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The melodica as a creative and expressive instrument in the twenty-first century

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Abstract

The melodica is generally perceived as a toy-like instrument, resulting in its predominant use by children, or as a gimmick in performances. This means that a sparse amount of research on the melodica exists. This thesis explores the melodica's creative and expressive capabilities through mixed methods of research.

Qualitative arts-based research methods and practiced based research methods have been applied to this research. Arts-based methods involve questionnaires answered by melodica practitioners worldwide, and associated literature on various aspects of the melodica. Using the data from those methods, a more practice-based approach was used to demonstrate the creative and expressive use of the melodica, achieved through compositions for the melodica with supporting musical scores and video material. This thesis opens with an introduction to the melodica, discussing reasons on why this research is necessary, followed by a review of literature highlighting relevant sources for this research. This is followed by the research methods used for this study. The main body of this thesis will focus on the original pieces, analysing the creative and expressive uses of the melodica, closing with a conclusion of findings.

The result of this research highlights the fact that the melodica offers many creative and expressive possibilities, but with much still to be explored. This is demonstrated through both the opinions of melodica practitioners and the original pieces. The original pieces are available to the public online through YouTube. These findings demonstrate the melodica's potential, thus proving it to be a valuable instrument with capabilities worth exploring, to improve the melodica's perception and hopefully to inspire future musicians to use the melodica.

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Introduction

The purpose of this study is to shape an understanding of the melodica, improve the perception of it in western music, and consider it more as a serious instrument. This is needed due to the small amount of scholarly literature regarding the melodica, and is necessary to improve the perception of the melodica by making musicians aware of its creative and expressive capabilities for performance and composition. The creativity, expressiveness, and history of the melodica will be explored through a review of appropriate literature, questionnaires answered by established melodica players, and consideration of their own work, followed by an analysis of original pieces showing the expressive possibilities of the melodica. The original pieces composed for this study will be analysed, then positive and negative elements of the piece will be discussed, including my personal experience with the melodica. This study will contextualise the evolution of the instrument and assess its current reputation in society by using my own experiences, and the experiences of the melodica practitioners taking part in this research. The Literature Review will acknowledge previous research focusing on the melodica and introduce relevant sources that will be referred to throughout the study, also revealing gaps where further research is required. Qualitative arts-based methods have been used to gather data from melodica players through questionnaires, which will be discussed later, and practiced-based methods have been used to show the practical use of my research through performance and composition.

Personal experience with the melodica

During my undergraduate music degree study at Coventry University, I studied in Madrid for one year where I discovered the melodica through a gypsy jazz band busking in the marketplace. I heard guitars, brass, and an uncommon sound which could be described as a

combination of accordion and harmonica but making use of chords and articulations not possible on either. A closer look revealed a small keyboard and tube into which a musician was blowing. The volume and timbre of the instrument was mixing pleasantly with other instruments, although it resembled a toy. The same day, I found a melodica in a music store for the equivalent price of £25. This purchase started my journey as a melodica player, changing the way I perform, compose, and think about music.

I currently play the melodica in a professional setting, predominantly in my band The Upsiders, or when hired for other groups. Because of this, I am constantly experimenting and pushing its expressive boundaries. Due to The Upsiders extensive performance material, predominantly covers, I have had the opportunity to recreate and rearrange popular songs. This has improved my knowledge and technique on the melodica, specifically for finding a wide range of expressive techniques, and being able to develop them over time in recordings and in front of a live audience. When writing original songs for The Upsiders I wanted the melodica to be featured in such a way that intrigued the listeners, for example in our song ‘M6’ (The Upsiders 2017b).

From my experience performing with the melodica, it is uncommon in Western music, and proves to be a source of fascination for many audience members experiencing the instrument for the first time. Other instruments such as the piano and guitar are very popular, having vast amounts of research and works available, allowing people the opportunity to better understand its capabilities.

Reputation of the melodica in society

The melodica is not widely popular, but it has made appearances on shows such as The Lawrence Welk Show in the 1960s (Ralson 1965) and been used also by modern day artists such as The Gorrilaz (emimusic 2014). More recently it has been used ‘as an alternative to

the recorder; as it can be ‘mass produced at low cost[…]and the ease with which learners can master the keyboard and mouthpiece made it very popular in schools’ (Davies 1984: 641). Learning a polyphonic keyboard wind instrument at a young age benefits a musician more than instruments such as the recorder as most professional musicians (especially composers) require basic keyboard skills. This has resulted in a recent wave of Japanese musicians who are taking the melodica more seriously and exploring its musical potential. Currently there is a great number of melodica players in Japan who have begun to use the instrument expressively. This growing trend has led manufacturers such as Suzuki, Hammond, and Yamaha to create professional models. Yamaha released their first adult *pianica* (melodica) in July 2018, which is currently exclusive to Japan. This shows a rise in its demand within Japan, however its popularity has yet to be matched in Western culture. This has much to do with it being perceived as a toy, resulting in a lack of awareness for the melodica’s capabilities. Arne Gieshoff, an award winning composer, whom I will discuss further in this study, makes an interesting statement appropriate to this work,

> I appreciate the fact that the melodica retains its particular charm of being a toy-like instrument, which in turn means that it’s not as balanced and ‘perfected’ as other instruments (e.g. piano). Its unevenness can be exploited creatively by performers and composers (2017a)

Literature Review

This literature review will focus on written work regarding the melodica, that discusses its history, its current use in society, and melodica sheet music. This will be followed by audio-visual sources that are relevant to the culture, social aspects, and techniques of the instrument.

Written sources

Written sources concerning the melodica are limited, particularly in academic literature, so cross-referencing information from various websites and books is necessary to verify facts about the instrument such as predecessors, invention, construction, technique, and composers who utilise it.

In *The New Grove Dictionary of Music and Musicians*, Davies states the melodica was manufactured by Hohner in 1959, and defines it firstly as a 'keyboard harmonica', from which the Japanese name *kenhamo* is derived (Davies 2001: 356). Other common names are the melody horn, melodion, and most commonly in Japan, the *pianica*, which is manufactured by Yamaha. The keyboard harmonica best describes the anatomy of the instrument due to the set of reed plates nearly identical to the harmonica. By pressing the keys (or buttons on older melodicas) and blowing, a flow of air enters the specific reed chamber where it vibrates that desired, pitched reed. But unlike the harmonica, the performer can only activate notes through exhalation. The melodica is labelled a 'free reed' instrument because, when pushing air through the melodica, 'the reed swings freely though the slot to set up a vibrating column of air which gives voice to the instrument' (Missin 2004b). This process is comparable to the harmonica and accordion; however, the design is not new, as free reed instruments such as the Chinese *Shen*, shown in Figure 1, are believed to have dated back to 5000BCE (Missin 2004b). The melodica has more specific predecessors from Europe, such as the *couesnophone* (commonly known as the *goofus*) from France, invented in 1924, which is shaped like a saxophone and is a polyphonic free reed instrument (Davies 2001: 356). However, even this design has a predecessor from 1861 called the *harmonicor* (shown in Figure 2).

Figure 1. Shen (SCO 2018)

Figure 2. Harmonicor (Missin 2004a)

Missin's website reveals more information about the melodica than the Suzuki, Yamaha, and Hohner websites, which have only a brief description yet are three of the largest manufacturers of the melodica in the world. This may show either a lack of attention for the melodica (given its lack of popularity in comparison to other instruments), or understanding from the manufacturers, potentially hindering the ability to deliver quality products and promote its development. The reliability of sources in this research, and therefore this study, could be improved with an increase of academic works to reference (Missin 2004b, Suzuki 2017).

The melodica's toy-like image is an advantage when introducing children to a keyboard-based instrument, since it is inexpensive to parents and schools, portable, and capable of polyphony. These contributing factors have led to a large number of beginner compositions targeted towards children. This same toy-like image discourages advanced performers and composers from utilising its creative and expressive capabilities. Current melodica notation can be seen in books such as *Bach Melodica for Beginners* (Marco 2017), where the notation is basic and idiomatic only in the pitch range of the melodica. The music could therefore be played on violin, clarinet or guitar, highlighting a lack of identity or melodica specific techniques. An online source discussing harmonica notation describes many techniques that are relevant to the melodica, offering insight into what melodica notation could look like along with possible techniques (Barrett, n.d.).

The Victoria College Exam is the only exam board to incorporate the melodica, however only Grade 3 and below are available. Figure 3 shows a Grade 1 melodica piece with piano accompaniment from the Victoria College Exam board. The pieces in this syllabus show potential for development playing the melodica to a basic level, but as in *Bach Melodica for Beginners*, the graded pieces for melodica do not show idiomatic writing, for example, breath control while playing chords, because only lower grades are available; so, advanced playing techniques are not necessary. However, having an exam board recognise the melodica enough to offer graded exams is a development in regarding it as a serious instrument. As the melodica's exam syllabus does not advance past Grade 3, it proves its development is still in its infancy (Victoria College of Music and Drama 2016).

Figure 3. Grade 1 melodica example (Victoria College of Music and Drama 2016)

Arne Gieshoff (mentioned earlier) has composed for melodica in ensemble pieces featuring techniques such as detuning and preparing the melodica (placing objects inside the instrument and altering its construction to change the sound), both of which are notated (shown in appendix K). He has kindly shared audio recordings and notation for these pieces with me for use in this research and will be referenced further on (Gieshoff 2017a, 2017b).

Audio/visual sources

Most sources in this study are audio/visual, ranging from solo and group performances to interviews with melodica practitioners, thus providing a greater understanding of the instrument's expressive capabilities, and its use in the twenty-first century.

