much more heightened way of using embodied vulnerability, achieved through my own playing of the toy piano and breathing, to explore – and build on – the same research questions. The effect created by the recorded physicality of breathing, alongside playing, felt extremely effective, and made me excited to further explore the possibility of using breathing as a musical idea.

5.2 .2 II. Hear, for 4 singers and electronics

Building on *Steel to Smoke'*s use of breathing to convey anxiety, but also adding in live elements of breathing on top of the pre-recorded ones, *Hear* was composed in the spring-summer of 2021 for my curated concert at St John's, Waterloo, London, in June 2021, as part of Nonclassical's Associate Composer scheme. It was my first

major post-lockdown piece, and is still my longest piece to date at approximately 42 minutes.

I decided for this to be a piece for live singers and a spatial multi-speaker electronic tape. This was because I knew that this was a rare opportunity to work with a much larger budget than I was accustomed to, which also included the option of multiple speakers and a sound engineer. Ever since working on the electronic track for *Steel to Smoke* the summer before, I had wanted to further build on those skills by creating another piece using electronic 'tape' elements, and with the available budget, I decided to write for myself and three other female singers. The idea to use spatial electronic tape came from attending several BEAST[47] concerts at the University of Birmingham over the years, and experiencing both purely electronic pieces and a mixture of live players and spatial electronics. It was attending clarinettist Heather Roche's BEAST concert in March 2019, in particular, that inspired me to compose for a mixture of live performers and spatial electronics.

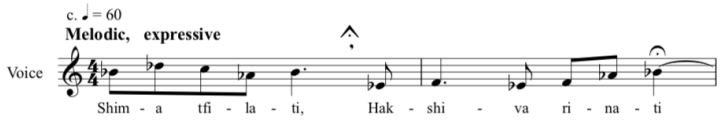
I knew that the piece I was aiming for would be a longer experience, where the singers would need to be able to react to the electronics and to each other in real time, necessitating singers who are expressive, experienced with performing contemporary music, and are experienced in and comfortable with improvising. For that reason, and in order to have different colours and ranges of voices alongside mine (a high soprano), I chose mezzo-soprano Loré Lixenberg (a brilliant and experienced singer and creator, whom I had worked with before), mezzo soprano Rosie Middleton

[47] BEAST (2020) BEAST – About. https://beast.cal.bham.ac.uk/about/ [Accessed 3 April 2023].

(whom I had previously met and wanted to work with), and high soprano Fleur de Bray (who is both an operatic soprano and a composer herself).

During the time when I was struggling to think of melodic ideas for the piece, I was at my part-time office job when I heard the melodic idea, sung by choral voices, not as an idea popping into my head but as an actual physical sound, perhaps coming from the humming of the lights. It was wordless but very clear, and I immediately wrote it down and knew that it was the idea for this piece. I struggled for a while with finding text to match the melodic phrase, eventually deciding on using a Hebrew text from Psalm 60 in Latin / 61 in Hebrew. This was a text I had already set several years before for two different choral pieces, once in Latin and once in Hebrew, since I liked it so much, and I decided to use one sentence from it, slightly altering it to fit the melody.

Figure 38: *Hear* – Main theme with text



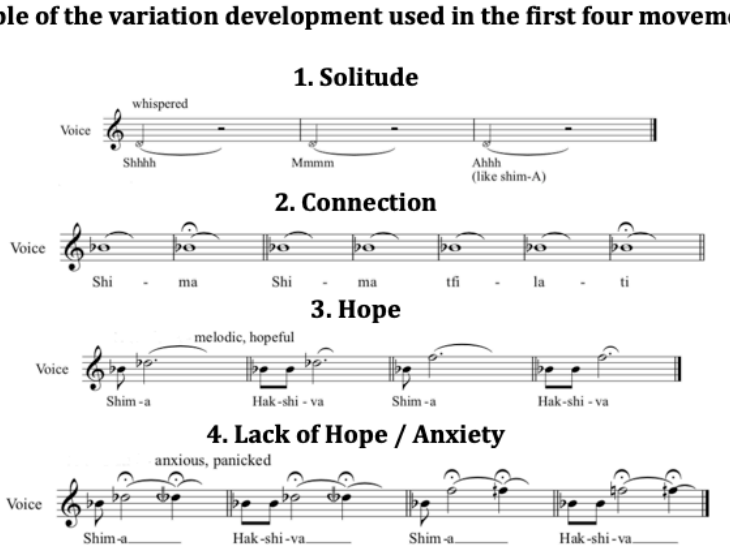
I removed "Elohim" (God) from the original text, which was originally "Shima Elohim Tfilati, Hakshiva Rinati" (Hear God my prayer, listen to my joy), making it much more 'personal'-sounding and less religious, while still maintaining the element of crying out for help / to be heard.

There were several reasons behind the choice to use a Hebrew text: Firstly, with Hebrew being my first language, it made the text feel more like it was my own,

reflecting my own point of view and upbringing. Secondly, the use of Hebrew added colour that made the text sound less like 'standard' words – I always found the difference in colour between the Hebrew and English languages to be quite extreme, especially when sung. Lastly, and most importantly, most people would not understand it, and, especially with the use of repetition throughout, my intent was for the words to gradually become meaningless, giving the space needed for the different emotional expression behind the words to come through with no distraction from the masses of English text one might expect from a 40-minute long vocal piece.

It was on the advice of my supervisor Howard Skempton that I decided to base the entire piece on this one melodic phrase and text, something I had never attempted before, especially for such a lengthy piece. It was a very rewarding challenge: structuring the entire 42-minute piece based on the emotional states it was trying to portray, all while using variations of the same single melodic idea. I achieved this by dividing the original theme into fragments, gradually building and developing them in each movement.

Figure 39: *Hear* – Example of development of fragment variation material



The structure was based on the emotional states I had experienced during the lockdowns – Solitude, Hope, Connection, Anxiety, and then all of these emotions together. While 'Anxiety' was only supposed to be its own separate idea in its own time, in reality it kept penetrating into all the other ideas as I composed them, reflecting the reality I lived through, where anxiety kept creeping into every moment.

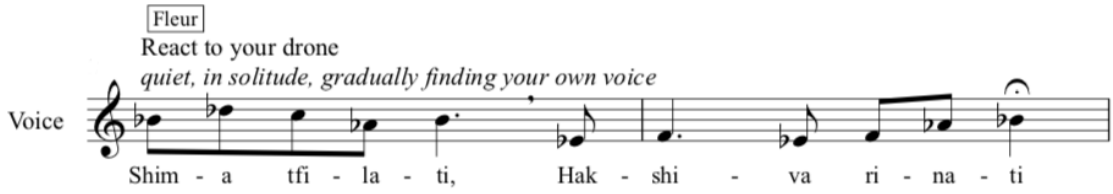
I knew there would not be much rehearsal time for the piece before the concert – a workshop was offered but would have been too difficult to organise – so there was only a rehearsal on the day. I therefore sent the singers a set of theme and variation fragments to record themselves, which was also the same material that was sung live in the performance. This meant that they were therefore already familiar with all the material they would have to perform, having recorded both the notated fragments and their own improvisations based on those fragments. I also recorded all of these sung fragments, and their improvisations, myself.

I then used these recorded fragments from all four singers – and nothing else – to create the electronic track. No audio effects were used, either – I had planned to use some but was struggling with technically adding them on. I asked Gabriel Prokofiev, who did the final mix of the piece, to add effects such as delay and reverb in, but he convinced me they were unnecessary. Gabriel was completely right – the end result, when placed in a very echo-filled space using ten speakers, four different audio channels, and the same four singers who recorded the fragments, was that it was virtually impossible to tell the live voices apart from the pre-recorded ones. As one of the performers, I was surprised to find myself struggling to tell live voices from pre-recorded ones, even when I could vaguely see the other singers. This created a unique

experience for the audience: being surrounded by a wall of sheer mixed live and pre-recorded sound, and not being able to distinguish between the live and pre-recorded voices unless there was no live singing at all. This made it become less of a standard live concert, and more of an experience, which I am extremely happy about.

Composing a piece comprising only of singers was a unique opportunity to create something that was very physicality and vulnerably embodied. By making it clear to the singers what the piece was about, marking the emotional states they needed to portray throughout, and even letting them experiment with the different fragments on their own during the recording stage, the result was a piece centring the embodiment of emotional expression. The singers, all very used to performing emotional and performative music, were reacting throughout to each other's live and pre-recorded singing, as well as to themselves, always with a prompt of what the emotion they should be feeling / portraying is.

Figure 40: *Hear* – c. 6:52 – example of instruction to react to your own drone, and the emotional state to be expressed



Apart from the various fragment variations, each emotional state in the piece also had a different type of breathing associated with it, which was both pre-recorded and performed live. While, throughout the piece, the different breathing types are used in the tape part as part of the texture in order to reinforce each emotional state, we also have two instances where breathing takes centre stage.

Figure 41: *Hear* – The different breathing ideas used, by movement / emotional state

Different types of breathing used:

1. Solitude

Breathing - block breathing. Not too relaxed, a **bit** anxious

Count 5 in, 5 hold, 5 out, 5 hold. Repeat for 30-40"

2. Connection

Breathing - slow, long, relaxed breath.

Approx. matching inhale and exhale in length. Repeat for 30-40"

3. Hope

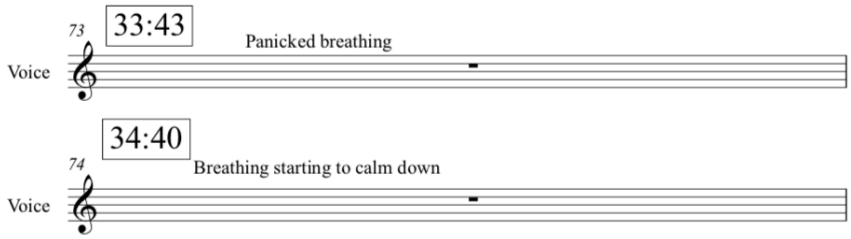
Breathing - medium speed (for you), feeling positive. Repeat for 30-40"

4. Lack of Hope / Anxiety

Breathing - Fast, anxious, panicked. Repeat for 30-40"

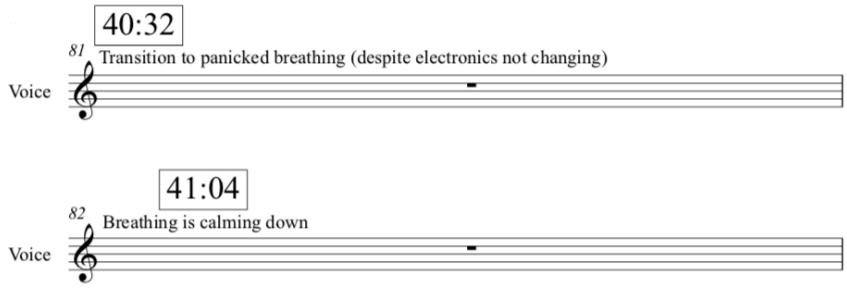
These sections are where the breathing begins to be performed live, on top of the tape part, and is used as a much more direct and embodied vehicle of emotional expression. The first is during the 'Lack of Hope / Anxiety' section, which develops from increasingly anxious repeated fragments into loud live and pre-recorded 'panicked breathing' (at 33:43), eventually calming down using long calming breaths.

Figure 42: *Hear* – c. 33:43 First appearance of live breathing on top of the pre-recorded tape breathing



The second is during the 'Everything Together' section, which works towards the climax of the entire piece at c. 39:28. The singers improvise by jumping between different fragments – from different emotional states – with the intent for the audience to experience all of them all at once – a representation of the emotions I experienced going through the COVID-19 lockdowns. At c. 40:32, the panicked breathing starts up again, sustaining until it calms down once again at c. 41:04.

Figure 43: *Hear* – c. 40:32 The return of the live panicked breathing



The aim of this very experience-oriented piece was to get the audience to experience all the emotions I had experienced in the first year and a half of the COVID-19 pandemic – both positive and negative – with the belief that only through truly connecting to our difficult feelings can we then release them and be able to move on. The sections are contrasting couplets - 'Solitude' represents the loneliness I felt, while 'Connection' represented reaching out digitally to one another, trying to re-create the community we had lost. 'Hope' was the hope I constantly had that things would go back to normal soon, while 'Lack of Hope / Anxiety' was how I felt every time that hope was snatched away yet again, and lockdown was once again extended. This was my way of taking my own personal lived experiences of the pandemic and lockdowns, and using the physicality of breathing and singing to transmute it into a piece that portrayed the different emotional states I had experienced, and felt stuck in, for so long.

For the first time in my experience as a composer, the resulting experience of the piece was less so about individual vulnerability during performance, as so many of my previous pieces had been, but rather about a *shared group* experience. The embodiment of the emotions was still there, as was the vulnerability and authenticity of those emotional states, but, instead of being a solitude experience within an

ensemble, like in *Distant Lament* for example, it was instead shared between the singers, and between the live and pre-recorded vocal lines and breathing. This 'group' element, of essentially being 'alone, together', seemed apt to symbolise the early 2020 lockdowns.

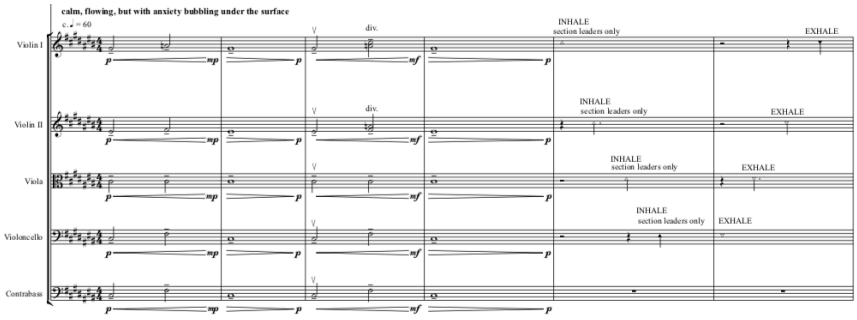
5.2.3 III. *Breathless*, for chamber orchestra

Written in August 2021 during a Wild Plum residency at The Red House, Aldeburgh, only two months after the performance of *Hear*, this piece was commissioned by Southbank Sinfonia as part of the Nonclassical Associate Composer scheme. Unlike my earlier uses of breathing, all of which included electronics, this was my first piece using breathing with no electronics and no singers – only a chamber orchestra, without any type of amplification. Also, while most of my previously used breathing elements were very much derived from anxious 'panic attack' types of breathing, originating from my experience of the first lockdowns, this was the first piece built primarily on more relaxed, meditative breathing. The calmer nature of this piece was also very much influenced by the location in which it had been written – The Red House, Aldeburgh.

Being in nature and taking daily walks to the beach meant that I was feeling the least stressed I had been, possibly ever. It was only while being in that particular headspace that I could have written a piece whose structure needed very little resistance to exist – something I usually require in structured pieces. The original plan for the piece required more resistance, more 'drama', but as I sat on the beach, watching the waves, it simply felt unnecessary to include those in order for the structure to make sense.

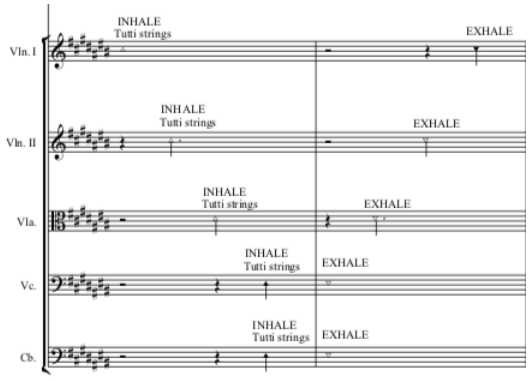
Hence, the structure of the piece was born – a stretched out moment of calm thinking that, without noticing, gets away from you. It takes a little bit of time to notice that a pesky thought had broken through past the calmness, and it is only through your breathing, or lack thereof, that you finally notice what is happening. At that moment, your response is not to fight back, or even start to tense in self-defence – instead you simply breathe out, take a moment, and return to the calmness you had before, feeling at ease and in control of your mind and body.

Figure 44: *Breathless* – bb. 1-6, opening material, including the first breathing 'wave'



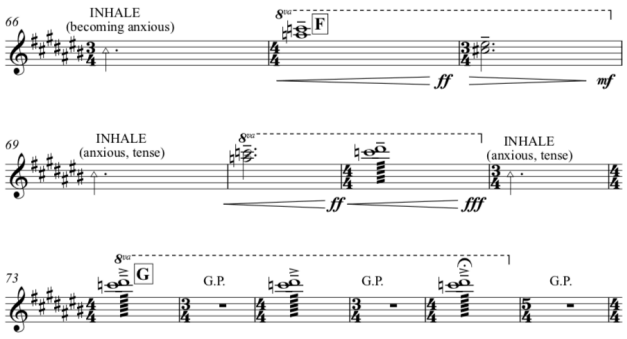
The rise of the 'pesky thought' is conveyed through the change in breathing, with the piece beginning with long spatial waves of inhaling and exhaling across the orchestra. However, as the music begins to get tenser and higher-pitched, with the woodwind being added in, the inhales and exhales get gradually shorter – from 5/4 to 3/4 – with their repetitions stretching further and further apart.

Figure 45: *Breathless* – bb. 23-24, tutti strings breathing wave



This results in the climax high notes being paired, in a Q&A manner, with only loud inhales. This depicts the physicality of how humans forget to breathe out when they get anxious, with the general panic attack advice being to insure you properly breathe out.

Figure 46: *Breathless* – bb. 66-78, Violin I, showing the progression into the climax of the piece, with repeated inhales

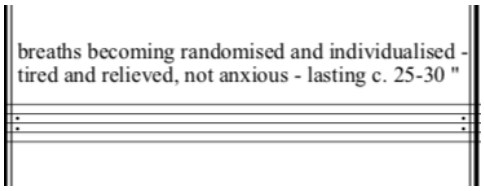


The pause and long exhale that follows it fixes this, bringing us back to the same material at the start of the piece, only this time orchestrated slightly differently, and with short pauses in between phrases. This change represents a sense of control in the calmness that was not present before.

The ending features a revelling in the calm breathing, achieved by using an aleatoric box in which each player is breathing in their own time, creating an interesting texture

that contrasts to the big unison ‘waves’ of breathing used throughout. This is followed by a long spatial unison exhale wave, completely calming the piece down into content silence.

Figure 47: *Breathless* – b. 106, example of aleatoric breathing bar



The experience of working with Southbank Sinfonia on this piece was a substantial learning experience, particularly in terms of using breathing as a musical idea for a purely acoustic ensemble for the very first time. Unfortunately, unlike all of their previous concerts in the months prior, this was their first one performed on a raised stage rather than on the same level as the audience, which I had planned on for the breathing to have its maximum embodied impact.

This, alongside many of the players sadly not taking the breathing seriously – and sometimes, especially during the aleatoric section, not performing it at all – caused the breathing to be barely audible throughout the piece, and to sound less like an integral part of it and more like an added noise or colour, similar to blowing air through wind instruments as an extended technique. This defeated the point of the breathing in the piece, and in my music in general, which was to connect the audience in a physical and subconscious way to the emotional journey of the piece, following the idea of Mimetic Participation.

My intention was to make the audience breathe *with* the players throughout, changing their own breathing alongside the changes in the piece, and therefore also changing their own emotional state to match those of the piece, thus creating a deeper emotional journey for them as the piece was performed. This could not be achieved unless the breathing dynamic levels matched, or were at least close to, that of the playing, creating a piece where both the breathing and musical ideas felt equally important and were equally audible.

I still believe this to be possible to achieve in this piece – by seating the audience much closer, and on the same level, as the orchestra, and by the orchestra committing more time to learning to perform the breathing elements in an exaggerated and performative way, the breathing in the piece could be much louder, and come across in a much more direct and embodied way.

One of my biggest takeaways from the rehearsal and concert were that it would be better to only focus on the string section when writing breathing for a large ensemble, as the other sections were too far away from the audience for it to be audible. I also learned that players would need an earlier introduction to the breathing elements, alongside enough time to rehearse them on their own, and that, in the case of other large ensembles, like the symphony orchestra piece I was already planning, the players should be notified in advance that this extended technique is being used so that anybody not comfortable with it could opt out and be replaced with another player who was.

I learned that this type of breathing only works as a performative technique, done in an exaggerated way, or else it is not audible enough for the audience to connect to in the same way they would with the musical elements of the piece. I very much hope that this piece gets performed again in the future, by an ensemble open to trying out the breathing, and willing to give extra time to mastering how to do it in an audible, and expressive, way.

As far as embodiment and vulnerability are concerned, this piece could be seen as the breathing equivalent of *Naamah* since it was attempting to do something very new to me – using breathing in a purely acoustic manner for instrumentalists. That required the piece to be quite simplistic, rather than pushing the boundaries of embodied and expressive performance in the same way its breathing predecessor pieces did.

The breathing, whether used as a 'wave' or aleatorically, was written with the intention of connecting the performers to the emotional states portrayed in the piece, all of which are based upon my own lived experience of connecting to emotions through breathing. This simplistic use of breathing, though, on top of the size of the chamber orchestra, make this piece, while embodied, not feel or sound very vulnerable. However, in terms of testing the waters of using acoustic breathing elements for chamber orchestra, I do view this piece as being successful: it brought out many issues and things to think about, which I could then build on for the next ensemble pieces in much more interesting, vulnerable, and embodied ways.

5.2.4 IV. *Breath*, for solo piano

Also written in August 2021 while at the Wild Plum Residency at the Red House, Aldeburgh, *Breath* was actually written 'accidentally' while trying to compose the music for *Breathless*.

Composed during a single sitting at Britten's piano at the Red House library, this piece is actually the first non-toy solo piano piece I had written since my much younger student days. All those years, I had chosen to instead compose for the toy piano – this was because each time I attempted to write for solo piano, rather than using the piano to compose while imagining other instruments, I felt stuck between my own intermediate piano abilities, the piano music I enjoyed playing and listening to (which mostly comprised of complex, hard-to-learn pieces by composers like Beethoven and Prokofiev), and my own compositional aesthetic, which was much more minimal and in tune with my own playing abilities. It therefore became far easier to simply not write for solo piano and instead focus on the toy piano, which suited my minimal aesthetic, provided a great challenge and unique colours, and did not make me doubt whether my pieces were 'too simple', compared to the instrument's 'canon' repertoire.

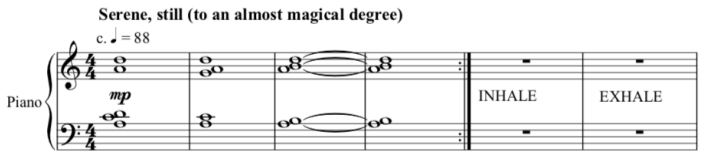
Perhaps, then, it makes perfect sense that the first time I managed to write for solo piano was while actually trying to compose for chamber orchestra. It became apparent to me quite early on in the compositional process that this was not the piece I was attempting to write – which I already had many ideas for in terms of the structure and types of texture, but not the actual musical material yet. However, I figured I might as

well finish writing it, since it felt very effective and different to anything I had written before.

Even more so than *Breathless*, this piece truly encompasses just how calm and at ease I became during that week of residency at The Red House. This piece is all about a moment of calm with no conflict whatsoever – not even the brief one that occurs in *Breathless* – which was how I recognised that it was a different piece being written. While I had planned on using breathing in *Breathless*, this piece, having been written first, was actually my very first time using breathing in a purely acoustic piece. *Breathless*, however, was rehearsed and premiered first, which is why I had submitted them in this particular order.

The audience is watching a very focused and defined moment being experienced by the pianist. The long breathing acts as a kind of meditation alongside the playing, creating an island of calm where nothing else exists, helped by the 'minimal' compositional approach. The intent here is for this to be a meditative experience the pianist is taking part in, with the audience experiencing it through the performer, especially through the physicality of their playing and breathing.

Figure 48: *Breath* – bb. 1-6, opening material, including breathing

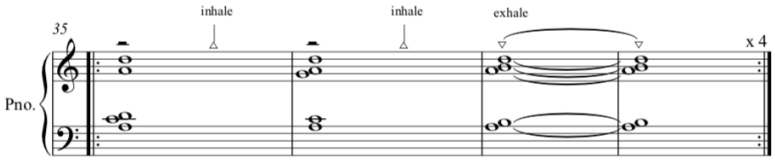


To further explain, I once again invite you to visualise a scene in a film or television show. The protagonist is undergoing a very meaningful meditative experience

completely on their own, and we, as the audience, connect to the character's emotions through the physicality of their actions, including their breathing. According to the previously-discussed concept of Mimetic Participation, it is the physicality of the performer's actions that helps us connect to the emotional experience we are presented with, and which helps us visualise ourselves as part of that experience.

While, practically, this was the easiest form of breathing I had written up to that point, the reality of giving it to a pianist to perform – my long-time friend and collaborator Késia Decoté, for whom the piece was dedicated to – was a big shock for me. The breathing I had found so easy, helped by years of singing and meditating, was actually challenging for Késia, a piano (and toy piano) player who does not professionally sing or play any woodwind instruments. On top of that, while the piece was written to be calming to the player, Késia found inhaling through the mouth reminiscent of experiencing anxiety and really struggled with the idea at first, especially with making the breathing both loud and long enough. I asked her to rehearse the type of breathing used in the piece for 2-5 minutes a day for a few days in a row, which I predicted would very quickly get her used to the mouth breathing, plus help her make it louder and stretch it out for longer.

Figure 49: *Breath* – bb. 35-38, breathing alongside playing, used in a piece for the very first time



I was extremely worried by her reaction to the breathing, which showed me just how much I took for granted in terms of breathing as a singer. I realised that I needed to

adapt my expectations, while also creating tools to help non-singers approach and perform different breathing techniques. Thankfully, when we had another Zoom session a few weeks later, Késia was feeling much better about the breathing elements, and her breathing was sounding louder and much closer to the written note lengths – the breathing exercises had helped! The premiere concert also ended up going extremely well, with the breathing sounding at the same general dynamic level as the playing – the intention I had for *Breathless* but was unfortunately not achieved. I believe this dynamic balance between breathing and musical material really helped focus the piece, and highlight the use of breathing as a genuine musical idea, rather than just an effect.

This experience taught me to not overestimate other players' experiences with breathing, which I took for granted, coming from the point of view of a singer who relies so much on breathing and is also not afraid of pushing her own body for the sake of performing. It also showed me that while using breathing as a musical idea in a piece should be treated as something new, and therefore given proper explanation and support, it could also be quite easily learned and adapted to, if given the necessary time to rehearse daily for only 2-5 minutes. From my experience, like many other new performance techniques, it needs to be practiced for long enough – at least a week – in order to be able to physically embody, control, and experiment with it.

Unlike *Breathless*, *Breath* was much more successful in embodying vulnerability through its minimal musical and breathing elements, largely because it did not have the burden of treading the waters of composing breathing elements for a large ensemble. The solo acoustic setting, in my opinion, made it even more effective in

achieving my research aims, as there was even more of a focus on the solo performer, with nothing to distract away from the physicality of their performance. In contrast to the breathing pieces written before and after it, its importance is in showing an example of calm, positive embodiment in performance, also being the only solo acoustic piece I had written, up until now, to use breathing.

5.2.5 V. *I don't feel like myself*, for string quartet

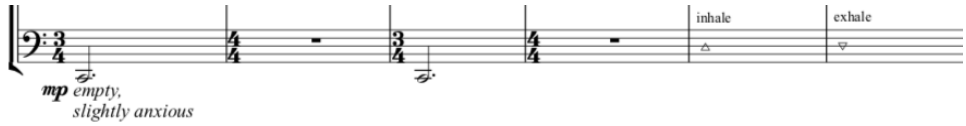
In the autumn of 2021, I had restarted working on my symphony orchestral piece. However, as winter approached, I realised that I needed to pause the piece once again in order to complete the string quartet in time. With the impending – probable, yet unconfirmed at the time – deadline of the symphony orchestra looming, I approached this piece in a similar way to *Breathless* – testing out the waters in advance of writing the upcoming orchestral piece. While *Breathless* was my first attempt at writing acoustic breathing for a large ensemble, and therefore had to be very simple and straightforward, *I don't feel like myself*, with the knowledge that it would be workshopped by the virtuosic contemporary specialists that are Quatuor Bozzini, allowed far more room for experimenting with, and pushing, a wider range of breathing ideas.

Written in the winter / spring of 2022, *I don't feel like myself* is arguably the most personal piece I have written to date, exploring my repeated struggle over the years to compose and be creative. Unlike many of my earlier pieces, where I took my own experience and changed it enough to be 'generalised', this time I truly wanted to try, for the first time ever, to explain my own lived experience through music, attempting

to recreate the feeling of ‘restlessness’ that I get when I become creatively ‘paralysed’ and am unable to concentrate.

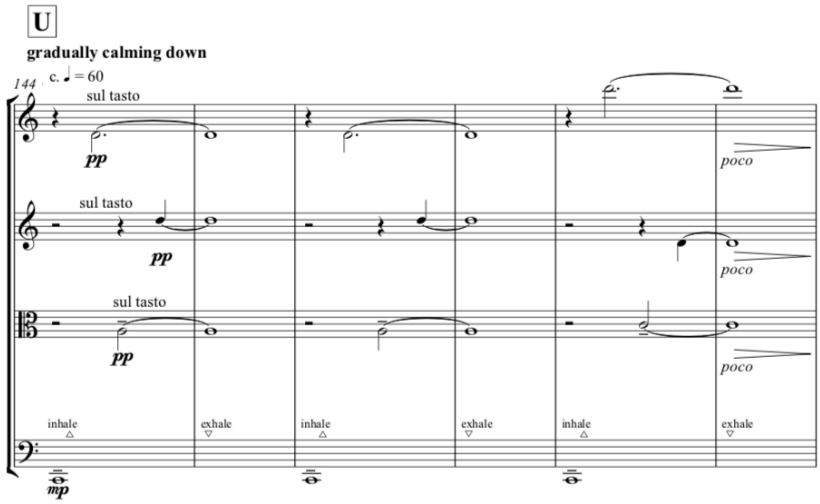
In the piece, the cello is the protagonist, while the rest of the quartet are the 'noises' in their head. The cello, with its insistence on the same note – The bottom cello C – represents myself as a composer, sitting down and attempting to be creative. The repeated C is meant to only be a starting point, but, with all the 'noise' in the cello’s head, they cannot progress past it – they are stuck.

Figure 50: *I don’t feel like myself* – bb. 5-10, Cello - first utterance of the repeated bottom C



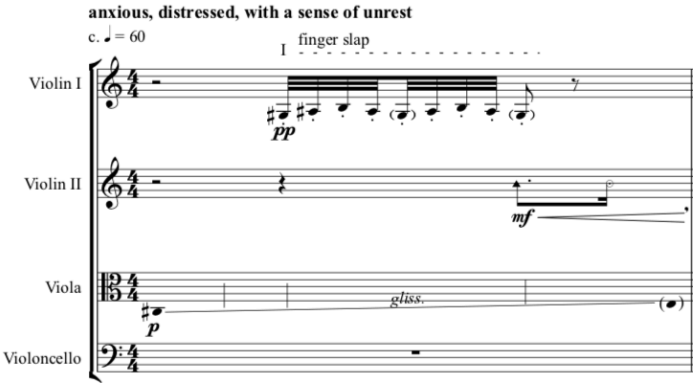
Instead of giving up, though, they simply insist on it, repeatedly, throughout the piece, until they manage to win over the ‘noises’. It creates a sort of ‘soloist and ensemble’ dynamic up until the very last section, at rehearsal mark U, where the cello’s win over the ‘noises’ finally creates what is a more obvious string quartet-like sound and texture.

Figure 51: *I don't feel like myself* – bb. 144-149, Final section of the piece, finally sounding more quartet-like



This is arguably my most embodied and physical piece written for non-singers. The 'noises' are all written in a way that both represents and is meant to physically create a sense of anxiety, with the combination of the initial three 'noise' ideas – an ascending glissando symbolising a rise in tension / stress, an almost-silent finger slap representing the almost-unheard sense of restlessness, and the breathing through the teeth, meant to illicit a sense of anxiety.

Figure 52: *I don't feel like myself* – b. 1, introduction of original 'noise' ideas

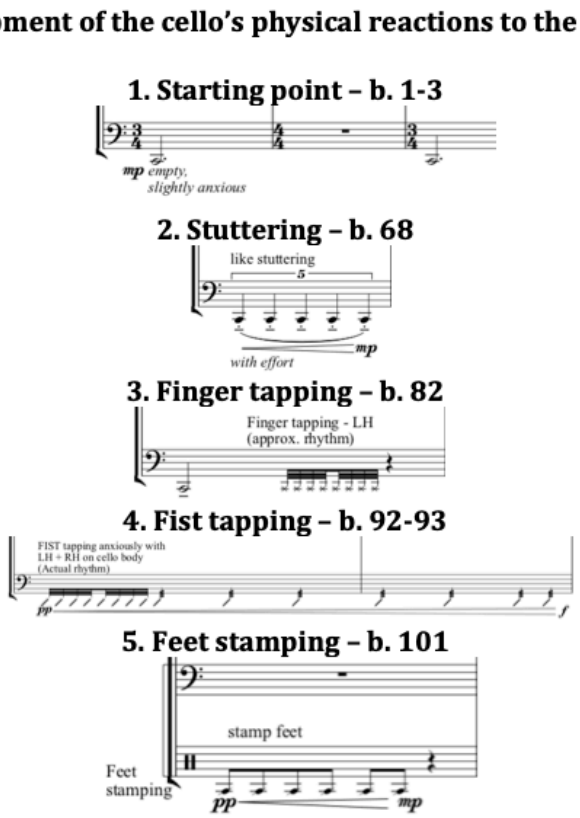


These ideas are grouped together and repeated to set up the soundworld we are in, which the cello exists in, one of anxiety and restlessness. The opening 'noise' ideas,

alongside the anxious breathing and faster ‘breathing while playing’, are all meant to elicit both emotional and physical responses for the cellist and the audience, who are meant to see themselves in the cello protagonist.

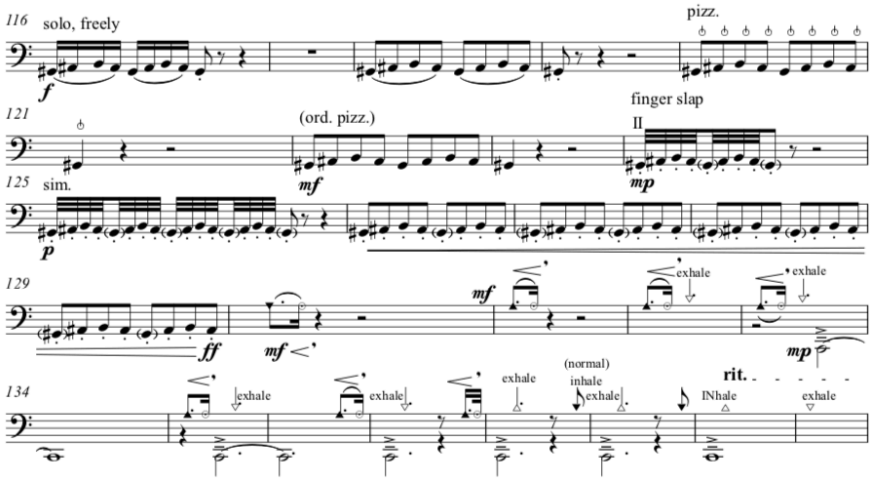
As the piece progresses, the ‘noise’ materials develop, using aleatoric boxes to become increasingly louder and more aggressive, thus more deeply affecting the cello protagonist. The cello reacts to that development by getting increasingly more physical in expressing the effect the ‘noise’ has on it, with the adage of a ‘tapping’ idea that begins as finger tapping – a musical embodiment of the way I experience restlessness – which develops into fist tapping, and then grows into feet stamping. This is to represent both the increased effects of the restlessness and the cello trying to physically resist and break free from it.

Figure 53: *I don’t feel like myself* – Development of the cello’s physical reactions throughout the piece



The journey throughout the piece is about the struggle of the cello against the 'noise' in their head, which only gets louder and more anxious / anxiety-inducing as the cello tries to fight it, becoming more and more physical with its insistence on the same note. The structural idea of the piece is that only through taking ownership of the 'noise' materials, making the material their own, will the cello finally gets out of the repeated note it has been stuck in. Once that realisation dawns, the cello, starting at rehearsal mark P, then goes through the development of all three initial 'noise' materials, co-opting them as the cello's own, and taking away the power the 'noise' had against the cello up until that point.

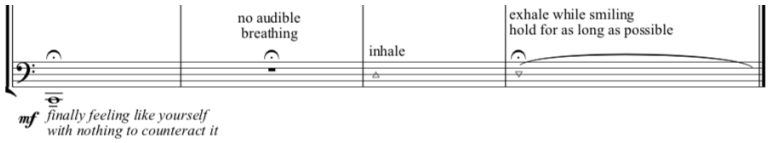
Figure 54: *I don't feel like myself* – bb. 116-141, the cello's co-opting of the 'noise' ideas



It is only when the cello had gone through the development of all three initial 'noise' ideas in its own way, and felt like they are now theirs – rather than something attacking them – that it can go back to step one: the bottom C that was its starting point. The broken chord texture in rehearsal mark U represents the harmony of the cello finally feeling like themselves and connecting to their own creativity, and now being open to working and progressing onwards. The final C is played in order to show the difference achieved through the cello's journey in the piece – it is the exact

same note, yet it finally feels heard and connected to itself, unlike before. The 'noise' is no longer there – the C is finally a true starting point, with nothing to stop it from progressing further.

Figure 55: *I don't feel like myself* – bb. 157-160, the cello's final bottom C



This piece, I believe, is very successful at finding a way of drawing upon my own lived-in experience – this time focusing more on my experience as a composer, rather than that of a singer – in order to create a structural journey that is entirely embodied throughout. Both layers of my personal struggle to be creative were transmuted into the music – the inward 'noise' / restlessness, and the outward battle against it.

The 'noise' elements were distilled into miniscule triggers that could be developed, contrasting with the non-progression of the cello. The lack of melodic material in the piece – which is highly unusual for me – takes the idea of embodied vulnerability much further than the vocalist-type expression I had usually drawn inspiration from and into a much more instrumental context, based around very physical and embodied gestures. This provided a very different learning experience for me, being given the opportunity to move away from the singer-like origins of using breathing, and attempting to instead adapt my use of breathing elements to better fit instrumentalists.

I am always myself, which we will look at next, was written as a continuation of the string quartet. It does, in my opinion, find more of a balance between melody and lack

thereof, achieved by using more contrasting block materials throughout, some of which had softer, melodic-like elements, despite not being 'singable'.

5.2.6 VI. *I am always myself*, for symphony orchestra

This piece is the most complicated to write about out of the entire portfolio, both because of its size and scope and the fact that, due to it being originally written for a concert in June 2020 and then repeatedly postponed until June 2022, it was worked on in several different iterations, some for many months at a time, having been restarted at least twice during the over two and a half years I had worked on it.

5.2.6.1 Ideas and Influences

Being the biggest large-scale piece I had ever written, and my first symphony orchestra piece since 2012, I began working on the original version of this piece around the end of 2019, inspired by various books and meditations by Dr. Joe Dispenza[48][49]. These meditations, created for feeling 'at one with the universe', were ones that I had read about and practiced at the time, and they inspired me to create a piece which began by treating each player as an individual, then as contrasting groups, and eventually getting to a point in which, using both musical material and breathing, the entire orchestra comes together as one. My supervisor, Joe Cutler, had suggested using breathing as a way of helping with portraying a meditative texture, and we discussed incorporating breathing into the piece as an idea from the

[48] Dispenza, J. (2017) Becoming Supernatural: How Common People are Doing the Impossible. London: Hay House.
[49] Dispenza, J. (2012) Breaking the Habit of Being Yourself: How to Lose Your Mind and Create a New One. London: Hay House.

beginning, so that it would feel like a natural part of the piece and not just an added-on technique.

I carried on working on this idea when the COVID-19 lockdowns began, but unfortunately, a few months in, it became increasingly difficult to keep working on while not knowing when the concert would actually take place, especially during the lockdowns. At that point the piece was very much still in its initial idea stage so could not be easily returned to.

As discussed earlier, in the autumn of 2021, I attempted to restart the piece but unfortunately did not get very far before having to pause it to start working on *I don't feel like myself*. After the completion of the string quartet in late January, I finally resumed uninterrupted work on the symphony orchestra piece, only keeping the idea of the 'panic attack' section from the previous paused re-start.

While I did put the piece aside while waiting to see if and when it would actually be performed – it got repeatedly delayed, adding up to two years in the end – I did keep it in the back of my mind, and had, in particular, treated the two ensemble pieces that preceded it, *Breathless*, for chamber orchestra and *I don't feel like myself*, for string quartet, as trials for testing different breathing techniques with live ensemble players, all in anticipation of writing breathing techniques for symphony orchestra.

In the end, the string quartet ended up being much more than just a 'try-out', instead acting as a previous movement that the symphony orchestra piece follows, despite the different instrumentation. The connection between the two pieces is clearly shown in

the re-use of musical materials, most notably shown by *I am always myself* beginning with the exact, just re-orchestrated, material that *I don't feel like myself* ends with. I do have plans to perhaps someday re-orchestrate the string quartet for symphony orchestra, as well as add in a middle movement, in order to create one large unified 25-30 minute orchestral piece. For the time being, though, I am happy with both pieces / movements as they are.

The title of the piece – *I am always myself* – was inspired by a Marvel comic-book collection I had read in the summer of 2021: *Loki: Agent of Asgard*[50]. The story in this collection, centring on the character of Loki, represented to me having a clear sense of who you are, even when others want you to be somebody else for their own selfish reasons. The piece itself is based upon my own personal journey to better connect to my emotions.

5.2.6.2 The Process of Writing the Piece

The original idea for this final iteration of the piece, inspired by Joe Cutler's notion about there being "no positive or negative emotions", was planned to have four different emotional states that work both alone and together with one another to form new emotional states. The ideas, influenced by my work in *Hear*, were 'Calm, inner quiet', 'Anxiety / Stress / Panic attack ', 'Love / Happiness', and 'Depression'. These four emotional states functioned as both contrasting couplets (Calm and Happiness versus Anxiety and Depression), and, when put together, were supposed to

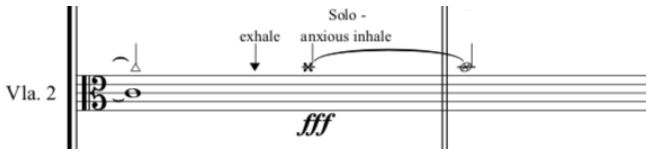
[50] Ewing, A., Aaron, J. (w) Garbett, L., Bianchi, S., Kudranski, S., Checchetto, M., Coelho, J. (a). 2021. *Loki: Agent of Asgard, The Complete Collection. QC, Canada: Marvel.*

create new emotional states – e.g. Anxiety + Happiness = Excitement, Depression + Happiness = Happiness that doesn't feel real, etc. This was going to be created by using different characteristics for each idea within the texture, so that they could easily fit with one another and create new textures together – with 'Depression' being a slow-moving bass pedal, 'Calm' being mid / high basic padding chords, 'Anxiety' portrayed as chaotic restless movement with rhythmic and breathing elements, and 'Happiness' being portrayed as big block chords.

This idea, while I did love it and hope to one day use it, unfortunately proved to be impractical in such a piece, simply being too many ideas, and yet also having ideas that fit so well together that they were not enough to sustain a 12+ minute piece. These ideas, therefore, had to be developed into ones that could sustain a 12-minute structure. The ideas that survived were the core ones, that could contrast well enough to create the change needed in the structure throughout – 'Calm' – or, at least, as close to calm as possible when not really feeling calm, 'Happiness', and 'Anxiety'.

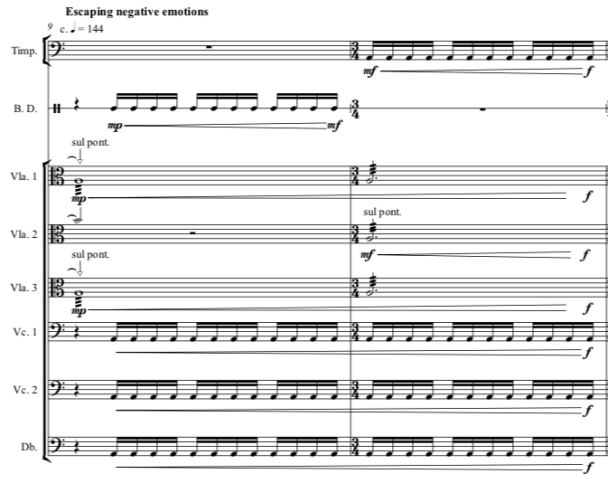
The 'Calm' idea, continuing from the end section of *I don't feel like myself*, contrasts with the 'Anxiety' solos ('anxious inhale') that keep popping up. These solos are meant to portray a single anxious thought popping up in your head, which you would rather not address, and prefer to instead actively ignore.

Figure 56: *I am always myself* – bb. 8-9, Viola 1 – first appearance of anxious inhale solo



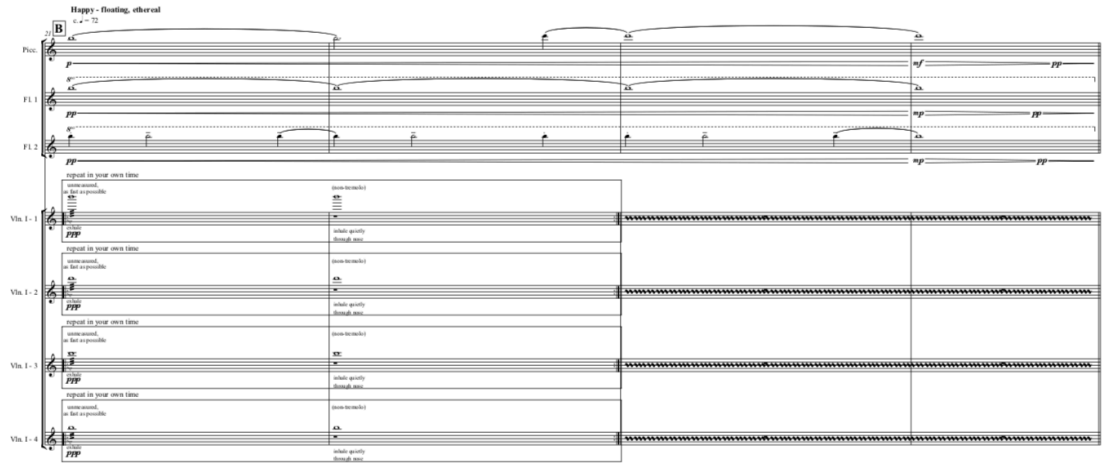
The ‘Escaping negative emotions’ idea, influenced by a chamber orchestra piece titled *Go!* that I had written back in 2013, was written to create a strong contrast to the ‘Calm’ idea. It begins as a reaction to the ‘anxious inhale’ solos, and signifies the choice to, instead of acknowledging the anxiety the solos are attempting to trigger, run away, as fast as possible.

Figure 57: *I am always myself* – bb. 9-10, first appearance of ‘Escaping negative emotions’ idea



The ‘Happiness’ idea, while not very prominent in the piece, is crucial to it – while the piece begins in a state of choosing to run away from our anxious thoughts, we are still able to feel happiness. As the beginning section progresses, though, it becomes clear that the more you run away from so-called ‘negative’ emotions such as anxiety, the less you are able to connect with any emotion, including ‘positive’ ones such as happiness. That means that as you become stuck in a state of running away from emotions, ‘Happiness’ gradually fades away with each repetition. This is what happens as the ‘Escaping negative emotions’ idea begins to take over, and, starting at rehearsal mark M, the repetitions of the ‘Happiness’ idea begin to gradually weaken, fading into nothing after its final repetition at bb. 95-96.

Figure 58: *I am always myself* – bb. 21-24, first appearance of 'Happiness' idea

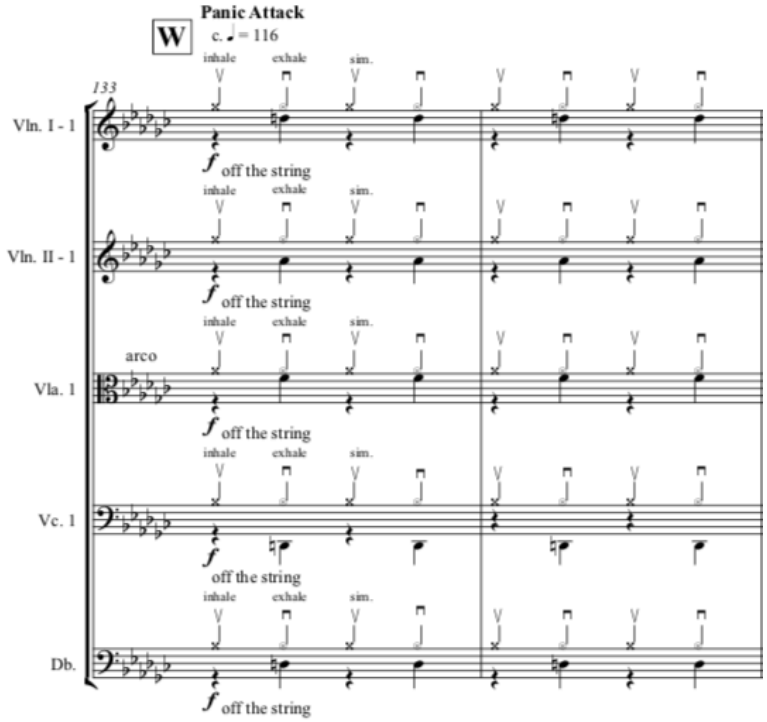


The middle section, beginning at rehearsal mark P, meant to symbolise a descent into emotional detachment and disassociation, builds once again on the string quartet, re-using the 'finger slap' technique as part of a repeated aleatoric box in order to once again signify a sense of restlessness. This section, using mostly aleatoric boxes to portray the noise I hear / feel in my head when unable to connect to myself or to my emotions, was written in an attempt to, in an embodied way, connect the listeners to this sense of restlessness and unease, especially using the sudden contrast in textures, going into the new section.

Figure 59: *I am always myself* – bb. 105-106, return of 'finger slap' idea from *I don't feel like myself*, but in a an even more disconnected context

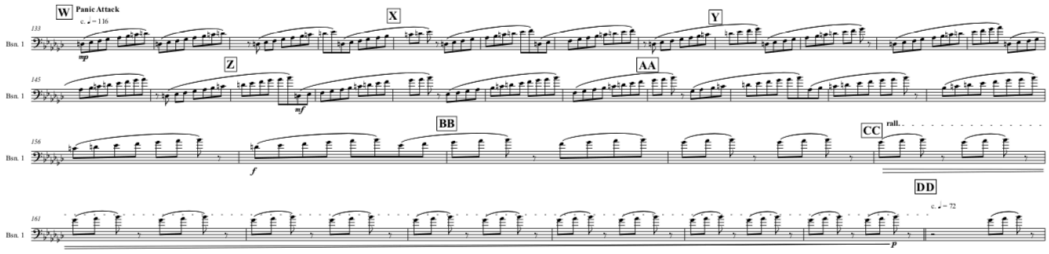
After 12 bars in the new detached soundworld, the 'anxious inhale' solos return in the Viola 2 at rehearsal mark S, trying to once again trigger a sense of anxiety. At first, they go unnoticed in this new noise-based texture, which only forces them to escalate much faster and more drastically than before, beginning to gradually infect many of the aleatoric boxes in the string section by changing the breathing in their repeated gesture to one conveying elements of anxiety. This build-up of anxious breathing alongside playing brings us to the climax of the piece – the 'panic attack' section at rehearsal mark W.

Figure 60: *I am always myself* – bb. 133-134, a reduction of the repeated string chord played during the 'panic attack' section



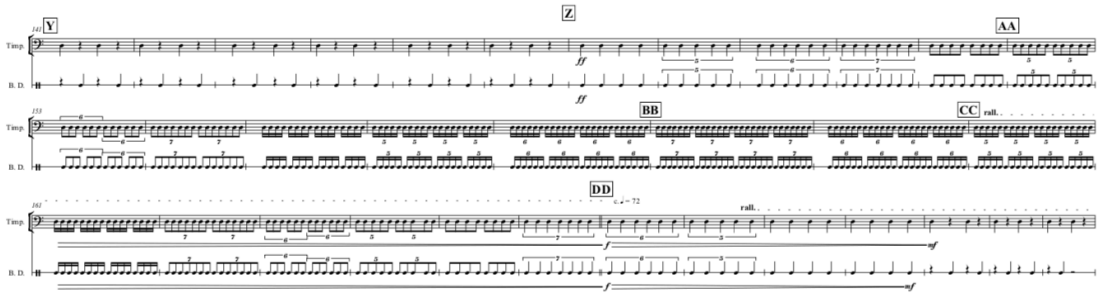
The 'panic attack' section is achieved by having the entire strings section homophonically inhale and exhale, playing a down-bow note with each exhale as an added embodied and physical effect. Meanwhile, the woodwinds individually play a repeated ascending phrase based around the natural C minor scale, with each phrase first getting gradually longer and higher and then gradually shorter, with the lower beginning of each phrase gradually being cut off.

Figure 61: *I am always myself* – bb. 133-166, Bassoon 1 line, showing the general woodwind development in this section



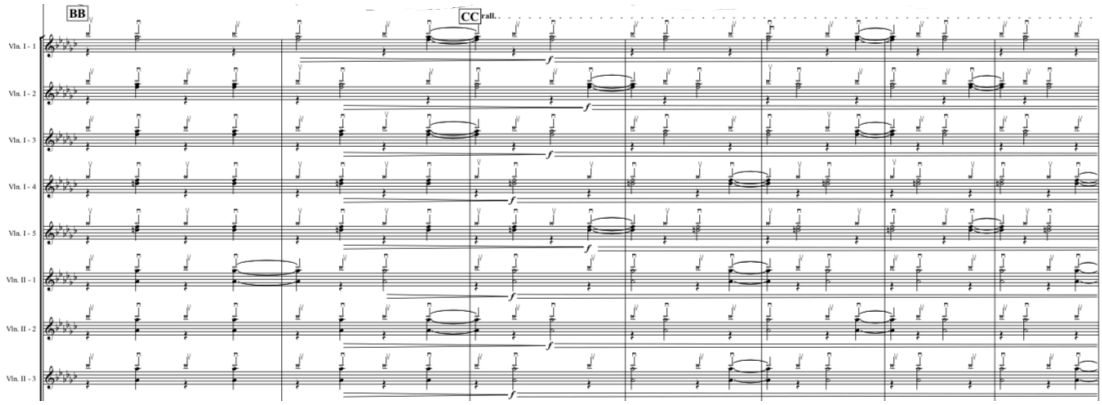
At the same time, the timpani and bass drum, initially set up in this section to play alternating crotchets – symbolising a loud but consistent heartbeat – begin to play in unison and speed up, starting at rehearsal mark Z, symbolising the heartbeat getting faster as part of the ongoing 'panic attack'. They continue to speed up until the change begins to occur in the strings, who begin adding gradually increasing exhales to calm the 'panic attack' down. It is at this point, around rehearsal mark BB, that the percussion instruments begin slowing back down, symbolising the heartbeat calming down.

Figure 62: *I am always myself* – bb. 141-173, the speeding up and slowing down of the percussion in the 'panic attack' section



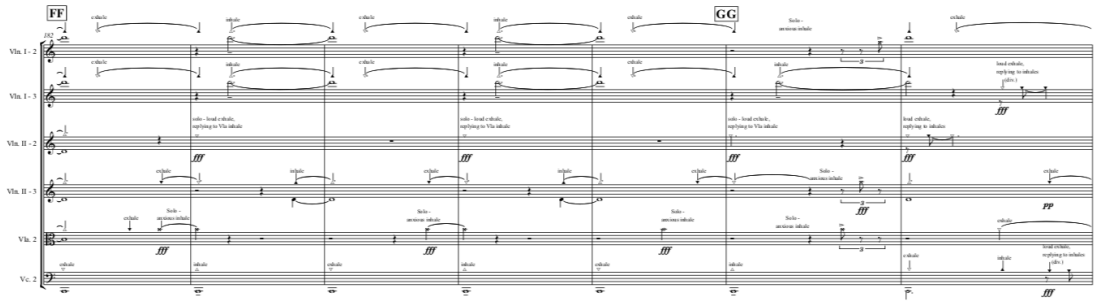
All of the above layers in the 'panic attack' section (se Fig. 62) were used in order to portray the very limited and anxious way I perceive the world during a panic attack – with breathing becoming higher and shallower, and feeling stuck in a sense of panic that seems like it exists in its own detached world. It is only through beginning to exhale out for longer – what you are supposed to do in a panic attack – that things begin to calm down. This is what happens in the strings at rehearsal mark BB, with longer exhales gradually added and made longer, until the entire texture finally calms down.

Figure 63: *I am always myself* – bb. 158-164 Example of added longer exhales appearing in the strings



After the texture calms down, we return, in rehearsal mark EE, to the original 'Calm' idea. Again, the solo 'anxious inhales' begin penetrating the 'Calm' soundworld, only this time we are wiser and know how to handle them – each anxious inhale is answered with an exhale until they finally subside, with each exhale symbolising that the anxiety is being acknowledged, felt, and released.

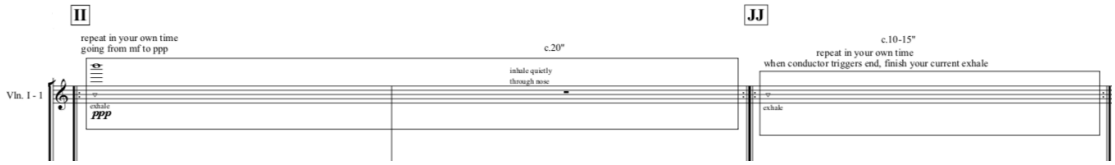
Figure 64: *I am always myself* – bb. 182-188, solos - anxious inhales and loud exhales



It is only after it has been established that the 'anxious inhale' solos can no longer trigger us to run away that we can finally go back to experiencing the 'Happiness' musical idea in rehearsal mark HH. This idea then repeats for a few times before giving way to a gradual calm descent into silence, done through first alternating between playing and breathing for c. 20 seconds, and then repeatedly exhaling for

another c.10-15 seconds, signifying the release of all the tension accrued during playing and / or listening to the piece.

Figure 65: *I am always myself* – bb. 202-204, Violin I – 1, example of final aleatoric bars



5.2.6.3 Issues during Rehearsals

Unfortunately, after working on this piece for such a long time, the rehearsal process was the least positive I had ever experienced, which I did not expect. This included a lack of players available, as well as a serious lack of rehearsal time, with rehearsals for the piece only beginning two days before the concert.

Learning from the experience of working with Southbank Sinfonia on *Breathless*, I requested, far in advance, to hold a short workshop with all the string players in order to go through the breathing techniques in the piece. In the workshop, I introduced all the breathing elements and urged the players to practice them alongside playing, as they appear in the score, for a few minutes a day leading up to the concert. This was in order for them to familiarise themselves with the breathing, get it into their body memory, and make it easier for them to breathe louder and for longer periods of time. This essentially suggested the same kind of practice that helped Késia practice *Breath*, only with the extra breathing techniques used, plus the physicality of bowing and breathing together.

While the workshop itself, which took place on Monday 6th June, 11 days before the concert, went well, it was only when I arrived at the first rehearsal, two days before the concert, that I realised the players had not been given their parts until that afternoon, and were therefore unable to practice the breathing and playing in their parts. This unfortunately resulted in barely being able to hear the breathing in the first rehearsal.

The first rehearsal's issues sadly did not end there. I was forced to interrupt the start of the rehearsal to explain the importance of the breathing in the piece, in order to prevent it from being initially rehearsed without its breathing elements. Moreover, during the rehearsal break, I was approached, and attempted to be convinced, that the breathing was not working, and that the mouth shapes for the inhales and exhales – 'Ahhhh' for inhales and 'Ohhhh' for exhales – should be swapped around.
I had to stand up for my choices and repeat my experience as a singer, knowing that this suggestion would have had the opposite effect, making the breathing sounds even quieter and less pronounced.

One practical edit I made after that rehearsal, though, was spatially alternating the panicked breathing in the panic attack section, since I could see that it was both physically taxing and unnecessary. The entire section was extremely loud, and repeating these panicked breathing bars for too long only made them sound weaker. Alternating them spatially both gave the players a break from the breathing, and gave them a chance to make the remaining bars much louder and more energetic, helping maintain the high energy of that section instead of letting it gradually drop across the numerous repetitions.

Another disappointing aspect of the rehearsal process was failing to properly rehearse any of the numerous 'anxious inhale' breathing solos in the piece. These solos are an extremely important structural element in the piece, acting as the driving force behind its development throughout. During the second rehearsal, the day before the concert, I had to point out that these solos were completely ignored in the previous rehearsal, and had to strongly insist in order to get them rehearsed at all.

After this rehearsal, following my supervisor Joe Cutler's suggestion, I decided to have the strings play with a practice mute throughout in order for the breathing to balance better with their playing. This subtle change was extremely effective in achieving a much better dynamic balance between playing and breathing throughout the piece.

By the Friday dress rehearsal the following day, I did notice that the breathing had been getting gradually better and louder since the first Wednesday rehearsal. The concert itself went slightly better than expected, with the breathing coming through slightly better than rehearsals, showing that if rehearsals for the piece had simply started on the Monday of that week, or, better off, with string sectionals focused on the breathing during the prior sectionals week, the performance would have gone miles better.

The entire rehearsal experience for this piece made me feel like the piece was a failure; like I had expected far too much from the players and had made a massive mistake in even attempting this piece. It was only after listening to my own recording, two days after the concert, that I realised that the piece really was successful, and that,

though you could only vaguely hear some of the breathing in the recording at times, my supervisor Joe was right – the piece did work, even without the breathing. I believe that the various musical materials were written in a way that was so interweaved with the breathing elements that the music on its own, though it did not have the same embodied and vulnerable effect, still successfully portrayed the different emotional states of the piece in a very embodied manner.

Knowing this, I am extremely disappointed because I now see that the piece would have been successful in implementing these breathing and playing elements had it been given adequate rehearsal time, both in terms of duration and number of days prior to the concert, in order to achieve the physical 'body memory' of breathing alongside playing.

It is also worth noting that despite being in repeated communication regarding adding a few extra microphones to create a better recording for the piece and being turned down, with them citing that the concert microphones would be more than enough, the Conservatoire's recording failed. As a result, I only have my own personal Zoom recording of the concert, which is the recording being submitted.

All in all, despite the delays and rehearsal issues, I believe this piece was successful at using my own lived experience to create an embodied, vulnerable journey. While it obviously could not be as vulnerable as a piece for solo or chamber ensemble, being for full symphony orchestra, it instead focused on taking small embodied gestures and expanding them into big orchestral gestures, still maintaining the focus and distilled approach towards the material. It built on the knowledge and experience gained

through all the music I had written over the two years prior, during which time I gradually developed and expanded the way I used breathing elements in composition.

While the disappointing rehearsal and performance experience made this piece seem very anti-climactic to me at the time, months later I can now value just how much it managed to achieve, the highlight of which, for me, is the 'panic attack' section, played by a full symphony orchestra – breathing and all. I truly hope this piece would get a much better performance someday.

5.2.7 VII. *A Standing-stone*, for strings, percussion, and solo soprano

5.2.7.1 Background

After the issues and difficulties faced when composing and rehearsing *I am always myself*, I wanted to end this thesis on a much more positive note, with a piece that might not be as complex but is still, I believe, a great representation of what my doctoral research project has been trying to achieve.

Commissioned by the City of Birmingham Symphony Orchestra in the summer of 2022 for their January 2023 'Sounds New' concert, I was asked to compose a 4-minute piece for strings, percussion, and "solo voice, if you wanted to sing". I could not say no to such an amazing opportunity.

My original ideas for the piece came from watching the film *Everything Everywhere All at Once*[51], where a woman explores the multiverse for the different versions of who she could have been had she made different choices in her life. I wanted to use the short 4-minutes I was allotted to create a rollercoaster of a piece, one in which the singer would constantly hop between different emotional states, essentially being in a state of 'feeling everything all at once' but only being able to outwardly express one emotion at a time.

Unfortunately, I was unable to find a structure or journey in which that idea would work, especially one that was not overly depressing or 'negative'. For example, one of my initial ideas centred on a person experiencing PTSD from a war, which I did not wish to pursue – I did not want to write a piece that was too emotionally taxing for the audience or myself, instead aiming for one in which there would at least be a positive ending.

5.2.7.2 Text and Meaning

In terms of text, I initially wanted to use a gibberish-type text reminiscent of Ligeti's *Mysteries of the Macabre*[52], hoping to create a piece that was as striking and virtuosic. However, as I had experienced before, while the singer in me wanted to perform such a piece, the composer side of me did not find it authentic to compose anything of the sort. I was struggling with finding a suitable text for my ideas, and trying to refrain from writing my own – it seemed important to me to have an external pre-existing

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[51] IMDB (2022) *Everything Everywhere All at Once*. Available at: https://www.imdb.com/title/tt6710474/ [Accessed on 3 April 2023].
[52] Ligeti, G. (1974-77; 1991) Mysteries of the Macabre: for coloratura soprano or solo trumpet in C and chamber orchestra. Mainz: Schott.

text to work with and be both limited and inspired by, something which would not have been achieved by writing my own text.

Fortunately, my supervisor Howard Skempton offered to write me some text based on my 'feeling all the emotions at once' brief. I was incredibly grateful and honoured by his offer, and absolutely loved the text he had come up with.

Figure 66: *A Standing-stone* – original text, as received from Howard Skempton

For Soul

Stay cool;
Hold it together.
A golden rule
Is a guide,
Not a tether:
A light
In a dark
And empty space;
Volatile if alone;
But right
When alongside.
A landmark;
A standing-stone.

Howard Skempton
20 October 2022

After receiving the text, though, it became very clear that the piece would have to be much more minimal, and focused on fewer emotional states. The limited amount of text forced me to truly find my own journey through it, eventually choosing to make the structure of the piece a sort of initial misreading of the text, in the same way a young person might misunderstand an important piece of advice they had been given.

The opening words “Stay cool; Hold it together.” begin with the (misunderstood) toxic positivity interpretation of ‘do not show your emotions, do not show that you are not okay’, with a fixation, later on, on “A light In a dark And empty space;” being very pessimistic, and solitary-feeling. The text “Volatile if alone;” begins fragmented, set as “volatile, alone”, signifying the dark place the singer is in, not being able to see the positivity and hope in their situation, and instead trying to keep themselves from feeling how stressed and anxious they really are.

As the piece progresses, though, it becomes increasingly more difficult to keep up the ‘coolness’ that the singer believes they must sustain. This continues until the point of the climax at rehearsal mark F, where the singer’s voice becomes higher and more erratic, trying to cling to “a light” at the end of the tunnel that they cannot actually see, completely exhausting themselves in the process. What follows, at rehearsal mark H, is another type of ‘panic attack’ section, even including a percussive heart-beat, only much shorter and more subdued than the one in *I am always myself*. It does conclude similarly, though – the chord that felt like it was attacking the singer gradually softens, surprisingly becoming beautiful and gentle.

This shows the singer that she was mistaken in how she approached the world, and how she had perceived the advice that was the piece’s text. She is now able to see the positive truth of it, and to see and sing the completed text – “Volatile -IF- alone; But right When alongside. A landmark; A standing-stone”.

As the text is finally sung in its complete form, we can finally, alongside the singer protagonist, understand the actual advice it was attempting to impart: “Stay cool”

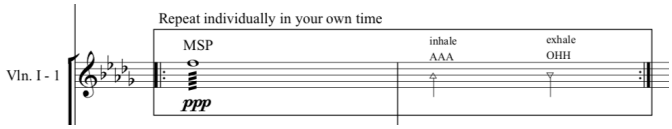
does not refer to holding in your feelings, but simply taking them in their stride, and even “golden rules” are only guides, not “tethers” to weigh you down. A “light in a dark and empty space” is volatile without any sense of perspective – you need a “landmark”, the knowledge of what others have done and learnt before you, to see that you are actually on the right track. Learning the true meaning of the text is, in a way, growing up, and finally understanding the life advice you were given years before but were not yet wise enough to properly understand.

The piece concludes, as I have done many times before, with a repeat of the opening musical idea – “Stay cool;” – only now sung an octave lower, and with an actual sense of coolness. It is then followed by a big exhale to release all the tension accumulated during the piece – in the same way as both *I don’t feel like myself* and *I am always myself* – and a smile.

5.2.7.3 Use of Breathing and Structure

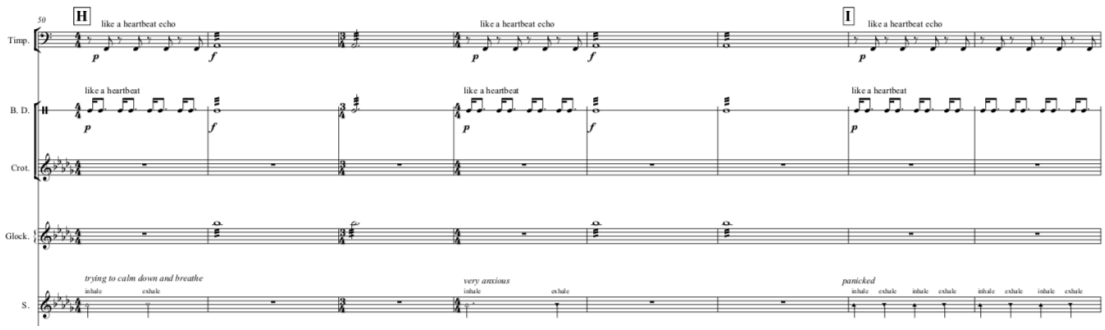
Throughout the piece, breathing is used in the voice as a way of portraying the singer’s emotional state, from anxious to calm. In the strings, very basic calm breathing is used in the first half – up to rehearsal mark F – of the piece, mostly acting as a textural effect, meant to signify the sense of repressed anxiety present from the beginning. This was also a practical decision – I had asked, and was given permission, to use breathing in the piece, provided it was “simple and straightforward”. I therefore only wrote the simplest type of breathing for the orchestra, and gave all of the more complex breathing elements to myself to perform, which ranged from long breaths to short panicked ones.

Figure 67: *A Standing-stone* – bb. 3-4, Violin I – 1, example of opening aleatoric material in the middle and high strings



The breathing in the soprano part throughout signifies, and helps the singer connect to, what she is feeling at that moment, from long breaths trying to calm herself down to the build-up into hyperventilating. Most of those are notated, but the longer section, at bb. 58-65, gives more freedom to the soprano – this is done by using a performance direction, rather than overly notating a gradually calming breath.

Figure 68: *A Standing-stone* – bb. 50-57, example of variety of breathing in the soprano part



At the start of the piece, the aleatoric boxes for the violins and violas, alternating between PPP molto sul tasto notes to audible breathing, are played by the entirety of the upper and middle string section, divided by desks. As the piece progresses, however, and leading up to rehearsal mark F, the tremolo notes, only played at first by the cellos and double basses, begin to take over the middle and upper strings, building up what becomes the aggressive chord during the 'panic attack' climax section, from rehearsal mark F to rehearsal mark I. This chord, gradually building itself from the almost-silence of the piece's opening, represents anxiety and stress bubbling under the surface, getting stronger and stronger until they can no longer be ignored.

While this piece did not seek to be as big or push as many boundaries as *I am always myself* before it, it did manage to achieve a sense of embodied vulnerability within a relatively large instrumentation. After writing such a big and loud symphony orchestra piece, it was a breath of fresh air to be able to use the strings and percussion in this piece in a much more minimal, understated way – particularly in the opening section – and focusing on the vocal line, building the piece around it.

By focusing on deciphering the text, and building an emotional journey and structure around it, I was able to create a vocal line that was, while understated, also very vulnerable, performative, and focused. In a way, this piece was similar to my later quarter-tonal pieces such as *I am dust* and *Together, alone*, in the sense that I felt no need to incorporate any of the more experimental breathing elements I had used in the string quartet and orchestral piece, returning to melodic elements instead. This, in my opinion, made the piece extremely effective in terms of its use of embodied vulnerability, as, despite the sizable orchestration, the focus on the solo voice as a clear protagonist, alongside the 'minimal' composing approach, made the piece feel very barren and exposed, making the orchestration seem much, much, smaller. It therefore, in my opinion, functioned closer to a solo piece like *Breath*, for solo piano, in its embodied vulnerability, rather than similar to a chamber orchestra piece like *Breathless*.

5.3 The Practicalities of using Breathing as Musical Idea

Like quarter-tonal vocal writing, where the examples of quarter-tonal vocal writing were far and few in between, the use of breathing as a musical idea in pieces,

particularly for instrumentalists, was brand new to me, and it was rare to find other examples of it being used in this way – especially in a medium to large scale acoustic instrumental setting. This meant exploring not just the use of breathing elements in pieces, but also the practicalities of how players could be trained to use them, as well as the limits of how they could be safely used in pieces.

From working with both solo players and ensembles, I have learned the need for explaining my approach to breathing in the piece in advance, as well as the reasoning for it. I have also learned to ask the players to practice breathing through their mouth for 2-5 minutes a day for at least a week, in order to quickly expand their ability to breathe loudly and for longer stretches of time. This exercise is also an important tool for showing players that the breathing elements are actually easier to do than they seem, in order to avoid scaring anybody with such a new performing element.

Another major issue, besides the practical performing of these breathing elements, is getting instrumentalists to agree to be vulnerable in a performance setting. As my approach to using breathing comes from the aim of connecting to different emotional states in a vulnerable and embodied manner, this might be too much to ask from some performers, and from orchestral instrumentalists in particular.

Coming from my own experiences as a singer, I have always approached every performance in the same way an actor would, willing to be vulnerable in order to give an authentic and emotional experience, and connecting to the character I was performing as. It has been difficult for me to accept that many instrumentalists, even ones who do not shy away from contemporary repertoire, actually prefer to not

completely engage with the emotions of the piece they perform. It makes sense, I assume – while singers have no boundaries between their body and their instrument, instrumentalists get to have that separation, and might not want to let go of it. By asking players to begin using their body for various types of emotional breathing, alongside playing their instrument, I am aware that I ask them to change their performing experience to one which is closer to that of solo singers, and they might not be comfortable with that.

Therefore, my next step would be to explore a different approach in using breathing as a musical idea when composing for instrumentalists, one that centres on the more physical and practical approach of the instrumentalists themselves. This is instead of insisting on my own emotional approach as a singer, which I see now is extremely foreign to instrumentalists, and especially so to orchestral ones. I believe that through finding a more 'instrumentalist-friendly' approach to breathing while playing, presenting the breathing elements to the players as more physical and 'musical effect'-based rather than as emotional states, I would be able to achieve the same embodied, vulnerable, and even emotional effect without alienating the players or making them feel uncomfortable. I look forward to exploring this aspect, and finding a balance between the emotional music I attempt to write and the way it is presented to instrumentalists.

6.0 Conclusion

6.1 General Conclusion

This doctoral research project has been a very long time in the making, but I feel as if I managed to achieve a great deal.

Starting from a point of feeling like my only worthy contribution to knowledge would be the creation of a Microtonal Singing Method, I now see that my journey of creating my own compositional language, inspired and influenced by my lived experience as both a composer-performer and as a person struggling with mental health issues such as anxiety, is in itself a worthy contribution to knowledge – both in terms of the works created and the journey taken to create them.

With regards to quarter-tonal composing, despite the lack of progress with the Microtonal Singing Method, I do believe that I managed to substantially advance in the creation of an embodied and vulnerable compositional language. This was done through mostly basing it on the use of the smaller quarter-tonal intervals. This compositional language was strongly informed – and led – by my abilities and experiences as a singer, drawing directly from my own lived experience in embodied performing, and focusing on the embodied vulnerability that could be achieved through the combined use of both quarter-tones and a 'minimal' compositional approach.

My decision to pause my quarter-tonal research, combined with a worldwide pandemic, could have easily been catastrophic to my doctoral research project. Instead, my lockdown experience gave me new inspiration: my anxiety become musical material, even more vulnerable and embodied than my quarter-tonal compositional language grew to be, and able to combine with standard musical material in an effort to create an even deeper connection to emotional states within my music.

It feels to me like it was the use of quarter-tones, especially in combination with a 'minimal' compositional approach, which allowed me to begin exploring the development of my own 'composer-performer'-informed compositional language. It was in discovering the use of breathing as a musical idea, however, that I could then build on my quarter-tonal work to more deeply connect to the ideas of embodied vulnerability, which I have been long attempting to translate from my lived experience as a performer into my compositional language. Next, I would like to combine both elements – quarter-tones and breathing – to try and build on the elements of embodied vulnerability even further.

6.2 The Different Pieces – an Overview

In *Hidden Elegy*, for alto flute and piano, my first quarter-tonal piece composed as part of this doctoral research project, I began exploring composing quarter-tonally, managing to achieve moments of embodied vulnerability in the repeated B sections, in which it felt as if both instruments were each playing on their own, at the same time, portraying the disassociation of grief. *Ode*, for violin and piano, built on this

with an extremely direct and pained use of quarter-tones, which drew on my lived experience at the time, translating the physical manifestations of my feelings – namely wanting to scream in frustration and punch a wall in anger – into embodied gestures in the violin and piano parts, respectively.

Naamah, for solo soprano and recorder sextet, was my first attempt at composing quarter-tonally for solo voice, using an extended tonality that included quarter-tone intervals built on the physical feeling of the so-called 'biting point'. While it was fairly simple in its use of quarter-tones, it confirmed the possibility of successfully composing (and performing) quarter-tones for voice, using a very expressive text to drive the emotional use of quarter-tones in the soprano line. *Distant Lament*, for clarinet, viola, and piano, combined what I had learned from composing all of the above-mentioned pieces, using a wider range of quarter-tonal intervals to create a melodic line that was embodied and vulnerable, yet without seeming overly 'pained' or angry.

I am dust, for soprano and cello, was a significant 19-minute semi-staged opera, which, in my opinion, was very successful at drawing upon my own lived experience, as both a singer and person, to create an extremely embodied performance whose use of quarter-tones was rooted in vulnerability. *Together, alone*, for string quartet, once again drew on my own personal lived experience, intent on creating an immensely distilled emotional experience in which quarter-tones became the norm, while the original 'normal' notes became the source of the dissonance. The use of the 1st violin as the protagonist in the piece, which the piece gradually zooms in on as it becomes estranged from the other instruments, forced an increasingly embodied response as

the violin, which started out as part of the ensemble, becomes gradually more vulnerable and alone within the quarter-tonal dominated texture.

The first of the breathing pieces, *Steel to Smoke*, a multimedia collaboration between myself and filmmaker Sasha Balmazi-Owen, used a vast majority of either field recordings, or recording of myself breathing or playing the toy piano. In other words, the entire musical aspect of the piece was based around my own physicality and embodiment, as a way of connecting to my own lockdown emotions and experiences. I believe this was a great start towards exploring the concept of Mimetic Participation in my music, using breathing as a way of creating an embodied and vulnerable experience, which attempts to connect to different emotional states.

Following it was the longest piece in this doctoral research project – *Hear*, for 4 singers and electronics. This piece built on my prior embodied use of breathing to create a spatial, atmospheric, and embodied group experience for both the singers and the audience. Taking inspiration from my own experiences, I created a piece whose sole purpose was to express the emotional states I experienced during the COVID-19 lockdowns – namely Solitude, Connection, Hope, and Anxiety. This was done using both breathing and melodic elements, in their live and pre-recorded forms, in an attempt to transmute my own lived experience into music for voices.

Breathless, for chamber orchestra, finally broke the mould, exploring breathing by attempting to connect to much calmer, less anxious emotions. Being my first piece to incorporate breathing for a purely acoustic instrumental ensemble, it was simple in its structure and ideas, but still, in my opinion, was successful in using a combination of

musical material and breathing elements to create an embodied performance that built on my own lived experience at The Red House, Aldeburgh.

Breath, for solo piano, also written at the same location and around the same time, was my first successful attempt at transferring my toy piano compositional approach into the solo (standard) piano. I believe that its extremely minimal material was very successful at creating an embodied, meditative, and calm experience for the pianist, whose emotional state the audience could then hopefully connect to. Its use of embodied vulnerability, unlike the rest of my breathing pieces, came through connecting to an extreme form of calmness, amplified by being a solo piece that interacts with silence itself – drawing on my experiences as a singer specialising in solo unaccompanied voice repertoire.

In *I don't feel like myself*, for string quartet, I managed to create a piece that was based solely on musical gestures and no melody, all with the intention of musically transmuting my own emotional experience of struggling against restlessness and anxiety while attempting to compose, into music. Every gesture in this piece was entirely embodied, and composed in an attempt to elicit an emotional reaction and connection – from both the cello protagonist and the audience. I consider this piece to be my most successful example of using breathing to connect to emotional states, as the combination of having a small chamber ensemble, alongside a wide range of breathing and playing elements, creates such an expressive, intimate, yet restless soundworld.

I am always myself, for symphony orchestra, was a piece I had worked on the longest, and which, despite issues during rehearsals, I believe ended up being a success.

Drawing on my own life experiences, I managed, in my opinion, to use the combination of minimal musical material and breathing elements to create a large-scale embodied and vulnerable experience, with an attempt at connecting to different emotional states throughout. I believe its most successful section by far is the 'panic attack', which managed, with no recorded elements, to convey and connect to my own lived experience, transmuting it into music.