Augustus Pablo was an iconic melodica player in Jamaica throughout the 1970s who performed melodica pieces in the *reggae* and *dub* genre. His music uses the melodica in a repetitive manner, employing various tonguing styles. This is shown clearly in his video of *Java* (Pablo 2009: 0:15). Another example of his unconventional use of the melodica is shown at 1:30, where he glissandos rapidly up and down the melodica. Augustus Pablo started a movement within reggae, which the melodica community has embraced. During the 1970s in Brazil we hear of the experimental jazz musician Hermeto Pascoal. As a multi-instrumentalist, he performed occasionally on melodica and introduces very virtuosic playing and a vast range of creative techniques and expression. In his performance of *Rebuliço* (Pascoal 2007), we hear many extended techniques, which will be referenced further on in this work. Sources such as these, which involve live performances, are beneficial to this study as they are visual and audible.

Jon Batiste is an American jazz musician who started playing melodica alongside piano before he went to study at The Julliard School. He is now the band leader on The Late Show with Stephen Colbert television show, where the melodica features heavily in the band named 'Stay Human'. In an interview (Batiste 2013), he gives insight into how diverse the melodica can be by showing multiple playing techniques and discussing his relationship to the instrument. This is a reliable audio representation of the melodica, and he describes how he achieves specific timbres through different techniques. This discussion and showcasing of

the instrument from a professional performer offers a reliable insight to the melodica's capabilities.

The New Grove Dictionary of Music and Musicians references the works of David Bedford, in particular, his work *It's Easier Than It Looks* (Bedford 1972) for his use of melodica. He uses the melodica in a very expressive way, utilising the technological advancements of the time, such as reversing audio samples. This will be discussed further on when his techniques are relevant to the original compositions.

The duo Melodica Men are possibly the most popular melodica players currently in the world, having gone viral on YouTube performing classical pieces such as The Rite of Spring (Melodica Men 2016) and having been interviewed about the melodica in *Limelight Magazine* (Paget and McPherson 2017). This written source like most literature on the melodica, is informal, short, and focuses on the instrument's reputation of being a gimmick in performance. This reputation, even though negative when considering it a serious instrument, has its advantages because this use of the melodica online, especially YouTube, is one way of increasing its popularity. The Melodica Men have proven this with their enthusiastic renditions of famous pieces, as they now have their own melodica brand due to public demand.

Tokyo Melodica Orchestra are another prominent group when discussing melodica arrangements. This group has a strong online presence, especially with their melodica quartet arrangement of George Gershwin's Rhapsody in Blue (Tokyo 2015). Here they show the wide range of the melodica's expressive capabilities. This piece will be useful to analyse, as all the techniques are both audible and visible. Australian musician Benny Davis, who has a prominent online and live presence with the melodica, creates videos where he performs famous pieces on the instrument, which have been seen by millions worldwide. His

arrangements of songs make full use of the melodica's polyphonic capabilities while using only one hand. His way of playing and experience with the instrument make him a valuable research participant when answering the questionnaire designed for this study.

Conclusion

The purpose of this review was to highlight the available literature and online sources relating to the melodica regarding its history, anatomy, reputation in society, repertoire showing its expressive capabilities, previous scholarly research, and performance icons, using sources from various media. It has revealed an insufficient amount of knowledge concerning these areas, and due to the lack of verified information, the few sources available on these areas of the melodica are unreliable. This is to be expected for a relatively new instrument, having made it difficult to conduct reliable research, but also possible for me to devise my own original experiments, some of which up to this point were unprecedented in academic work.

Research Methods

This study will apply qualitative and practice-based research methods to increase awareness of the melodica as a serious musical instrument. This will include a questionnaire for melodica practitioners, to give an insight as to how other melodica players utilise the instruments capabilities. Through my own studies as a composer and performer, which have informed my performance on the instrument, I will compose pieces designed as possible study material for future use. These pieces will be recorded, notated, and analysed in this study to show the melodica's capabilities and limitations. Alongside this analysis will be literature that discusses techniques in the form of websites, blogs, and forums. The *Melodica*

World Forum will be the primary source of data from other melodica practitioners as it is the largest and most active melodica forum. The research design for this study will lends itself to communications with melodica practitioners, analysis of my own and others' work, and my personal practice as a melodica player and composer.

The primary methodological approach for this research is action research. Stringer (2014) states that rigorous inquiry/investigation enables people to 'understand the nature of problematic events or phenomena' (2014:5). For this I must question how the melodica is being used creatively, and can do so through methods of inquiry, including literature on the history of the melodica, interviews from iconic performers, audio visual material of melodica arrangements and compositions, and data from other melodica players in form of questionnaires. The data gathered will result in a greater understanding of the melodica and its expressive and creative capabilities. The practical element of my research is to be original compositions focusing on various expressive and creative techniques, which will be influenced by elements of other melodica compositions, data from the questionnaires, and performances of melodica arrangements showing a wide range of techniques. These will influence my work to create a portfolio of idiomatic melodica compositions thus 'creating knowledge through work' (Savin-Baden, Major 2013: 292).

As there is a significant gap in knowledge on this topic I contacted melodica players from around the world through online media such as YouTube, and the *Melodica World Forum*. By becoming an active member in the forums community, I networked with many enthusiastic melodica players who wanted to be a part of my research. I emailed composers and performers who have written for melodica; those that replied were

- Arne Gieshoff (a composer based in the United Kingdom and Germany whos works have been performed by many groups including the London

Philharmonic Orchestra, and is also the artistic director and co-founder of the *Explore Ensemble*)

- Daren Banarsë (who is the founder of *The Melodica World Forum*, is a London based composer and former lecturer at Goldsmiths College, University London. He created the first 3D printed melodica in 2015)
- Oscar Verdugo (a melodica player from the USA who is the founding member of the group *Monsters of Melodica* which organise a world recording session where melodica players around the world can perform on the same track; through this I have networked with many enthusiastic melodica players. Verdugo is also an instrument maker, designing pioneering melodicas and making use of electronics)
- Makoto Nomura (a Japanese pianist, melodica player, and contemporary and experimental composer who has used the melodica in many creative ways, many of which have contributed to this research)
- The Melodica Men (consisting of duo Tristan Clarke and Joe Buono, who are an online sensation regarding melodica arrangements, sharing their enthusiasm of the instrument to millions around the world)
- Benny Davis (an award winning composer, performer and comedian from Australia known for his work in the comedy music group *Axis of Awesome* and his online videos of melodica arrangements)
- Nobumi (a Japanese melodica player who has shared her melodica compositions and arrangements through *The Melodica World Forum* and been a participant on the *Monsters of Melodica* world recordings mentioned previously)

- Lowboy Bootay (an active member on *The Melodica World Forum* who has shared his research on manipulating the melodicas timbre, and experiments with melodica tubing)
- Daisuke Takane (also known as Pelo DT is a Japanese melodica player who has combined multiple melodicas in a technique he calls melomics)
- Bruno Travi (a melodica enthusiast with experience in comparing melodicas shown through his in depth YouTube tutorials, whom I was introduced to through the world recording sessions and *The Melodica World Forum*)
- Kiki Sanchez (a Peruvian musician, composer and educator, he performs with the melodica in styles such as jazz, tropical and afro-Peruvian)
- Rodrigo Cantú (a musician, composer, clinical psychologist and researcher who makes use of the melodica in jazz styles) (Melodica World 2016)

I designed a questionnaire where the participants can answer freely on aspects of the melodica I wanted to discuss in this research. I asked the following questions to each practitioner:

1. What about the melodica makes it a unique instrument, if you think it is a unique instrument?
2. What sort of techniques do you use that you believe to be unique to the instrument?
3. Have you experimented much with the melodica? If yes, in what way?
4. How do you think the melodica could be improved?
5. What do you love about the melodica?

The questions are open-ended, giving the practitioner the option to express themselves and share their own findings and opinions. The responses from the practitioners were

enthusiastic and informative, showing how the community surrounding the melodica feel strongly towards the use and growth of the instrument. A certain level of bias must be acknowledged in this study, as the practitioners and I are musicians who value the melodica as a creative tool, and which is the reason we are enthusiastic about the subject. The questionnaires will be referenced in this work where applicable.

The ontological nature of this research lends itself to being subjective. This is reflected in my original compositions as they will be experienced differently by each individual. This is expected from a constructivist outlook. The analyses of scores and audio/visual material of other composers may be interpreted differently by other researchers. Savin-Baden and Major say the 'making of art as a means of understanding experience' (2013: 293) is a process of research and applies to the melodica, as my 'personal exploration' will show concern for its placement in society (2013: 299).

'Action research' and 'practice as research' are interchangeable in the sense that both aim for theories that can be 'validated through practice' (Savin-Baden and Major 2013: 245). Action research as a framework will benefit this, as Reason and Bradbury say it 'seeks to bring together action and reflection, theory and practice, in participation with others, in pursuit of practical solutions to issues...' (2006: 1). Reflecting on why this research is needed would be asking why the melodica's development has not progressed like other instruments, such as the piano and guitar, and reflecting on who has used the melodica in a manner appropriate to my study, and in what ways. Theory and practice involves my own practice of the instrument, and other melodica players with the same viewpoint as me. The melodica community has revealed itself as a small but strong and proud one.

Action research has a practical/pragmatic stance; it has a more flexible approach to issues, and encourages 'human interpretation, interactive communication, deliberation,

negotiation and detailed description' (Savin-Baden and Major 2013: 247). All these elements are prominent in this study, involving interpretation of melodica music, interactive communication between players to share ideas, and possible collaborations. Participatory action research involves a community (other melodica players) who are 'involved in shaping and implementing research' (Savin-Baden and Major 2013: 248), which in this study will be done via the questionnaires for melodica practitioners who share an enthusiasm for the instrument.