Concluding this doctoral research project was my *CBSO* commission, *A standing-stone*, for strings, percussion, and solo soprano. While it did not attempt to further build on the previous pieces by incorporating even more breathing elements and emotional states – largely due to practicality – it did provide a lovely postlude to the past seven and a half years. By being a very ‘minimal’, distilled, emotional, and expressive piece, and centring on the vocal line and the text, I feel it managed to achieve a sense of embodiment and vulnerability through the textural use of the strings and percussion, as well as the breathing elements in the soprano line.

6.3 Thoughts and Plans for the Future

With regards to quarter-tonal composing, I plan to, in the near future, return to the Microtonal Singing Method, working on further developing and expanding it so that it could then support the practical and sustainable expansion of quarter-tonal interval use within my compositional language for both voices and instruments. I plan to keep my ‘minimal’ compositional approach towards composing quarter-tonally, as I believe it would retain its effectiveness and expressiveness, even with the adage of further expanded intervals to my quarter-tonal compositional language.

In regards to breathing, I still feel that there is much left to explore. I have learned a lot through the writing and rehearsing of the submitted breathing pieces, both in terms of the practicality of using breathing as a musical idea and the training required before players can comfortably approach these pieces. However, since I feel as if the rehearsal process for some of the larger pieces was fraught by a lack of necessary rehearsal time, it is difficult to tell what was impossible or impractical in performance, and what was simply not given enough time or properly attempted.

I therefore plan to carry on developing the use of breathing in my music, as well as the techniques for approaching and learning to perform it, by seeking out performers interested in exploring these elements in a very performative, vulnerable, and embodied way. I also, as mentioned before, plan on exploring a new compositional approach to breathing elements, which would centre on the more physical and practical approach of instrumentalists – instead of my own emotional approach as a singer. This is in an attempt to make the breathing elements in my music easier and more approachable to players, and orchestral instrumentalists in particular.

It was only at the very end of my doctoral research project that I discovered Bloch et al's article (previously mentioned in chapter 5) regarding the use of a combination of respiratory, postural, and facial configurations to help actors connect to emotional states. This article, however, has now given me more ideas to explore, namely attempting some of their training exercises for connecting to various emotions[53],

[53] Bloch, S., Orthous, P., Santinañez H. (1987), pp. 6-9

experimenting with different "*modulations of intensity"*[54] and *"Stepping in and stepping out of an emotional pattern"*[55], as well as possibly exploring the idea of notating not only breathing but also other forms of physical expression in performance – such as facial expression and posture.[56] I would love to explore, attempt, and build on the ideas in the article – both by myself and by collaborating with other performers – to find out what can be used in my own music, and be further developed in the future.

My ideal collaborations to explore breathing elements would be a combination of solo players and chamber ensembles to truly explore the boundaries and training needed for various elements, followed by a larger ensemble or orchestra that would be comfortable devoting sufficient time for solo practise, sectionals, and full rehearsals of the piece, with all players committed to performing in an embodied and vulnerable way, behaving as soloists even within a large ensemble piece.

In the future, I would also like to work on gradually combining the two compositional strands in this doctoral research project, merging quarter-tones and breathing, as well as other embodied and performative elements, in order to build even further on my quest to create embodied, vulnerable, and expressive music. As I believe the combination of the two would require further progress in the Microtonal Singing Method first, I intend to first continue working on each of them separately, before combining them.

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[54] Bloch, S., Orthous, P., Santinañez H. (1987), p. 9
[55] Bloch, S., Orthous, P., Santinañez H. (1987), p. 10
[56] Bloch, S., Orthous, P., Santinañez H. (1987), p. 17

6.4 Contribution to Knowledge

In my journey towards finding answers to my research questions, I believe I have helped pave the way for other composer-performers to develop their own compositional language, drawing from both their performance-based and personal lived experiences. In answering 'How does the composer-performer develop a personal compositional language for voices and instruments, drawing directly upon their own lived experience in embodied performing?' and 'How can the vulnerability experienced in solo performance be translated and foregrounded within music composition?', I hope to have paved a way for future composer-performers to be able to use their own abilities and skills, not merely to write well and interestingly for their own instrument, but to also be able to transfer that experience into other instruments, thereby creating much more unique approaches towards musical composition and performance.

It is my belief that it is our unique points of view in life that make us interesting as creators, and give us something to say in our music. For me, it was my life experiences – my years as a singer, but also my mental health struggles – that, over time, helped me create my own compositional language. I hope that others will be able to learn from my own journey, and that it will aid, enrich, and inspire their own.

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8.0 Appendix:

1. Untitled solo recorder piece (2 pages)

2. All solo toy piano pieces composed during the doctoral research project:

   I. Recollection (2015) (5 pages)

   II. 5 Buffy-inspired Songs, for singing toy pianist (2017) – Treble Clef Version (16 pages)

   III. Para a Frente (2018) (5 pages)

   IV. Full Moon (2019) (6 pages)

   V. Everything is Fine (2020) (5 pages)

   VI. Restlessness (2020) (4 pages)

3. Yfat Soul Zisso – *A Study of Singers' Approaches to Microtonal Singing* – masters research project, completed in 2015 (70 pages)

For solo recorder

I.

Yfat Soul Zisso

Solitary, expressive

c. ♩ = 92

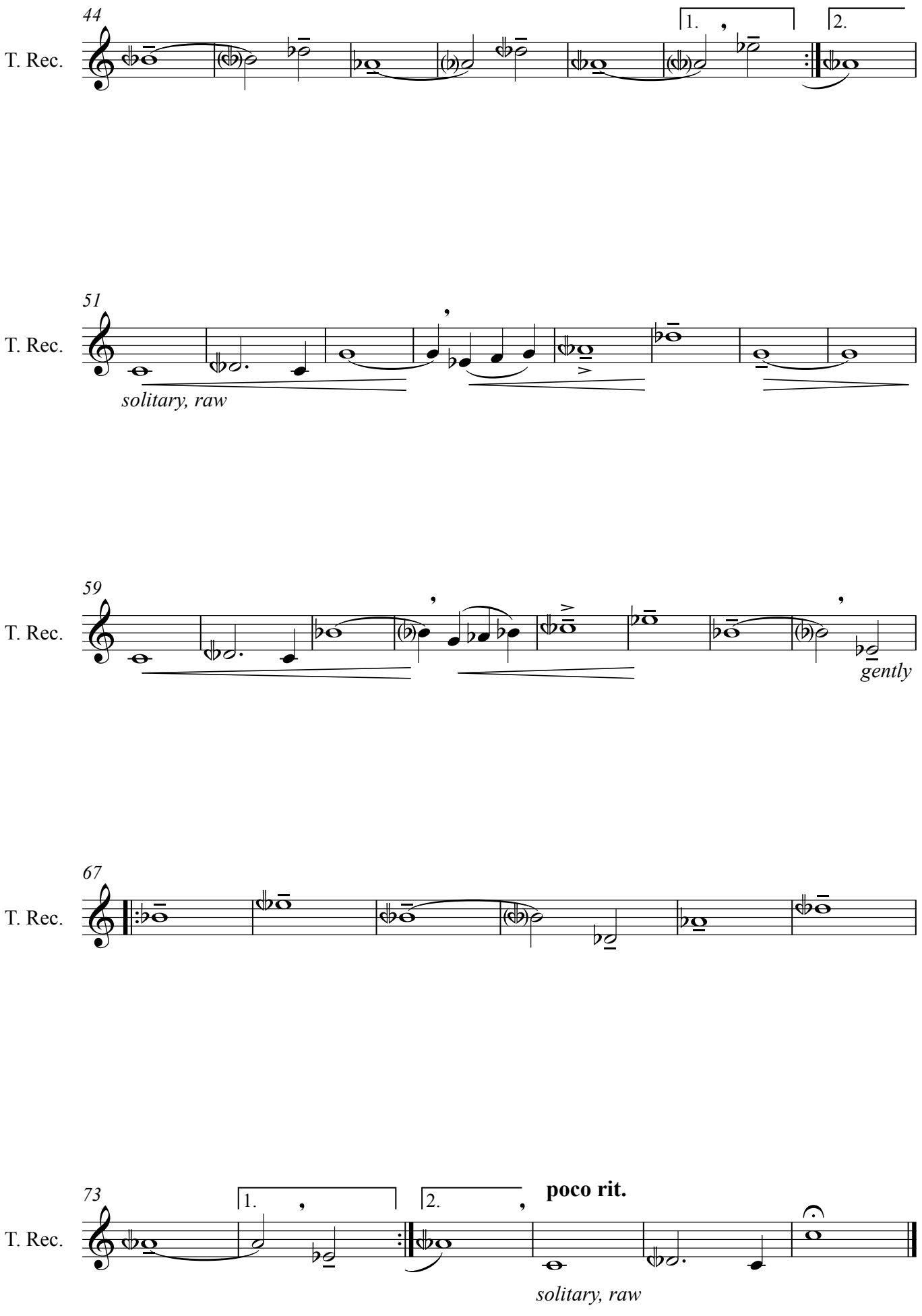
Tenor Recorder

mf

T. Rec.

gently

solitary, raw


44
T. Rec.
1.
2.
51
T. Rec.
solitary, raw
59
T. Rec.
gently
67
T. Rec.
73
T. Rec.
1.
2.
poco rit.
solitary, raw

for Xenia

Yfat Soul Zisso

Recollection

for toy piano

Programme Notes:

Written for Xenia Pestova for the September 2015 Centre Stage concert in Leeds.

A moment of serene clarity triggers a memory,

which turns out to be more sinister than initially remembered.

Y.S.Z.

Performance Notes:

During the molto accel. (starting b. 39) wrong notes are fine (and even encouraged)

as long as the general sense of melody is maintained.

Duration: c. 3 mins

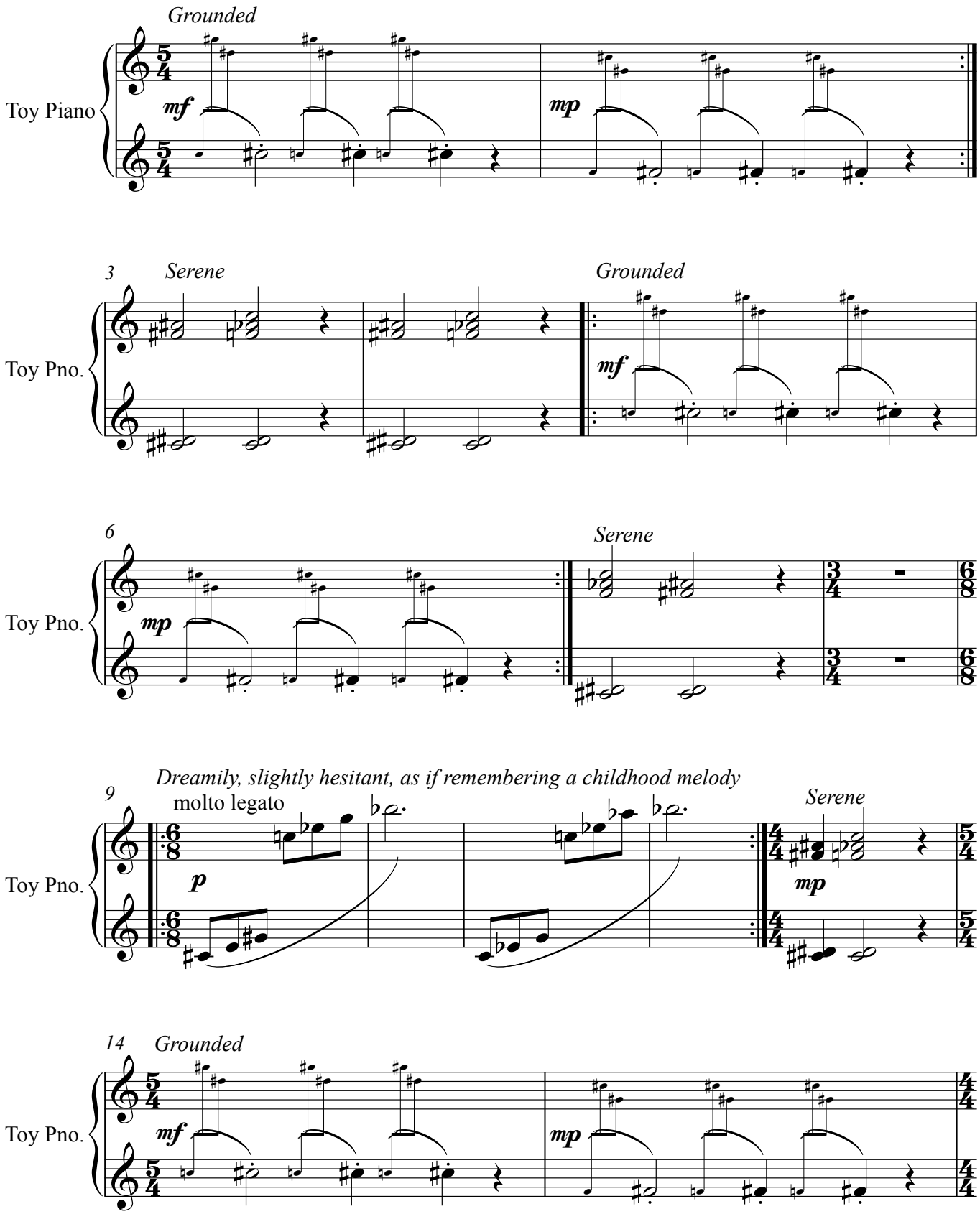
for Xenia

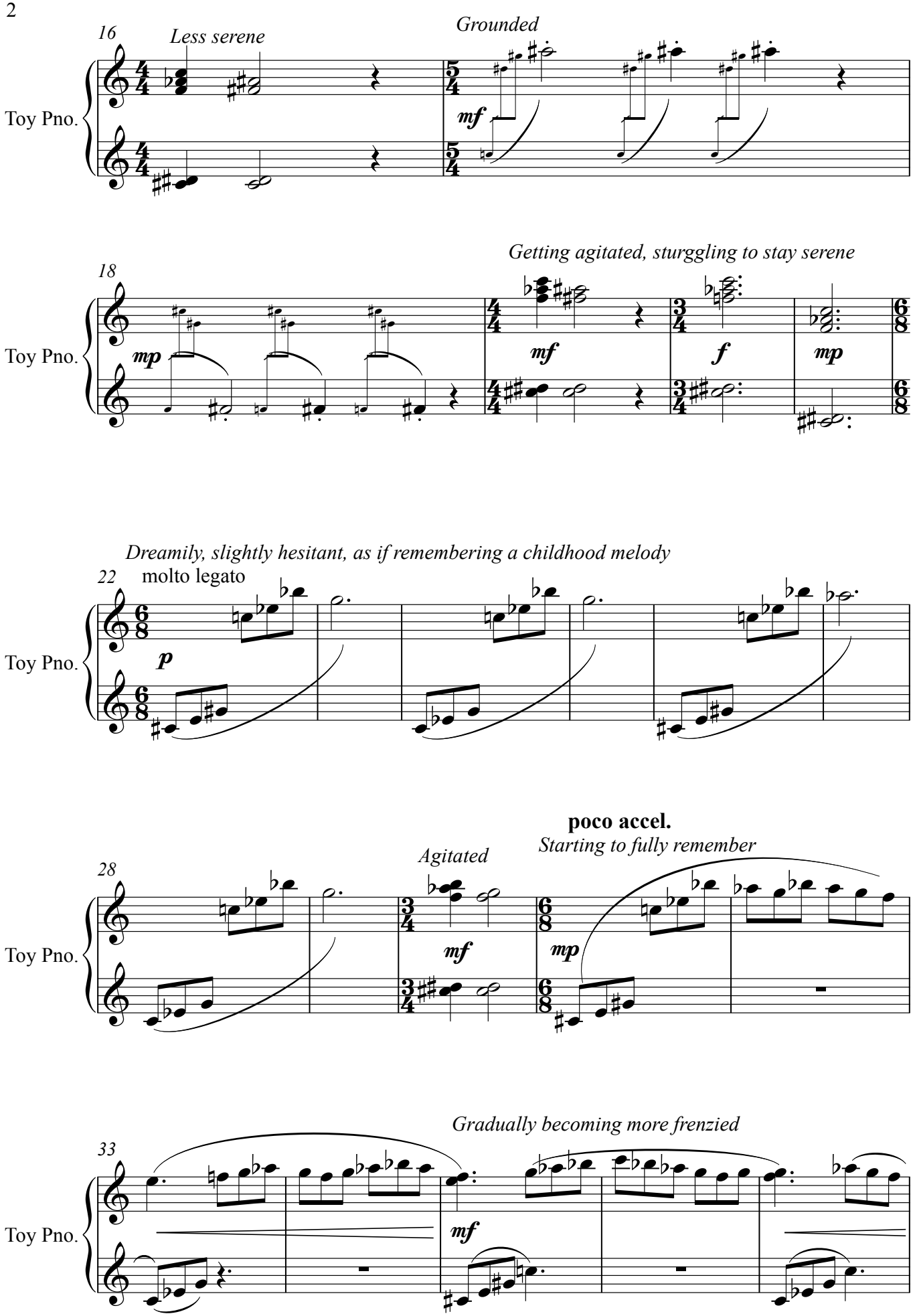
Recollection

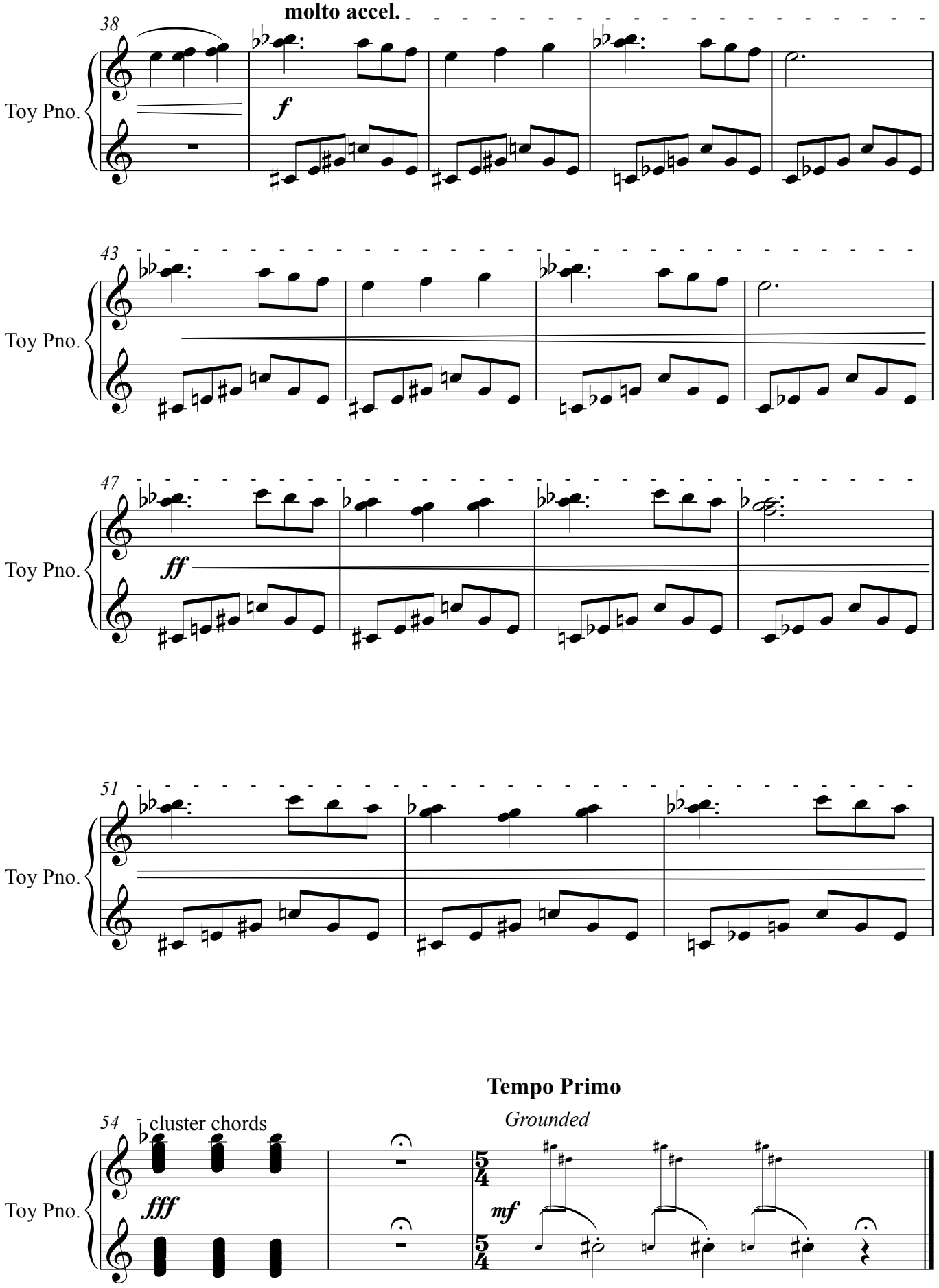
for toy piano

Yfat Soul Zisso

c. ♩ = 60 Not strict, with freedom of expression




16
Less serene
Grounded
Toy Pno.
mf
18
Getting agitated, sturggling to stay serene
Toy Pno.
mp
mf
f
mp
Dreamily, slightly hesitant, as if remembering a childhood melody
22
molto legato
Toy Pno.
p
poco accel.
Starting to fully remember
28
Agitated
Toy Pno.
mf
mp
Gradually becoming more frenzied
33
Toy Pno.
mf


38
molto accel.
f
Toy Pno.
43
Toy Pno.
47
ff
Toy Pno.
51
Toy Pno.
54
cluster chords
fff
Tempo Primo
Grounded
mf
Toy Pno.

for Anthony Zatorski

Yfat Soul Zisso

5 Buffy-inspired Songs

for singing toy pianist

Programme notes:

Written in the spring of 2017 for Australian baritone Anthony Zatorski,

this piece was inspired by the 20th Anniversary celebrations

of the first episode of *Buffy the Vampire Slayer*,

though written mostly as children's poems

with occassional quotes from Buffy and films from my childhood.

It is certainly the most bizarre piece I have written so far

and I hope you enjoy its weirdness as much as I do.

Y.S.Z.

Performance notes:

The movements can be performed on their own, as well as picking a few to perform rather than all five.

If not all movements are being performed then the performer can choose their own order

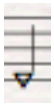
(though the final movement is recommended to always be played last).

If all movements are played then the original order should be kept.

The use of accessories / props to diffrentiate between movements is recommended,

though not obligatory - for example something furry, a witch's hat, fangs/cape, bunny ears and sunglasses.

<u>Approximate pitches:</u>

 Lowest pitch

 Highest pitch

 Approximate pitch -
follow the shape of the line
and the note's positioning
on the stave (i.e. low / mid / high)

<u>Fermatas:</u>

 short fermata  medium fermata

I. Use the given dynamics as guidelines, using the text to lead the dynamic changes.

III. For the entire movement, play only using both index fingers, each hanging down either side of your mouth.
Each time you lean down to play, open your mouth wide (and inhale for added effect),
as if the fingers are your fangs and you are about to bite somebody.

Accelerandi only apply to the specific phrase, going back to tempo afterwards.

V. To be performed in an exaggerated old-school American Rock 'n Roll style
(e.g. singer Little Richard), with an American accent.

Don't worry about hitting high notes - they should be more of a shout than proper singing.

During the repeats, improvise (the given notes are only a suggestion),
gradually becoming more outragous and dramatic.
Feel free to add 'woos' etc.

I. Werewolf

II. Witch

III. Vampire

IV. Bunny

V. Slayer

Duration - c. 6 mins

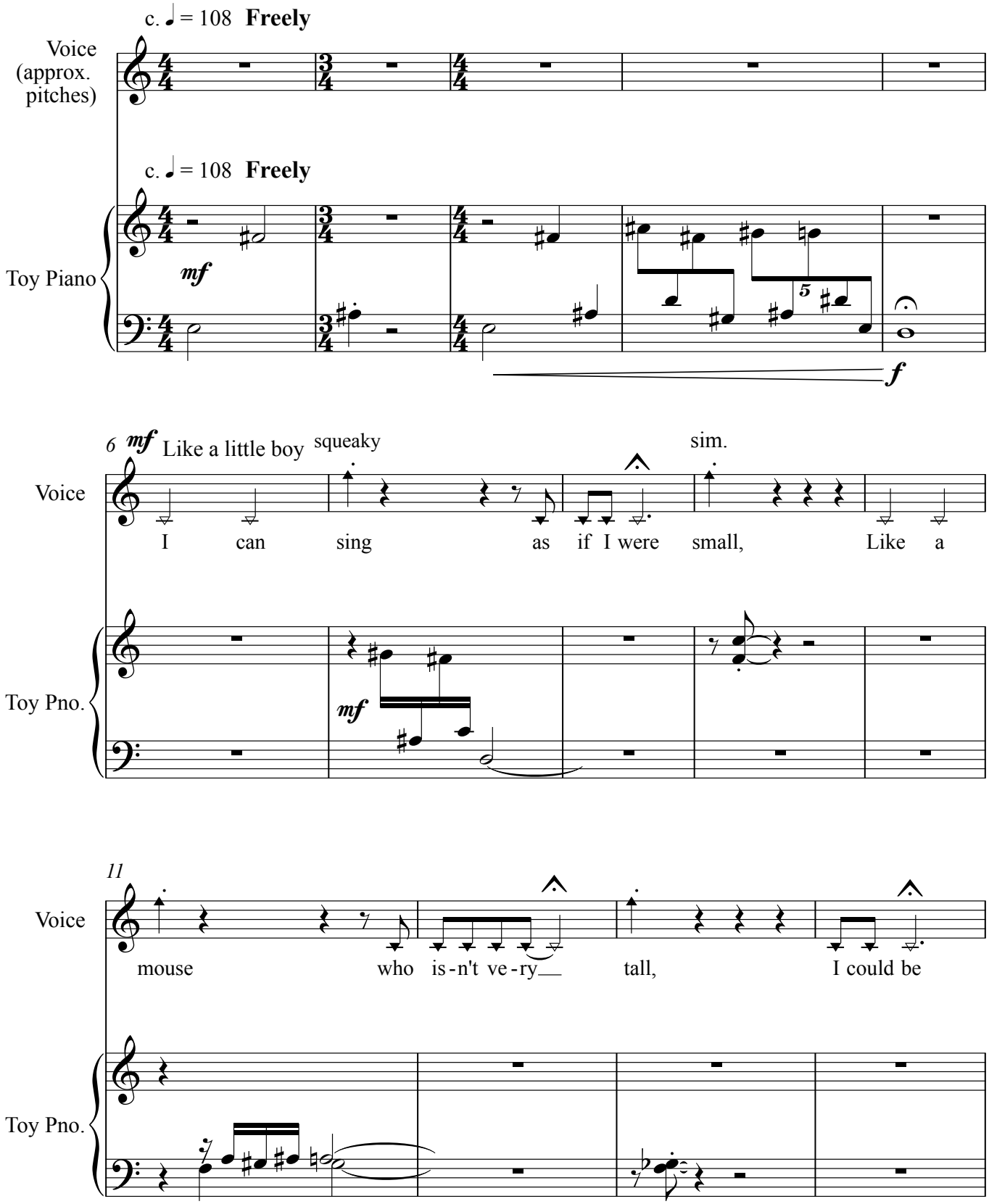
For Anthony Zatorski

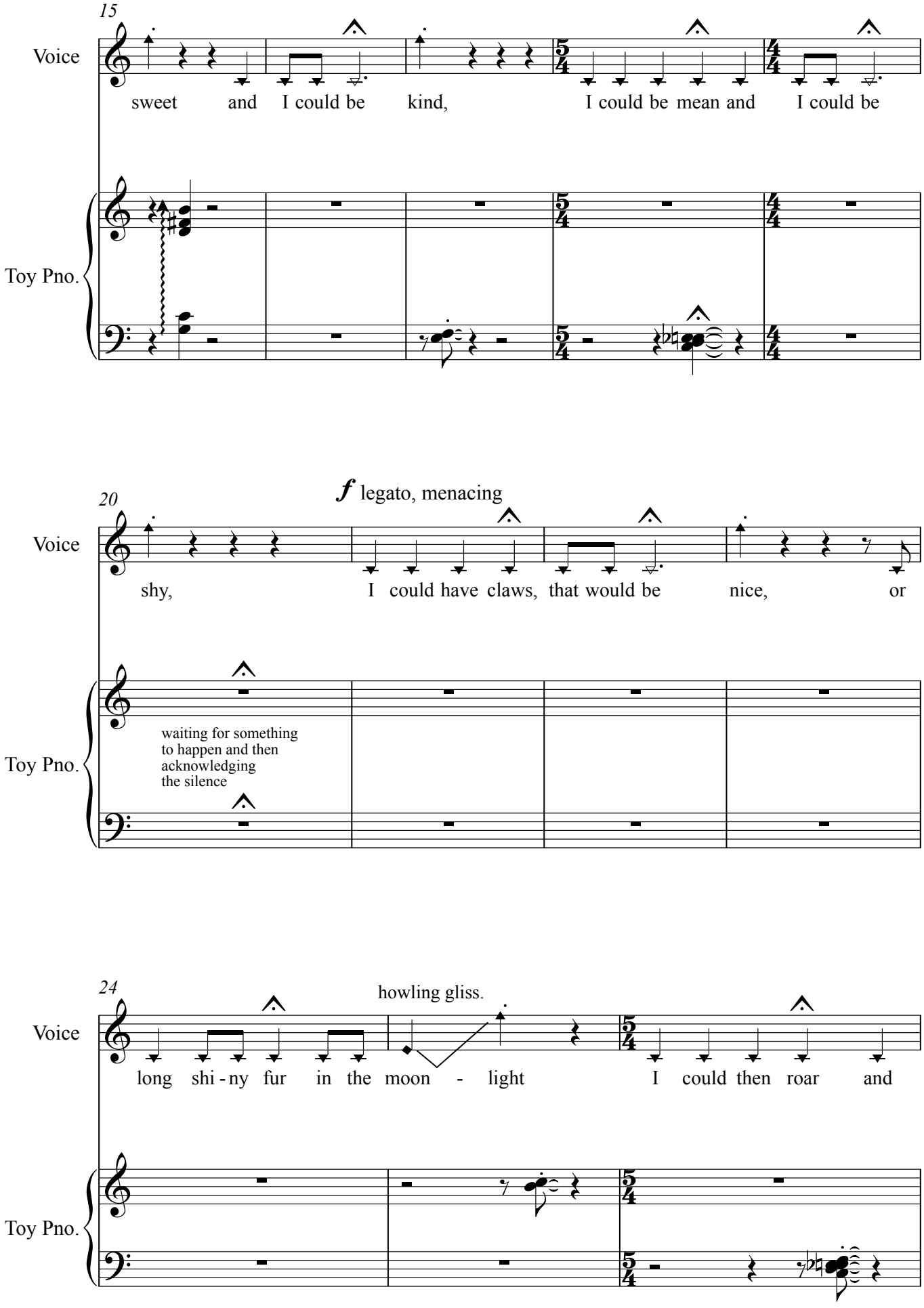
5 Buffy-inspired Songs

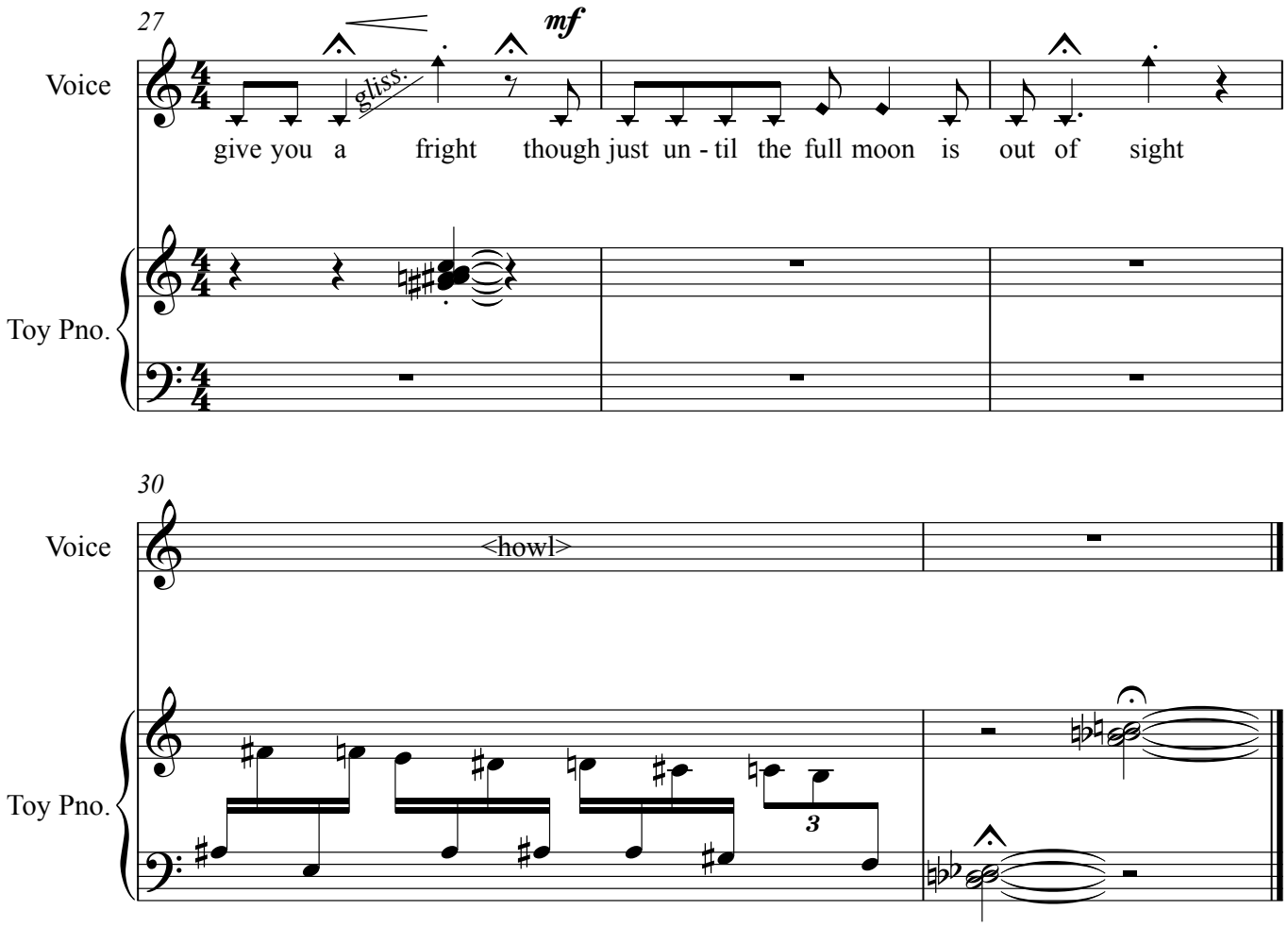
for singing toy pianist

I. Werewolf

Yfat Soul Zisso

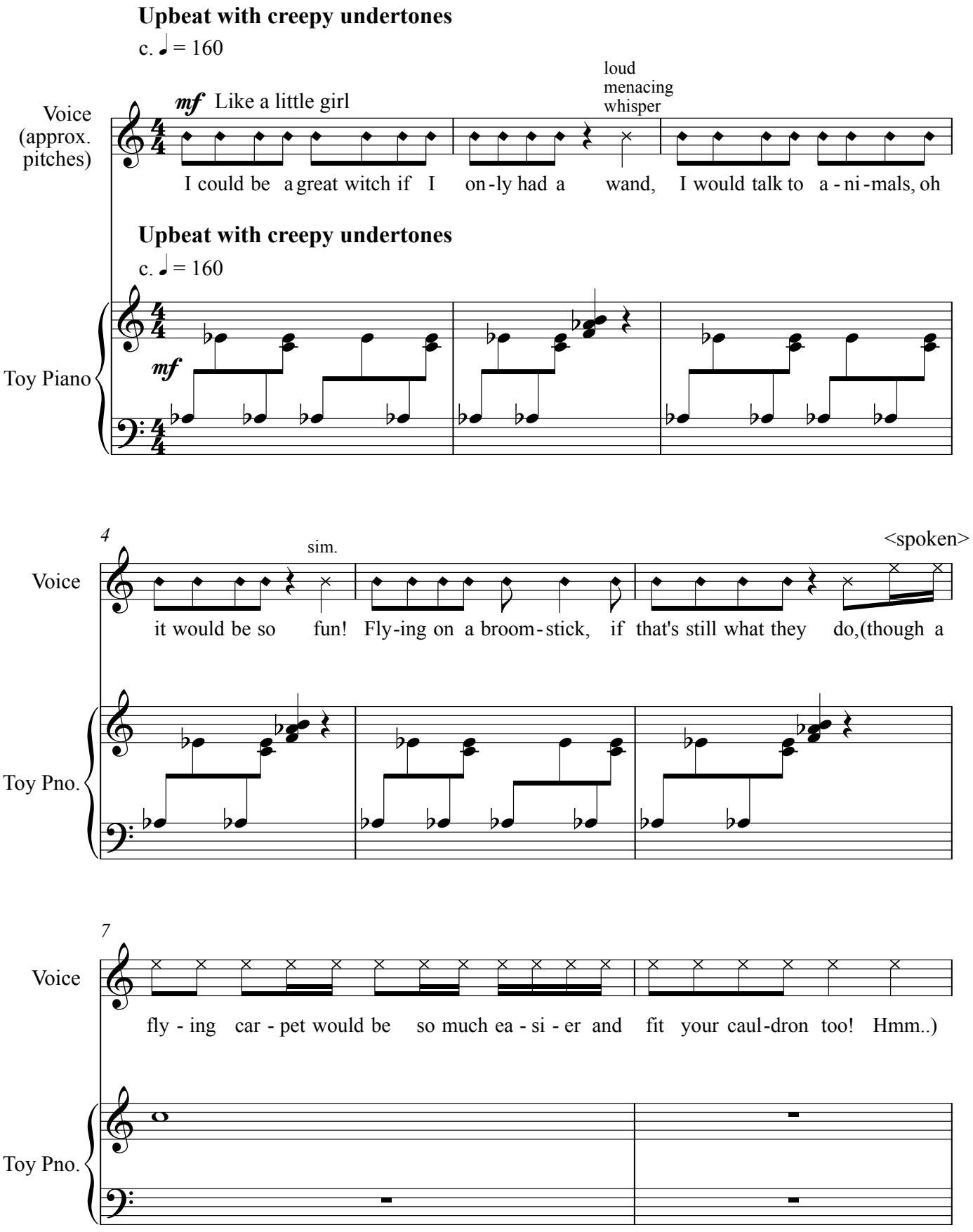


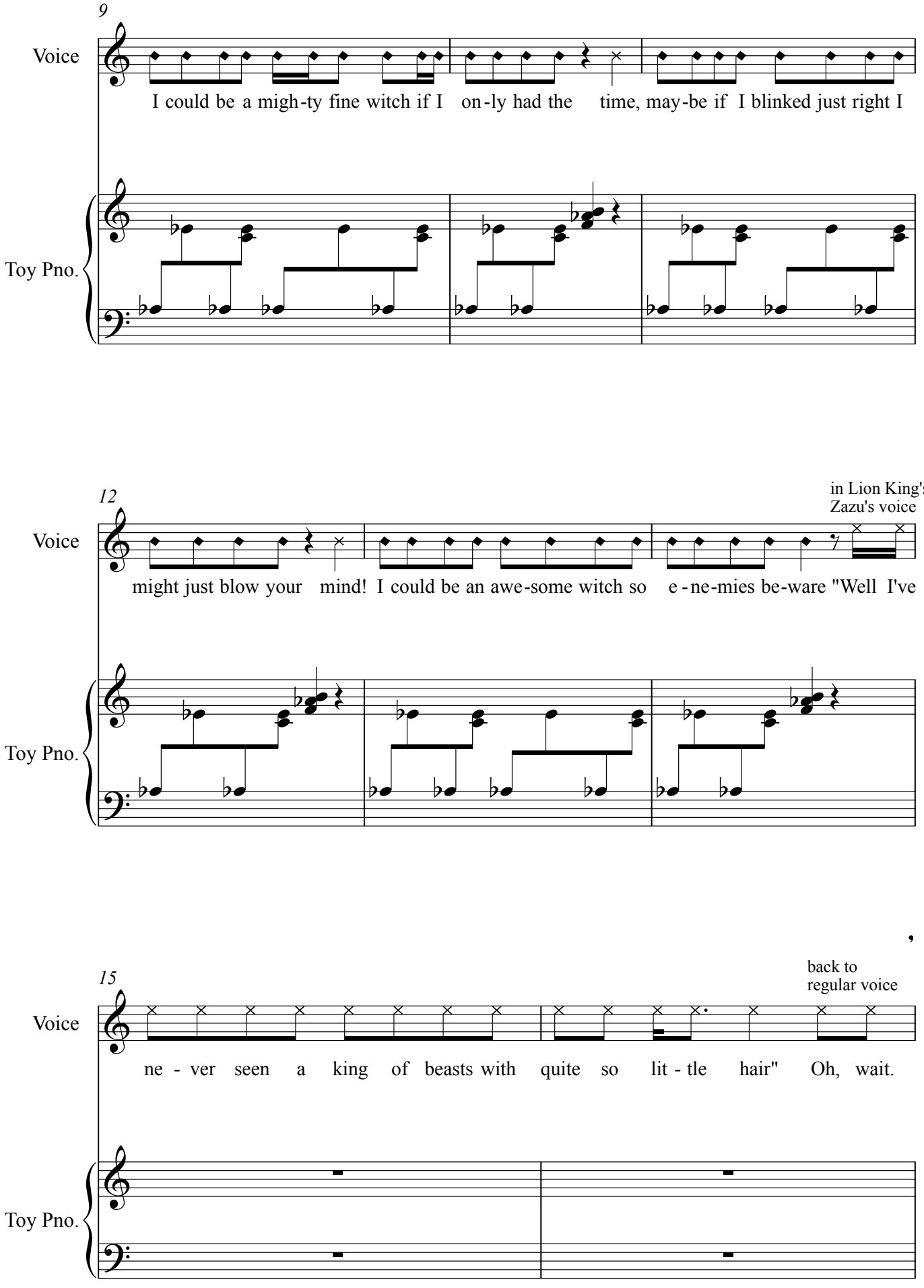

15
Voice
sweet and I could be kind, I could be mean and I could be
Toy Pno.
20
f legato, menacing
Voice
shy, I could have claws, that would be nice, or
Toy Pno.
waiting for something
to happen and then
acknowledging
the silence
24
howling gliss.
Voice
long shi - ny fur in the moon - light I could then roar and
Toy Pno.

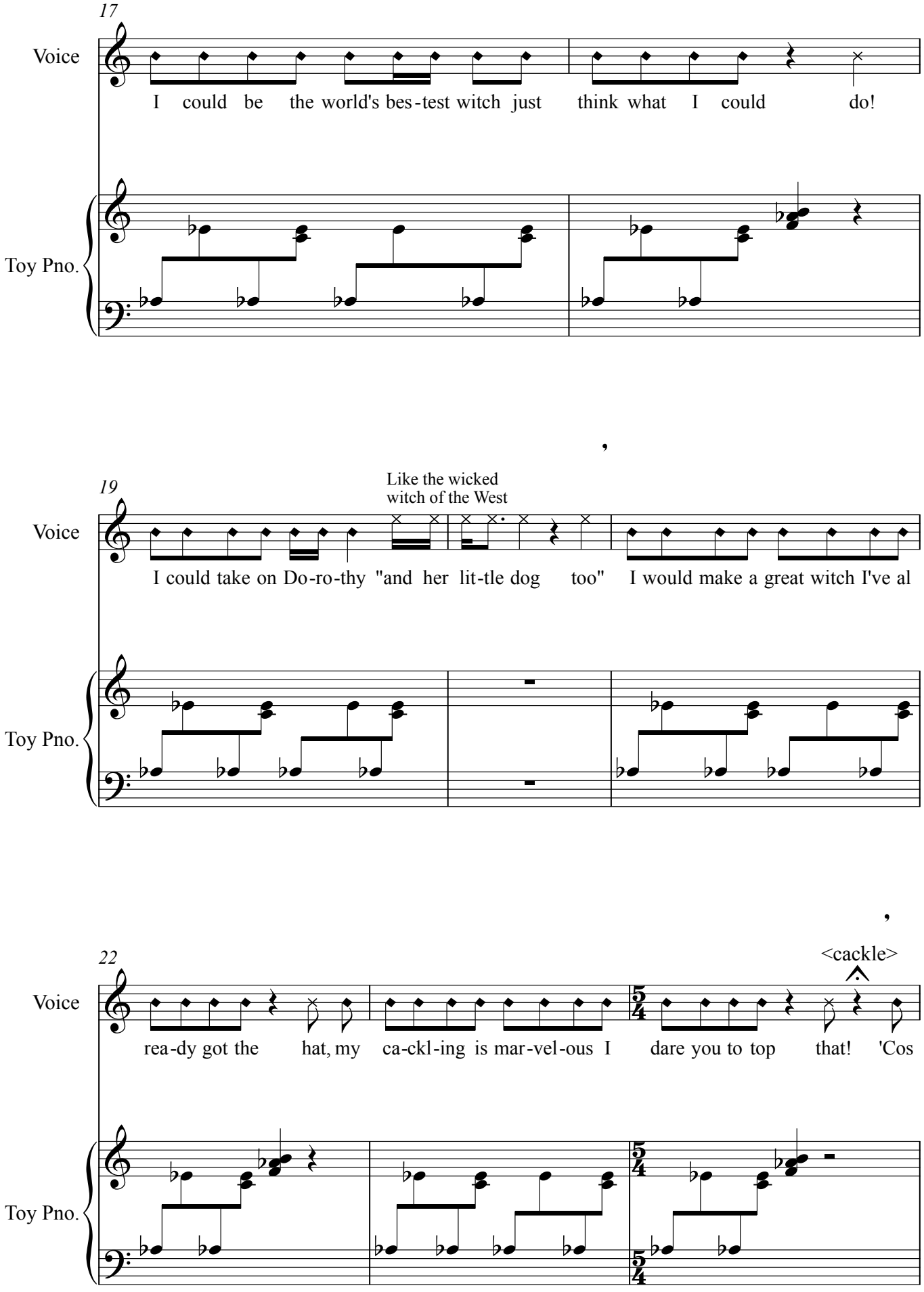


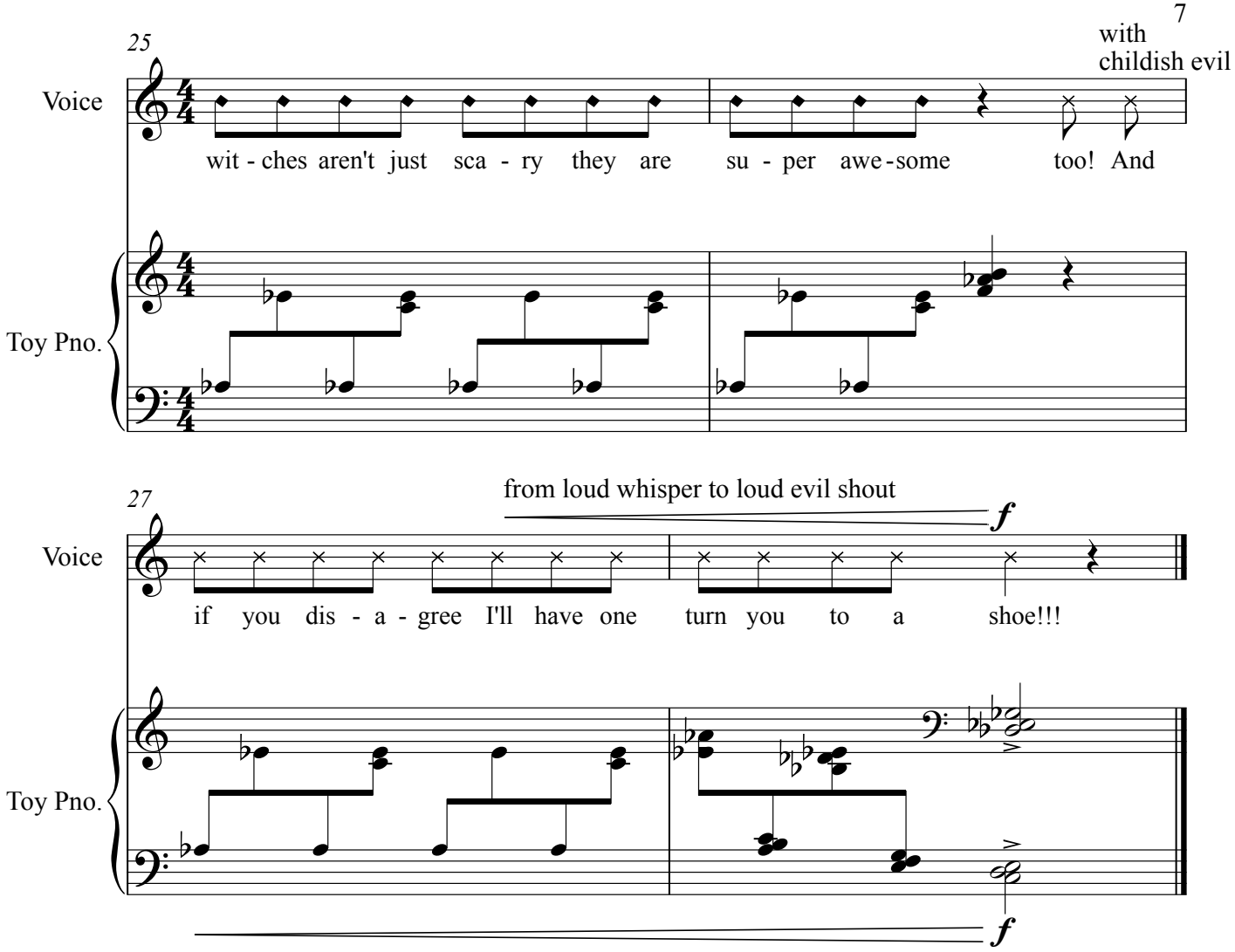
Duration - c. 1:30

II. Witch


Upbeat with creepy undertones
c. ♩ = 160
Voice (approx. pitches)
mf Like a little girl
loud menacing whisper
I could be a great witch if I on-ly had a wand, I would talk to a-ni-mals, oh
Upbeat with creepy undertones
c. ♩ = 160
Toy Piano
mf
4
Voice
sim.
<spoken>
it would be so fun! Fly-ing on a broom-stick, if that's still what they do,(though a
Toy Pno.
7
Voice
fly-ing car-pet would be so much ea-si-er and fit your caul-dron too! Hmm..)
Toy Pno.

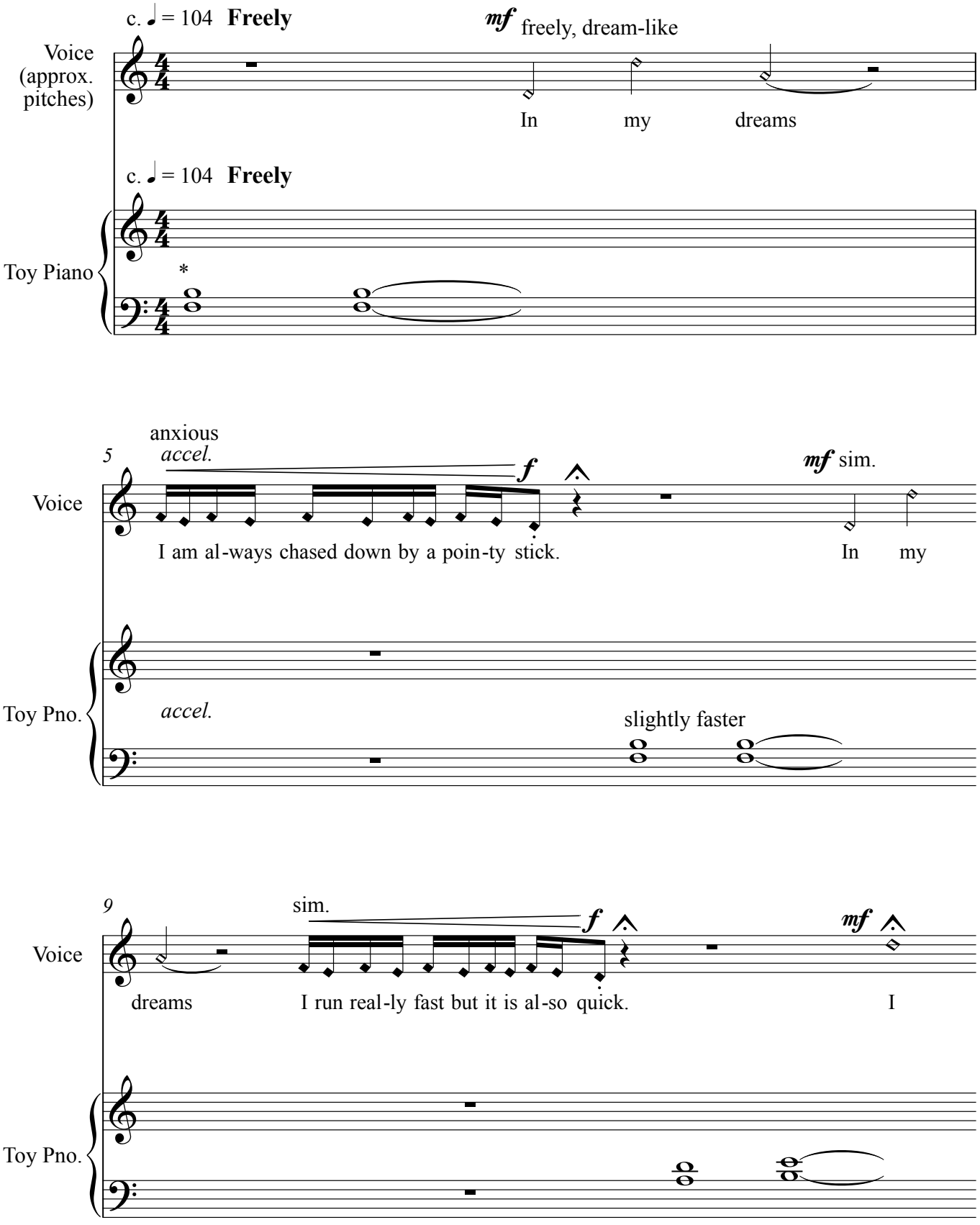

9
Voice
I could be a migh-ty fine witch if I on-ly had the time, may-be if I blinked just right I
Toy Pno.
12
in Lion King's Zazu's voice
Voice
might just blow your mind! I could be an awe-some witch so e-ne-mies be-ware "Well I've
Toy Pno.
15
back to regular voice
Voice
ne - ver seen a king of beasts with quite so lit - tle hair" Oh, wait.
Toy Pno.


17
Voice
I could be the world's bes-test witch just think what I could do!
Toy Pno.
19
Like the wicked witch of the West
Voice
I could take on Do-ro-thy "and her lit-tle dog too" I would make a great witch I've al
Toy Pno.
22
<cackle>
Voice
rea-dy got the hat, my ca-ckl-ing is mar-vel-ous I dare you to top that! 'Cos
Toy Pno.

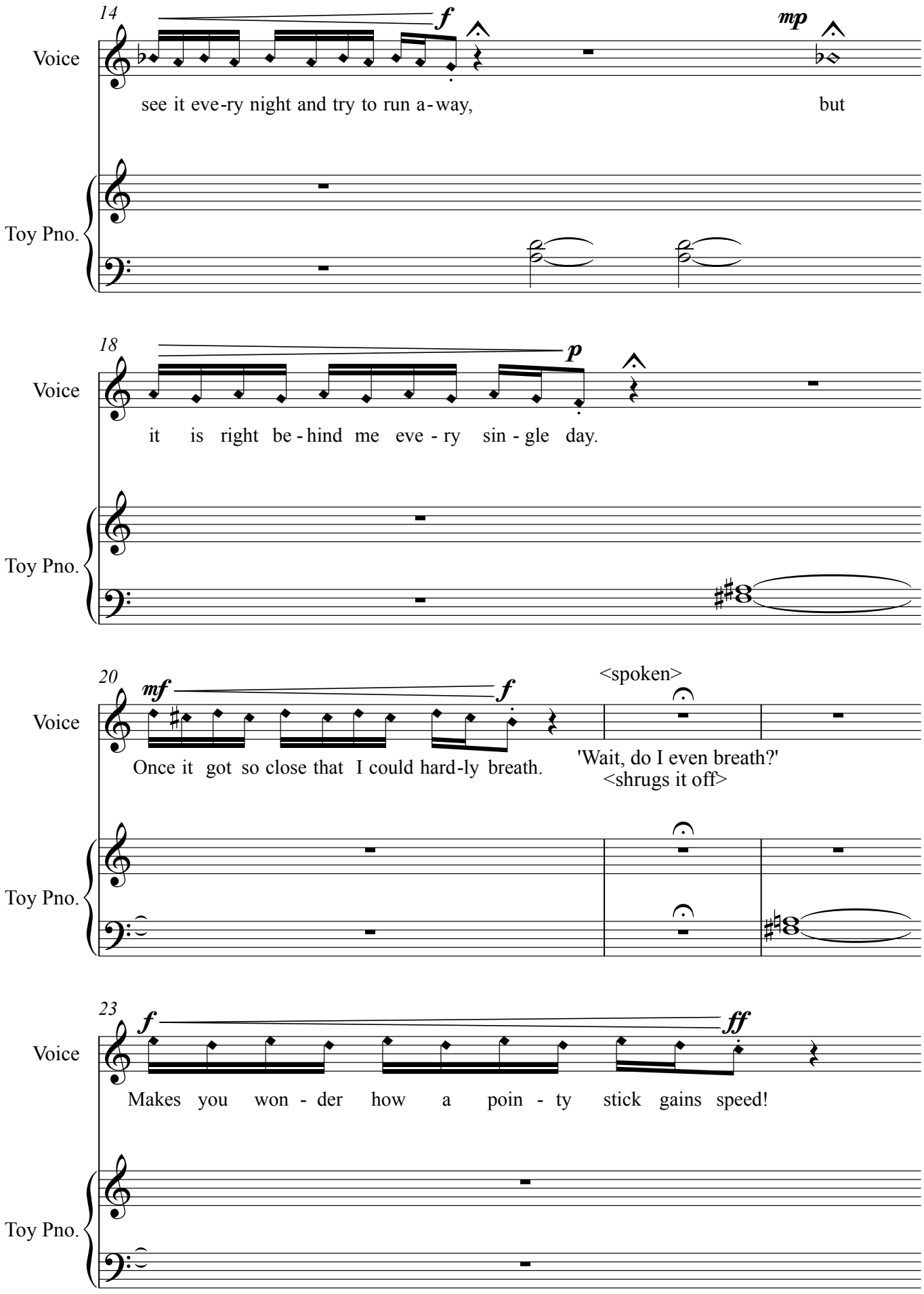


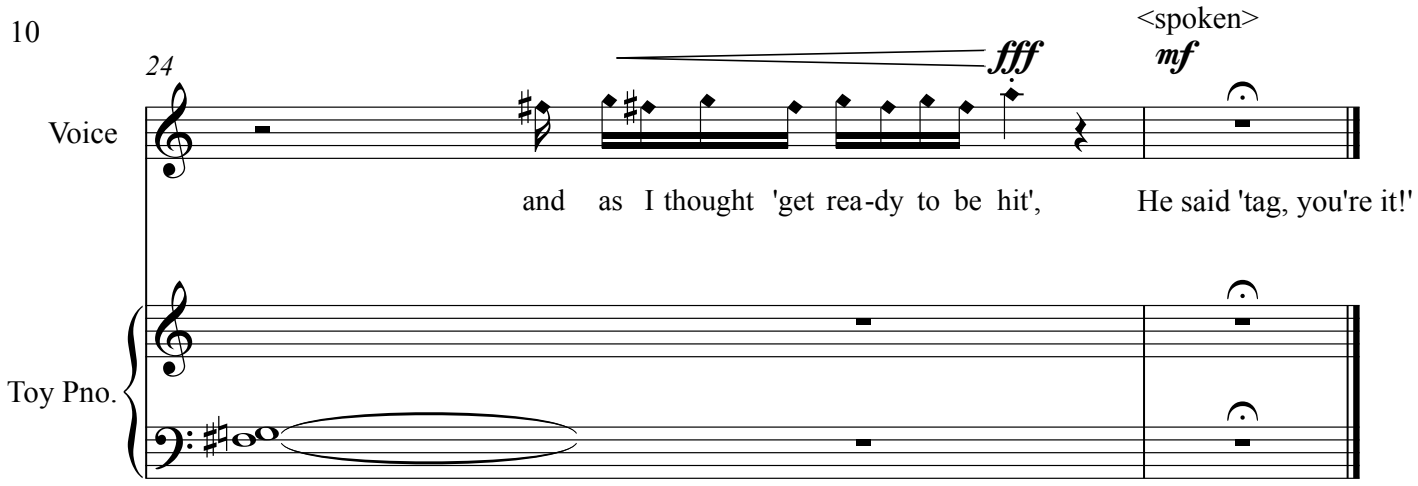
Duration - c. 45 seconds

III. Vampire



*See performance notes

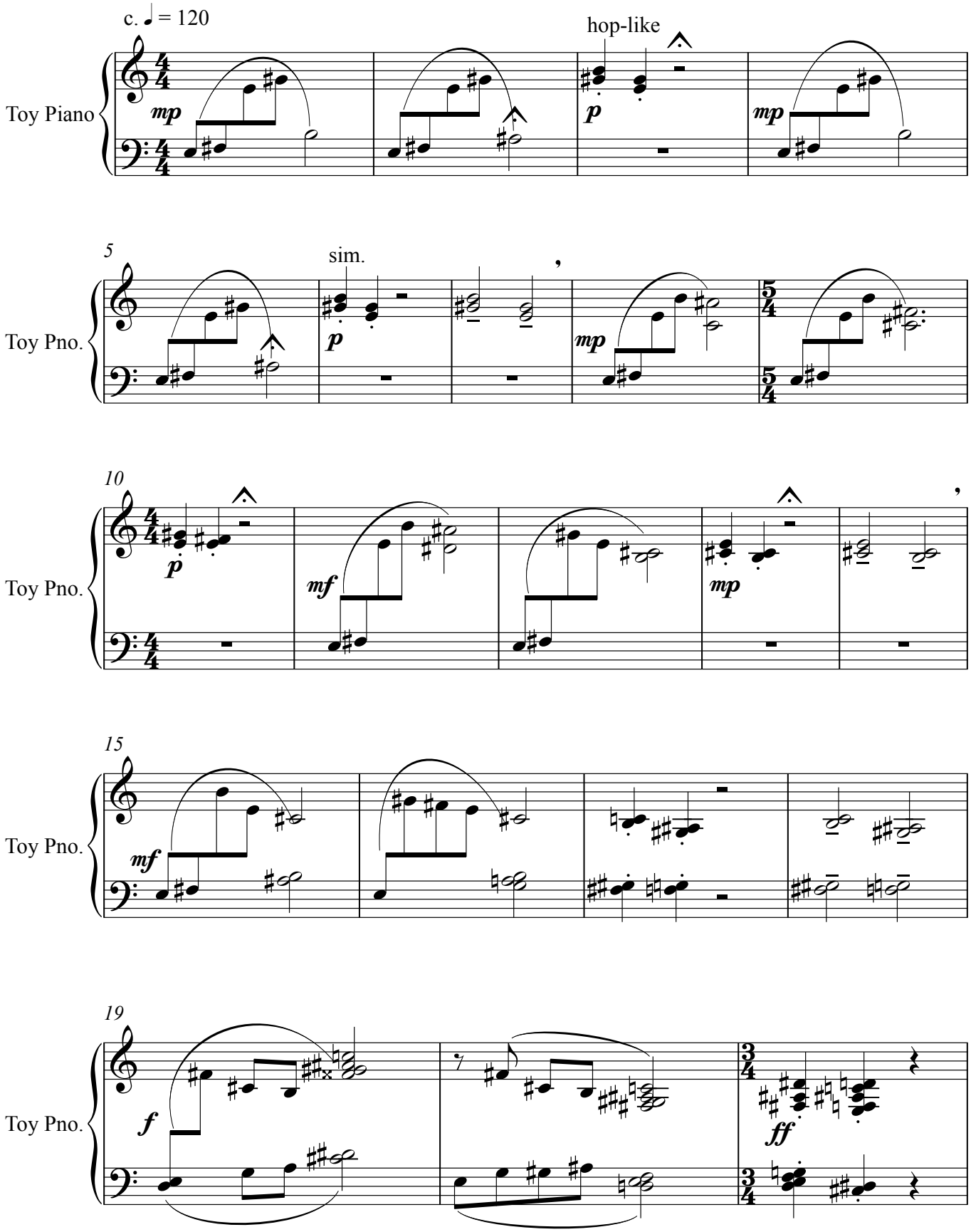

14
Voice
f
mp
see it eve-ry night and try to run a-way,
but
Toy Pno.
18
Voice
p
it is right be-hind me eve-ry sin-gle day.
Toy Pno.
20
Voice
mf
f
<spoken>
Once it got so close that I could hard-ly breath.
'Wait, do I even breath?'
<shrugs it off>
Toy Pno.
23
Voice
f
ff
Makes you won-der how a poin-ty stick gains speed!
Toy Pno.

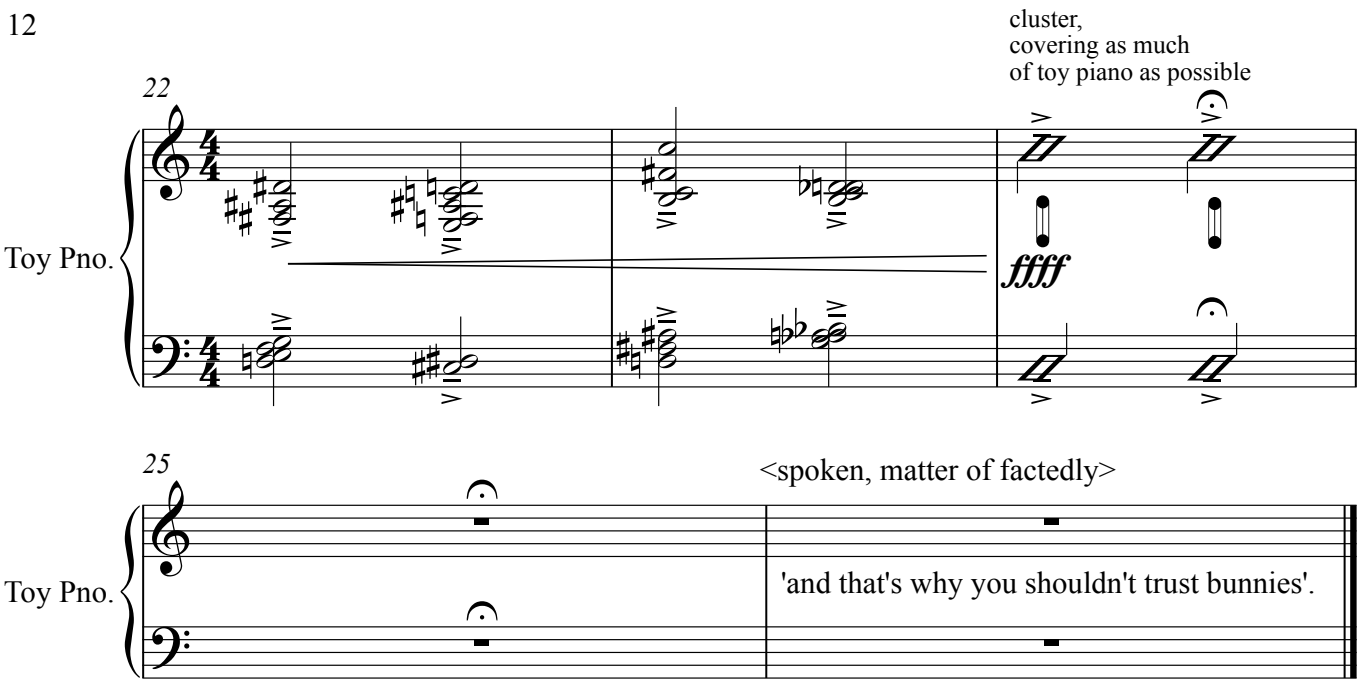


Duration - c. 1 min.

IV. Bunny

Starting cute and gradually becoming evil



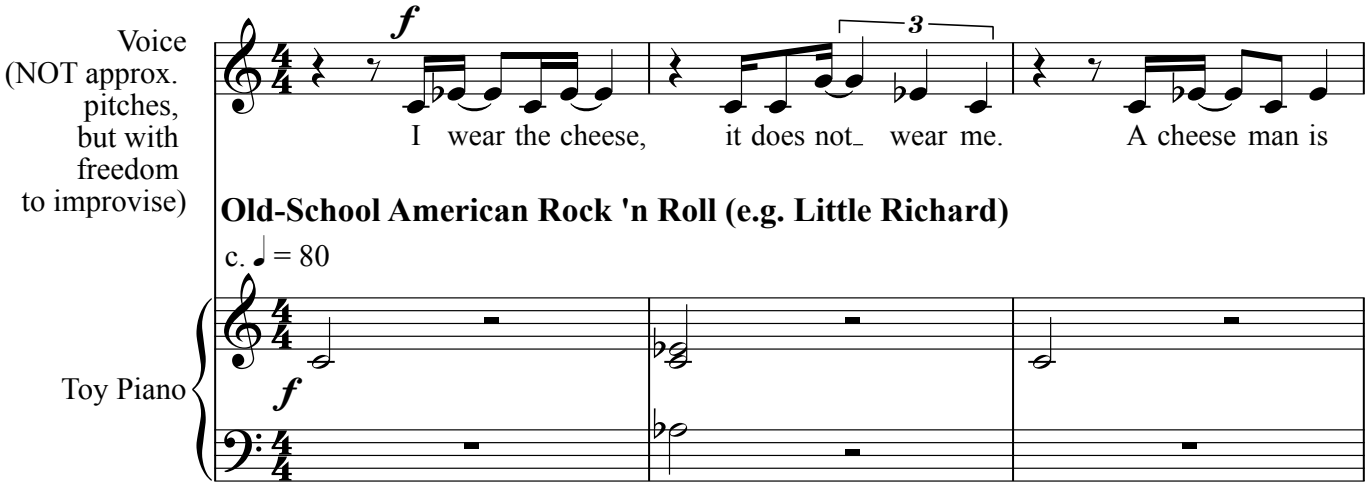


Duration - c. 1 min.

V. Slayer

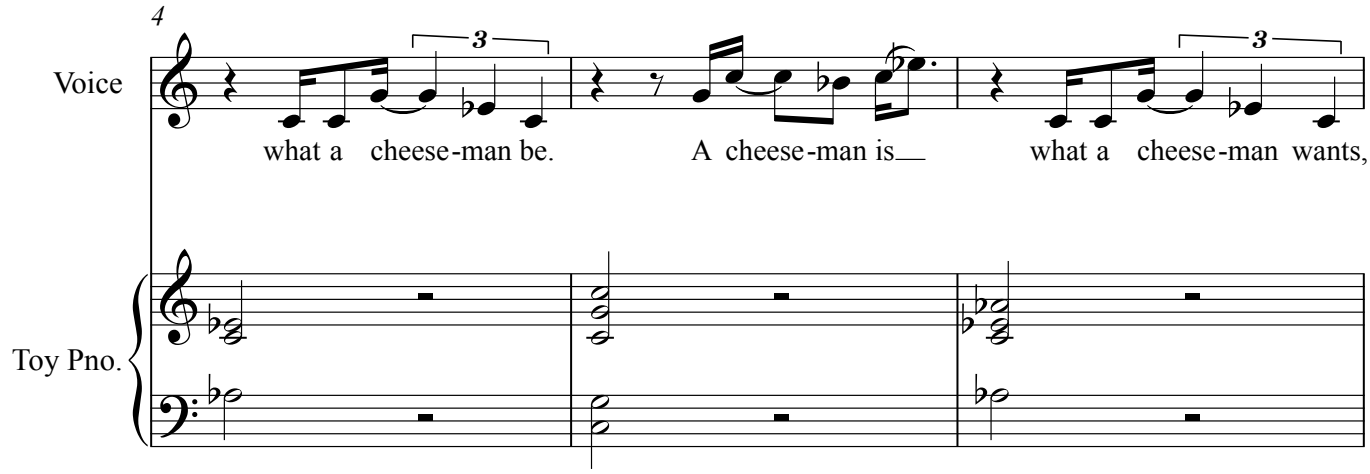
Old-School American Rock 'n Roll (e.g. Little Richard)

c. ♩ = 80

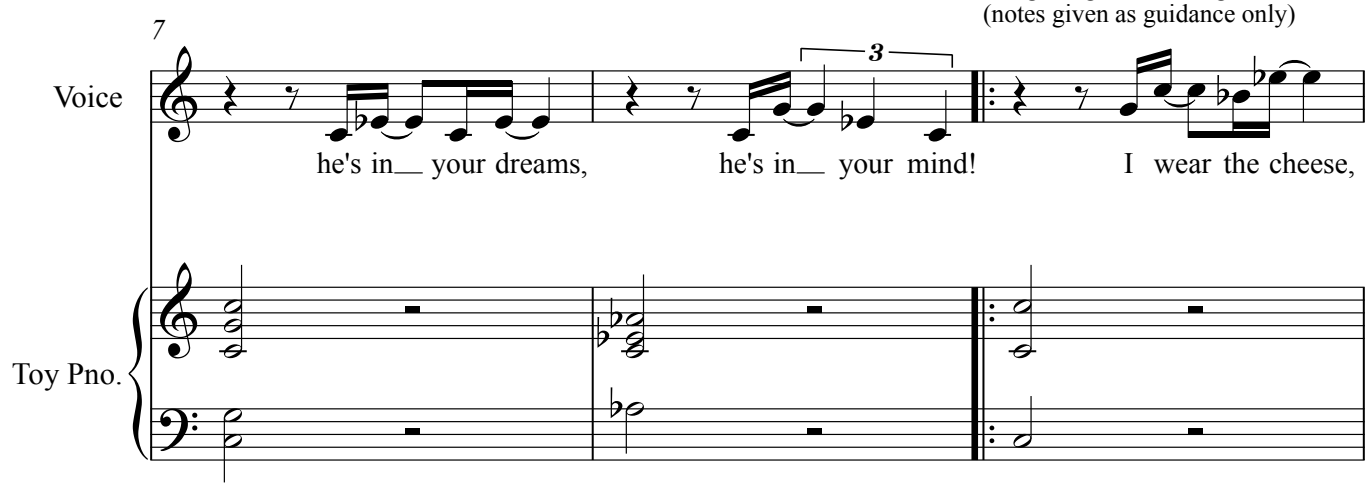


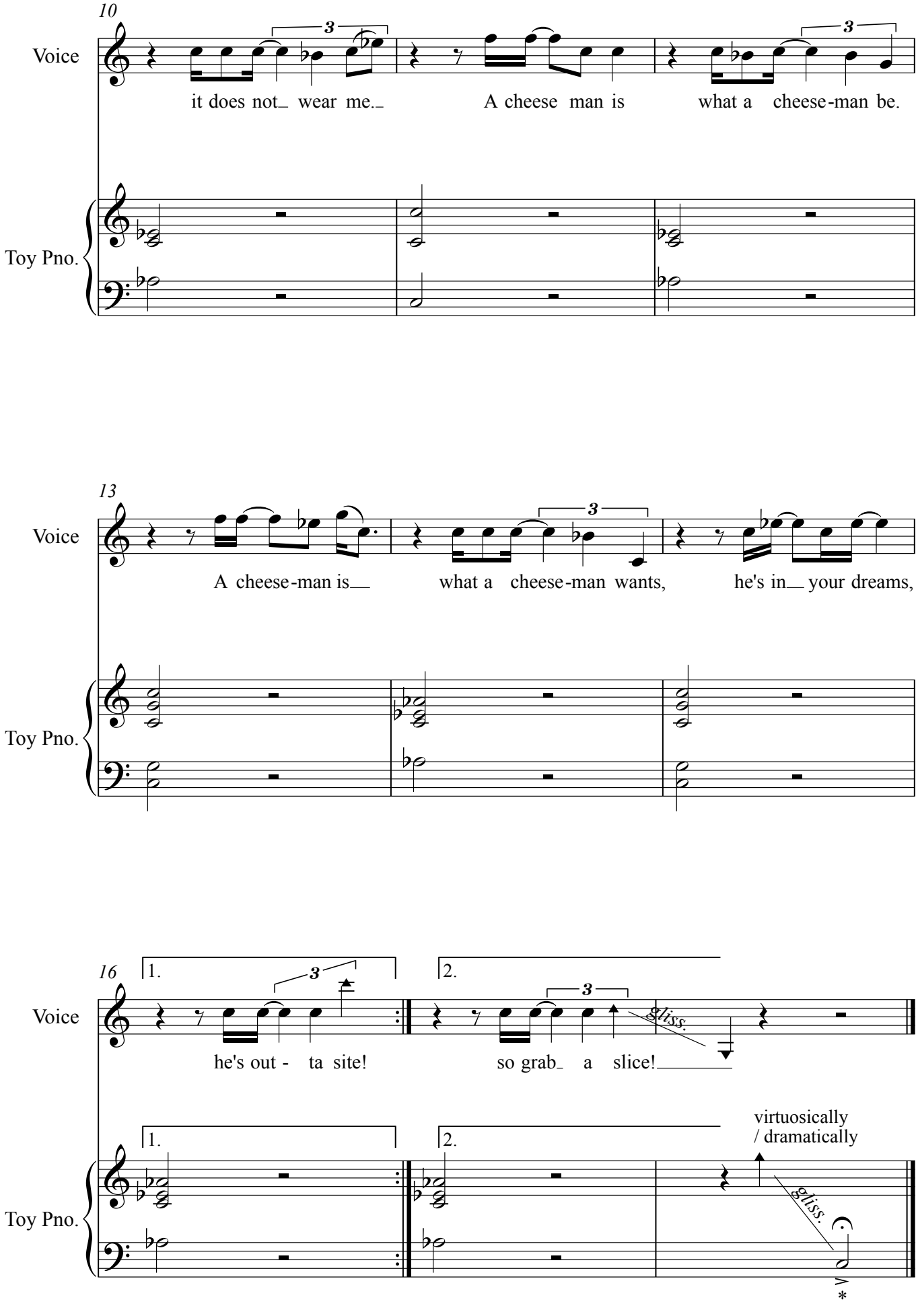
Old-School American Rock 'n Roll (e.g. Little Richard)

c. ♩ = 80



Repeat twice, improvising to the melody and getting more outrageous (notes given as guidance only)





*If toy piano extends lower/higher
then extend glissando (though finish on a bottom C)

Duration - c. 1:20 mins.

for Késia Decoté

Yfat Soul Zisso

Para a Frente

for toy piano

Programme notes:

Written for pianist Késia Decoté in the summer of 2018 for the *Brief Candles* concert series,

the title means *Forwards* in Brazilian Portuguese (Késia's first language).

Y.S.Z.

Performance notes:

The starting *mf* dynamic indicates the general dynamic area of the piece,

but it is the constant intensity which drives the piece forwards throughout.

Grace notes should always be played before the beat.