Action research is a valid methodology for this thesis because this research deals with what Davis Elkind calls 'human intelligence interacting with experience in the real world' (Research Methodology 2016). Moreover, there is a personal stance in this research, as I, the researcher, am a melodica practitioner aiming for the instrument to be used in a more professional setting.

The research design will follow a similar framework that Stringer recommends (2014:62). This will be as follows:

A. Research Planning

Introduction and literature review, also discussing ethics and validity. This will include the historical, social and organological aspects of the melodica.

B. Data-Gathering

After reviewing the literature and primary data sources, this study will focus on data from questionnaires from melodica practitioners, delivered and received by email. This will be protected by following the appropriate ethics procedures.

C. Analysis

The coding process will take place in different forms depending on the type of data. There will be a combination of audio, scores, communications with melodica practitioners, other literature, and video data. This will be coded and categorised accordingly to facilitate the analysis.

D. Communicating

This is where my original pieces and arrangements will be introduced. They will be a combination of scores, and audio/visual material.

Actions

Here the analysis of my pieces will take place, bringing all the data from the research to its final stage. This stage of the research design will introduce another methodology, arts-informed inquiry, which is one of the most prominent features in this final stage of research. This is where art is used to 'represent the findings of a study' and to 'represent a response to a situation studied' (Savin- Baden and Major 2013: 295). The latter quote applies most here as the original compositions for the melodica is a response to the gap in knowledge of the instrument. This, in turn, will enhance the understanding of the melodicas expressive and creative capabilities, providing a more serious stance on the instrument. The ten pieces composed around specific techniques will be analysed in this study to show the melodicas expressive capabilities and limitations. The scores and video material will be referred to with bar numbers and time stamps for an accurate analysis.

Action research will benefit this study because public participation is encouraged, and the research is strongly promoting change, serving the public interest. However, there are few disadvantages to using this method. It cannot be replicated, and it may seem biased towards the melodica community, since the participants involved are all melodica practitioners. The

involvement of unrecognised professionals may cause the study to suffer low credibility; however I would argue that the melodica must be recognised as a serious instrument before a community of professional practitioners emerge (Sarantakos 2005:337).

Research methods not appropriate for this study are designs that involve handling quantitative data and use positivist paradigms, because this research deals with social matters that are better discussed and analysed with *qualitative* data. There are still many qualitative methods which I have chosen not to focus on, even though elements of them may occur in my methods, such as ethnography, which is the study of a group of people or culture. To some extent this method is being utilised, as participants for interviews will be experienced melodica players, thus a 'melodica player ethnography'.

A strong feature that Sarantakos mentions that applies to this study is that the researcher can 'understand culture from within' (2005: 208), and as a melodica practitioner and composer I am part of this culture. Because of this I have the knowledge and motivation to develop research on the melodica. The bias in this research derives from the use of melodica enthusiasts solely, as their opinions are not objective. However, I can only use melodica practitioners for this research as they have the knowledge on both positive and negative elements of the instrument, where as involving musicians that have no experience with the melodica will result in unreliable and inexperienced opinions. Within the questionnaire I asked how the melodica could be improved, giving the opportunity for melodica practitioners to share their issues. This shows I am trying to reduce bias by creating an objective view of the melodica.

Creative and Expressive Uses of The Melodica

As the melodica was invented in the 1950s, it has been experimented with less than other instruments such as the guitar and piano, whose potentials have been developed for hundreds of years. The expressiveness of the melodica is still in its infancy, and the techniques showcased will be further developed in the future as musicians experiment more, and as the melodica's design evolves. In this chapter I will present each of the ten pieces which focus on specific techniques. I will discuss the background of the chosen technique, where it has been used before, explain how to perform it, its limitations, and will share practitioners' opinions regarding the specific technique. A detailed analysis of the piece will follow, using notation and video recordings to precisely outline points of the analysis. I will then review my own work and how it can be developed further, incorporating the practitioners' thoughts and their opinions on the melodica's development. Finally, to conclude this research I will discuss my findings, and how to develop this subject further.

Articulation with tonguing

Tonguing is a technique common to every wind instrument. Due to the many different constructions and brands of melodicas the varying structures can affect techniques such as tonguing. The first variable is the mouthpiece used. Articulating precise rhythms is easier with shorter mouthpieces, or no mouthpiece at all, as I have found that the tube's length can diminish the clarity of the articulation. Secondly, pitch can affect tonguing, as lower-pitched notes have larger reeds that require more air to vibrate, making it difficult to achieve rapid, short staccato notes. This is especially true with the bass melodica, because the reeds are larger and heavier in comparison to the more common alto melodicas where the performer has more control over quick, precise rhythms.

The melodica's ability to articulate chords with the breath and tonguing is what draws most performers to the instrument. These techniques are achievable on the harmonica, however its polyphonic capability is more limited than that of the melodica. It is the closest relative to the melodica, using breath control to activate the reeds; but the harmonica is limited to the choice of notes for a chord, due to the mouth having to cover the desired holes. The melodica has one entrance for the flow of air, and the only limiting factor is how many keys the performer can press with their fingers, and the amount of breath that is required. Playing a rapid succession of triads is not much harder than playing single notes provided the melodica is airtight. Articulating notes with the tongue is simpler on the melodica than on instruments where the reed is in direct contact with the mouth, since there is no problem in finding the correct *embouchure*, as there is with for example, the saxophone. All that is required to produce a pitch is exhalation into the instrument while pressing the keys.

Hermeto Pascoal demonstrates many techniques in his playing, including flutter-tonguing. For example, in his live rendition of *Rebuliço* (Pascoal 2007), at 1:06, he flutter-tongues a descending scale. This adds variety as up to this point only standard playing is employed. We hear such tonguing again at 1:19 and 3:29 where he utilises it with a chord cluster. The Melodica Men utilise tonguing in their rendition of Tchaikovsky's 1812 Overture. This can be seen at 0:43, where the descending phrases are sounding two notes each when pressing the note once. This means they are using tonguing and breath to articulate the phrase instead of only the fingers (Melodica Men 2018a).

Makoto Nomura has been a pioneer of melodica techniques and composition (Nomura 2010). One way he did this was through the group *P-blot*, which he formed in 1996. In the questionnaire he says there are various ways for a performer to articulate phrases, such as '…staccato with your finger like an accordion and staccato by tonguing like a clarinet'. He shows this (amongst many other techniques) in his performance with *P-blot* at 1:55-2:05

(SuperDeluxe 2010). The melodica virtuoso Masa Matsuda demonstrates a mixture of rapid tonguing and flutter-tonguing, heard in an arrangement of Astor Piazzolla's *Libertango* (MASAMATSUDA1 2012). At 0:54 Matsuda makes use of very rhythmic tonguing while playing a melody underneath chords. This demonstrates the vast possibilities for articulation on the melodica.

Analysis

I adopt this technique in my own playing to broaden the timbral possibilities of the instrument. It can be used in monophonic and polyphonic playing, giving the performer more creative and expressive options on the instrument, demonstrated in the piece 'Flutter Tongue' (Appendix A). This technique is introduced at bar 20 (0:28) shown in Figure 4 where it transitions from a normal sustained note to flutter-tonguing.

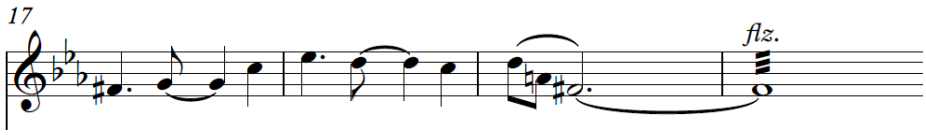

Figure 4. Flutter-tonguing, bar 17 – 20 (Appendix A)

At bar 78 (1:32), shown in Figure 5 single notes develop into chords, in a mixture of flutter-tonguing, standard playing, and rapid staccato tonguing. Bar 81 (1:42) combines flutter-tonguing over rapid broken chords, shown in Figure 6. These combinations of effects require only the use of tonguing and basic keyboard skills, yet, they create a fascinating timbre, shown clearly in 'Extended Techniques' (de Broize-King, 2018a) (Appendix J) at bar 14 (0:28), and in Figure 7 where a descending phrase results in a flutter-tongued cluster chord influenced by Pascoals previously mentioned piece *Rebuliço* (2007). This use of polyphony

and articulation contributes to idiomatic melodica writing and supports its creative and expressive use.

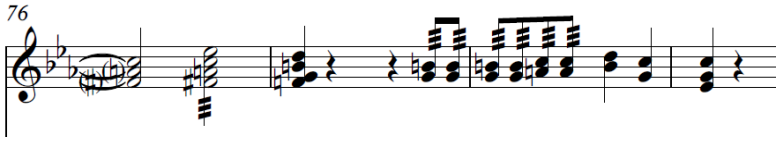

Figure 5. Flutter-tonguing bar 76 – 79 (Appendix A)

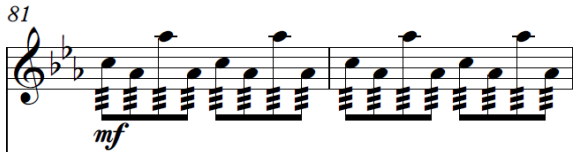

Figure 6. Flutter-tonguing bar 81 – 82 (Appendix A)

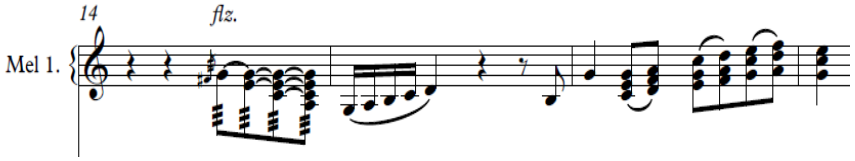

Figure 7. Extended Techniques bar 14 -17 (Appendix J)

The development of tonguing techniques could involve varied dynamics by flutter-tonguing softly; though difficult, it would make for interesting contrast. Additionally, using tonguing to perform complex rhythms in varying registers of the melodica, and with combinations of monophonic and polyphonic passages could yield captivating results. Developments in the instrument's components, such as reeds and mouthpieces, may improve future playability of techniques such as these. From my own experience, I have found that professional melodicas respond better to articulating notes with breath more than less expensive models.

Pitch Bending

Pitch bending with the melodica is not a technique recognised by many musicians, whether they play the instrument or not. Yet the harmonica, its closest relative, has an iconic sound involving pitch bending. A reason why the harmonica is understood and utilised more than the melodica could be due to commercially successful harmonica players such as Larry Adler. The melodica is yet to have this commercial success, which results in a disregard for its expressive capabilities.

The mechanics of the melodica and harmonica are similar so numerous techniques should be transferable, including pitch bending. After much trial and error, I have discovered two ways to fluctuate pitch, the first by blowing more air through the instrument resulting in flattening the pitch. This was interesting but not achievable at a low volume and may cause the reed to 'choke', meaning that it would obstruct the sound. The prevailing technique is to press the desired note down slightly while blowing intensely, which produces a flat pitch. From here pressing the key down fully will achieve a pitch bend from the flat note up to the correct pitch. The second way of utilising this technique is to play the note normally and slowly lift the key so the air chamber is neither fully open nor closed, resulting in the correct sounding pitch going flat without the need to increase volume. Too much air pressure can result in choking the reed, so the performer's breath control must be precise and consistent.

Performers such as Makoto Nomura have incorporated this technique into their playing, as shown in an informal video where he showcases many different techniques (Nomura 2013). At 1:48, Nomura begins to bend single notes and achieves this successfully by angling his fingertip between the tip of the key and the plastic of the melodica, which gives greater accuracy in bending the notes, because it is a very precise action to execute. The model of melodica also makes a difference in pitch bending as greater key depth provides

more potential for an effective pitch bend. Nomura is using the Suzuki M-37c model, which I have found to be one of the most responsive melodicas in pitch bending, due to the depth the key can reach. There is currently no commercially available melodica that can bend from a correct pitch upwards or from a sharp pitch down to a correct pitch (unless pitches are initially tuned sharp).

Oscar Verdugo, a pioneer in designing melodicas, and a founder of the group Monsters of Melodica, is a very active member of the melodica community. Having shared his process of building his own melodicas (which have great pitch modulation capability), and organising recordings where he gives melodica players around the world a chance to perform together on one track, which he calls the melodica world recording. He has kindly shared many thoughts on the melodica with me, and when discussing modulation in pitch, he says,

> unlike a saxophone where the reed is manipulated by the breath at the start of the sound, the reed in the melodica creates the sound at the end point. This does not mean that the human breath cannot manipulate the sound; it only means that it is limited in pitch modulation (in a typical melodica). Pitch modulation can be achieved in a melodica by how much air is forced into the chamber prior to the reed, but in comparison to a saxophone only a few semi tones can be created where the reed of a saxophone can vary the pitch several octaves. (Verdugo 2017)

Pitch bending is a common technique on most wind instruments such as the saxophone and harmonica but most wind instruments are monophonic, and the few polyphonic wind instruments such as the accordion are not expressive via the players breath. Combining breath control and a polyphonic keyboard make the melodica capable of many techniques that other instruments are not capable of such as pitch bending chords and flutter-tonguing chords.

Analysis

The piece ‘Pitch Bends’ (de Broize-King 2018d) (Appendix B) requires an extremely steady finger for simple pitch bends, and becomes increasingly difficult when repeatedly bending one note, as shown in bar 23 and 24 (1:40) of Figure 8. I found this technique varied in difficulty depending on the range used as the lower notes responded better to pitch bending, which I took advantage of when writing ‘Extended Techniques’ piece (de Broize-King 2018a) (Appendix J). Here I use the lowest note of the bass melodica to sustain a gradual pitch bend from bar 25 to 29 (Figure 9). The precision of this technique can be seen in the recording of the piece at 0:48.

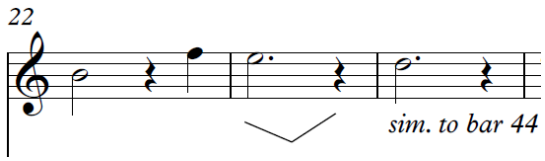

Figure 8. Pitch Bends bar 22-24 (Appendix B)

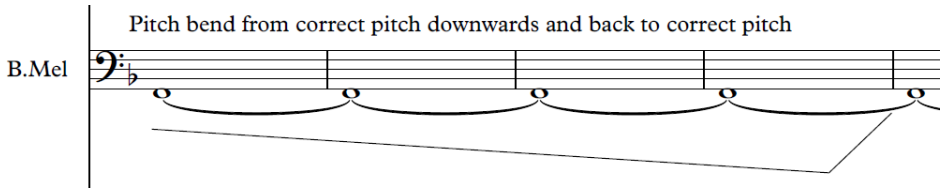

Figure 9. Extended Techniques bar 25-29 (Appendix J)

Pitch bending single notes can be developed into bending chords due to the melodica’s polyphonic capabilities, which introduces a greater level of control displayed in Figure 10 at bar 40 (2:20) where the chord flattens in pitch then rises to the original pitch notated with a pitch bend line.

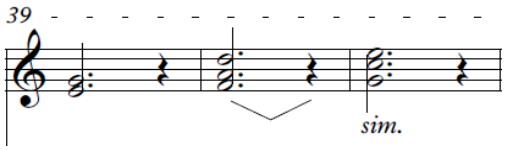

Figure 10. Pitch Bends bar 39 – 41 (Appendix B)

Another example of pitch bending chords is highlighted in the piece 'Extended Techniques' in Figure 11 at bar 27 (0:50) where it gradually flattens in pitch, then rises back to the original pitch. For this to be effective it is necessary to move all the keys simultaneously while keeping a consistent air pressure (de Broize-King 2018a).

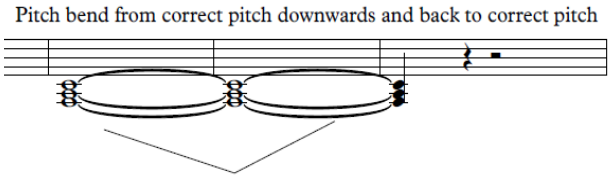

Figure 11. Extended Techniques bar 27-29 (Appendix J)

Pitch bending a chord with a wind instrument is not common and has potential to be developed further through experimenting with different sized chords, use in an ensemble, and spread chords over the whole range of the melodica. I hope to experiment with this technique in future compositions. The melodica's design can also be developed to make this technique more accessible, as discussed earlier regarding the depth of key.

Alternate tuning

Tuning a melodica is not as convenient as the guitar or violin. It is similar to an accordion or harmonica where it must be disassembled to file down the metal reed at certain points. Tuning is not a regular occurrence for the melodica, but its pitch can be affected by temperature and humidity. When discussing tuning, Nobumi says, 'Japan has a completely different humidity and climate from Europe, there is more humidity. To maintain the

melodica, especially to maintain reeds, it is important to remove the moisture from the melodica. I use a hair dryer' (Nobumi 2017).

I have tuned many melodicas, exploring different ways to improve the process, and after watching tutorials online from Melodica Men (2017b), Morales (2014), Reenen (2014) and many more, I concluded that the process was time consuming and could be swifter. These tutorials instruct the viewer to file down the desired reed and reassemble the melodica to check the pitch. This is because the melodica needs to be air tight, so all screws must be in place and tightened. Assembling and disassembling the melodica is tedious, so, as an alternative, I discovered that by pressing the retuned note and blowing intensely the performer can hear the pitch without having to assemble it each time. I have created my own tuning tutorial outlining these steps (de Broize-King 2018k).

Retuning the melodica for creative purposes opens many possibilities like imitating Indian scales used in ragas which make use of microtonal music. Arne Gieshoff is a composer who has utilised the melodica in this way in his piece *verdreht* (Appendix K), written for trombone and two melodicas. The performance notes for this piece instruct Melodica 2 to be retuned and that the 'G3- key must be clipped resulting in a buzzing effect…' (Gieshoff 2017a).

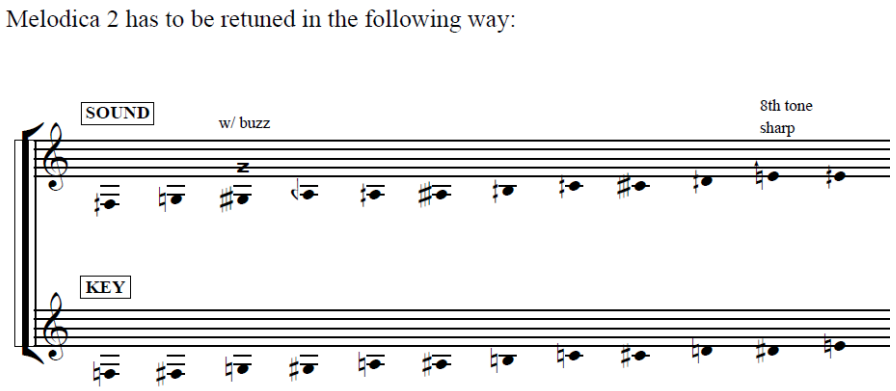

Figure 12. Performance directions for *Verdreht* (Gieshoff 2014)

Gieshoff utilises the melodica's creativity by retuning, and 'preparing' the melodica by cutting a reed. In a discussion with Gieshoff, he mentions he has '…experimented with retuning a melodica as well as with introducing buzz-like effects by filing down/preparing the reeds inside the instruments' (Gieshoff 2017a). This is an area which can be developed by composers, especially as the melodica is inexpensive and thus cost effective to experiment with.