Duration: c. 1:40

for Késia Decoté

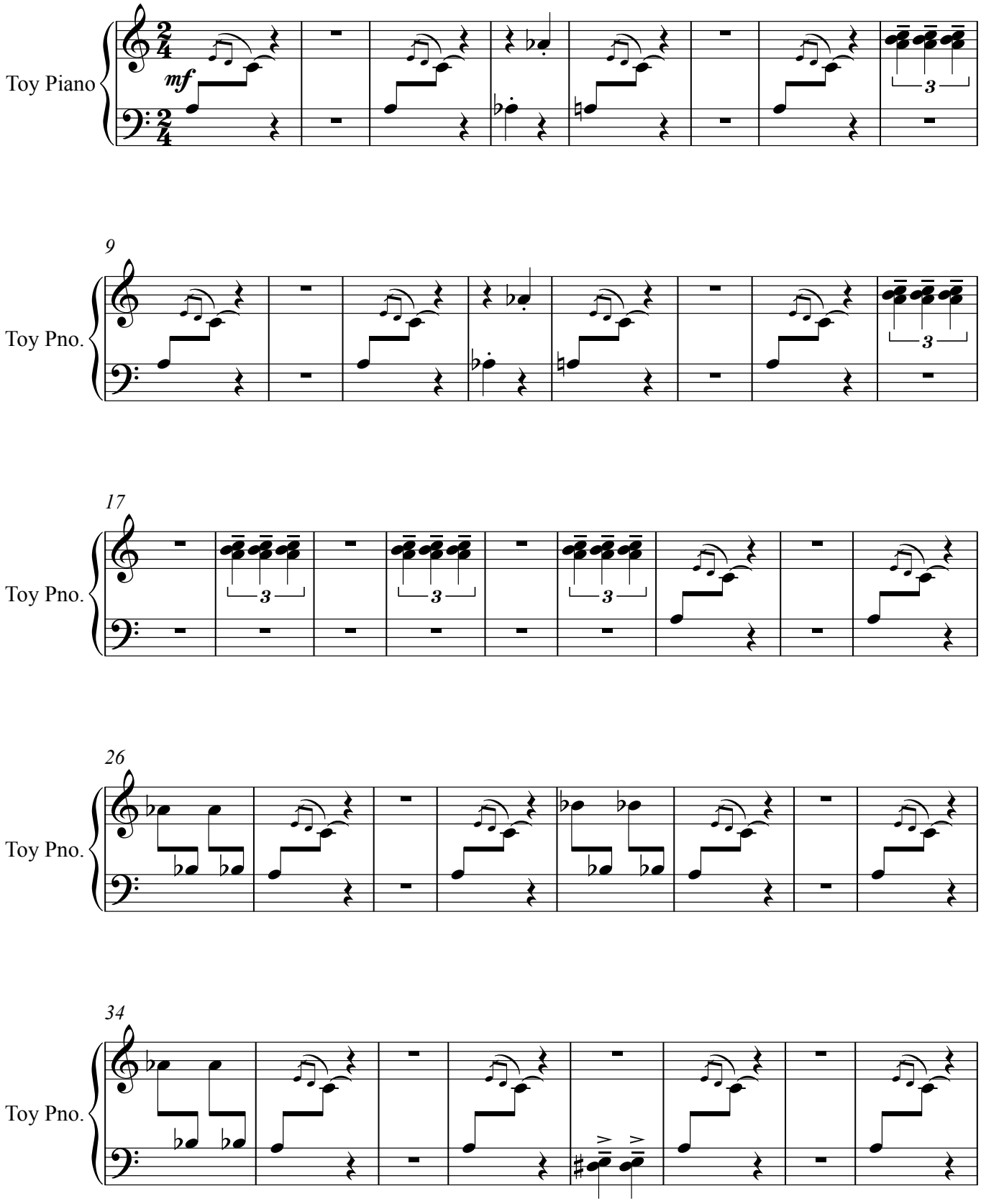
Para a Frente

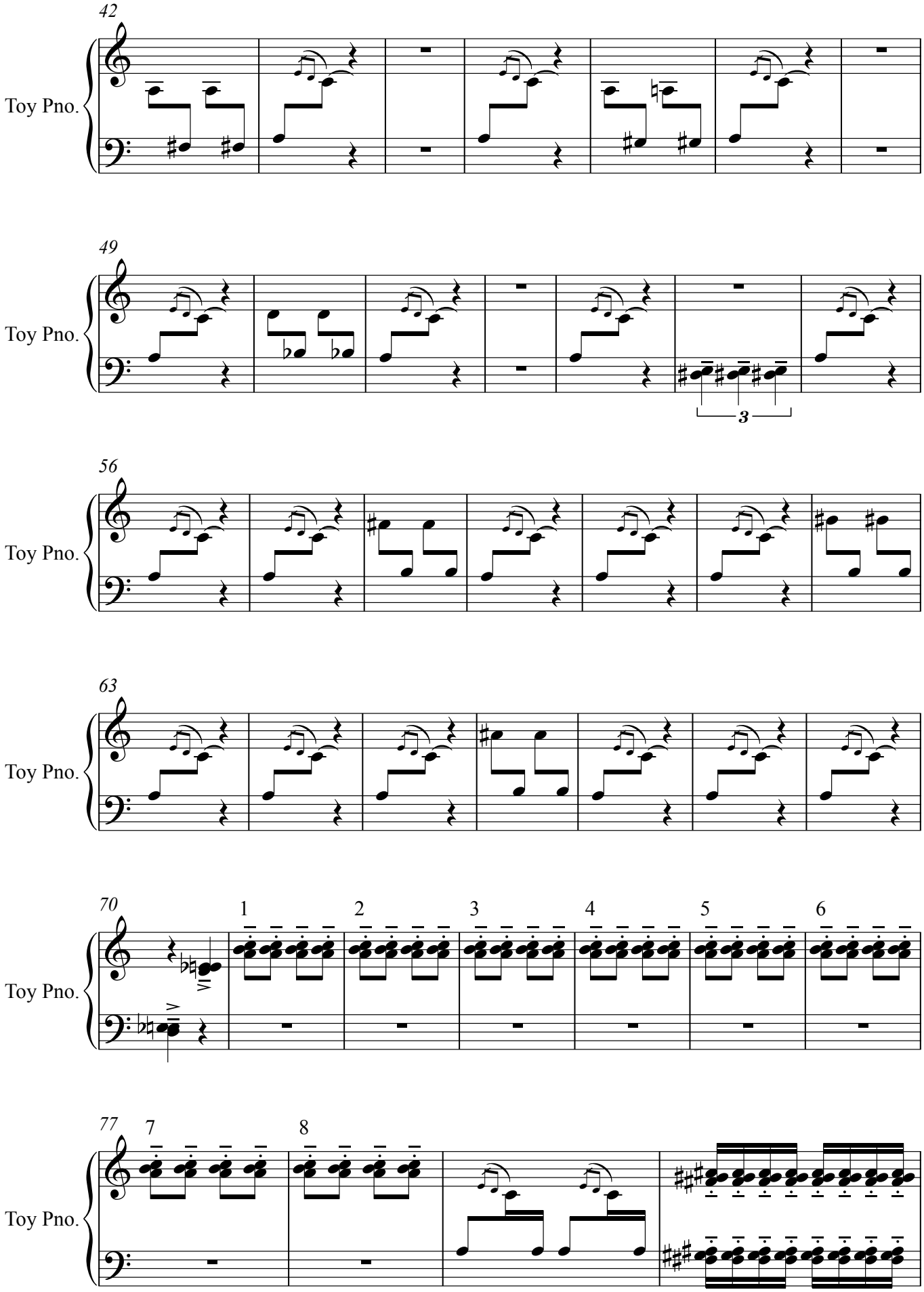
for toy piano

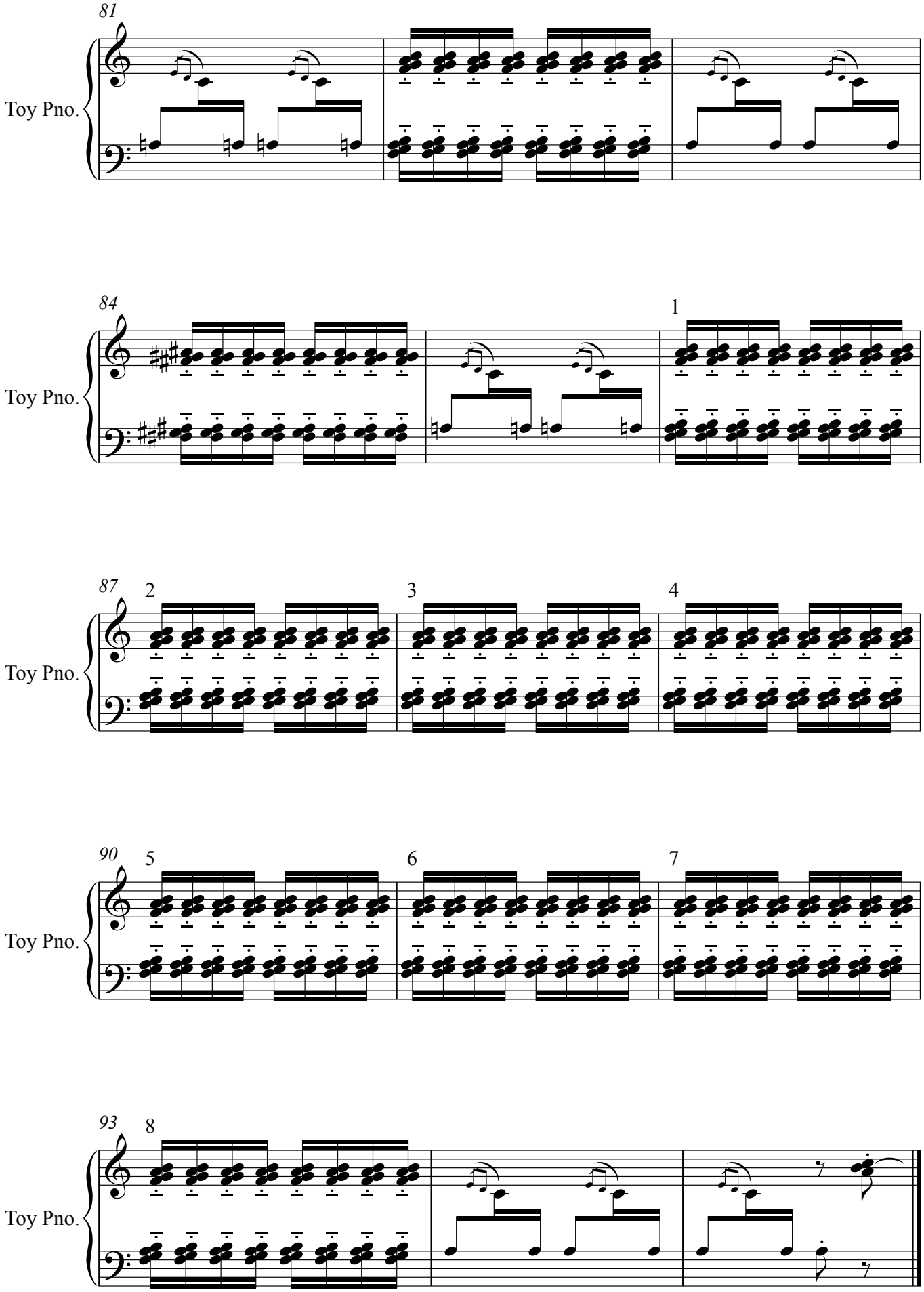
Yfat Soul Zisso

Always with intensity and a sense of driving forward

c. ♩ = 116




42
Toy Pno.
49
Toy Pno.
3
56
Toy Pno.
63
Toy Pno.
70
Toy Pno.
VI
1
2
3
4
5
6
77
Toy Pno.
7
8


81
Toy Pno.
84
Toy Pno.
1
87
2
3
4
Toy Pno.
90
5
6
7
Toy Pno.
93
8
Toy Pno.

for Késia

Yfat Soul Zisso

Full Moon

for toy piano

Programme notes:

Written mostly during the full moon just before Friday the 13th,

with nothing but good (if slightly spooky) energy.

Y.S.Z.

Performance notes:

All grace notes to be played on the beat

b.43-50 - crescendo indicates a sense of building up tension towards the section

starting in b. 51. Can speed up a tiny bit during it but not too much.

duration: c. 3 mins

for Késia

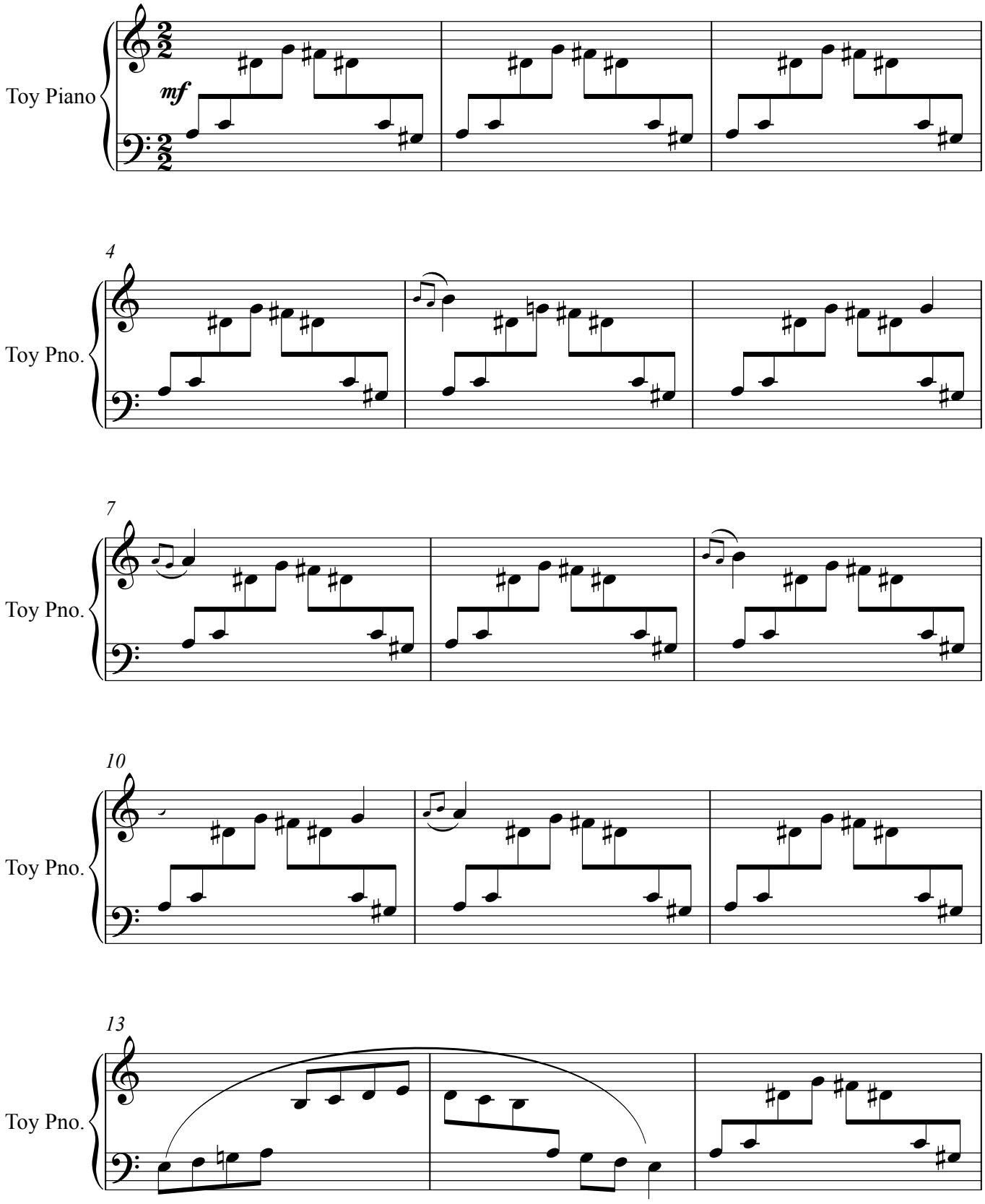
Full Moon

for toy piano

Yfat Soul Zisso

Fluid, mysterious

c. ♩ = 92



16

Toy Pno.

19

Toy Pno.

22

Toy Pno.

24

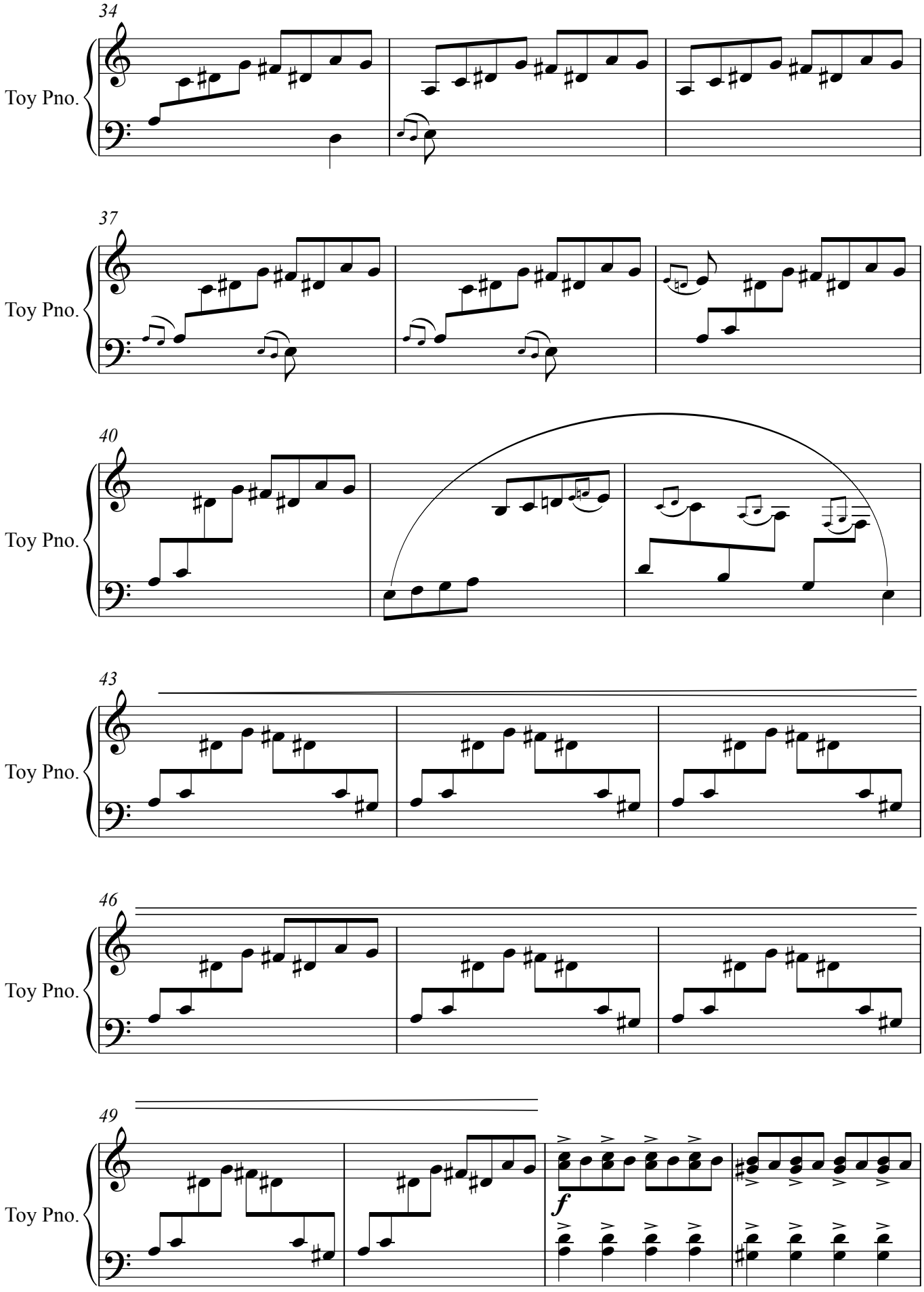
Toy Pno.

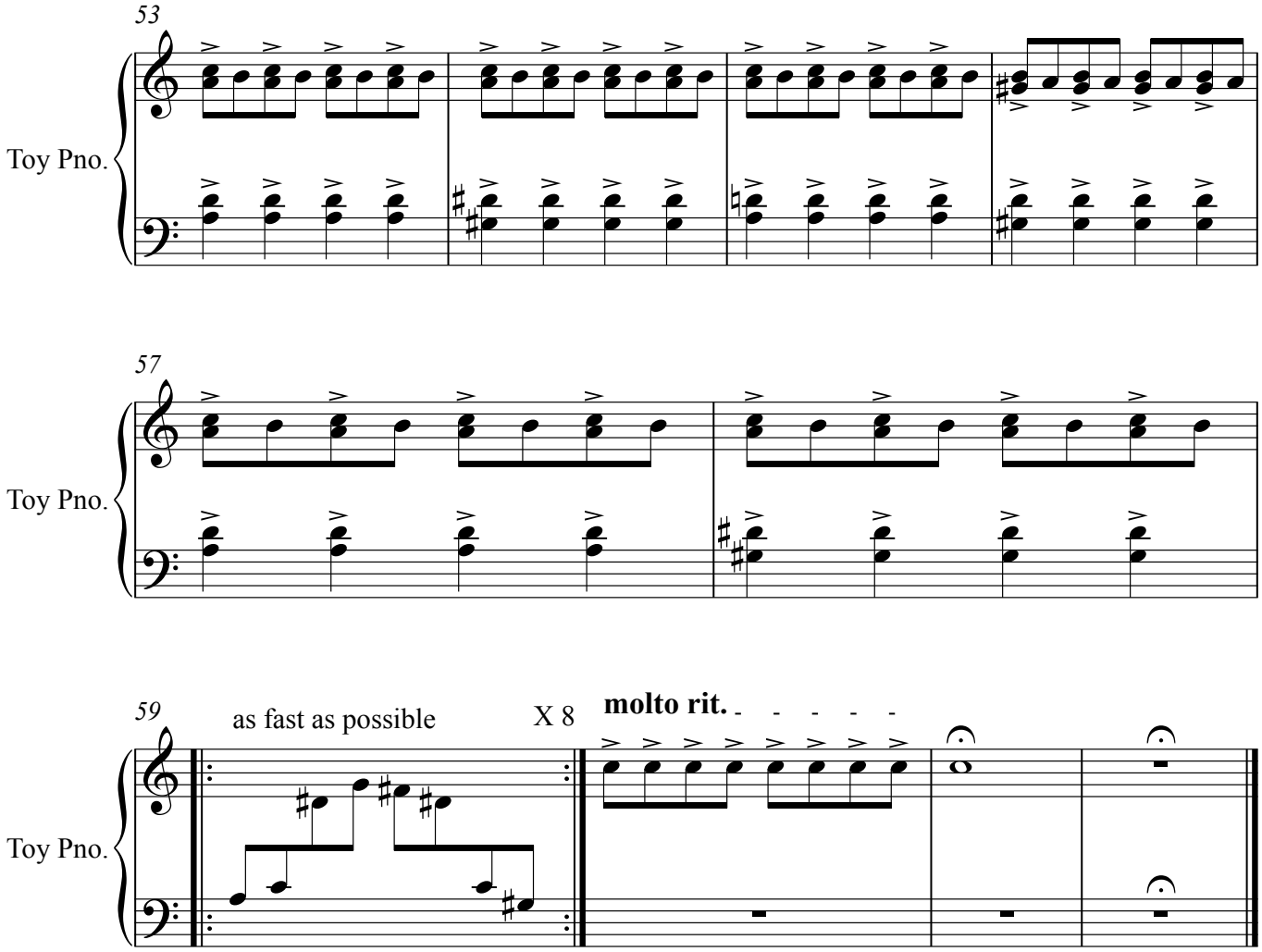
27

Toy Pno.

31

Toy Pno.


34
Toy Pno.
37
Toy Pno.
40
Toy Pno.
43
Toy Pno.
46
Toy Pno.
49
Toy Pno.
f


53
Toy Pno.
57
Toy Pno.
59
as fast as possible
X 8
molto rit.
Toy Pno.

for Xenia and Késia

Yfat Soul Zisso

Everything is Fine

for toy piano

Programme notes:

Written in April 2020 while in self-isolation during the the COVID-19 pandemic,

this piece tries to capture the attempt to keep sane

(and possibly even productive or creative)

during this time,

while trying to avoid anything that might trigger a panic attack.

This is the first full piece I have managed to write during this crisis.

Y. S. Z.

Performance notes:

The cheerful melody should be played like a wind-up doll / music box that keeps running out of steam

and needs to be re-wound, with the last 2 notes of each rit. *really* dragging.

This repeated melody should sound exactly the same each time it is played

(besides the final bars of the piece),

as if it is simply a mechanical recording (like a music box)

with no actual relation to what is going on in the real world.

The last occurence of this melody (in b. 44) represents a full long and total drain

as the wind-up toy / box completely runs out of energy.

Duration - c. 3 mins

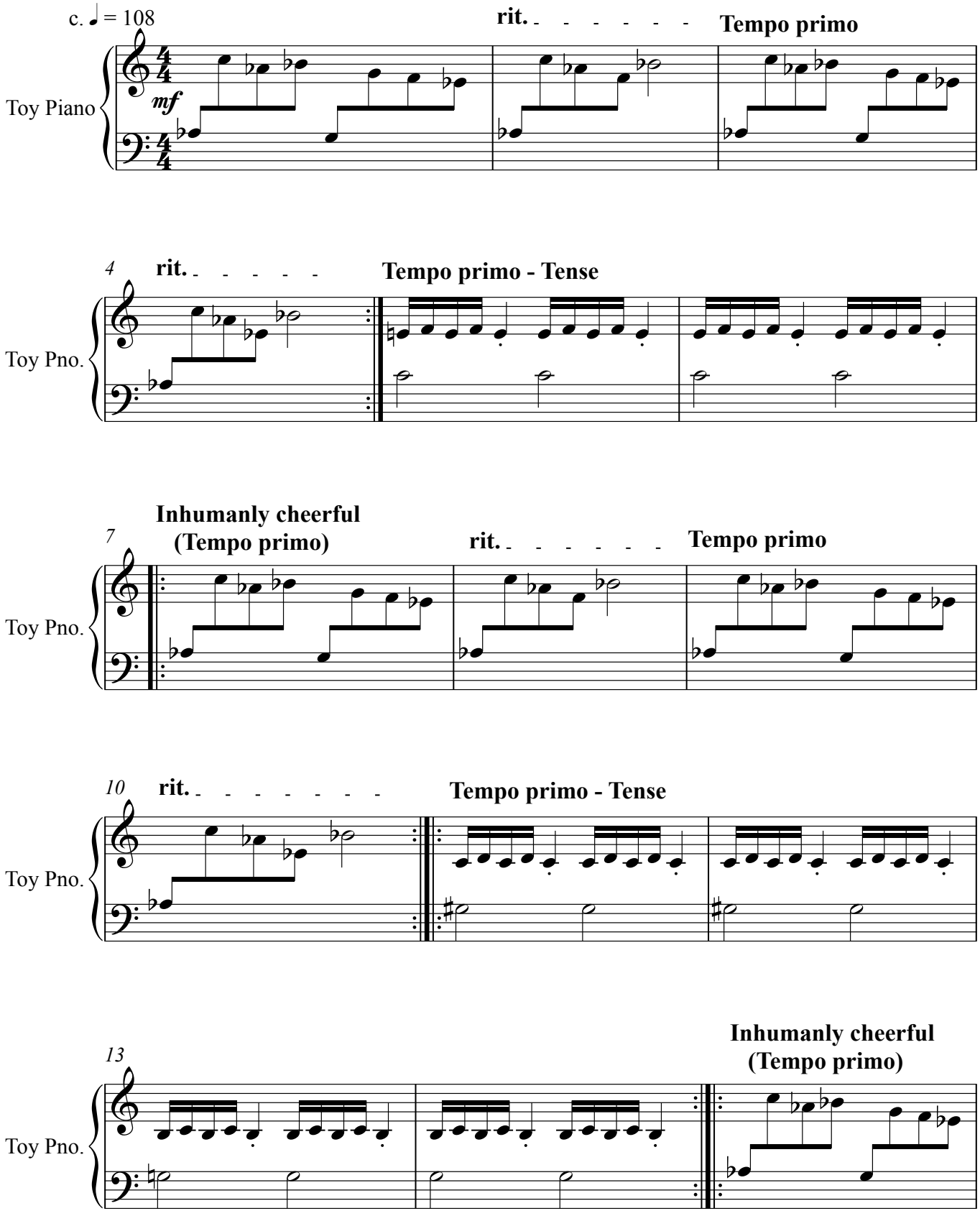
for Xenia and Késia

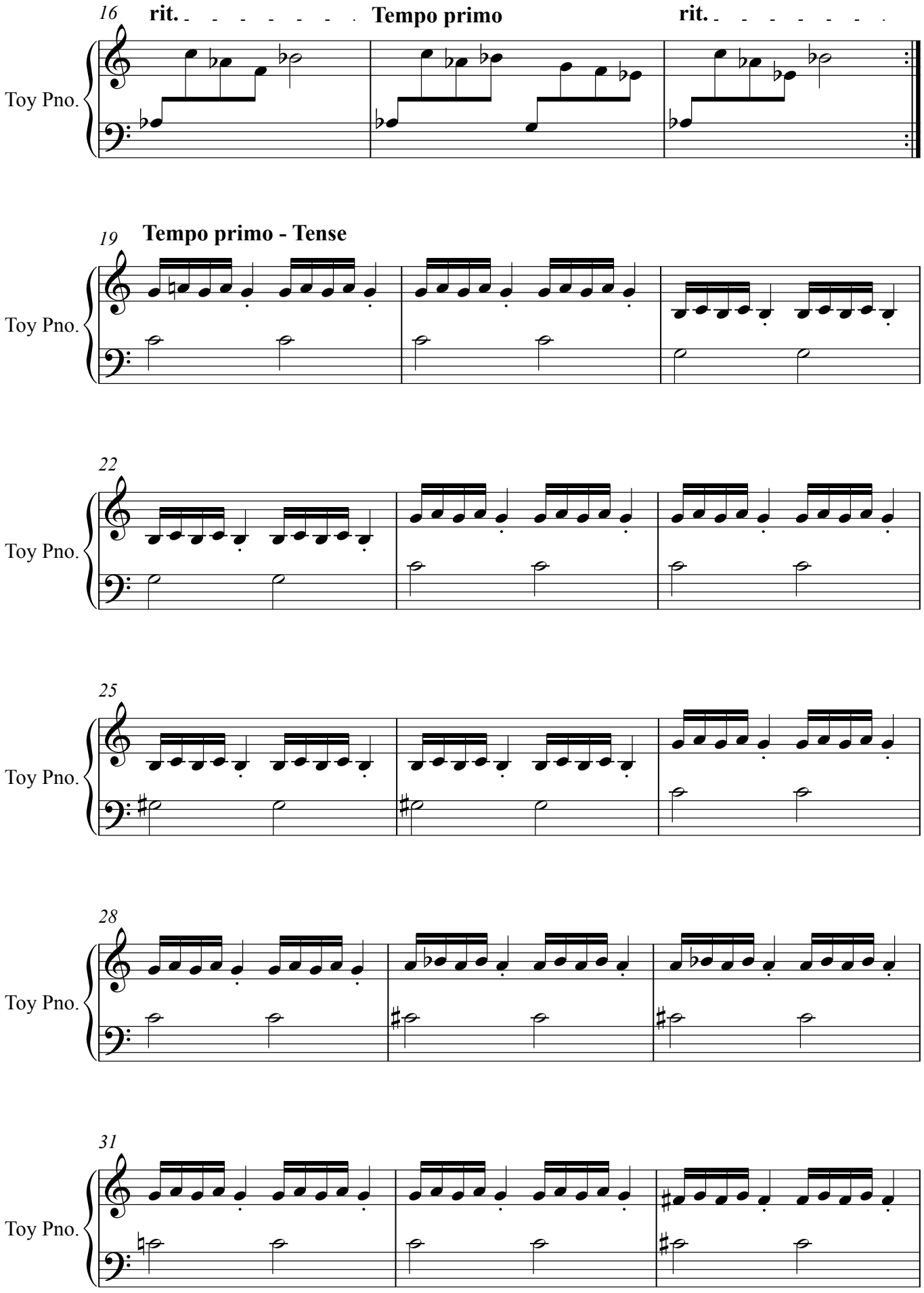
Yfat Soul Zisso

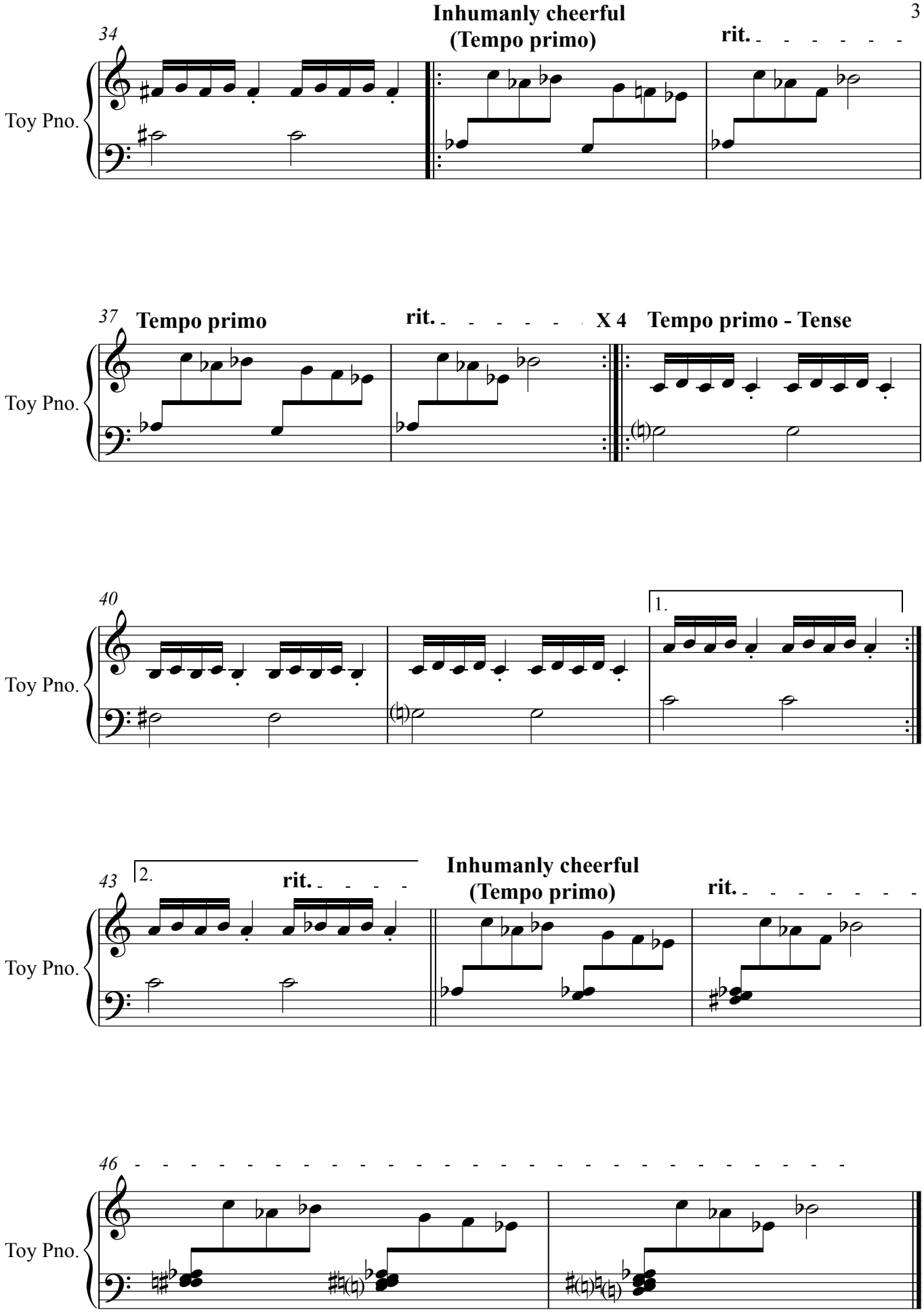
Everything is Fine

for toy piano

Inhumanly cheerful,
like a happy wind-up toy
Constantly being re-wound




16
rit.
Tempo primo
rit.
Toy Pno.
19
Tempo primo - Tense
Toy Pno.
22
Toy Pno.
25
Toy Pno.
28
Toy Pno.
31
Toy Pno.


34
Inhumanly cheerful
(Tempo primo)
rit.
Toy Pno.
37
Tempo primo
rit.
X 4
Tempo primo - Tense
Toy Pno.
40
1.
Toy Pno.
43
2.
rit.
Inhumanly cheerful
(Tempo primo)
rit.
Toy Pno.
46
Toy Pno.

for Xenia Pestova Bennett and Késia Decoté,

who always inspire me to write for the toy piano

Yfat Soul Zisso

Restlessness

for toy piano

Programme notes:

Began in October 2019 and finished in March 2020, this miniature for toy piano was the first piece I managed to finish during the COVID-19 pandemic.

I hope it is a symbol of hope for creativity in times of fear and anxiety.

Y.S.Z.

Duration - c. 2 mins

for Xenia Pestova Bennett and Késia Decoté,
who always inspire me to write for the toy piano

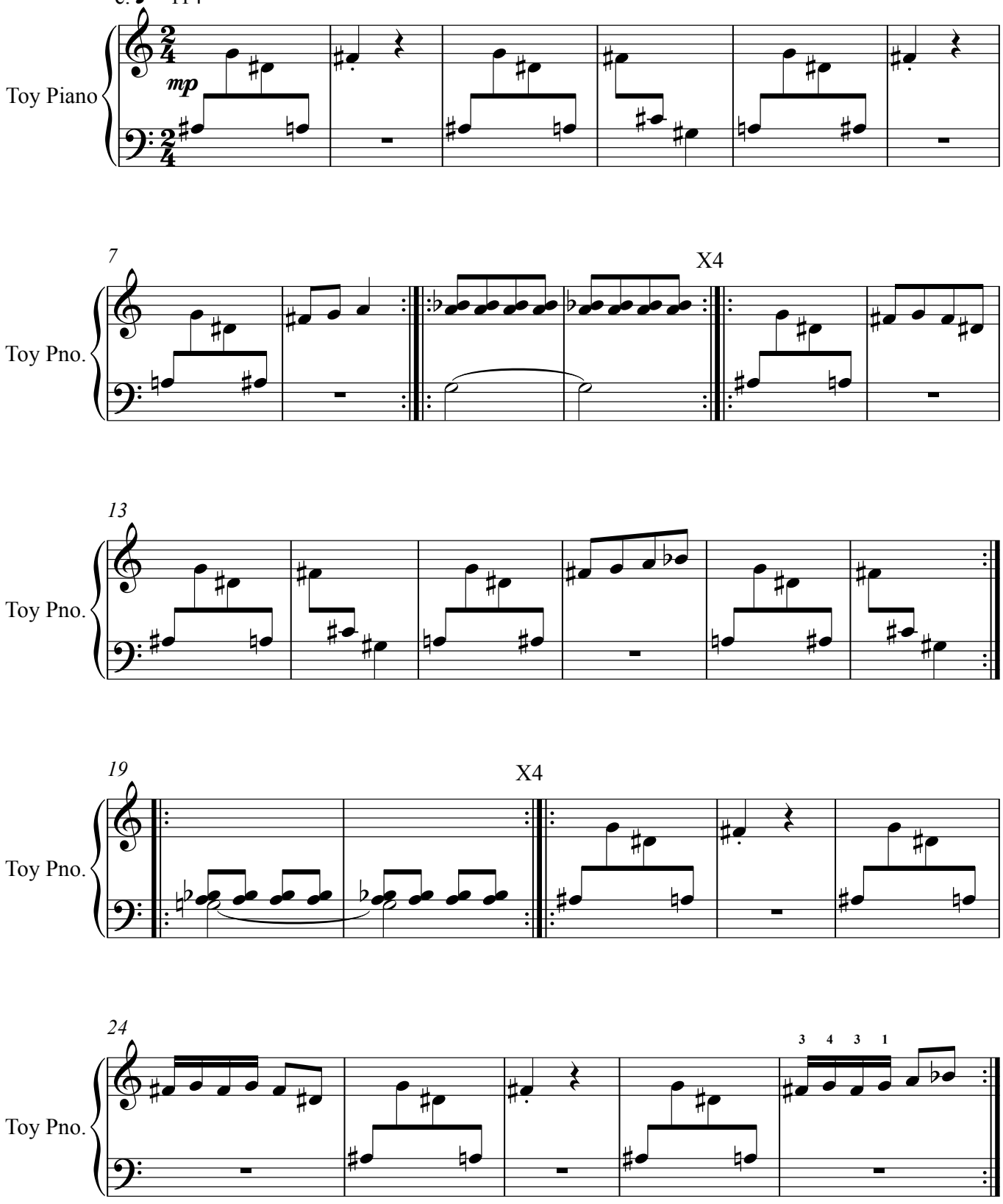
Restlessness

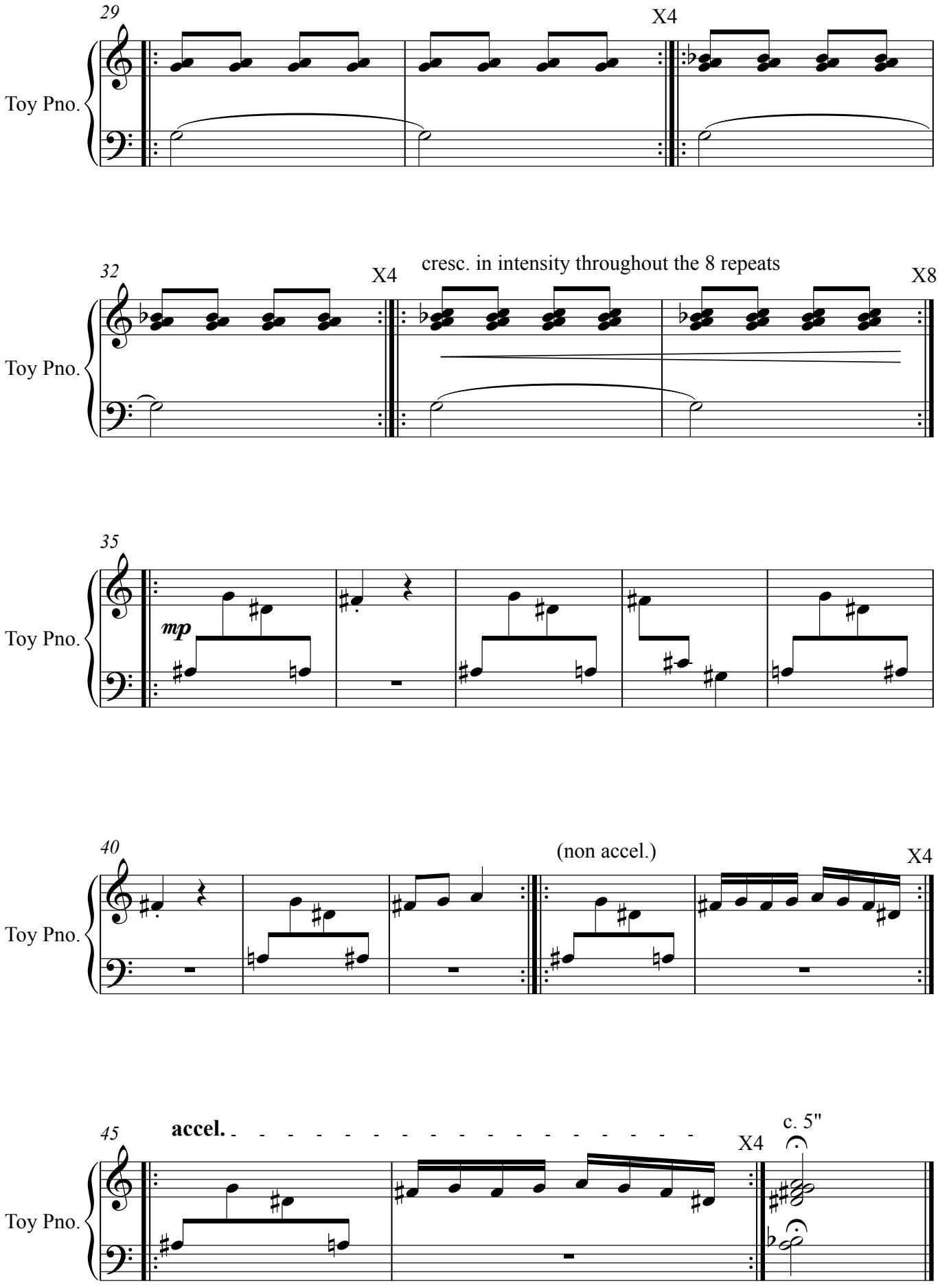
for toy piano

Yfat Soul Zisso

Anxious but trying to keep it all together

c. ♩ = 114




29
X4
Toy Pno.
32
X4
cresc. in intensity throughout the 8 repeats
X8
Toy Pno.
35
mp
Toy Pno.
40
(non accel.)
X4
Toy Pno.
45
accel.
X4
c. 5"
Toy Pno.

A Study of Singers' Approaches to Microtonal Singing

Yfat Soul Zisso

The use of microtonality in western contemporary classical music has become more and more popular since the 1970s, whether influenced by the work of French Spectral composers such as Gerard Grisey and Tristan Murail, Gyorgy Ligeti (who took inspiration both from the harmonic series and Hungarian folk melodies) or composers like Harry Partch (who divided the scale into non-standard microtones). Microtones, though perhaps tricky to get used to playing, are very possible to play accurately on most instruments – string instrumentalists can merely place their fingers between two notes a semitone apart to locate a quarter-tone and woodwind players can usually find a specific fingering for a microtone, or can simply overblow a note to subtly change its pitch. This is a completely different issue for singers, however: for such a physical and personal instrument, overblowing a note put tension on the vocal chords, adversely affecting the quality of the tone alongside the possibility of causing strain on the singer's voice. Unlike a string player who can memorise the position of a note without audiating, a singer needs to hear the pitches he/she needs to sing and memorise the intervals in between them, while also concentrating on maintaining appropriate singing technique and achieving an egaging performance.

The greatest barrier for classically-trained singers raised in a western culture (and thus not accustomed to hearing different types of microtones which exist in the folk music of Eastern Europe, India, Scandinavia and Arabic countries) is being able to hear them well enough to pitch them, a difficulty that would require a step-by-step manual which would expose singers to microtones and gradually teach them how to sing different types of microtones and examples of various microtonal vocal music. This research project is the

first step in determining how classically-trained singers who have successfully sung microtones did so, the problems arising from microtonal singing (and how they could be addressed) and the best ways a singer could approach singing microtones for the first time without it adversely affecting their technique or confidence levels. The aim of this project is to provide a basis for a manual to help singers learn to sing various types of microtones by determining which issues the manual should address and what it should contain, as well as highlighting issue and areas that would require further research. It is my hope that this project will ultimately make microtonal singing easier to learn and thus a skill more commonly possessed by singers than it is today, resulting in more vocal microtonal pieces being written and performed – an area of new musical colours just waiting to be further explored by both composers and performers.

Research Context and Methodology:

Existing research on the topic of how singers should approach singing pieces containing microtones is incredibly scarce. Jane Manning's books on new vocal repertory, *New Vocal Repertory – An Introduction* and *New Vocal Repertory volume 2*, don't mention any pieces containing any types of microtones. Paul Barker, in his book *Composing for Voice*, mentions extended techniques for voice but completely ignores microtonal singing.[1] Nicholas Isherwood's Book *The Techniques of Singing* is the only book found which specifically mentions how to approach microtonal singing, though it only does so very briefly, stating a MIDI keyboard with specialist software must be used in order to hear the microtones and recommending basic microtonal scale exercises. With regards to technique, Ishewrood only states that microtones should be sung non-vibrato, disregarding any other technical issue that might arise with microtonal singing. Isherwood's attempts to liken learning pieces containing micro-intervals without playing them on a specialist MIDI keyboard to studying

[1] Barker, 2004: 40-42.

Bach cantata arias using a piano with only white keys; this comparison is only valid in the sense that microtonal pitches need to be 'heard' before they are sung, but the assertion that the only way to do so is through the costly purchase of a MIDI keyboard and specialist software, greatly limits the number of singers able to learn microtonal singing since the aural learning of microtones could be done in other ways, such as using recordings.[2]

This lack of existing research on the topic means that more primary research is needed, necessitating the creation of a survey. The web-based survey, targeted at classically-trained singers who have sung at least one piece containing microtones grew up in a western-culture country (i.e. one whose folk-music does not contain microtones), was written using GoogleForms and distributed through Email and social media networks Facebook and Twitter, helped greatly by hundreds of shares and retweets by musicians, ensembles and organisations from all over the world. It was open to responses for eight days.

The survey received 23 responses, two of which (respondents M and D) had to be disqualified due to their not being classically-trained singers, (the first being a recorder player who had performed one piece in which she also had to sing microtones while playing, and the latter a music teacher who had sung Blues and African music but had never trained as a classical singer). In spite of their responses to the survey being disqualified, their answers were still read and some showed interesting results. Respondent W also stated that he/she is not a trained singer but explained that they do have a great deal of experience singing, working with and thinking about the singing of microtonal harmonies (and had sung 6-10 pieces containing microtones). Due to their apparent experience in microtonal singing, I decided to allow their responses to the survey to be counted.

[2] Isherwood, 2013: 62-64.

The survey focused on different areas within the microtonal singing topic, and included a mixture of filter, cumulative and open-ended questions aimed to collect both quantitative and qualitative data. It also included extracts of two vocal phrases containing quarter-tones taken from Michael Finnissy's *Sir Tristr*an which the respondents were asked how they would approach with an aim of performing. The results of the survey were analysed by firstly dividing them into being separately organised by both questions (Appendix A) and respondents (Appendix B) in order to see a fuller picture of both the responds to each question and each respondents responds as a whole. The questions are each referred to as Q, going from Q1 to Q23 and respondents are referred to by letters, going from respondent A to respondent W. Only the questions most crucial to the project were addressed in the essay.

Assessment of Respondents According to Experience:

Firstly, the respondents were assessed the amount of experience they have had singing microtones. This was done according to their replies regarding how many pieces containing microtones they have sung (Q1) and how often they sing them (Q3).

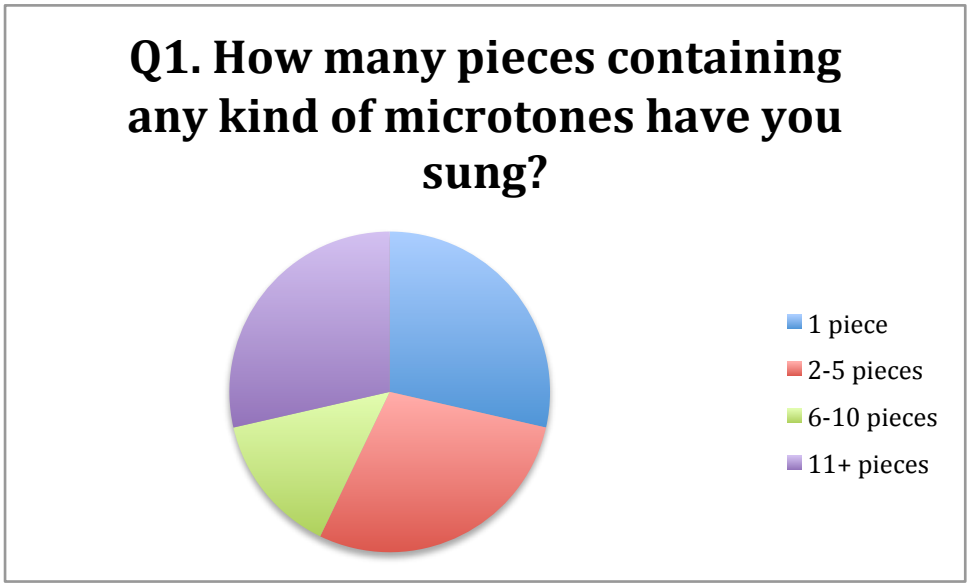


Chart no. 1 - Q1

Six of the respondents have only sung one microtonal piece, six have sung 2-5 pieces, three have sung 6-10 pieces and six have sung 11 pieces or more, making for a relatively even divide of microtonal singing experience throughout the respondents.

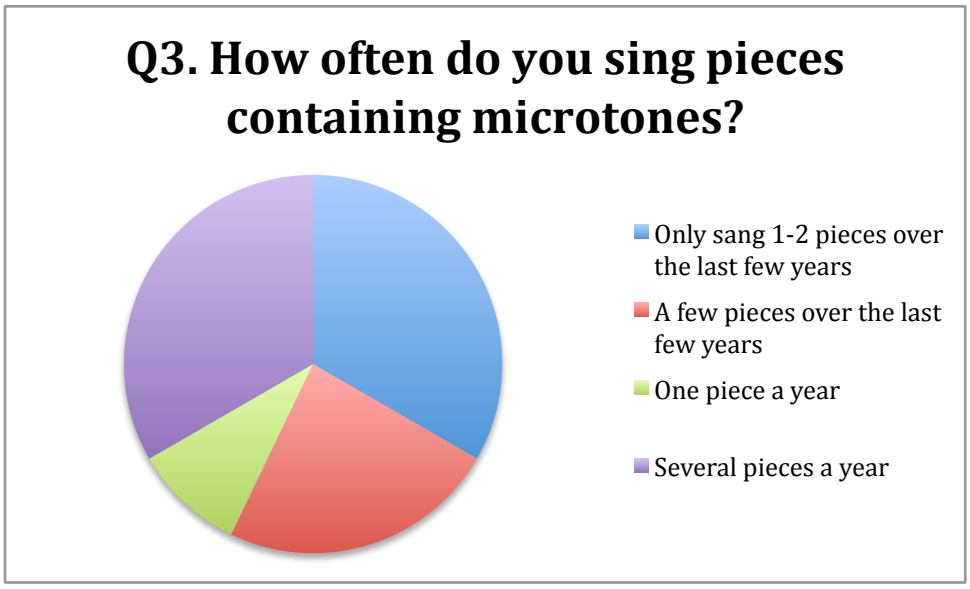


Chart no. 2 – Q3

When asked how often they have sung these kinds of pieces, there was again a relatively even distribution between respondents who have only sung a small amount of microtonal pieces over the last few years (12 respondents) and those who either sing an average of one piece a year (two respondents) or several pieces a year (seven respondents). The respondents were then analysed by the types of microtones they have sung. They were asked to tick all the types of microtones they have sung in the past (Q4), choosing from quarter-tones, 8th tones, 6th tones, 3rd tones and other divisions of the octave.

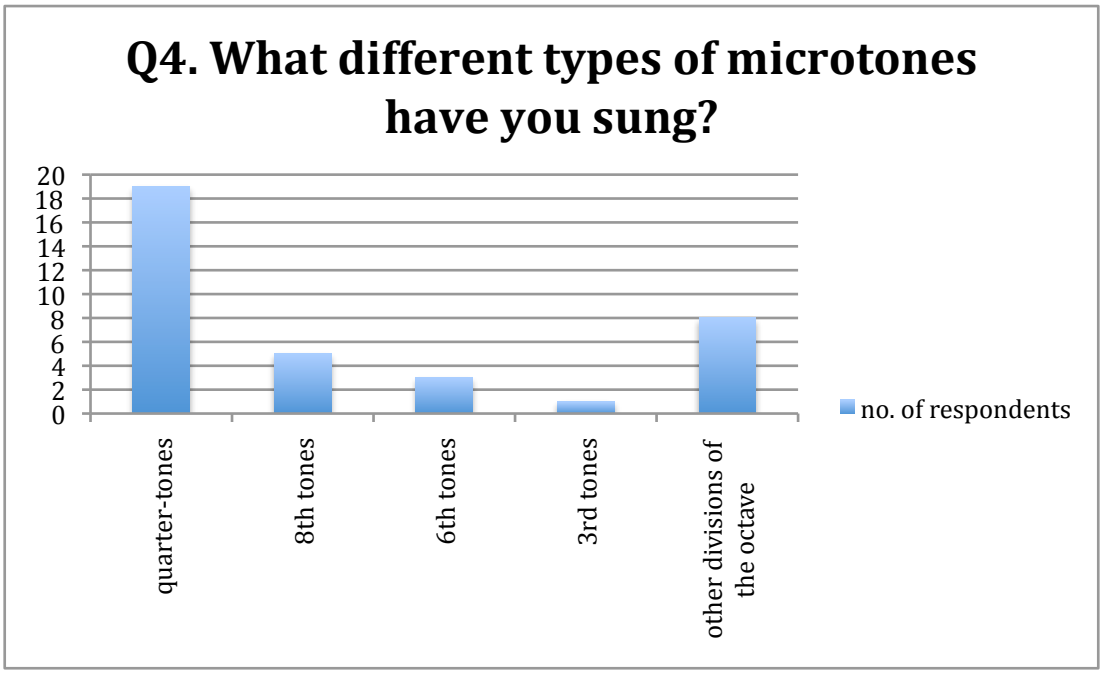


Chart no. 3 – Q4

As the chart above shows, almost all of the respondents (19 out of 21) have sung music containing quarter-tones, while only eight respondents have encountered other divisions of the octave.

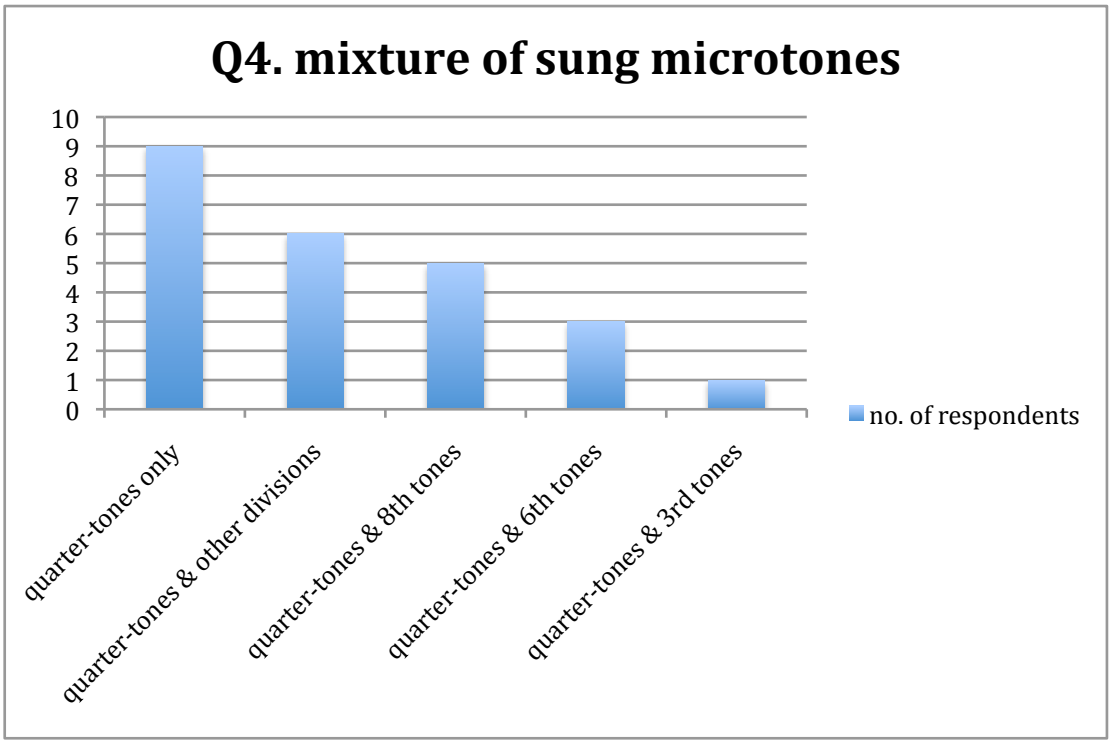


Chart no. 4 – Q4

The range of responses given was interesting. As the chart above shows, while a large number of the respondents who had experience singing quarter-tones have only sung that one particular type of microtone, many of them have also sung other types as well, with the most popular being other divisions of the scale, followed closely by 8th tones.

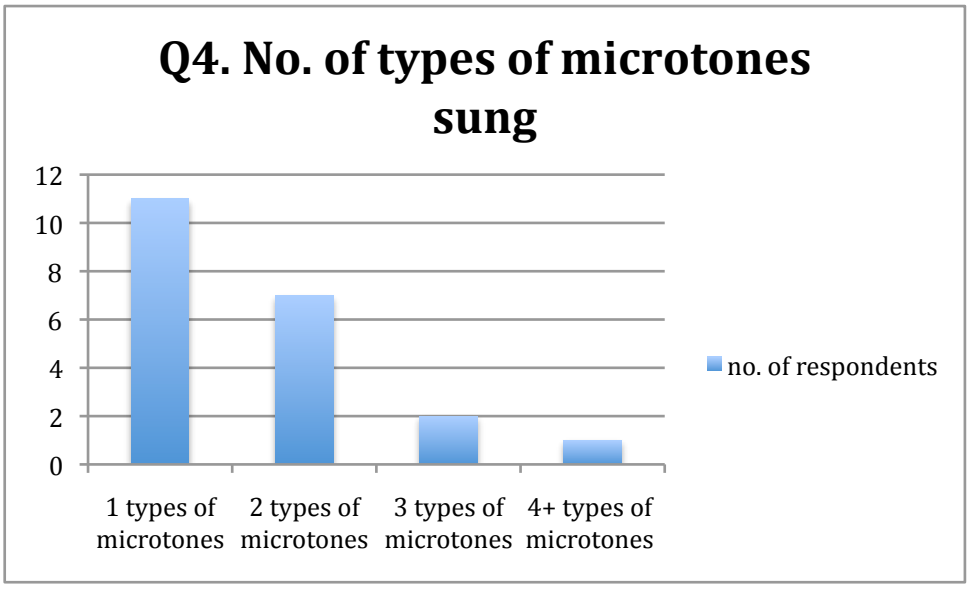


Chart no. 5 – Q4

Also interesting was the division of the amount of different types of microtones the respondents have each sung. As the chart above shows, over half of the respondents have only sung one type of microtones (which was almost exclusively quarter-tones), with seven respondents having sung two types and only three having sung three or more types. In addition, of the nine respondents who have only sung quarter-tones, four have only sung one microtonal piece and five have sung 2-5 pieces, suggesting that quarter-tones are the most commonly used microtones in microtonal vocal music and are the easiest type of microtones to perform, making them the best starting point for a singer exploring microtonal singing for the first time.

When asked about having sung a piece containing a mixture of more than one type of microtone (Q5), two of the respondents who replied mentioned a mixture of quarter-tones and 8th tones (which, according to respondent I, were used as an inflection). Respondent L mentioned Xenakis' *Medea*, which used both quarter-tones and 6th tones, while respondent W mentioned singing pieces based on the harmonic series, which would therefore use both quarter-tones and 6th tones (like the flattened 7th partial). This data

shows that a mixture of more than one type of microtone in the same piece usually involves quarter-tones and another smaller microtone used as an inflection (usually 6^{th} or 8^{th} tones).

Next it is important to look at the context of the microtonal pieces the respondents have sung by analysing the different cultures they belong to. The respondents were asked to tick all that applies, with the option of adding in other places the music they have sung originated from.

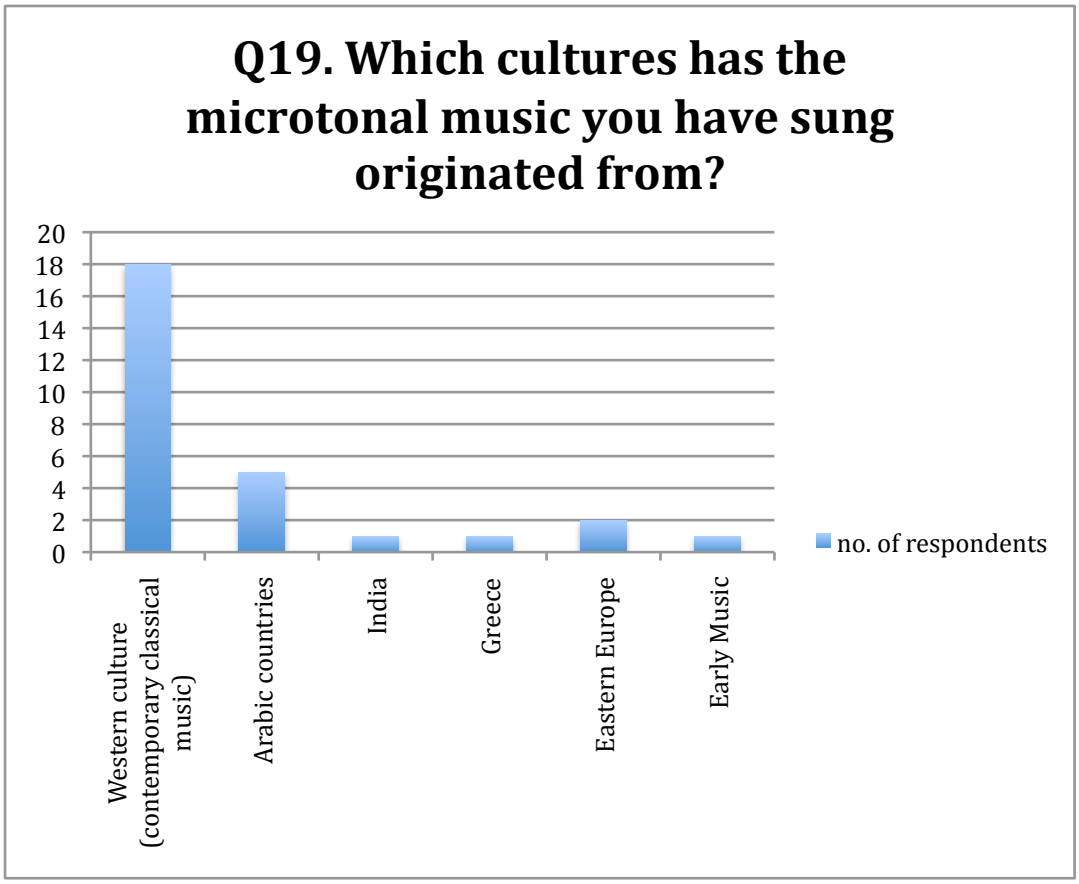


Chart no. 6 – Q19

As the chart above shows, a large majority of the respondents (18) have sung microtonal music that originated from a western culture (contemporary classical music), with five having sung music originating in Arabic countries, four from other cultures and

one having sung early music containing microtones. Eleven (over half) of the respondents have only sung microtonal music originating from a western culture while four of them have sung microtonal music from both western and Arabic cultures.

I believe these results show a kind of contemporary music 'bubble' where singers often perform microtonal music only when asked to learn it for a performance, be it either newly-commissioned piece or programmed contemporary classical music from the last 50 years. It also suggests that singers interested in performing microtonal music could learn greatly by performing vocal music from other cultures since recordings for those pieces can be easy to find (performed by singers of the particular nationality) and once the soundworld has become accustomed to, these pieces might be a relatively easy way to start learning to sing different types of microtones.

Technique, confidence and intonation:

One of the greatest issues in learning microtonal singing is how to do so without adversely affecting vocal technique, as the action of pushing a pitch up or down trying to find a specific microtone from a normal-scale note can cause tension on the vocal chords[3], combined with the act of focusing on finding the specific pitch distracting the singer from thinking about other aspects of singing technique. In spite of my assertion that this was a serious issue, the following result was received:

[3] Rose, 1971: 104-113.

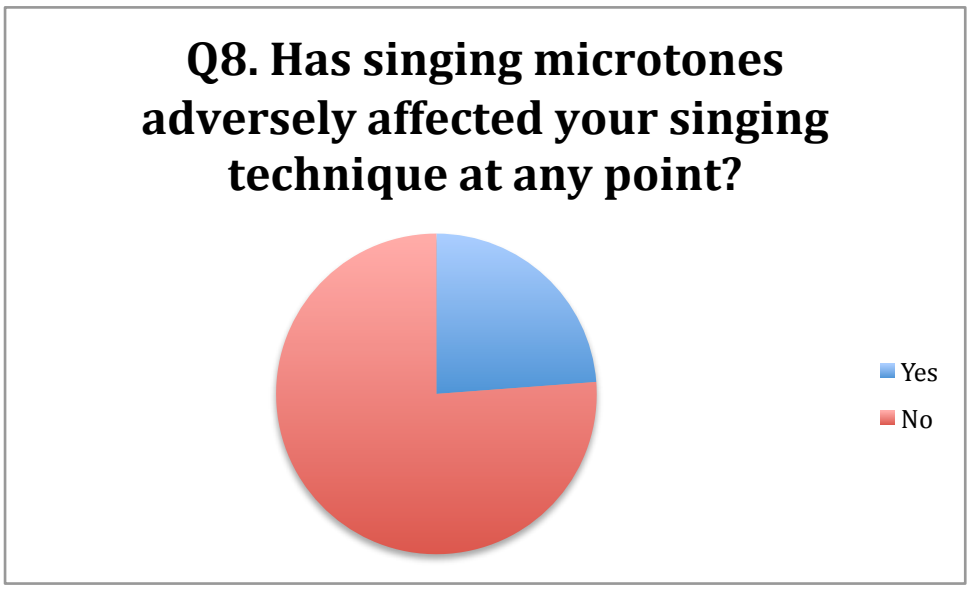


Chart no. 7 – Q8

These results suggest a fault in my methodology, specifically in the phrasing of the question. My intention was to ask whether the respondents have felt that their singing technique was adversely affected during the active process of microtonal singing, rather than whether their general technique was affected by singing pieces containing microtones. This possible lack of clarity can be seen in the response to the follow-up question (Q9) by respondent F, who remarked that singing microtones has affected her technique while singing them but is not something that has had an enduring influence on her technique. Of the five respondents who answered 'yes' to this question, three have sung 11 or more pieces, the other two having sung either 2-5 or 6-10 pieces containing microtones. It is difficult to ascertain why all of the respondents who have only sung one piece containing microtones replied 'no' to this question, though I suspect that if they had understood it as a general adverse effect on technique then one piece would have not been enough to make them feel like their overall technique had changed. It would be interesting to see the results of a differently-phrased question such as 'Have you found it difficult to maintain your normal singing technique while singing microtones?'.

Of the five respondents whose answer to Q8 was 'yes', several technique-related issues arose in the follow-up question (Q9), namely tension/squeezed tone, a problem created by singing with vibrato and even an issue of many microtonal pieces being badly written for voice. With regards to tension, respondent F stated that 'because I do them by thinking slightly higher mostly, they can initially have a bit of a shrill sound. Thinking about the tones takes too much effort in the beginning to also think about proper technique at the same time…'. Respondent I wrote that 'There's a tendency to straighten, even squeeze the tone when producing quarter-tones, losing the freedom of well-produced singing. I've worked quite hard recently to get past this, and to sing all pitches with the same vocal freedom and flow. It's a process, and one that many singers would recognise I think'. Respondent U wrote that 'Sometimes the concentration of the tuning and the urge to hang on to an exact tuning causes the voice to tighten. Less so with practice, but it can be hard to sing as naturally as normal'. Respondent V wrote that '…in rehearsals when you're still singing the music into your body and don't have the muscle memory to do it fluently, tensions can arise and you can end up tightening and pushing the sound because you're trying to pitch the microtones correctly'. These results corroborate what I had anticipated – that singing microtones can create tension and a lack of concentration on technique. Unfortunately they do not provide a solution to the problem, which will necessitate more in depth research, possibly by the use of face-to-face interviews and experiments.

With regards to vibrato, Respondent I stated that '…Part of the issue is that microtonal music requires, to a degree, a straighter tone so that the details of the tuning can be clearly heard. I wouldn't counsel a singer with a huge vibrato to enter this territory actually…'. Respondent V stated that 'Because in order for the pitch to be heard clearly, singing without vibrato is preferable'. This is a very interesting point relating to the performance practice of instrumental pieces containing microtones, where string

instruments normally play *senza vibrato* throughout to make sure the microtones are clearly heard. It is also problematic since it has been established that it is unhealthy for singers to attempt to limit the use of their natural vibrato by singing with a straight tone. The recommended substitute for this damaging technique would be for singers to use pure head voice to achieve a clearer sound without causing lasting damage to their voice.[4] Respondent H raised a completely separate issue though, stating that 'It's unfortunate that a lot of microtonal pieces are badly written for voice'. As the respondent did not give any examples of pieces he believes are badly written for voice and this type of comment did not appear elsewhere throughout the respondents' answers. I cannot gather any information from it, though it would be interesting to further research microtonal pieces for voice and find an approach that would be better suited for singers which could then be explained to composers.

Another perspective about technique while singing microtones was put forward in Q12, though apart from one respondent mentioning a heightened awareness of smaller intervals, this question simply produced the same responses as Q8.

[4] Emmons and Chase, 2006: 137-141.

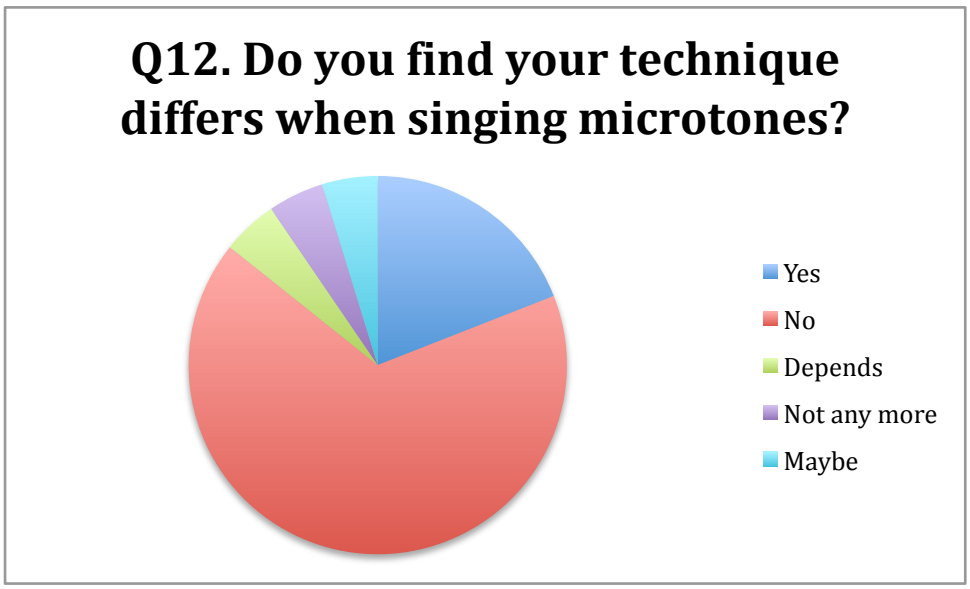


Chart no. 8 – Q12

A question that has arisen during the preparation for this project was regarding singers with perfect pitch and whether they would find it easier or more difficult to sing microtones.

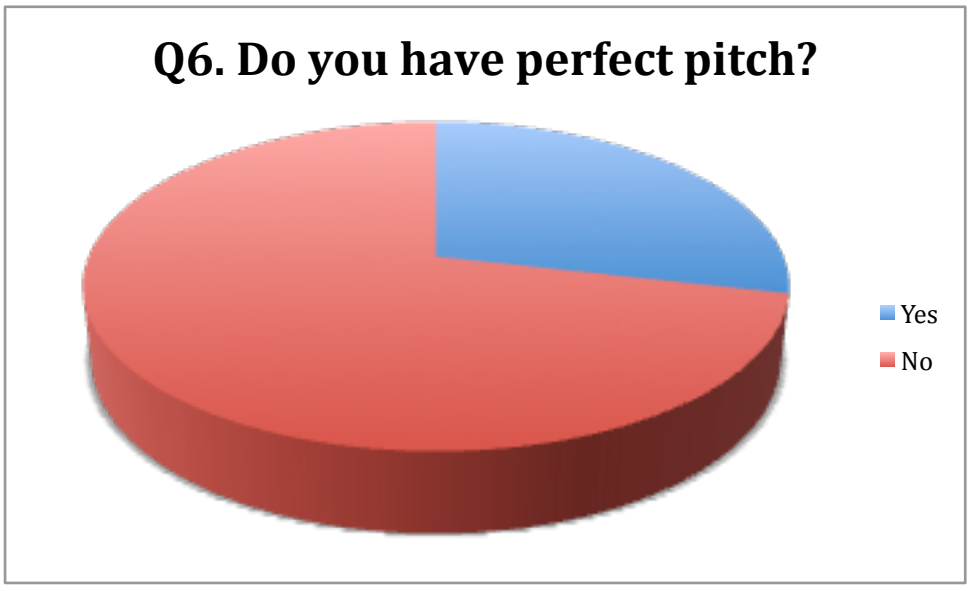


Chart no. 9 – Q6

Of the 21 respondents, six have perfect pitch (seven have replied 'yes' but respondent W later explained their pitch is less perfect now after years of tuning to different As). In the follow-up question (Q7), those with perfect pitch were asked to explain whether this has affected their ability to sing microtones.

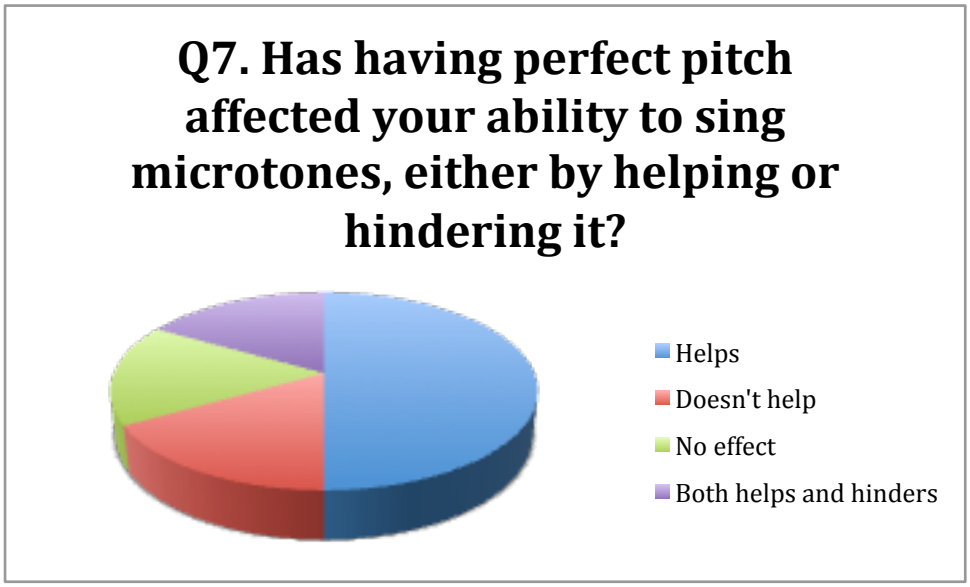


Chart no. 10 – Q7

The responses were divided, with three stating that having perfect pitch helps them with microtonal singing; two saying it does not help or has no effect and one person saying it both helps and hinders. Those who felt having perfect pitch aides them in microtonal singing explained that it was due to being able to strongly pitch 'regular' semitonal pitches, which can then act as pivot points for microtones. Respondent V, who wrote it was both a help and a hindrance, explained that '..It helps because it acts as a guide for the general tonality. But it also makes it harder because everything feels wrong and disorientating'. This is an interesting example of the difference in perception of microtones between musicians with and without perfect pitch.

The issue of confidence in performing microtones is a major one – how can a singer be confident when they are unsure whether the notes they are singing are pitched correctly? How can a singer be confident when they are focusing so much on pitching notes and intervals that are foreign to them that their technique suffers? Once again, I am uncertain as to whether the results of this question were affected by a lapse in methodology, which led to confusing phrasing in the set question, but these were not the results I expected.

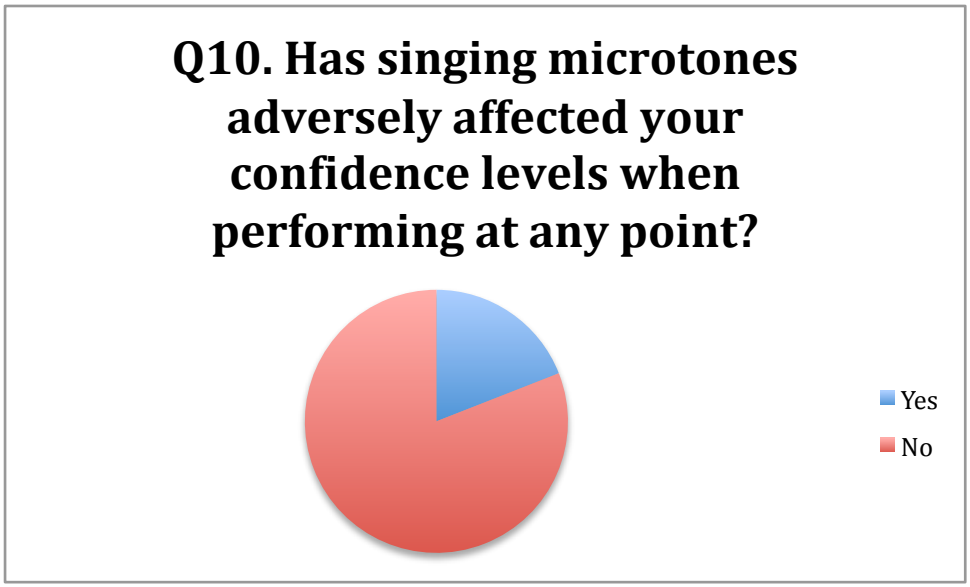


Chart no. 11 – Q10

As the chart above shows, only four of the respondent replied that their confidence levels were adversely affected by singing microtones. Of those four, two stated that it was because of being unsure about the accuracy of the sung microtones: Respondent A stated that he is not always confident that he truly 'hears' the microtonal divisions, which can lead to a lack of confidence and sometimes to a sense of 'reaching' for microtonal intervals rather than 'hitting' them. Respondent V wrote that their lack of confidence is due to every microtone (they sing) feeling wrong, perhaps due to their having perfect pitch.

Another interesting area of research explored in the survey is the way singers who have sung microtones perceive more traditional repertoire afterwards.

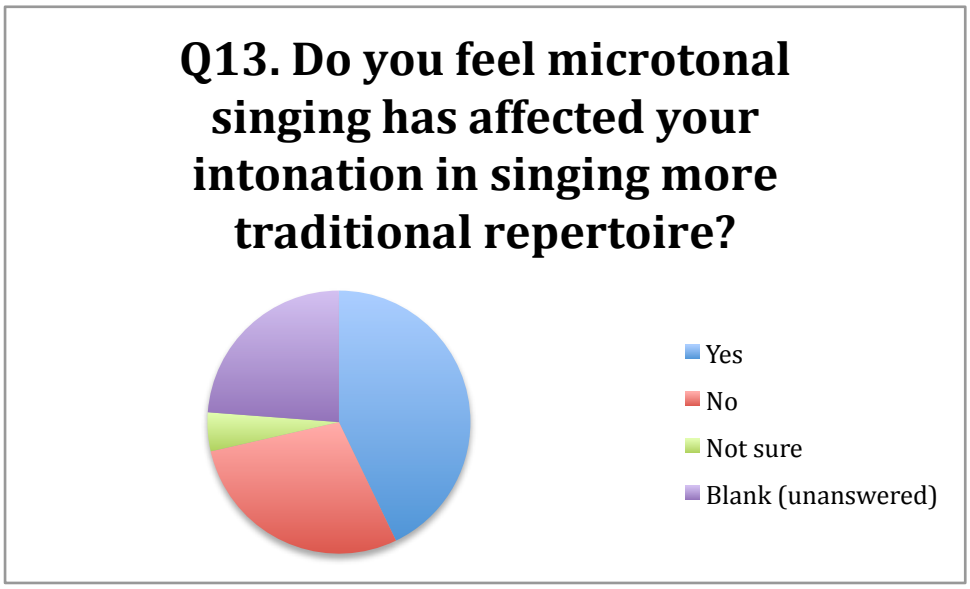


Chart no. 12 – Q13

Of the respondents who replied, nine feel that singing microtones has affected their intonation unlike six who disagree. Most of the respondents who felt an effect described it (in the follow-up question, Q14) as an improvement in the subtlety of accurate pitching, alongside two respondents stating that it makes semitones feel like a much bigger interval. While the change in the perception of semitones and other larger intervals might be disorientating, these results show the positive outcome of learning to sing microtones – a heightened sense of pitching, which can help singers in any kind of repertoire.