In *verdreht* at bar 19 (1:19) shown in Figure 13, the detuned melodica sustains an interval of a minor second, but because of detuning, the interval was diminished and caused a vibrato effect. This can be described when an accordion has a *musette* setting and the slight detuning of notes results in a vibrato effect.

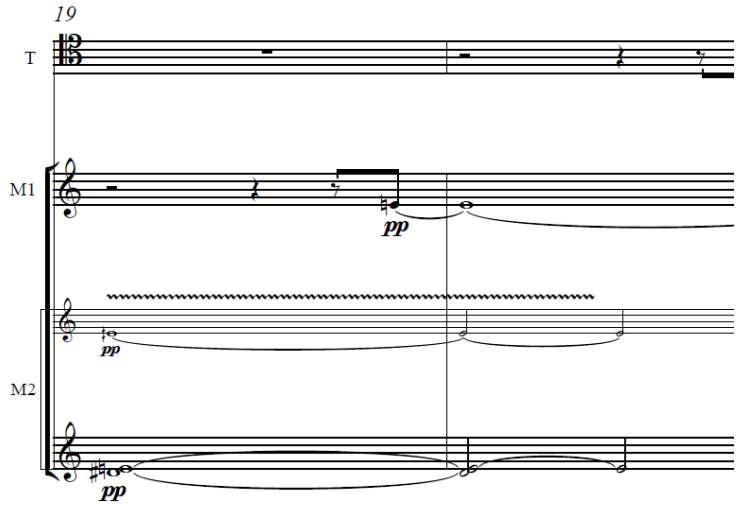

Figure 13. Verdreht bar 19 – 20 (Gieshoff 2014)

When composing my piece for alternate tunings, I researched many tuning systems and scales from eastern cultures such as Indian classical music to Just Intonation. For this research, I took part in an event called 'The Big Bang' at *The Bhavan Centre* in November 2017. This performance consisted of more than twenty musicians performing a fusion of Indian classical music and western pop music. Here, I learnt about different scales and styles

of Indian music as well as performing with the acclaimed *sitar* player Sanjay Guha while performing one of his original pieces on melodica (High Bandwidth 2018).

After this experience I decided that composing a piece in the style of Indian classical music would require much more knowledge than originally thought. From here, I focused on researching Just Ibrntonation and began retuning a disposable melodica. I found the change in pitch to be minimal as the melodica already fluctuates in pitch.

Finally, I decided to alter C4 to B4's tuning anywhere between 10-40 cents flat or sharp. This causes an audible difference in pitch, does not wear down the reeds material to an unplayable level, and is time effective. Figure 14 shows my process for retuning.

Comparison of Interval Size in Equal Temperament and Personalised Tuning				
Interval (Starting from C4)	**Equal Temperament (Cents)**	**Personalised Tuning (Cents)**	**Difference (Cents)**	**Frequency (hertz)**
Minor 2nd	100	140	+40	285
Major 2nd	200	220	+20	297
Minor 3rd	300	310	+10	313
Major 3rd	400	370	-30	323
4th	500	480	-20	345
Diminished 5th	600	610	+10	371
5th	700	710	+10	395
Minor 6th	800	780	-20	410
Major 6th	900	870	-30	432
Minor 7th	1000	1010	+10	468
Major 7th	1100	1060	-40	482

Figure 14. Table on altering the melodica's tuning

When tuning a melodica, the performer must file down the material of the reeds with a file or similar tool. To sharpen the pitch one must file towards the tip of the reed, or to flatten the pitch, the base of the reed must be filed. For more details on tuning the melodica see the previously mentioned tutorial 'Melodica Tuning Tutorial' (de Broize-King 2018k).

Analysis

'Alternate Tunings' (de Broize-King 2018h) (Appendix C) was composed to demonstrate the interaction of 'out of tune' reeds achieved through various means, firstly with a scalic phrase and a C pedal note to give the reference point to the tonic in bar 3 (0:12) shown in Figure 15. Figure 16 shows the development in bar 7 (0:25) by incorporating an inverted pedal note and slowly changing melody notes until all the modified notes have been heard. The combination of pitches creates interesting and unexpected harmonies, especially with the pedal note for comparison. I developed this by exploring chord clusters (Figure 17) at bar 25 (1:29) displaying the interaction of the newly shifted intervals. This presents a similar effect shown in Gieshoff's piece where a tremolo effect is heard from two closely pitched notes.

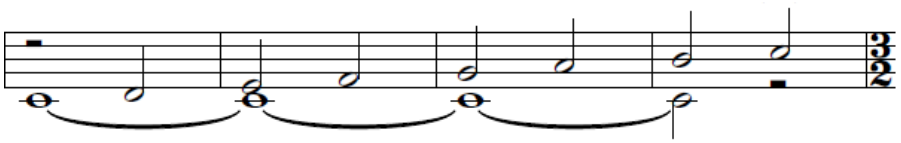

Figure 15. Alternate Tunings bar 3 – 6 (Appendix C)

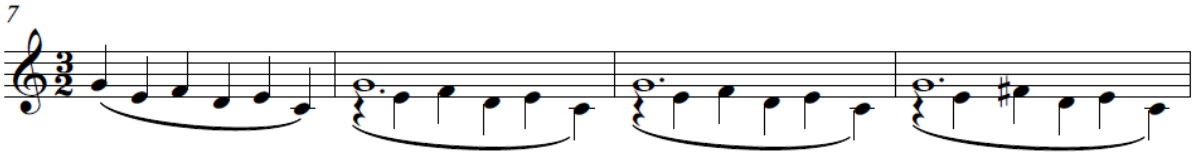

Figure 16. Alternate Tunings bar 7 – 10 (Appendix C)

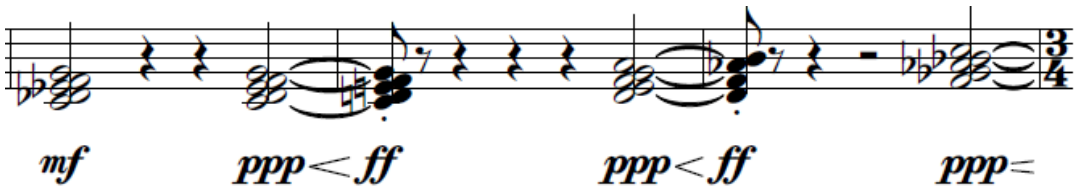

Figure 17. Alternate Tunings bar 25 – 27 (Appendix C)

Retuning the melodica is a process that has much potential and is something I intend to explore further. Another possible route, as Gieshoff briefly showed is *preparing* the melodica which I believe has a future, especially as the melodica is portable, cheap, and simple to modify.

Swells

Swelling on the melodica can demonstrate and explore the expressiveness of the melodica's polyphony and breath control. Verdugo says 'the melodica is a very personal instrument as it combines the human breath…' (2017). The majority of practitioners state how the melodica's polyphonic and wind capabilities are the predominant factor attracting them to the instrument. The ability to express chords and polyphonic lines with breath is impossible on many instruments, and none as readily available to the public as the melodica. If a musician has had a background playing a wind instrument, they will be comfortable applying these effects to the melodica. I do not have a background playing any other wind instruments and have nevertheless found the melodica easy to experiment with. This accessibility is an advantage to playing the melodica at any age.

In an interview about the melodica, Jon Batiste describes it as having "a voice that's powered by your air and is distinct in the sound world it creates" (Batiste 2013). This description hints at its expressiveness and can be trusted from a respected professional musician who is seen playing the melodica commercially. Batiste as a melodica practitioner is developing its image through performance, composition and interviews.

The Melodica Men showcase the use of chords and breath control to create varied dynamics in all their arrangements. In their most recent arrangement of the 'William Tell Overture' (Melodica Men 2018b) a consistent use of chords and melodic lines is present. In a discussion with one member of the 'Melodica Men', Joseph Buono, he indicates 'you can add

vibrato and dynamics to both notes and chords, as well as rapidly articulate notes/chords using your tongue. No other single instrument can do these things, to our knowledge' (Buono 2017). Benny Davis' opinions are comparable to those of the Melodica Men as when asked his thoughts on the melodica he answered '…a wind instrument that can play harmonies is the most significant in my mind. I've been wracking my brain to think of any other than the pipe organ, which isn't quite the same' (Davis 2018). This suggests that even the most popular mainstream melodica players believe it to be the only instrument that combines breath and polyphony in such a versatile way.

Bruno Travi, a melodica player from Spain states in my questionnaire that it has 'greater capacity of polyphony than the harmonica and greater expressiveness than the accordion with the vibration of natural breathing' (Travi 2017).

When asking Davis about the types of techniques he values on the instrument, he states 'More than any other, wind-powered chords – being able to use articulations as a wind player, but on a keyboard that can play polyphony as opposed to a single melody line is transformative.' (Davis 2018). Davis goes on to say, 'I can replicate the expression of a horn section while playing every harmony. The dynamic range afforded to the player while playing harmonies is another limitation of a regular keyboard that the melodica overcomes' (Davis 2018). This is highlighted in my own playing with the band 'The Upsiders' where I incorporate the melodica to imitate brass and other instruments as seen in our arrangement of 'September' by Earth, Wind & Fire (The Upsiders UK 2018). The intro riff at 0:15, which is originally played by a brass section, has been condensed down to the melodica; but as the melodica is polyphonic it can sustain the lower harmony part while playing the riff an octave above.