Instrumentation:

In seeing what can aid singers in microtonal singing, I decided to examine the different types of instrumentations used in the microtonal pieces the respondents have sung in order to analyse whether certain instrumentations are more helpful than others. This was first addressed by Q16, asking the respondents to tick all the boxes that apply.

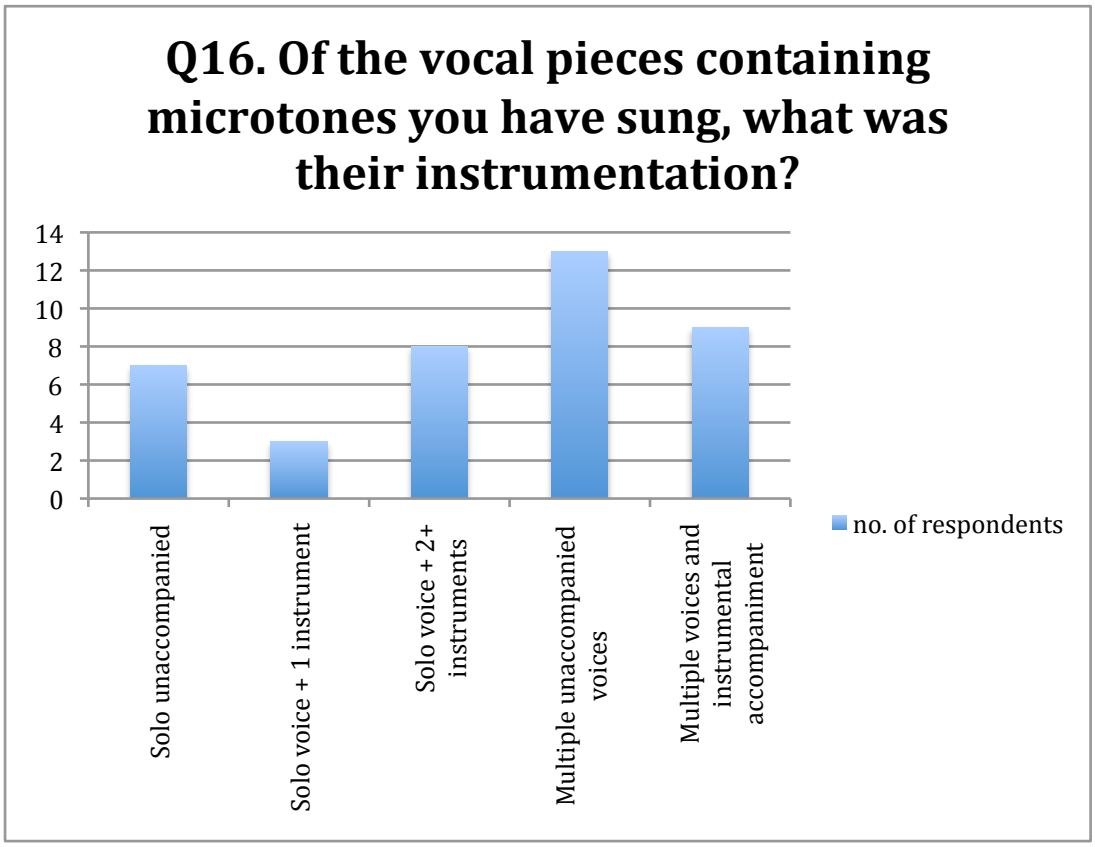


Chart no. 13 – Q16

As can be seen in the above chart, the most common instrumentation was multiple unaccompanied voices, which was also the most common among the respondents who have only sung pieces with one type of instrumentation.

The respondents were then asked about which instrumentations they found most helpful when singing microtones:

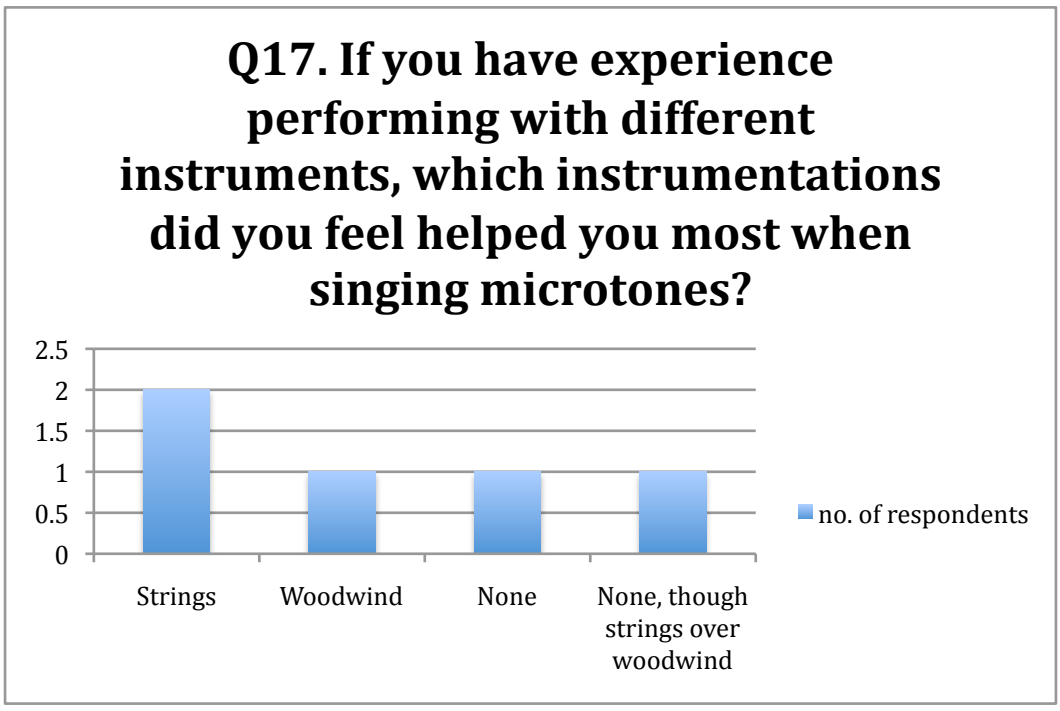


Chart no. 14 – Q17

When asked about performing with different instruments, the few who responded seemed to prefer strings to woodwind, not explaining their response. Respondent U, who thought no instrumentation was particularly helpful, still stated that '...strings are usually more flexible in tuning and can adapt to the tuning of singers more easily than wind instruments'. Respondent R however, argued that '…While strings can be more precise the woodwind sonority is more helpful for vocal pitching'. These responses are interesting: both kinds of answers make sense: strings are more flexible than woodwind, but the latter can have a sonority that is easier for singers to blend with. The question is whether the preference towards strings is, like respondent U stated, because strings can adapt to the tuning of the voices rather than the voices having to tune based on the woodwind instruments (which are less flexible). This would require further research to be answered.

When asked about performing microtonal pieces for multiple voices (Q18), those who replied were divided, with six replying it had helped microtonal singing, four who replied it hindered it, and two saying it had done neither.

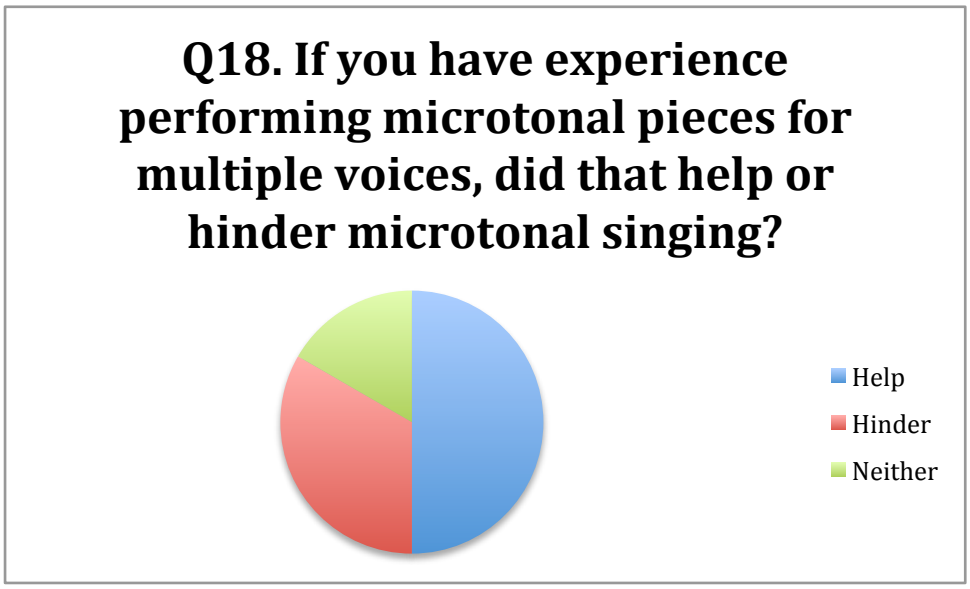


Chart no. 15 – Q18

Those who believed performing pieces for multiple voices helped microtonal singing explained that it did so by supplying more points of pitch reference which helped with the tuning, with one respondent (F) referring back to an earlier response to Q14 which described how effective and fun working with another singer on a microtonal piece was. Two of these respondents made it clear though that performing microtonal pieces with multiple voices only helps if all the singers involved had learned their own part properly and did not make any mistakes during rehearsals/performance. Of the respondents who found singing pieces for multiple voices hindered microtonal singing, half of them mentioned the vibrato of the others singers as an issue. Respondent I referred back to her reply to Q17, which stated that 'A capella [microtonal] music is probably hardest [to perform accurately] because everyone's pitch can go awry!'. Respondent R stated that performing microtonal music for multiple voices '…required greater precision from all

concerned' adding that '…A solo voice can get away with not being very exact… but multiple voices need precision'.

These results show that performing microtonal pieces for multiple voices can aid microtonal singing by providing singers with more points of pitch reference, but they also require a reasonable amount of group training and solo practice before in order to help rather than hinder. This data could be approached very positively – as respondent F's anecdote to answer to Q14 showed, singers can greatly benefit by working on microtonal singing together. If various relevant exercises for groups of 2+ singers were devised and used (alongside solo exercises and practice) as part of preparation for a performance of a microtonal piece for multiple voices, the process should become far more helpful and could be adjusted according to the difficulty of the piece and the level of microtonal singing experience of the singers involved.

Initial Pieces and Recommendations for Singers First Exploring Microtonal Singing:

The issue of how a singer should first approach microtonal singing and what a manual helping singers learn to sing various types of microtones should contain is an extremely large topic, one which would take years to comprehensively research. The next two questions in the survey, Q14 and Q15, attempted to find a basis for this research by asking the respondents to recommend pieces and techniques a singer should start off with when first approaching microtonal singing and then asking them what they think a manual to help singers explore microtonal singing should contain. Both were open-ended questions, which raised some very important issues to address, alongside solutions.

Several interesting repeating themes arose from the responds to Q14. First of all, in connections to the last topic analysed, several respondents recommended working with other singers and instruments or with recordings of either voices or MIDI. Respondent R stated that '…Singing alongside singers already experienced in this field is invaluable'.

Respondent F wrote about how the first microtonal piece she sang was for two voices, one singing traditional pitches and the other (the respondent) singing quarter-tones above and below them. As the other singer was the respondent's housemate, they created their own games singing together, even on several occasions singing along to pop-tunes on the radio while attempting to be slightly out of tune with them, which proved to be effective in learning to sing quarter-tones. Several respondents recommended using MIDI or instrumental tracks to learn the pitching of microtonal pieces and others recommended the singer also record him/herself for analysis. Several respondents also recommended the use of a MIDI keyboard tuned to the specific microtones.

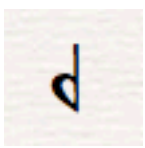
In terms of vocal exercises, the use of microtonal scales was mentioned by two respondents who recommended singing chromatic microtonal scales. Respondent S recommended singing scales of semitones, quarter-tones and 8th tones to help tune the ear, while respondent T recommended moving up by various intervals, starting small (up/down a quarter-tone) and getting larger The use of pitch-bending was also mentioned – respondent U recommended a singer 'practice bending a note up and/or down against a held pitch, then practice intervals (3rds, 5ths, 6ths) with slightly adjusted tuning'.

In terms of pieces and composers recommended, the only ones were Scelsi (recommended generally as a vocal composer of microtonal pieces), Xenakis' Nuits and Gesualdo's madrigals (as his music uses mean-tone temperament tuning). Respondent W argued that the first step for a singer would be to understand the concept of having different pitching systems rather than perceiving them as a deviation from standard pitching, recommending explaining to them about just, equal-tempered and Pythagorean tuning.

More interesting themes arose from the replies to Q15, asking the respondents what they believe a manual to help singers explore microtonal singing should contain. Scales, intervals and general ear-training exercises proved to be a popular reply, with some

respondents recommending that recordings of those exercises be given as part of the manual. Respondent R stated that '…A microtonal equivalent of Modus Novus [a sight-reading and aural-awareness book using excerpts and studies to aid the learning of atonal lines] would be great'. Examples of various microtonal singing repertoire and recommendations of pieces to explore were also popular amongst respondents, with respondent H suggesting that the manual contain examples of both good and bad (microtonal vocal) writing. Respondent E suggested the manual contain advice about pitching when the singer is not paired with an instrument it can tune to, and two respondents suggested exercises for a group of singers to do, respondent U recommending the use of de-tuned chords for singers to try together, whereas *'…Singers in pairs or threes should practice moving a chord up and down by quarter tones, making sure they stay in tune with each other'*. In terms of technique, respondent I recommended the manual should advise singers that every note should be sung healthily and without tension.

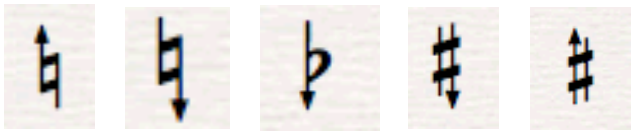
An unexpected issue that arose from Q15 was the need for an accurate and clear notation system for microtones, or at least a clear description of the notational conventions. Currently the notation used can often differ from composer to composer, with quarter-tones (the most commonly found microtones) being mostly notated by either a system of specialist symbols (to denote quarter-flat/sharp and three-quarter flat/sharp pitches) or one of conventional sharp/flat symbols accompanied by up/down arrows.


quarter-flat


quarter-sharp


¾ flat


¾ sharp



More ambiguous symbols used for microtones, which can be found, among others, in pieces by Gyorgy Ligeti such as his Viola Sonata.

The confusion lies when a piece contains microtones other than quarter-tones, in which case the arrows are used to symbolise any microtone the composer chooses, which are then explained in the performance notes of the particular piece. This irregularity of notational convention for notes other than quarter-tones can be very confusing to musicians performing different types of microtones (as they can get confused by the lack of convention when sight-reading) and should be resolved by using the manual to advise composers which symbols should be used for (at least) the most popular microtones.

The results for Q15 and Q16 highlight very important issues that a manual aiding singers in learning to sing microtonally would need to address and the things it should contain. The manual should contain exercises, which I believe would need to be built around different difficulty levels, with some general microtonal exercises and some specific to a type of microtone, starting with quarter-tones (since they are, as respondent I remarked in reply to Q14, a good place to start as splitting the semi-tone in half is probably easier [than learning to sing other types of microtones]). The exercises should focus on scales, intervals and pitch-bends, recommending the singer intermittently record themselves and listen back to the results to assess improvement and get used to the microtonal soundworld. The focus on learning microtonal interval is an important one as studies show that singers perceive melodic phrases as a collection of intervals rather than sung pitches.[5]

[5] Parncutt and Strasburger, 1994 : 88-129.

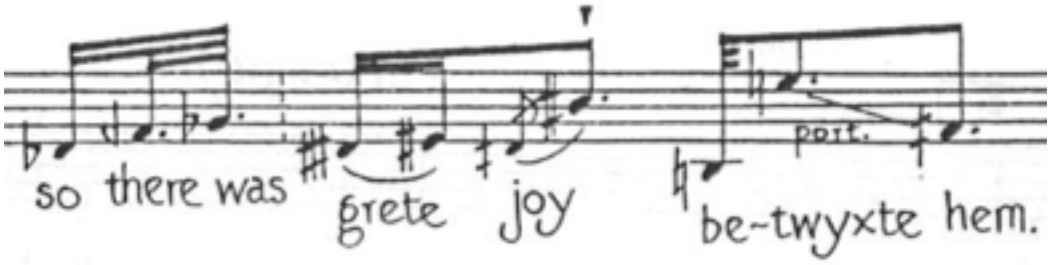
The exercises in the manual should be aimed at both solo practice and at groups of two or more singers (with possible recordings to help singers practice the group exercises on their own too). As the responses for many questions in this survey show, audio recordings will need to play a big part in the manual, whether by demonstrating various exercises (scales, intervals and general ear training), giving examples of different types of microtones and pieces in the microtonal vocal repertoire, or providing sustained pitches on top of which pitch-bending could be done. The issue of retaining good technique while singing microtones should also be tackled in the manual, though further research is needed. Perhaps part of the solution would be to recommend that singers listen to recordings of exercises and engage in 'silent practice' for a specific amount of time before attempting to sing pitches they cannot yet hear in their head, which might make singing without tension much easier. While the issue of notation cannot be solved by a mere singers' manual (since the conventions are controlled by composers' use of these symbols), the manual can explain the different notations used and perhaps even attempt to find alternative symbols which could then be suggested for use to symbolise 6^{th}, 8^{th} and 3^{rd} tones, hoping these symbols will catch on by composers.

Finnissy Case Study and Approaching Other Types of Microtones:

As a way of assessing how singers approach and learn to sing new pieces containing microtones, two extracts from Michael Finnissy's *Sir Tristran* were used, each of vocal lines containing quarter-tones, and the respondents were asked how they would approach learning each extract. The original intent of the survey was to present the respondents with several extracts, each containing a different type of microtones used, but finding written examples of vocal music containing microtones other than quarter-tones proved extremely difficult, resulting in those extracts being replaced by Q23, which simply asks how they would approach a piece containing $6^{th}/8^{th}/3^{rd}$ tones or other less common microtones. Since

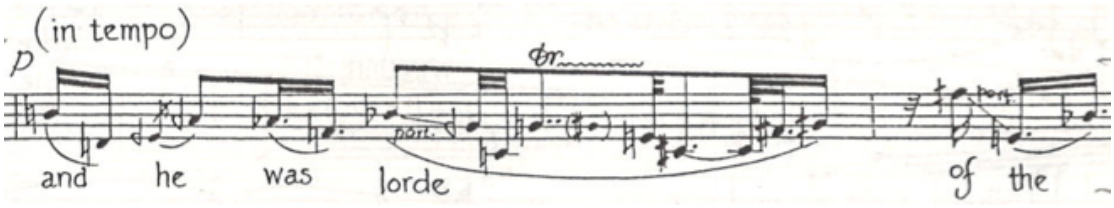
both extracts (forming Q21 and Q23) are from the same piece and the responses to them were almost identical, they can be analysed together.

The Finnissy case study showed some very interesting common approaches to microtonal/quarter-tonal singing. The most common approach, shared by six respondents, was to first learn the phrase without any microtones in order to get the rough outline of it, and only then sharpen or flatten the appropriate pitches to achieve the correct tuning. For example, respondent I wrote that she '…would learn the phrase with every note as a 'true' pitch, worked out so that all the quartertones are then bent in the same direction. So, the phrase [extract no. 1] would be learned: Db – E – Gb – D# - E# - D – B# - B – E – F, and then the quartertones would be sharpened'.



Extract no. 1, taken from Finnissy's *Sir Tristran*, b. 12 (in treble clef)

Another common approach to both extracts was to use a MIDI keyboard or specialist software to play the quarter-tones in order to learn the notes. The use of a MIDI file of the extract was also suggested. Notation was another issue mentioned as a starting-point to approaching this type of extract – two respondents stated that the first thing they would do is make sure they understood what the notation meant.



Extract no. 2, taken from Finnissy's *Sir Tristran*, b.4 (in treble clef)

Respondent A suggested he might approach the extract by devising an exercise wherein he would pitch the microtonal intervals from neighbouring semitonal notes, a similar response to respondent R who wrote that he would start with a silent study of the extract, followed by a vocalised testing of pitches against a constant or using a piano to provide semi-tones on either side of the quarter-tones, to which text would only be added last to ensure that vowels do not distort the intended pitches. Respondent A went on to suggest that he would then record himself singing the extract and repeatedly listen to the recording and sing along with it until all the intervals feel automatic. Respondent F suggested pitch-bending between the semi-tones to try to feel the halfway point.

When asked how they would approach a piece containing $6^{th}/8^{th}/3^{rd}$ tones or any other less common microtones, very interesting issues arose. Respondent A stated that he would be very unsure of how to approach such microtones, saying he is not sure he would really be able to be sure that he was 'hearing' the intervals correctly. Other replies showed the same lack of experience and confidence, and included the responses 'with great difficulty', 'avoid it', 'don't know' and even 'guess', showing that many singers with experience in singing quarter-tones would not know how to begin approaching a piece with microtones other then quarter-tones. Four respondents stated they would use a MIDI keyboard or specialist microtonal software, while two of them also suggested using a MIDI recording to learn the pitches from. Respondent I wrote that it would depend on the context and the effect the detuning is trying to create, but that she would approach such a piece in

the same way as the Finnissy extracts, only with different inflections. Respondent R mentioned that even though these types of microtones are beyond his direct experience, 6th tones are relatively easy to recognize as the flattened 7th harmonic (in the harmonic series), meaning it would be possible to find the fundamental pitch and work out the relation from it, though that could only be done during personal practice and would need to be fully assimilated before a rehearsal or concert. He also argues that even a slight vibrato would make tuning microtones (smaller than a quarter-tone) immediately imprecise, though singing with no vibrato at all can then be too 'cold' for effective performance. Respondent T made quite a striking point regarding singing non-quarter-tonal microtones, claiming they were not convinced that enough people can actually pitch them. They go on to explain that when singing quarter-tones, '…one tends to reach a sort of 'biting point' when one knows that it really is exactly between semitones. Besides that, I would find it incredibly difficult to tell how far between semitones I might be'.

The results from the Finnissy case study show very effective ways of approaching vocal phrases containing quarter-tones (and most kinds of other microtones, once the singer is used to generally hearing and pitching them). The approach of first learning the phrase as semi-tonal notes to get its overall shape and then sharpen or flatten all appropriate pitches in one direction can create less tension in the voice than playing two semitones and trying to find the best way (either by sharpening or flattening) to get to the halfway point between them. This is because I believe that when only tweaking pitches in one direction, the singer would be more in control of their technique than they would be while pitch-bending up and down (which can cause more tension in the voice). The approach of starting out with only silent practice, moving on to vocalized pitches and only adding the text and vowels at the end also would likely be effective in making sure the correct pitching is achieved without wasting any focus on also singing the text at the same

time. The difference in the characteristic frequencies of the various vowel-sounds mean that they each add a distinctive quality or tone colour[6], which is why the pitch would be easier to control by adding them last in the rehearsing process. The use of MIDI keyboards adjusted to quarter-tones and specialist software would also be helpful – but this is a more expensive and less accessible solution. The use of MIDI recordings of pieces can be extremely helpful to learning pieces containing quarter-tones (and easier to create since notation software such as Sibelius contain plug-ins that, although not perfect, allow for the playing of quarter-tones), but should probably only be used as an initial learning tool before the singer then records him/herself singing the particular phrase. This would help the singer analyse their own pitching and technique and re-record as needed, an essential step since repeated listening to poor technique being used might result in the singer automatically copying the technique used, which would be incredibly difficult to re-learn for a particular phrase or piece once it had sunk in and become automatic.

With regards to approaching pieces containing microtones other than quarter-tones, the results show the lack of familiarity most singers have with these kinds of microtones would need to be tackled by preliminary listening. This would be followed by various sets of exercises of varying difficulty (accompanied by recordings), which would be recommended only after mastering the singing of quarter-tones, the easiest microtones to sing (because of the aforementioned 'biting point' achieved which is easily recognizable, even from my own experience singing quarter-tones).

Conclusion:

This original primary research (in the form of an online survey) has produced very interesting data regarding microtonal singing, in terms of the popularity of the different types of microtones and the way in which singers approach them and deal with the issues

[6] Rose, 1971: 64-65.

singing them create. All this data would be incredibly helpful in pursuing further research for a manual to help singers learn to sing different types of microtones.

Writing this type of manual would require years of further research, interviewing singers and singing-teaching experts and experimenting with the effectiveness of different kinds of exercises, recordings and other teaching materials. What the results of this survey have shown, though, are that the main issues the manual should address and the ways in which it should do so, aiding in focusing where further research should be done.

The manual would need to be very audio-based, with recorded examples of various pieces of microtonal singing repertoire (with and without the singers, so that singers could practice singing along to the instrumental accompaniment of some pieces) and aides to exercises (recorded scales and intervals, static pitches to pitch against and perhaps some of another voice to harmonize against). Another audio-based solution to help make exercises that would be fun for the singers to do (and therefore encourage them to develop their ear-training) is to create a mobile phone or web-based application to test recognition of various microtonal intervals (building on existing ear-training applications such as *Better Ears,* formerly known as *Karajan*, an ear-training application for iPhone). The exercises should be divided into different types of microtones and levels of difficulty, with different 'paths' through the exercises recommended, such as starting off by learning to pitch quarter-tones before moving on to other types of microtones. They should be targeted at both solo practice and groups of singers (with possible recordings of some of the group exercises to simulate singing with other singers for those wishing to work on pieces for multiple voices on their own).

The manual should explain the history and context of microtonal vocal pieces, giving examples and recommending pieces to explore according to the types of microtones used

and the different levels of difficulty they pose. It should explain different notational conventions and attempt to establish clearer conventions to help singers in the future, also containing a section advising composers how to effectively write microtonal vocal pieces in order to combat microtonal pieces being badly-written for voices. The issue of technique should also be tackled thoroughly, recommending the use of pure head voice instead of forcing a lack of vibrato. It should be noted that if audio-based listening and singing exercises are used and listening and silent practice are established as a starting point for learning each exercise and piece, internalizing the pitches before attempting to sing them, it should be much easier to maintain regular singing technique while singing microtones.

Appendix A – Survey Results Organised by Questions.

Note that respondents were asked to provide name and contact details if they wanted to receive the results of the survey and/or participate in further research. For the sake of anonymity, these details (Q24 and Q25) have been redacted.

Q 1 - How many pieces containing any kind of microtones have you sang?

A - 2-5
B - 1
C – 6-10
D - 1
E - 1
F - 2-5
G - 11+
H - 6-10
I - 11+
J - 1
K - 1
L - 11+
M - 1
N - 1
O - 2-5
P - 1
Q - 2-5
R - 2-5
S - 2-5
T - 11+
U - 11+
V - 11+
W - 6-10

Q 2 - Which initial piece/s did you start with when tackling microtones?

A - Nicola LeFanu: Cancion de la Luna

B - Ulf dither Soyka's Ninja, an opera in 3 acts.

C - Byzantine Music

D - Answers to required questions are NOT correct. They are just to allow me to submit.

E - Stuart Stevens The Tempest

F - A piece for the YCM 2013, Lachlan Hughes wrote it, it was a drawn-out sentence from Metthew's Passion, I think. Called 'Wie er ihn loslasse'.

G - Liza Lim - Chang-O
Henze - El Cimarron

H - Can't remember

I - With EXAUDI I have done many microtonal pieces. Probably something by Finnissy or James Weeks would have been first (c. 2004?).
Doing Alvin Lucier's 'Wave Songs' in 2005 was a big moment though. There one is dealing with Herz (cents).

J - Fernyhough
Can't remember the title

K - John Tavener, Magnificat and Nunc Dimittis

L - Xenakis Medea

M - It was a piece for recorder and voice (one performer) - 'Liturgy of Darkness V' by Rafael Reina. I'm a recorder player and I deal a lot with microtones. But this was the first time singing them!

N - Flame - Ben Parry

O - Don't remember

P - Mouniati Sayed el Derwish

Q - Taylor Brooks - motorman fragments

R - Can't recall the first. It was a student composer in the 1990s. Second piece Xenakis : Nuits.

S - Composers in Birmingham Conservatoire. Can't remember the names, but interesting pieces and use of bending notes.

T - Mažulis - sorry, I can't remember the name of the piece!

U - Scelsi Tre Canti Sacri
Pieces by Nono, Rihm, Ferneyhough Missa Brevis
Gesualdo motets, Sciarrino motets and madrigals

V - Gesualdo - Madrigals
Xenakis - Nuits

W - "Branches", Catherine Lamb

Q3 - How often do you sing pieces containing microtones?

A - A few pieces over the last few year
B - Only sang 1-2 pieces over the last few years

C - Several pieces a year
D - Only sang 1-2 pieces over the last few years
E - Only sang 1-2 pieces over the last few years
F - A few pieces over the last few year
G - Several pieces a year
H - One piece a year
I - Several pieces a year
J - Only sang 1-2 pieces over the last few years
K - Only sang 1-2 pieces over the last few years
L - Several pieces a year
M - Only sang 1-2 pieces over the last few years
N - One piece a year
O - Only sang 1-2 pieces over the last few years
P - Only sang 1-2 pieces over the last few years
Q - A few pieces over the last few year
R - A few pieces over the last few year
S - Only sang 1-2 pieces over the last few years
T - Several pieces a year
U - Several pieces a year
V - Several pieces a year
W - A few pieces over the last few year

Q4 - What different types of microtones have you sung?

A - Quarter tones
B - Quarter tones, 8th tones
C - Other divides of the octave
D - Other divides of the octave
E - Quarter tones
F - Quarter tones
G - Quarter tones, 8th tones, Other divides of the octave
H - Quarter tones, 8th tones
I - Quarter tones, 6th tones, 8th tones, 3rd tones, Other divides of the octave
J - Quarter tones
K - Quarter tones
L - Quarter tones, 6th tones

M - 8th tones

N - Quarter tones, Other divides of the octave

O - Quarter tones

P - Quarter tones

Q - Quarter tones

R - Quarter tones

S - Quarter tones, 8th tones, Other divides of the octave

T - Quarter tones, Other divides of the octave

U - Quarter tones, Other divides of the octave

V - Quarter tones, 6th tones

W - Other divides of the octave

Q5 - Have you sang a piece containing a mixture of more than one kind of microtones? If so, which ones and what was the piece? If not, leave blank.

A - Blank

B - as above
C – Blank
D – Blank
E – Blank
F – Blank
G – Blank
H - Blank

I - Quarter tones and inflections (eighth tones, I guess?) are a quite common combination, the 8th tones marked by an arrow, so more of an inflection. James Weeks has written some pieces with this combination, and perhaps Enno Poppe's 'Interzone' uses both?

J - Blank

K - Blank

L - Yes - Xenakis Medea, quarter/6th

M - It was a piece based upon 7 different South Indian Carnatic ragas.

N - Blank

O - Blank

P - Blank

Q - Blank

R - Blank
S - Stockhausen - Opera, Mittwoch aus licht. I don't remember which ones but a selection of different tones and sounds needed.

T - Blank

U - Blank
V - I don't really remember which pieces in particular are so specific. Learning pitches in vocal music doesn't really work in such a scientific or black & white way. You remember why it was there were shifts in tonality and why microtones were used in that passage and to what emotional or aural effect overall rather than the exact ones that you sang.
W - The pieces typically had intervals derived from different partials of the harmonic series, so a piece might have pitches based on both the 5th and 7th partials, for example

Q6 - Do you have perfect pitch? If no then skip next question.

A - No
B - No
C - No
D - No
E- No
F - No
G - No
H - Yes
I - Yes
J - Yes
K - No
L - Yes
M - No
N - Yes
O - No
P - No
Q - No
R - No
S - No
T - No
U - No
V - Yes
W - Yes

Q7 - Has having perfect pitch affected your ability to sing microtones, either by helping or hindering it? Please explain.

A – Blank
B – Blank
C – Blank
D – Blank
E – Blank
F – Blank
G – Blank

H - PP has no effect either way on the ability to sing microtones. If you can pitch the note then you can adjust for microtones. This is true of non PP as well as those with PP. With PP you could pick it up faster that's all.
I - It helps because I have a stronger grasp on the 'true' pitches, making it harder for me to lose my sense of pitch completely. It's still hard though!
J - I find it excruciating and unnecessary but I suspect it helps to pitch between what you know are definite semitones.

K - Blank

L - no. why would it? In tricky pieces I use a tuning fork anyway

M - Blank
N - It helps. You know where the boundaries lie between semi-tones, and so it's a lot easier to manipulate your tone to make the note brighter or darker to sing microtonally.

O – Blank

P – Blank

Q – Blank

R – Blank

S – Blank

T – Blank

U - Blank
V - It's both a help and a hindrance. It helps because it acts as a guide for the general tonality. But it also makes it harder because everything feels wrong and disorientating.
W - I should qualify this, that after several years of tuning instruments to different A's that my pitch is less perfect now, fluctuating by a semitone. Focusing on the nuances of harmony with pitch deviations has helped to further remove the automatic identification of pitch when I listen. This is a good thing.

Q8 - Has singing microtones adversely affected your singing technique at any point? If not skip next question.

A - No

B - No

C - No

D – Blank

E - No

F - Yes

G - No

H - Yes

I - Yes

J - No

K - No

L - No

M - No

N - No

O - No

P - No

Q - No

R - No

S - No

T - No

U - Yes

V - Yes

W - No

Q9 - How do you feel singing microtones has adversely affected your technique and how have you dealt with it?

A - Blank

B – Blank

C – Blank

D – Blank

E - Blank

F - Because I do them by thinking slightly higher mostly, they can initially have a bit of a shrill sound. Thinking about the tones takes too much effort in the beginning to also think about proper technique at the same time... so it's not something that has an enduring influence on my technique!

G – Blank

H - Sometimes/sort of. It's mostly to do with the context of the writing. Pitch, vowel used, dynamic, note value etc. Good vocal writing technique still applies. It's unfortunate that a lot of microtonal pieces are badly written for voice.

I - There's a tendency to straighten, even squeeze the tone when producing quarter-tones, losing the freedom of well-produced singing. I've worked quite hard recently to get past this, and to sing all pitches with the same vocal freedom and flow. It's a process, and one that many singers would recognise I think. Part of the issue is that microtonal music requires, to a degree, a straighter tone so that the details of the tuning can be clearly heard. I wouldn't counsel a singer with a huge vibrato to enter this territory actually...

J – Blank

K – Blank

L - Blank

M - I have no singing technique ;) I can just pitch quite well, and my ears are good from playing the recorder..

N – Blank

O – Blank

P – Blank

Q – Blank

R – Blank

S – Blank

T – Blank

U - Sometimes the concentration of the tuning and the urge to hang on to an exact tuning causes the voice to tighten. Less so with practice, but it can be hard to sing as naturally as normal.

V - because in order for the pitch to be heard clearly, singing without vibrato is preferable. If one has good technique, singing without vibrato shouldn't be a problem but in rehearsals when you're still singing the music into your body and don't yet have the muscle memory to do it fluently, tensions can arise and you can end up tightening and pushing the sound because you're trying to pitch the microtones correctly.

W - Blank

Q10 - Has singing microtones adversely affected your confidence levels when performing at any point? If not skip next question

A - Yes

B - Yes

C - No

D - Yes

E - No

F - No

G - No

H - No

I - No

J - Yes

K - No

L - No

M - No

N - No

O - No

P - No

Q - No

R - No

S - No

T - No

U - No

V - Yes

W - No

Q11 - How do you feel singing microtones has adversely affected your confidence levels and how have you dealt with it?

A - I'm not always confident that I truly 'hear' the microtonal divisions. This can lead to a lack of confidence and sometimes a sense of 'reaching' for a microtonal interval rather than truly 'hitting' it.

B - Wrong and strong is my motto

C – Blank

D – Blank

E - Blank

F – Blank

G – Blank

H – Blank

I – Blank

J - As I have pitch, I can always sing the right notes. I didn't like it and, musically, did not find it satisfying. I have dealt with it by not singing in microtones ever again.

K – Blank

L – Blank

M – Blank

N – Blank

O – Blank

P – Blank

Q – Blank

R – Blank

S – Blank

T – Blank

U – Blank

V - Yes because it's not an exact science. I don't know whether this is just because I have perfect pitch but every microtone feels wrong!

W - Blank

Q12 - Do you find your technique differs when singing microtones? If so, in what way? If not, leave blank.

A - Blank

B - the focus is so great the performance suffers

C - I become aware of smaller intervals. Quite literally such small divisions are not "on my mind" when I'm performing non-microtonal music.

D – Blank

E – Blank

F - See above also - when you're still trying to find them, my voice can sound shrill, they are too far in front.

G – Blank

H - Entirely dependant on how it's written. A microtones in the middle of the voice at mF and not held for 50 beats is easy to sing, and does not affect tech. Visa versa, will affect tech. Good vocal writing is always applicable microtonal or not.

I - No, not really, or at least not any more.

J – Blank

K – Blank

L - No

M – Blank

N - Not really. The same basic principles still apply, but your aural skills have to be good enough to recognise if you're singing the right pitch.

O – Blank

P – Blank

Q – Blank

R – Blank

S – Blank

T - I don't think so, but if anything, maybe I relax the support mechanism in order to facilitate finding the correct pitch. I think I tend to think of microtones slightly more as 'flat' notes rather than 'sharp'. But it depends a lot on context.

U - See above, it shouldn't change but sometimes does!

V – Blank

W – Blank

Q13 - How do you feel microtonal singing has affected your intonation in singing more traditional repertoire?

A – Blank

B - ive learned to be (slightly) more accurate

C - It's helped my intonation, but any context that pays disciplined and distinctive attention to tuning would do that.

D – Blank

E - No

F - not.

G - It has increased the subtlety with which I think of pitch in traditional harmony

H - Not at all. Singers, and all non-keyed instruments are constantly adjusting their notes microtonally to account for temperament of the harmony whether they realise it or not.

I - I don't think it has.

J - it hasn't

K – Blank

L - not at all

M - The jumps feel bigger...

N – Blank

O - Not affected other than that a semitone seem an enormous interval after quarter tone singing

P - Not sure

Q – Blank

R - It improves it : perception of subtlety in pitch is useful in any context.

S - It makes you more focused on pitching precisely.

T - Sometimes for a few days around/after a microtone project my general tuning may fluctuate a little, but I don't think it (at least I hope it doesn't!) lasts long.

U - Improved my sensitivity to tuning intervals

V – Blank

W - I think my intonation has improved somewhat

Q14 - How would you recommend a singer first approach microtonal singing? Please offer names of piece/s, composer/s and/or techniques

A - I kind of think the only real way of doing it is through taking a given piece and trying to learn how to sing microtonal intervals through trial and error, perhaps using a recording device.

B - work closely with the composer?

C - Use some reference, a recording, an instrument, etc.

D - I am not a singing specialist but wondered if you knew about just and equal temperament issues, and of the work of Harry Partch in the 60's and 70's on ratios as the basis for for intonation. I am convinced that this is how most people actually hear sound. The equal temperament scale is actually a problem, as it is undermines the way in which a singer naturally hears frequencies meshing together when the ratios of frequencies are right. I know there is evidence that when there is no equal temperament accompaniment singers (and violinist etc.) tend to shift more to just intonation. Barbershop groups specifically stop on chords until they "ring" because the intonation (just intonation) is exactly right. As you get into the higher ratios all sorts of notes emerge that are not part of Western Classical intonation systems. These are the notes that I think can be sung exactly in tune.

E - I've only sung one cycle with microtones.
I used a recording to intitially learn it on my own, I also found it quite natural to automatically tune to the instrument who was playing microtones when in the ensemble.

F - I never learned it from someone or some book.Actually, funnily, what helped me was that the first piece I sang was for two voices. The other voice was singing traditional notes and I had to sing quarter tones below and above them. But since I live in the same house as that singer, we had on quite a few occasions tried to sing along to pop-tunes on the radio and tried to always be ever so slightly out of tune. So we were actually used to sing like that!
G - Quarter tones as neighbor tones - Scelsi is a good start. Work with synthesizer setups that allow playing precise quarter tones for reference

H - Good vocal technique is the first and last in singing. There is no special tech for microtonal singing other than developing a good ear for tuning. This is not separate from technique. Practice in situ is important.