The dynamic range of the melodica is broad but is limited by lung power and, to an extent, reed quality. Unlike the piano and guitar, the melodica has the capacity ‘for changes in velocity, being able to *sforzando*, *subito piano* and then *crescendo* to *fortissimo* all while holding a single chord…’ (Davis 2018). Davis states in our communication that this attribute is a very important reason why he plays the melodica.

Analysis

The piece ‘Swells’ (de Broize-King 2018b) (Appendix D) explores polyphonic elements by building chords from various parts of the melodica with various speeds, breath techniques, and dynamics, which creates a variety of expressive sounds not achievable on many instruments. Changes in dynamic are demonstrated throughout, specifically Figure 18 at bar 3 (0:22), where the dynamic moves from *mezzo forte* to *mezzo piano* then suddenly to *sforzando*, all while sustaining a ten-note chord. Having such control over chords with the breath facilitates many creative and expressive possibilities to the music, however limited lung capacity can be a disadvantage on playing wind instruments. Figure 19 at bar 5 (0:41) demonstrates how breath control effects the decay of the chord (illustrated with a vibrato line reflecting the intensity).

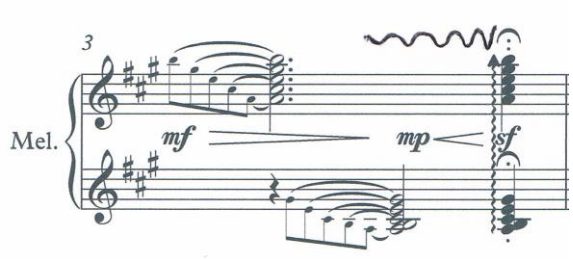

Figure 18. Swells bar 3 (Appendix D)

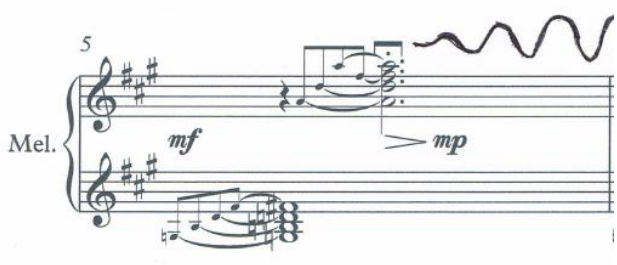

Figure 19. Swells bar 5 (Appendix D)

When exploring how to creatively utilise breath and vibrato, I discovered that a consistent and rapid vibrato could produce a rhythmical phrase to what otherwise would be a sustained chord. This is introduced in Figure 20 at bar 28 (3:07) with the solid vibrato line and tremolo notes, which depict the rate of vibrato.

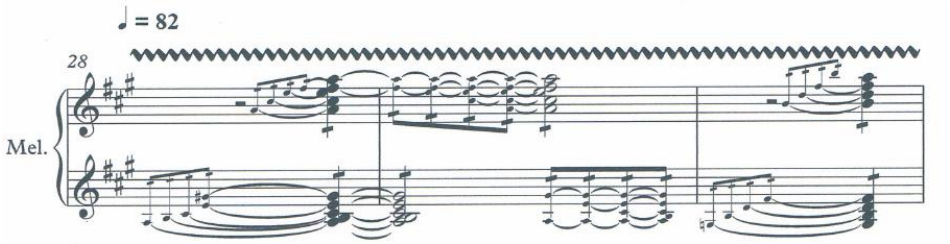

Figure 20. Swells bars 28 – 30 (Appendix D)

When playing large chords, greater air pressure is required, as more air chambers are opened, thus dividing the pressure between them. This means that larger chords require more breath, which is a disadvantage when utilising polyphony on the melodica. Furthermore, the reeds that receive the air pressure first will sound the loudest, which will always be the lowest notes due to them being closer to the blow hole. As can be heard in the above piece, the higher notes get lost in the larger chords, especially at softer dynamics. This problem is due to the anatomy of the instrument and is not likely to be *solved* but may be *reduced* in the

future, especially as more developed instruments such as the accordion have the same limitation, but to a lesser extent.

To hear the higher register over the lower, I started the chords from the top and played them falling into the lower register (also shown in Figure 18). This activates the higher register, first keeping the notes prominent; however they still become overpowered by the lower register. A potential solution would be to build melodicas with better quality reeds. Daren Banarsë, who is the founder of the *melodica world forum*, has 3D printed a melodica (MelodicaWorld 2015) and replaced the cheap melodica reeds with 'Italian accordion reeds' (Banarsë 2017). These reeds respond better to airflow, allowing more balanced dynamics of chords, and staying in tune longer. As the melodica's popularity increases, the demand for higher-quality reeds will need to be met. This is already becoming a reality with Hammond's professional melodicas, such as the 'Hammond Pro -44HP' which has 'phosphor bronze reeds' (Hammond 2018).

Circular breathing is a breathing technique that can be utilised to develop the playing of the melodica. Kiki Sanchez, a composer and performer from Miami, who utilises the melodica in his works, says, 'I apply the Circular Breathing technique to produce continuous tone without interruption' (Sanchez 2017). Banarsë adopts this in his own playing when performing a traditional Irish reel called 'The Old Red Lion' (MelodicaWorld 2014).

In David Bedford's album *Nurses Song With Elephants* the piece It's Easier Than It Looks experiments with the melodica and electronics by reversing the melodica swells. This means he records a swell on the melodica and plays the recording in reverse so the decay of the chord is heard first instead of last. This creates interesting timbres and could be developed, especially at present with readily accessible technology (Bedford 1972).

Chords

The piece ‘Chords’ focuses on the timbres created by multiple melodicas (de Broize-King 2018f), producing a choral effect. Each brand of melodica has its own timbre, which is a consequence of different materials, sizes, and reeds. This study uses a wide variety of brands, such as Suzuki models (Melodion M-37C, Pro 37, Soprano 25), Hammond models (Hammond 44, 44HP, Hammond bass), and Hohner models (Airboard 37, Superforce 37). This variety ranges from some of the least expensive Hohner melodicas (approximately £25) to some of the most expensive Hammond melodicas (approximately £500). Also, the range of notes in this collection starts from an ‘F2’ (from the Hammond bass melodica, the lowest note on any melodica available to the public) up to a ‘G6’ (the Hammond 44/44HP). This gives a wide range to work with, and the same range is shown in the Tokyo Melodica Orchestra’s arrangement of Gershwin’s Rhapsody in Blue (2015).

This example utilises the wide ranges and variations in timbre, highlighted at 3:20, when member Akira Sawaki (on far left) changes melodica from the Yamaha Pianica p-37 to the Yamaha Pianica p-32. This introduces a distinct difference in timbre, the latter having a brash tone that suits specific sections of the piece. The Yamaha Pianica p-32 has been modified, demonstrating techniques such as Gieshoff’s ‘prepared melodica’ mentioned previously.

Another performer who uses multiple melodicas in his arrangements is James Howard Young. In his video of the Brandenburg Concerto 1 (James Howard Young 2009), he records twelve separate melodica tracks representing different parts of the orchestra. The cello parts are played on the Suzuki bass melodica, and the horns, woodwind, and strings all on the Suzuki Pro, in their respective ranges. As he uses only two melodicas, the timbre is limited. Using different models would result in a wider variation of tone. It is, however, beneficial to

use two melodicas when wanting consistent tuning. More variation in melodicas results in a fluctuation in pitch that can be undesirable, especially in cheaper models.

In an interview with Nomura, he states that in 1996 he formed the melodica octet *P-blot* who use many techniques in their pieces, and do so with melodica's only. They use models that cover the same range that the Tokyo Melodica Orchestra, Young, and I cover in our pieces. Nomura states that 'the bass melodion is a very unique instrument' (Nomura 2017), which reflects why it is used in melodica-exclusive groups. *P-blot* inspired me to create a piece with as many melodicas as possible; however I did not want to incorporate extended techniques, because I wanted to expose the raw sound of the melodica. I chose to record each line individually and vary the melodicas used to convey a choral effect. This piece is limited by the number of melodicas I could record and how many were accessible to me.

Analysis

'Chords' (de Broize-King 2018f) (Appendix E) begins with four melodicas playing two individual lines to introduce a minimal choral effect. The four-bar phrase is repeated with the addition of new parts thus building the texture until twenty-five melodicas are heard together. Each melodica begins with a single line to demonstrate how chords spread between the instrument sound, as they would in a group of string or woodwind instruments. Lines are then added with different melodicas to create the choral effect (shown in Figure 21 at bar one to six)

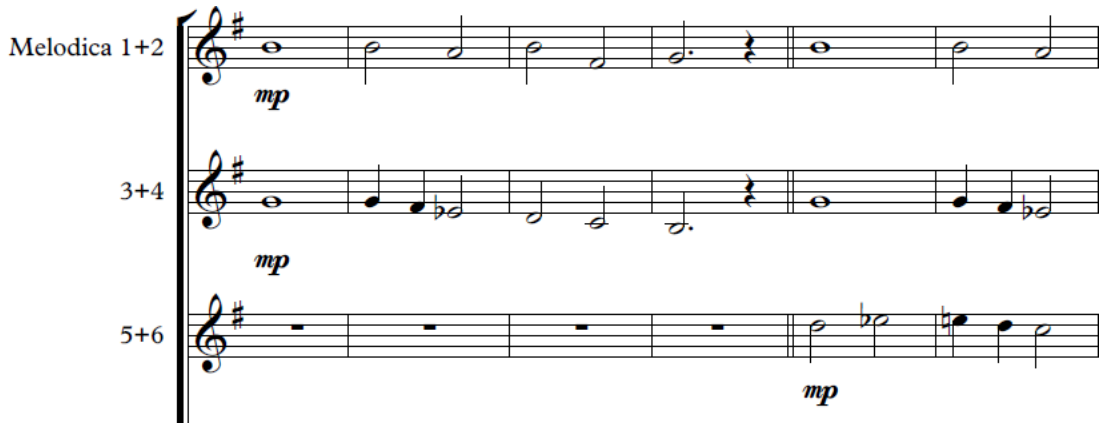

Figure 21. Chords bar 1 – 6 (Appendix E)

The bass melodica joins at bar 9 (0:39), shown in Figure 22, introducing a register of the melodica that most are unfamiliar with but effective in expanding the texture. From bar 9 to 12, the parts double in many places, creating the choral effect. The upper register of the melodica is introduced at bar 13 (0:56), shown in Figure 23, exploiting the full range of all the melodicas. To build the texture further, chords are performed on individual melodicas that increase in dynamics, shown in Figure 24 in bars 21 to 29 (1:27). After utilising the full range of melodicas I decided to explore the addition of articulation, developing the texture by use of flutter-tonguing in bar 21, with melodica 19 highlighted in Figure 25.

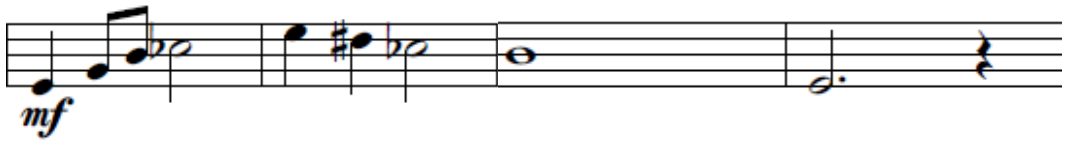

Figure 22. Bass melodica entering in the piece 'Chords', bars 9 – 12 (Appendix E)

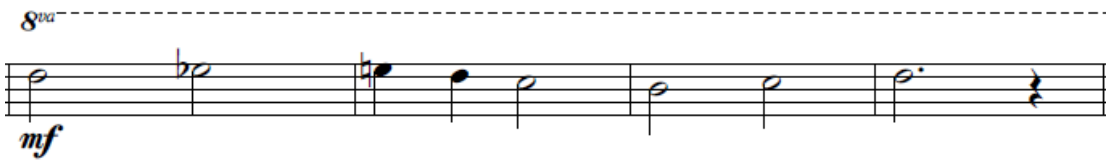

Figure 23. Soprano range of the melodica entering in the piece 'Chords', bars 13 – 16 (Appendix E)

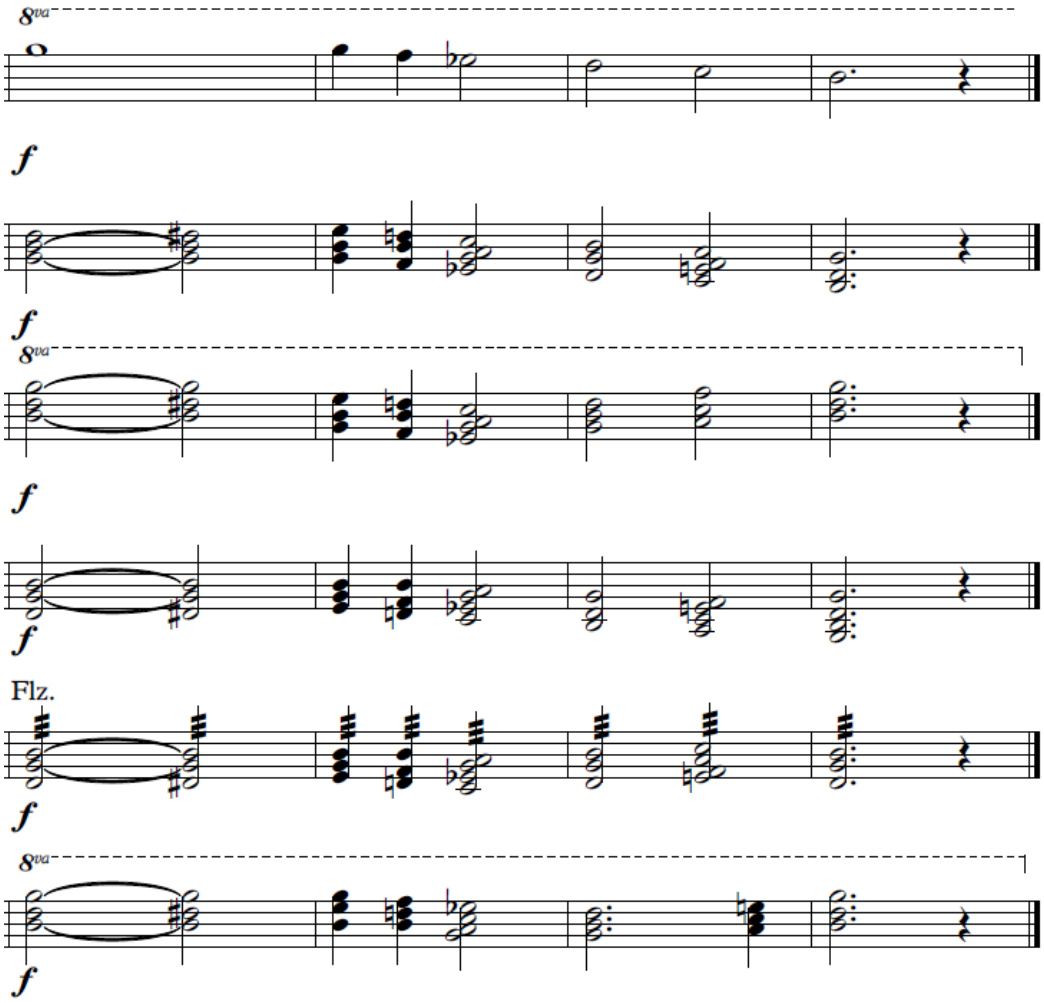

Figure 24. 'Chords', bars 21- 24 (Appendix E)

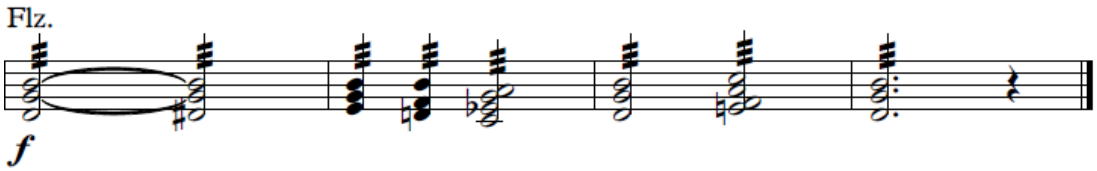

Figure 25. Flutter-tonguing, bars 21 – 24 (Appendix E)

This piece concludes with the use of twenty-five melodicas all performing *fortissimo* to demonstrate the cumulative sound of a melodica chorus. The result at this point resembles a reed organ, which is not surprising, as they are both 'free reed' instruments.

This can be developed further by adding more melodicas. It would be informative to hear this piece played within large, natural acoustics. However if an organisation were to use

cheap melodicas, it would not be a representative result. Professional orchestras, on the other hand, would not trade price for poor quality, and musicians should be aware of the higher-quality melodicas on the market, such as Suzuki, Hammond and Yamaha. The Tokyo Melodica Orchestra (2015) use high-quality instruments such as these, and even modified them.

An ensemble of 'prepared' and 'retuned' melodicas is a creative route for experimentation in expressiveness and would give a challenging opportunity to composers. To further expression the use of articulation can be developed, incorporating different textures such as staccato tonguing and legato phrasing.

The innovative performer Pelo (2018), a player from Japan, when asked if he had experimented with the melodica, replied, 'I connected four melodicas and succeeded in widening the sound range remarkably', a process he calls 'melomics' (Takane 2018). This is seen in his video (Pelo 2018) which involves the doubling of notes in the same range, creating new timbres and being able to perform high melodies over chords without losing the intensity (an issue discussed earlier in 'Swells'). Pelo also use the range of the bass, alto and soprano melodicas in performance.

Tube Interaction

Interacting with the flexible tube mouthpiece is a technique I observed in Nomura's video showcasing various techniques (Nomura 2013). Until seeing this video I had never considered manipulating the tube and have not seen this done since. Experimenting with it felt unnatural at first as I found it very difficult to coordinate one hand playing the keyboard with the other operating the tube. A disadvantage is the generally short length of the tube, making it uncomfortable to play when seated facing the melodica as shown in Figure 26. To

execute this technique comfortably I had to have the melodica hanging on the front of my body (Figure 27).

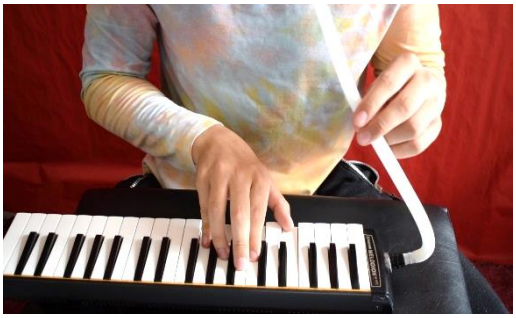

Figure 26. Melodica facing body

Figure 27. Melodica hanging from body

The piece ‘Tube Interaction’ (de Broize-King 2018g) focuses on two approaches to using the tube in performance. First ‘pinging’ the tube. This effect is creative, using only the mouth piece to manipulate the sound. The air flowing through the tube is moved abruptly resulting in the air flow shaking as it vibrates the reed, as seen by Nomura in his improvisation video at 0:19 (Nomura 2013). Nomura sits down to achieve this, as most melodicas do not allow for straps to hang the melodica from the body. When pinging the tube excessively, it can cause discomfort to the mouth. The mouthpiece on the tube is not built for such force and can fall out, so it requires a strong grip with the teeth and lips.