I - I don't think this is the right way around: better to fall in love with a piece and then learn whatever techniques it requires than the other way around. You have to be seduced by the music first. Quartertones are a good place to start though, if one is interested in contemporary classical music. Splitting the semi-tone in half is probably the easiest way in.

J - I don't know and wouldn't recommend it

K - Blank
L - I wouldn't. Which means, I sing microtones if they're in pieces I'm doing that I think are worthwhile. Like any other technique, I learn it when I need it, rather than for the hell of it!

M - I practised singing the raga scales along with a MIDI track. Also with playing recorder, I practice the semitones, and then placing the quarter tones exactly in between. Then repear the same process of placing eighth tones between the quarters.

N - Blank

O - Unable to suggest

P – Blank

Q - Blank

R - Firstly a purely technical approach - listening, singing and recording yourself for analysis. Then

working on a piece with no stress - plenty of time for preparation, probably with no performance looming. Let it mature. Then tackle a short piece for performance. Singing alongside singers already experienced in this field is invaluable.

S - The tonal scale needs to be totally in tune before you begin. Your technique needs to be in control so that you can bend the pitch accordingly. You can try doing chromatic scales going up 1/2, 1/4, 1/8 tones at a time - to help tune the ear to the finer sounds/pitches.

T - Probably with excersises moving up and down by various intervals, starting small (up/down a quarter tone) and getting bigger.

U - Practice bending a note up and/or down against a held pitch, then practise intervals (3rds, 5ths, 6ths) with slightly adjusted tuning. Enjoy the sensations!
V - Xenakis - Nuits
Gesualdo - Madrigals

W - Understanding that a pitch is simply itself, and not a deviation from something else seems like a useful concept to understand at first. I would start with explaining the syntonic comma, etudes about different major thirds (just, equal tempered, pythagorean)

Q15 - What do you think a manual to help singers explore microtonal singing should contain?

A - 1. clear description of the notational conventions of microtones
2. Scales to practice
3. recordings of the practice scales

B - an accurate and clear notation system

C - Hard to say, given how many different microtonal systems there are.

D - I think it should be audio based. With digital technology frequencies can be produced very accurately, which was not the case when i was an under grad and looking into this in the 1980s. it is all about hearing (and probably feeling as well). I personally think trying to sing micro tones that are not natural intervals is probably a waste of time because that is not how music works!

E - Advice about pitching when you aren't paired with another instrument you can tune to

F - I think the fun and playful way in which I learned to do micro tones, was pretty perfect.

G - systematic ear training exercises combined with repertoire selections
H - Nomenclature. Examples of temperament. Examples of microtones pieces - both good and bad writing. There is no point in exercises, other than good vocal tech. Since microtonality is entirely context specific.

I - That's a big question!

An explanation of the different types of microtone;
An explanation of the notation variations;
An explanation of the different effects that are behind the microtone, and a caveat that sometimes finding 'the biting point' is more important than doing the maths perfectly;
The advice that every note should be sung healthily (no tension on microtones);
A few tips on techniques for learning phrases with microtones (I'll expand in the Finnissy extracts)

J - Help with notation

K - Blank

L - No idea
M - Clear exercises. A listening list: the main part of being able to pitch microtones is having them in your ear!

N – Blank

O - Don't know

P – Blank

Q – Blank

R - Plenty of basic exercises. A microtonal equivalent of Modus Novus would be great.
S - Excerpts from Composers pieces, scales and intervals practice. Listening to or analysing music such as the Japanese Kabuki theatre music to the point of hearing it in tune.... (this could take some time for western ears!!)

T - Such excersises and excerpts from various pieces.
U - Exercises as above, plus de-tuned chords for singers to try together. Singers in pairs or threes should practise moving a chord up and down by quarter tones, making sure they stay in tune with each other.

V – Blank

W - a lot of recorded examples

Q16 - Of the vocal pieces containing microtones you have sung, what was their instrumentation? (check all that applies)

A - Solo voice and more than one instrument

B - Multiple voices and instrumental accompaniment

C - Solo unaccompanied voice

D - Multiple unaccompanied voices

E - Solo voice and more than one instrument

F - Solo unaccompanied voice, Solo voice and more than one instrument
G - Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
H - Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
I - Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment

J - Multiple unaccompanied voices

K - Multiple unaccompanied voices

L - Multiple unaccompanied voices, Multiple voices and instrumental accompaniment

M - Solo voice and one instrument

N - Multiple unaccompanied voices

O - Solo unaccompanied voice, Multiple unaccompanied voices

P - Solo voice and more than one instrument

Q - Multiple voices and instrumental accompaniment

R - Multiple voices and instrumental accompaniment
S - Solo unaccompanied voice, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment

T - Multiple unaccompanied voices

U - Multiple unaccompanied voices, Multiple voices and instrumental accompaniment

V - Multiple unaccompanied voices

W - Multiple unaccompanied voices

Q17 - If you have experience performing with different instruments, which instrumentations did you feel helped you most when singing microtones?

A - Definitely string instruments... can't really explain why! Just felt easier.

B – Blank

C – Blank

D – Blank

E – Blank

F – Blank

G - None especially more helpful

H - not a piano

I - A cappella microtonal music is probably hardest because everyone's pitch can go awry!

J – Blank

K – Blank

L – Blank

M - I was singing into a recorder, so I could listen to the intervals the two creates, and the difference tones, to help me pitch.

N – Blank

O – Blank

P – Blank

Q – Blank

R - Woodwind. Whilst strings can be more precise the woodwind sonority is more helpful for vocal pitching.

S - ?

T – Blank

U - None particularly, though strings are usually more flexible in tuning and can adapt to the tuning of singers more easily than wind instruments.

V – Blank

W - Strings

Q18 - If you have experience performing microtonal pieces for multiple voices, did that help or hinder microtonal singing and why?

A – Blank

B – Blank

C – Blank

D – Blank

E – Blank

F - It helped! See the anecdote above.

G - it helps if everyone is well practiced and learned on their own part. Homogeneity in ensemble can help

H - no affect. The problems that affect microtonal pieces are the same as any piece.

I - See above

J - Hindered because we instinctively tuned in to each other in standard pitches

K – Blank

L - neither

M – Blank

N – Blank

O - No

P – Blank

Q - Blank

R - It requires greater precision from all concerned. A solo voice can get away with not being very exact (ahem!) but multiple voices need precision. Vibrato is obviously an important technical issue.

S - Helped when they did it right!

T - In general more of a help. Having other points of pitch reference (especially as someone without perfect pitch) is (usually) very helpful when pitching microtones.

U - Help, because you have something to hang on to in terms of tuning!

V - Vibrato of the other singers

W - helped. intervals can be found by tuning to another voice.

Q19 - Which cultures has the microtonal music you have sung originated from? (Check all that applies)

A - Western Culture (Contemporary Classical Music)

B - Western Culture (Contemporary Classical Music)

C - Greece

D - Blues, african,

E - Western Culture (Contemporary Classical Music)

F - Western Culture (Contemporary Classical Music), Arabic countries

G - Western Culture (Contemporary Classical Music), India

H - Western Culture (Contemporary Classical Music)

I - Western Culture (Contemporary Classical Music), Arabic countries

J - Western Culture (Contemporary Classical Music)

K - Eastern Europe

L - Western Culture (Contemporary Classical Music), Arabic countries

M - India

N - Western Culture (Contemporary Classical Music)

O - Western Culture (Contemporary Classical Music)

P - Arabic countries

Q - Western Culture (Contemporary Classical Music)

R - Western Culture (Contemporary Classical Music), Arabic countries

S - Western Culture (Contemporary Classical Music)

T - Western Culture (Contemporary Classical Music), Eastern Europe
U - Western Culture (Contemporary Classical Music), Early music

V - Western Culture (Contemporary Classical Music)

W - Western Culture (Contemporary Classical Music)

Q20 - Do you enjoy singing pieces containing microtones? Why?

A - Yes - the challenge is a very different one to normal rep, where emphasis is almost always on tone quality, diction etc. Presents a different challenge.

B – Blank

C - Yes, it is intriguing.

D - Yes - gives a wider range of expression.

E - Yes. It makes you listen to tuning in a different way.
F - Yes. To me it's very playful. It also broadens your horizons: suddenly there are even smaller steps than half-tones - something that seems hard to imagine at first...

G - Yes I enjoy the challenge
H - Not really. They rarely adds anything tangible to the piece. J Harvey I think has some good examples of microtonal harmony which is effective. Like any effect, intention behind the use is everything. Just microtones for the sake of it is self defeating.
I - If they're good pieces, then yes! But not purely because they have microtones, no... It depends entirely on the context.
J - No
See above

K - Yes, it's challenging and different (to what I'm accustomed to)

L - If they're good pieces...
M - Yes! It sounds great. The first raga in the piece was incidentally pure intonation - that's weird and microtonal-ish if you're used to equal temperament, but for a recorder player it was a great relief!

N - I did

O – Blank

P – Blank

Q - No, because i don't know exactly how to sing them and I usually can't hear the difference..
R - Not really. It often feels very unnatural in western contexts. I love listening to Indian and Arabic music using non-western scales but here the tuning is natural and not artificially applied as it inevitably is in contemporary western pieces.
S - Not particularly, it makes the learning process much longer and often doesn't (in my opinion) add to the end result of the piece because you feel you can't relax and express fully in performance. Too much to think about.
T - I didn't to start with, because it is a very hard thing to learn to do, especially after so long learning to sing only 12 tones 'in tune'. But the more I do it, and the better I get at it, the more I appreciate the challenge and reward of it.
U - Yes, it's enormous fun because it requires such a different approach in rehearsal, really going back to the basics of tuning. And it's fun to see the faces people make when singing in micro tones!

V – Blank

W - yes, because I like different flavors of harmony

Q21 - How would you approach learning to sing extract no. 1?

A - 1. check i totally understood the notation!
2. perhaps devise an exercise where I pitch the microtonal intervals from neighbouring semitonal notes
3. record myself singing it (hopefully) correctly
4. repeatedly listen to the recording and sing along with it to really get the intervals automatic

B - get some sort of midi file?

C - With a quarter tone tuned keyboard.

D - Blank

E - Use microtonal software to pitch against and muscle memory

F - slide slowly between half-notes and try to feel the half-way point.

G - working with a keyboard synthesizer that can play quarter tones

H - The use of microtones in Michael's music is very much bound up with the emotion of the line. A singer who sings this 100% accurate (v unlikely) would (most likely) dilute the intention of the line.

I - I would learn the phrase with every note as a 'true' pitch, worked out so that all the quartertones are then bent in the same direction. So, the phrase would be learned: Db - E - Gb - D# - E# - D - B# - B - E - F, and then the quartertones would be sharpened.

J - Work out what the notation means
Work out where those notes are
Practise

K - I would find this very difficult to start learning. Perhaps I would benefit from a manual!

L - Practise!!!

M – Blank

N - Blank

O - Learn it as though the notes were in the norma lscale and subsequently deviate. Bit hit and miss!

P – Blank

Q - Blank

R - Silent study first. Then vocalise testing pitches against a constant or using piano to give the semitones either side of the quarter tones. Adding text last, ensuring that sung vowels do not distort the intended pitches.

S - Very slowly, repeating every phrase and then joining up the phrases. Try to get it to flow in the end to sound spontaneous.

T - I would start by ignoring the quarter tones completely to get the general contour of the music. And once the contour is there, start trying to put them back in. It's a lengthy process!

U - Probably try to learn it in ordinary tuning first to get the rough outline, then inflect the intervals with the correct tuning.

V - I would learn it with the exact pitches first (turn the D double sharp into just a D sharp for example) to get the general shape into muscle memory and then tweak it later microtonally.

W - I wouldn't work on this kind of microtonal piece. I have only worked with microtonal singing in terms of harmony, but not melody.

Q22 - How would you approach learning to sing extract no. 2?

A - In pretty much the same ways as for the former extract.

B - again find a pitch bending piano or an accurate midi file?

C - With a quarter tone tuned keyboard.

D - Blank

E - Use microtonal software to pitch against and muscle memory

F - Learn with the traditional notes first and then sing slightly higher or lower...

G - same as previous excerpt

H - Learn where the natural G lies.

I - The same way as Extract 1.

J - See above

K – Blank

L - ditto

M - I'd play it on recorder, learn how it sounds, and then copy it by ear from that. I'd learn the rhythm first, then pitch the notes, then sing the notes in rhythm, then add in the ornaments,

N – Blank

O - As above

P – Blank

Q – Blank

R - Same approach.

S - As above

T - The same as for extract 1, although a bit more attention would need to be paid to rhythm!

U - As above, but with more time spent on the exact rhythms.

V - No differently from the first extract. I'd do exactly the same thing.

W - Blank

Q23 - How would you approach a piece with 6th/8th/3rd tones or any other less common microtones?

A - I would be very unsure here . I'm not sure I would really be able to be sure I was 'hearing' the intervals accurately.

B - with great difficulty

C - With a keyboard tuned to that system.

D – Blank

E - Use microtonal software to pitch against and muscle memory

F - Same as with the first extract: slide between half notes and try to find the subdivisions.

G - computer realizations or synthesizer tunings

H- Don't know

I - Probably in the same way as with the Finnissy, but with different inflections. It rather depends on the context actually, and what the effect is to be of the detuning.

J - Avoid it

K – Blank

L - no differently

M - Identify the bigger steps first (half tones, then quarter tones) and then divide the interval up in equal measures, singing up and down.

N – Blank

O - Guess

P – Blank

Q – Blank

R - Not in my direct experience. 6th tones are relatively easy to recognise as the flat 7th harmonic - this means finding the fundamental and working out the relation, which is okay at home but in

rehearsal/concert this needs to be fully assimilated in advance. These small intervals are rarely genuinely achieved by most singers. The Robert Shaw exercise of dividing a tone into 12 distinct steps has a benefit in tuning a choir's unisons but very little in tuning microtones. Even a slight vibrato makes this kind of tuning immediately imprecise but singing with no vibrato at all can be too "cold" for effective performance.
S - as above, and allow lots of time to learn it. Thinking about the size of the intervals helps. I.e. between the 1/2 tones think of bigger and smaller increments depending on if they are 3rd,6th, 8th e.t.c
T - I'm not convinced enough people can actually do this to bear it much thought. When singing quarter-tones, one tends to reach a sort of 'biting point' when one knows that it really is exactly between semitones. Besides that, I would find it incredibly difficult to tell how far between semitones I might be.
U - Perhaps try singing some first, either with a recording device or someone to listen. May be even try to find an electronic means to play the right frequencies.

V – Blank
W – Blank

Appendix B – Survey Results Organised by Respondents.

Note that respondents were asked to provide name and contact details if they wanted to receive the results of the survey and/or participate in further research. For the sake of anonymity, these details (Q24 and Q25) have been redacted.

A:

1. 2-5
2. Nicola LeFanu: Cancion de la Luna
3. A few pieces over the last few year
4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. Yes
11. I'm not always confident that I truly 'hear' the microtonal divisions. This can lead to a lack of confidence and sometimes a sense of 'reaching' for a microtonal interval rather than truly 'hitting' it
12. Blank
13. Blank
14. I kind of think the only real way of doing it is through taking a given piece and trying to learn how to sing microtonal intervals through trial and error, perhaps using a recording device.
15. 1. clear description of the notational conventions of microtones
    2. Scales to practice
    3. recordings of the practice scales
16. Solo voice and more than one instrument
17. Definitely string instruments... can't really explain why! Just felt easier.
18. Blank
19. Western Culture (Contemporary Classical Music)
20. Yes - the challenge is a very different one to normal rep, where emphasis is almost always on tone quality, diction etc. Presents a different challenge.
21. 1. check i totally understood the notation!
    2. perhaps devise an exercise where I pitch the microtonal intervals from neighbouring semitonal notes
    3. record myself singing it (hopefully) correctly
    4. repeatedly listen to the recording and sing along with it to really get the intervals automatic
22. In pretty much the same ways as for the former extract.
23. I would be very unsure here . I'm not sure I would really be able to be sure I was 'hearing' the intervals accurately.

B:

1. 1
2. Ulf dither Soyka's Ninja, an opera in 3 acts.
3. Only sang 1-2 pieces over the last few years
4. Quarter tones, 8th tones
5. as above
6. No
7. Blank
8. No
9. Blank
10. Yes
11. Wrong and strong is my motto
12. the focus is so great the performance suffers
13. ive learned to be (slightly) more accurate
14. work closely with the composer?
15. an accurate and clear notation system
16. Multiple voices and instrumental accompaniment
17. Blank
18. Blank
19. Western Culture (Contemporary Classical Music)
20. Blank
21. get some sort of midi file?
22. again find a pitch bending piano or an accurate midi file?
23. with great difficulty

C:

1. 6-10
2. Byzantine Music
3. Several pieces a year
4. Other divides of the octave
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. I become aware of smaller intervals. Quite literally such small divisions are not "on my mind" when I'm performing non-microtonal music.
13. It's helped my intonation, but any context that pays disciplined and distinctive attention to tuning would do that.
14. Use some reference, a recording, an instrument, etc.
15. Hard to say, given how many different microtonal systems there are.
16. Solo unaccompanied voice

17. Blank
18. Blank
19. Greece
20. Yes, it is intriguing
21. With a quarter tone tuned keyboard.
22. With a quarter tone tuned keyboard.
23. With a keyboard tuned to that system.

D: (Disqualified - not a classically-trained singer)

1. 1
2. Answers to required questions are NOT correct. They are just to allow me to submit.
3. Only sang 1-2 pieces over the last few years
4. Other divides of the octave
5. Blank
6. No
7. Blank
8. Blank
9. Blank
10. Yes
11. Blank
12. Blank
13. Blank
14. I am not a singing specialist but wondered if you knew about just and equal temperament issues, and of the work of Harry Partch in the 60's and 70's on ratios as the basis for for intonation. I am convinced that this is how most people actually hear sound. The equal temperament scale is actually a problem, as it is undermines the way in which a singer naturally hears frequencies meshing together when the ratios of frequencies are right. I know there is evidence that when there is no equal temperament accompaniment singers (and violinist etc.) tend to shift more to just intonation. Barbershop groups specifically stop on chords until they "ring" because the intonation (just intonation) is exactly right. As you get into the higher ratios all sorts of notes emerge that are not part of Western Classical intonation systems. These are the notes that I think can be sung exactly in tune.
15. I think it should be audio based. With digital technology frequencies can be produced very accurately, which was not the case when i was an under grad and looking into this in the 1980s. it is all about hearing (and probably feeling as well). I personally think trying to sing micro tones that are not natural intervals is probably a waste of time because that is not how music works!
16. Multiple unaccompanied voices
17. Blank
18. Blank
19. Blues, african,
20. Yes - gives a wider range of expression.
21. Blank
22. Blank

23. Blank

E:

1. 1
2. Stuart Stevens The Tempest
3. Only sang 1-2 pieces over the last few years
4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. No
14. I've only sung one cycle with microtones.
    I used a recording to intitially learn it on my own, I also found it quite natural to automatically tune to the instrument who was playing microtones when in the ensemble.
15. Advice about pitching when you aren't paired with another instrument you can tune to
16. Solo voice and more than one instrument
17. Blank
18. Blank
19. Western Culture (Contemporary Classical Music)
20. Yes. It makes you listen to tuning in a different way.
21. Use microtonal software to pitch against and muscle memory
22. Use microtonal software to pitch against and muscle memory
23. Use microtonal software to pitch against and muscle memory

F:

1. 2-5
2. A piece for the YCM 2013, Lachlan Hughes wrote it, it was a drawn-out sentence from Metthew's Passion, I think. Called 'Wie er ihn loslasse'.
3. A few pieces over the last few year
4. Quarter tones
5. Blank
6. No
7. Blank
8. Yes

9. Because I do them by thinking slightly higher mostly, they can initially have a bit of a shrill sound. Thinking about the tones takes too much effort in the beginning to also think about proper technique at the same time... so it's not something that has an enduring influence on my technique!
10. No
11. Blank
12. See above also - when you're still trying to find them, my voice can sound shrill, they are too far in front.
13. not.
14. I never learned it from someone or some book.Actually, funnily, what helped me was that the first piece I sang was for two voices. The other voice was singing traditional notes and I had to sing quarter tones below and above them. But since I live in the same house as that singer, we had on quite a few occasions tried to sing along to pop-tunes on the radio and tried to always be ever so slightly out of tune. So we were actually used to sing like that!
15. I think the fun and playful way in which I learned to do micro tones, was pretty perfect.
16. Solo unaccompanied voice, Solo voice and more than one instrument
17. Blank
18. It helped! See the anecdote above
19. Western Culture (Contemporary Classical Music), Arabic countries
20. Yes. To me it's very playful. It also broadens your horizons: suddenly there are even smaller steps than half-tones - something that seems hard to imagine at first...
21. slide slowly between half-notes and try to feel the half-way point.
22. Learn with the traditional notes first and then sing slightly higher or lower...
23. Same as with the first extract: slide between half notes and try to find the subdivisions.

G:

1. 11+
2. Liza Lim - Chang-O
   Henze - El Cimarron
3. Several pieces a year
4. Quarter tones, 8th tones, Other divides of the octave
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. It has increased the subtlety with which I think of pitch in traditional harmony
14. Quarter tones as neighbor tones - Scelsi is a good start. Work with synthesizer setups that allow playing precise quarter tones for reference

15. systematic ear training exercises combined with repertoire selections
16. Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. None especially more helpful
18. it helps if everyone is well practiced and learned on their own part. Homogeneity in ensemble can help
19. Western Culture (Contemporary Classical Music), India
20. Yes I enjoy the challenge
21. working with a keyboard synthesizer that can play quarter tones
22. same as previous excerpt
23. computer realizations or synthesizer tunings

H:

1. 6-10
2. Can't remember
3. One piece a year
4. Quarter tones, 8th tones
5. Blank
6. Yes
7. PP has no effect either way on the ability to sing microtones. If you can pitch the note then you can adjust for microtones. This is true of non PP as well as those with PP. With PP you could pick it up faster that's all
8. Yes
9. Sometimes/sort of. It's mostly to do with the context of the writing. Pitch, vowel used, dynamic, note value etc. Good vocal writing technique still applies. It's unfortunate that a lot of microtonal pieces are badly written for voice.
10. No
11. Blank
12. Entirely dependant on how it's written. A microtones in the middle of the voice at mF and not held for 50 beats is easy to sing, and does not affect tech. Visa versa, will affect tech. Good vocal writing is always applicable microtonal or not.
13. Not at all. Singers, and all non-keyed instruments are constantly adjusting their notes microtonally to account for temperament of the harmony whether they realise it or not.
14. Good vocal technique is the first and last in singing. There is no special tech for microtonal singing other than developing a good ear for tuning. This is not separate from technique. Practice in situ is important.
15. Nomenclature. Examples of temperament. Examples of microtones pieces - both good and bad writing. There is no point in exercises, other than good vocal tech. Since microtonality is entirely context specific.
16. Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. not a piano

18. no affect. The problems that affect microtonal pieces are the same as any piece.
19. Western Culture (Contemporary Classical Music)
20. Not really. They rarely adds anything tangible to the piece. J Harvey I think has some good examples of microtonal harmony which is effective. Like any effect, intention behind the use is everything. Just microtones for the sake of it is self defeating.
21. The use of microtones in Michael's music is very much bound up with the emotion of the line. A singer who sings this 100% accurate (v unlikely) would (most likely) dilute the intention of the line.
22. Learn where the natural G lies.
23. Don't know

I:

1. 11+
2. With EXAUDI I have done many microtonal pieces. Probably something by Finnissy or James Weeks would have been first (c. 2004?). Doing Alvin Lucier's 'Wave Songs' in 2005 was a big moment though. There one is dealing with Herz (cents).
3. Several pieces a year
4. Quarter tones, 6th tones, 8th tones, 3rd tones, Other divides of the octave
5. Quarter tones and inflections (eighth tones, I guess?) are a quite common combination, the 8th tones marked by an arrow, so more of an inflection. James Weeks has written some pieces with this combination, and perhaps Enno Poppe's 'Interzone' uses both
6. Yes
7. It helps because I have a stronger grasp on the 'true' pitches, making it harder for me to lose my sense of pitch completely. It's still hard though!
8. Yes
9. There's a tendency to straighten, even squeeze the tone when producing quarter-tones, losing the freedom of well-produced singing. I've worked quite hard recently to get past this, and to sing all pitches with the same vocal freedom and flow. It's a process, and one that many singers would recognise I think. Part of the issue is that microtonal music requires, to a degree, a straighter tone so that the details of the tuning can be clearly heard. I wouldn't counsel a singer with a huge vibrato to enter this territory actually...
10. No
11. Blank
12. No, not really, or at least not any more.
13. I don't think it has.
14. - I don't think this is the right way around: better to fall in love with a piece and then learn whatever techniques it requires than the other way around. You have to be seduced by the music first. Quartertones are a good place to start though, if one is interested in contemporary classical music. Splitting the semi-tone in half is probably the easiest way in.
15. That's a big question!

    An explanation of the different types of microtone;
    An explanation of the notation variations;
    An explanation of the different effects that are behind the microtone, and a caveat that

sometimes finding 'the biting point' is more important than doing the maths perfectly;
The advice that every note should be sung healthily (no tension on microtones);
A few tips on techniques for learning phrases with microtones (I'll expand in the Finnissy extracts)

16. Solo unaccompanied voice, Solo voice and one instrument, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. A cappella microtonal music is probably hardest because everyone's pitch can go awry!
18. See above
19. Western Culture (Contemporary Classical Music), Arabic countries
20. If they're good pieces, then yes! But not purely because they have microtones, no... It depends entirely on the context.
21. I would learn the phrase with every note as a 'true' pitch, worked out so that all the quartertones are then bent in the same direction. So, the phrase would be learned: Db - E - Gb - D# - E# - D - B# - B - E - F, and then the quartertones would be sharpened.
22. The same way as Extract 1.
23. Probably in the same way as with the Finnissy, but with different inflections. It rather depends on the context actually, and what the effect is to be of the detuning.

J:

1. 1
2. Fernyhough
   Can't remember the title
3. Only sang 1-2 pieces over the last few years
4. Quarter tones
5. Blank
6. Yes
7. I find it excruciating and unnecessary but I suspect it helps to pitch between what you know are definite semitones
8. No
9. Blank
10. Yes
11. As I have pitch, I can always sing the right notes. I didn't like it and, musically, did not find it satisfying. I have dealt with it by not singing in microtones ever again.
12. Blank
13. it hasn't
14. I don't know and wouldn't recommend it
15. Help with notation
16. Multiple unaccompanied voices
17. Blank
18. Hindered because we instinctively tuned in to each other in standard pitches
19. Western Culture (Contemporary Classical Music)
20. No
    See above

21. Work out what the notation means
    Work out where those notes are
    Practise
22. See above
23. Avoid it

K:

1. 1
2. John Tavener, Magnificat and Nunc Dimittis
3. Only sang 1-2 pieces over the last few years
4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. Blank
14. Blank
15. Blank
16. Multiple unaccompanied voices
17. Blank
18. Blank
19. Eastern Europe
20. Yes, it's challenging and different (to what I'm accustomed to)
21. I would find this very difficult to start learning. Perhaps I would benefit from a manual!
22. Blank
23. Blank

L:

1. 11+
2. Xenakis Medea
3. Several pieces a year
4. Quarter tones, 6th tones
5. Yes - Xenakis Medea, quarter/6^{th}
6. Yes
7. no. why would it? In tricky pieces I use a tuning fork anyway
8. No
9. Blank
10. No

11. Blank
12. No
13. not at all
14. I wouldn't. Which means, I sing microtones if they're in pieces I'm doing that I think are worthwhile. Like any other technique, I learn it when I need it, rather than for the hell of it!
15. No idea
16. Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. Blank
18. Neither
19. Western Culture (Contemporary Classical Music), Arabic countries
20. If they're good pieces...
21. Practise!!!
22. Ditto
23. no differently
24. Blank
25. I might not be so helpful as Im not actually a singer ;)

M: (Disqualified - not a classically-trained singer)

1. 1
2. It was a piece for recorder and voice (one performer) - 'Liturgy of Darkness V' by Rafael Reina. I'm a recorder player and I deal a lot with microtones. But this was the first time singing them!
3. Only sang 1-2 pieces over the last few years
4. 8th tones
5. It was a piece based upon 7 different South Indian Carnatic ragas.
6. No
7. Blank
8. No
9. I have no singing technique ;) I can just pitch quite well, and my ears are good from playing the recorder..
10. No
11. Blank
12. Blank
13. The jumps feel bigger...
14. I practised singing the raga scales along with a MIDI track. Also with playing recorder, I practice the semitones, and then placing the quarter tones exactly in between. Then repear the same process of placing eighth tones between the quarters
15. Clear exercises. A listening list: the main part of being able to pitch microtones is having them in your ear!
16. Solo voice and one instrument
17. I was singing into a recorder, so I could listen to the intervals the two creates, and the difference tones, to help me pitch
18. Blank

19. India
20. Yes! It sounds great. The first raga in the piece was incidentally pure intonation - that's weird and microtonal-ish if you're used to equal temperament, but for a recorder player it was a great relief!
21. Blank
22. I'd play it on recorder, learn how it sounds, and then copy it by ear from that. I'd learn the rhythm first, then pitch the notes, then sing the notes in rhythm, then add in the ornaments,
23. Identify the bigger steps first (half tones, then quarter tones) and then divide the interval up in equal measures, singing up and down.

N:

1. 1
2. Flame - Ben Parry
3. One piece a year
4. Quarter tones, Other divides of the octave
5. Blank
6. Yes
7. It helps. You know where the boundaries lie between semi-tones, and so it's a lot easier to manipulate your tone to make the note brighter or darker to sing microtonally.
8. No
9. Blank
10. No
11. Blank
12. Not really. The same basic principles still apply, but your aural skills have to be good enough to recognise if you're singing the right pitch.
13. Blank
14. Blank
15. Blank
16. Multiple unaccompanied voices
17. Blank
18. Blank
19. Western Culture (Contemporary Classical Music)
20. I did
21. Blank
22. Blank
23. Blank

O:

1. 2-5
2. Don't remember
3. Only sang 1-2 pieces over the last few years

4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. Not affected other than that a semitone seem an enormous interval after quarter tone singing
14. Unable to suggest
15. Don't know
16. Solo unaccompanied voice, Multiple unaccompanied voices
17. Blank
18. No
19. Western Culture (Contemporary Classical Music)
20. Blank
21. Learn it as though the notes were in the norma lscale and subsequently deviate. Bit hit and miss!
22. Blank
23. Guess

P:

1. 1
2. Mouniati Sayed el Derwish
3. Only sang 1-2 pieces over the last few years
4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. Not sure
14. Blank
15. Blank
16. Solo voice and more than one instrument
17. Blank
18. Blank

19. Arabic countries
20. Blank
21. Blank
22. Blank
23. Blank

Q:

1. 2-5
2. Taylor Brooks - motorman fragments
3. A few pieces over the last few year
4. Quarter tones
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. Blank
13. Blank
14. Blank
15. Blank
16. Multiple voices and instrumental accompaniment
17. Blank
18. Blank
19. Western Culture (Contemporary Classical Music)
20. No, because i don't know exactly how to sing them and I usually can't hear the difference..
21. Blank
22. Blank
23. Blank

R:

1. 2-5
2. Can't recall the first. It was a student composer in the 1990s. Second piece Xenakis : Nuits.
3. A few pieces over the last few year
4. Quarter tones
5. Blank
6. No
7. Blank
8. No

9. Blank
10. No
11. Blank
12. Blank
13. It improves it : perception of subtlety in pitch is useful in any context.
14. Firstly a purely technical approach - listening, singing and recording yourself for analysis. Then working on a piece with no stress - plenty of time for preparation, probably with no performance looming. Let it mature. Then tackle a short piece for performance. Singing alongside singers already experienced in this field is invaluable.
15. Plenty of basic exercises. A microtonal equivalent of Modus Novus would be great.
16. Multiple voices and instrumental accompaniment
17. Woodwind. Whilst strings can be more precise the woodwind sonority is more helpful for vocal pitching.
18. It requires greater precision from all concerned. A solo voice can get away with not being very exact (ahem!) but multiple voices need precision. Vibrato is obviously an important technical issue.
19. Western Culture (Contemporary Classical Music), Arabic countries
20. Not really. It often feels very unnatural in western contexts. I love listening to Indian and Arabic music using non-western scales but here the tuning is natural and not artificially applied as it inevitably is in contemporary western pieces.
21. Silent study first. Then vocalise testing pitches against a constant or using piano to give the semitones either side of the quarter tones. Adding text last, ensuring that sung vowels do not distort the intended pitches.
22. Same approach.
23. Not in my direct experience. 6th tones are relatively easy to recognise as the flat 7th harmonic - this means finding the fundamental and working out the relation, which is okay at home but in rehearsal/concert this needs to be fully assimilated in advance. These small intervals are rarely genuinely achieved by most singers. The Robert Shaw exercise of dividing a tone into 12 distinct steps has a benefit in tuning a choir's unisons but very little in tuning microtones. Even a slight vibrato makes this kind of tuning immediately imprecise but singing with no vibrato at all can be too "cold" for effective performance.

S:

1. 2-5
2. Composers in Birmingham Conservatoire. Can't remember the names, but interesting pieces and use of bending notes.
3. Only sang 1-2 pieces over the last few years
4. Quarter tones, 8th tones, Other divides of the octave
5. Stockhausen - Opera, Mittwoch aus licht. I don't remember which ones but a selection of different tones and sounds needed
6. No
7. Blank
8. No
9. Blank

10. No
11. Blank
12. Blank
13. It makes you more focused on pitching precisely.
14. The tonal scale needs to be totally in tune before you begin. Your technique needs to be in control so that you can bend the pitch accordingly. You can try doing chromatic scales going up 1/2, 1/4, 1/8 tones at a time - to help tune the ear to the finer sounds/pitches.
15. Excerpts from Composers pieces, scales and intervals practice. Listening to or analysing music such as the Japanese Kabuki theatre music to the point of hearing it in tune.... (this could take some time for western ears!!)
16. Solo unaccompanied voice, Solo voice and more than one instrument, Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. ?
18. Helped when they did it right!
19. Western Culture (Contemporary Classical Music)
20. Not particularly, it makes the learning process much longer and often doesn't (in my opinion) add to the end result of the piece because you feel you can't relax and express fully in performance. Too much to think about.
21. Very slowly, repeating every phrase and then joining up the phrases. Try to get it to flow in the end to sound spontaneous.
22. As above
23. as above, and allow lots of time to learn it. Thinking about the size of the intervals helps. I.e. between the 1/2 tones think of bigger and smaller increments depending on if they are 3rd,6th, 8th e.t.c

T:

1. 11+
2. Mažulis - sorry, I can't remember the name of the piece!
3. Several pieces a year
4. Quarter tones, Other divides of the octave
5. Blank
6. No
7. Blank
8. No
9. Blank
10. No
11. Blank
12. I don't think so, but if anything, maybe I relax the support mechanism in order to facilitate finding the correct pitch. I think I tend to think of microtones slightly more as 'flat' notes rather than 'sharp'. But it depends a lot on context.
13. Sometimes for a few days around/after a microtone project my general tuning may fluctuate a little, but I don't think it (at least I hope it doesn't!) lasts long.
14. Probably with excersises moving up and down by various intervals, starting small (up/down a quarter tone) and getting bigger.

15. Such excersises and excerpts from various pieces.
16. Multiple unaccompanied voices
17. Blank
18. In general more of a help. Having other points of pitch reference (especially as someone without perfect pitch) is (usually) very helpful when pitching microtones.
19. Western Culture (Contemporary Classical Music), Eastern Europe
20. I didn't to start with, because it is a very hard thing to learn to do, especially after so long learning to sing only 12 tones 'in tune'. But the more I do it, and the better I get at it, the more I appreciate the challenge and reward of it.
21. I would start by ignoring the quarter tones completely to get the general contour of the music. And once the contour is there, start trying to put them back in. It's a lengthy process!
22. The same as for extract 1, although a bit more attention would need to be paid to rhythm!
23. I'm not convinced enough people can actually do this to bear it much thought. When singing quarter-tones, one tends to reach a sort of 'biting point' when one knows that it really is exactly between semitones. Besides that, I would find it incredibly difficult to tell how far between semitones I might be

U:

1. 11+
2. Scelsi Tre Canti Sacri
   Pieces by Nono, Rihm, Ferneyhough Missa Brevis
   Gesualdo motets, Sciarrino motets and madrigals
3. Several pieces a year
4. Quarter tones, Other divides of the octave
5. Blank
6. No
7. Blank
8. Yes
9. Sometimes the concentration of the tuning and the urge to hang on to an exact tuning causes the voice to tighten. Less so with practice, but it can be hard to sing as naturally as normal.
10. No
11. Blank
12. See above, it shouldn't change but sometimes does!
13. Improved my sensitivity to tuning intervals
14. Practice bending a note up and/or down against a held pitch, then practise intervals (3rds, 5ths, 6ths) with slightly adjusted tuning. Enjoy the sensations!
15. Exercises as above, plus de-tuned chords for singers to try together. Singers in pairs or threes should practise moving a chord up and down by quarter tones, making sure they stay in tune with each other.
16. Multiple unaccompanied voices, Multiple voices and instrumental accompaniment
17. None particularly, though strings are usually more flexible in tuning and can adapt to the tuning of singers more easily than wind instruments.

18. Help, because you have something to hang on to in terms of tuning!
19. Western Culture (Contemporary Classical Music), Early music
20. Yes, it's enormous fun because it requires such a different approach in rehearsal, really going back to the basics of tuning. And it's fun to see the faces people make when singing in micro tones!
21. Probably try to learn it in ordinary tuning first to get the rough outline, then inflect the intervals with the correct tuning.
22. As above, but with more time spent on the exact rhythms.
23. Perhaps try singing some first, either with a recording device or someone to listen. May be even try to find an electronic means to play the right frequencies.

V:

1. 11+
2. Gesualdo - Madrigals
   Xenakis – Nuits
3. Several pieces a year
4. Quarter tones, 6th tones
5. I don't really remember which pieces in particular are so specific. Learning pitches in vocal music doesn't really work in such a scientific or black & white way. You remember why it was there were shifts in tonality and why microtones were used in that passage and to what emotional or aural effect overall rather than the exact ones that you sang.
6. Yes
7. It's both a help and a hindrance. It helps because it acts as a guide for the general tonality. But it also makes it harder because everything feels wrong and disorientating.
8. Yes
9. because in order for the pitch to be heard clearly, singing without vibrato is preferable. If one has good technique, singing without vibrato shouldn't be a problem but in rehearsals when you're still singing the music into your body and don't yet have the muscle memory to do it fluently, tensions can arise and you can end up tightening and pushing the sound because you're trying to pitch the microtones correctly.
10. Yes
11. Yes because it's not an exact science. I don't know whether this is just because I have perfect pitch but every microtone feels wrong!
12. Blank
13. Blank
14. Xenakis - Nuits
    Gesualdo – Madrigals
15. Blank
16. Multiple unaccompanied voices
17. Blank
18. Vibrato of the other singers
19. Western Culture (Contemporary Classical Music)
20. Blank

21. I would learn it with the exact pitches first (turn the D double sharp into just a D sharp for example) to get the general shape into muscle memory and then tweak it later microtonally.
22. No differently from the first extract. I'd do exactly the same thing.
23. Blank

W:

1. 6-10
2. "Branches", Catherine Lamb
3. A few pieces over the last few year
4. Other divides of the octave
5. The pieces typically had intervals derived from different partials of the harmonic series, so a piece might have pitches based on both the 5th and 7th partials, for example
6. Yes
7. I should qualify this, that after several years of tuning instruments to different A's that my pitch is less perfect now, fluctuating by a semitone. Focusing on the nuances of harmony with pitch deviations has helped to further remove the automatic identification of pitch when I listen. This is a good thing.
8. No
9. Blank
10. No
11. Blank
12. Blank
13. I think my intonation has improved somewhat
14. Understanding that a pitch is simply itself, and not a deviation from something else seems like a useful concept to understand at first. I would start with explaining the syntonic comma, etudes about different major thirds (just, equal tempered, pythagorean)
15. a lot of recorded examples
16. Multiple unaccompanied voices
17. Strings
18. helped. intervals can be found by tuning to another voice.
19. Western Culture (Contemporary Classical Music)
20. yes, because I like different flavors of harmony
21. I wouldn't work on this kind of microtonal piece. I have only worked with microtonal singing in terms of harmony, but not melody.
22. Blank
23. Blank
24. Blank
25. I should note that I am not a trained singer, but I do sing a lot, and have worked with and thought a lot about the singing of microtonal harmonies

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