The second approach to use of the tube is to swing it back and forth (or up and down, depending on the angle) creating a controlled vibrato. In my questionnaire, Nomura tells of an alternative way of achieving vibrato, by ‘shaking the hose’ (Nomura 2017). Nomura uses a similar method at 1:02, but instead of using the tube he shakes the melodica itself. This creates an intense vibrato, however, it is possible that when he shakes the melodica, it is the

shaking of his whole body that is affecting the air flow. This act of shaking the tube or melodica is incorporated in my own piece as well.

Analysis

The piece ‘Tube Interactions’ (de Broize-King 2018g) (Appendix F) displays a basic use of pinging the tube on single notes, which is notated with a ‘+’ above the note, shown in Figure 28 bar 1 (0:05), which develops into chords, shown in Figure 29, bar 7 (0:20). The presence of chords does not make this technique more difficult, as the procedure affects mainly the tube. The core difficulty is gripping the tube directly after pinging; it is therefore beneficial to perform this with a consistent rhythm to develop the motion needed for this unorthodox technique.

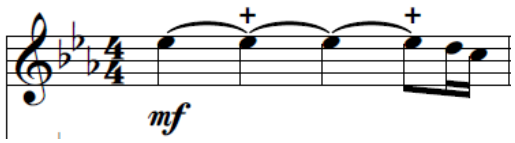

Figure 28. Tube Interactions, bar 1 (Appendix F)

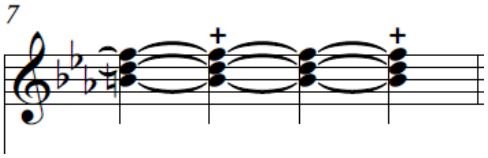

Figure 29. Tube Interactions, bar 7 (Appendix F)

At bar 17 (0:46) the pinging switches to shaking the tube, which is notated with vibrato lines (shown in Figure 30). Vibrato applied through physical movement of the body is a different sensation for the performer than using traditional (breath) vibrato, because the entire body is moving to create it.

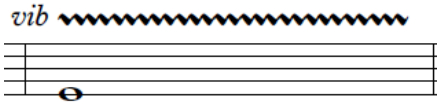

Figure 30. Tube Interactions bar 17 (Appendix F)

Nomura suggests that the capability of allowing for a 'physical performance' (Nomura 2017) is an advantage, because it is lightweight and small, and thus very portable, with various playing positions possible. When using a tube mouthpiece, the melodica can move freely (depending on the length of the tube) and this makes for more ways to be expressive. 'Tube Interactions' demonstrates a basic use of the tube such as shaking and pinging, which can be developed in many ways. For example, when Nomura uses the tube to his advantage displayed at 3:50 of his techniques video (2013), where he explores the possibilities of being mobile by performing with his leg and hand simultaneously, saying that 'playing keys not by your fingers but by other parts of the body, eg. legs, head, arm, bottom, etc.' are a possible route for development. (Nomura 2017). This demonstrates his creativity in expressing music using his whole body. Another example of the use of movement is shown through Nomura's group *P-blot* (SuperDeluxe 2010) at 1:35 where the performer on the far left is seen using her knuckles and palms to play certain registers of the melodica.

Modifying the mouthpiece is a possible additional area of development as I have found the tubes quite short when playing the melodica (as seen in Figure 26). American melodica player and composer Lowboy Bootay has experimented with modifying mouthpieces and other parts of the melodica. In my questionnaire I asked Bootay how the melodica could be improved, to which he said 'More flexible and larger tubing and more professional mouthpieces' (Bootay 2017). Bootay shares his tubing modification process on the 'Melodica World' forum. He makes it larger in diameter, lighter, and more flexible, describing it as performing 'beautifully, offering no resistance to air flow and enabling me

lots of freedom to move my keyboard harmonicas around'. At the same time, he admits the following:

> Then, as I played more and more and listened closely, I found one flaw that is a showstopper. This tubing acts much like a slinky. And when pressurized, it elongates along its length. This elongation…delays the attack on the notes (Lowboy 2017)

Lowboy has since developed this tubing; however, this emphasises the developments amateur melodica players are involved in and indicates a demand for further research and advances in the quality of the instrument.

Trills and Tremolos

Trills are a common technique on most monophonic and polyphonic instruments. The melodica's keyboard like that of the piano, allows for the benefits of polyphony, and that of tremolo, whatever notes are obtainable, including combinations of chords. As it is a wind instrument, the performer can control the dynamics and articulations with their breath. This makes it possible to combine trills with variations in dynamics and tonguing techniques. Monophonic wind instruments, like the clarinet and saxophone, can combine varying dynamics and tonguing, however they are limited to single notes; whereas the melodica can introduce chords, which increases the performers possibilities for creativity and expression.

There are multiple ways of approaching trills and tremolos on the melodica, the first being with the left hand holding the melodica, and playing notes with the right. A disadvantage is that only one hand is available to contribute to the keyboard (shown in Figure 31). Figure 32 illustrates trills with both hands which requires the melodica to be hung from the body. It is possible to have the melodica positioned flat, like a keyboard, however this can be uncomfortable, and the option of moving with the melodica, if required, is certainly preferable.

Figure 31. Trills with one hand

Figure 32. Trills with two hands

The Tokyo Melodica Orchestra (2015) begin their arrangement of Rhapsody in Blue with a trill and a rapidly ascending chromatic scale on one melodica, immediately showing its versatility with rapid notes. At 2:30, trills are spread across different melodicas at different ranges, incorporating the broad range of pitch and timbre. 4:04 is the first point in the piece at which a chordal tremolo is heard. This is played by Akeo Minamikawa (second from left), who uses both hands to achieve this result.

The Melodica Men (2017c) have an arrangement of Rhapsody in Blue for two melodicas, in which they perform an aggressive chord tremolo at 2:40. This requires a very relaxed wrist and can quickly cause hand fatigue. I cover this technique, and variations of it, in ‘Trills’ (de Broize-King 2018e) (Appendix G)

Analysis

‘Trills’ begins with a single trill which carries on underneath the right hand’s ascending chromatic scale, shown in bar 1 to 3 (0:07), Figure 33, displaying the polyphonic capability of the melodica. From bar 9 (0:36), Figure 34, the trill develops into chords, again highlighting its polyphonic capabilities.

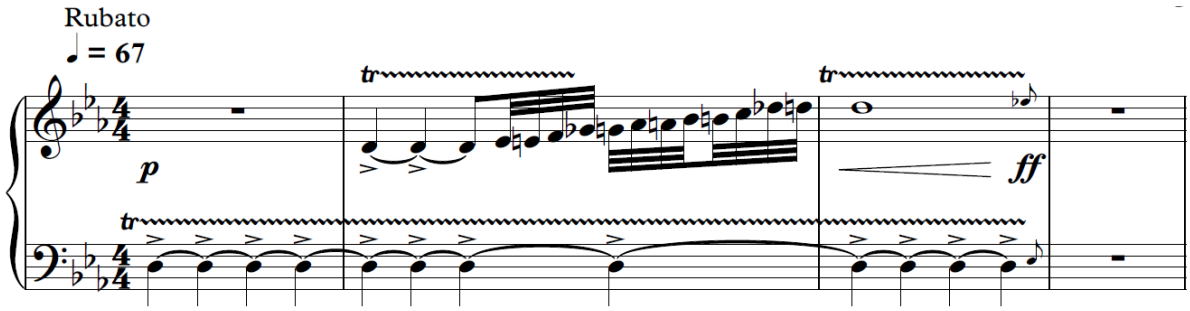

Figure 33. Trills bars 1 – 4 (Appendix G)

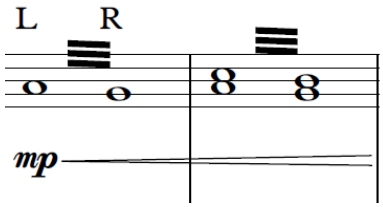

Figure 34. Trills with chords bars 8 – 9 (Appendix G)

Figure 34 provides a clear example for notating rapidly alternating chords, because it is clear which two chords are alternating and which hands play them. The aggressive chordal tremolo effect demonstrated in Figure 35 at bars 17 to 18 (1:05) was heard previously in the Melodica Men (2017c). A choice was made to notate this as a buzz roll, which is a percussion technique for rapid repeated notes. The hand motion and effect are similar because it involves rapid movement between all the notes (Figure 35).

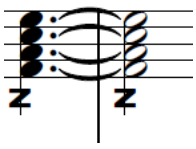

Figure 35, Trills buzz roll bars 17-18 (Appendix G)

To make full use of the melodica's polyphony I wanted to have a clear melody with accompanying harmony, (Figure 36 at bars 19 to 21, 1:13), where the left hand plays a steady legato melody underneath an accompanying sequence of rapid broken chords. This phrase

has a clear melody, flowing harmony, and dynamic variations, supporting the idea of melodica as a capable solo instrument, when written for effectively. This same phrase is heard in Figure 37, at bars 39 to 41, with the right-hand broken chords being replaced with the buzz roll effect, so the listener can hear the comparison of techniques over the same phrase.

At bars 46 to 49 (3:01), I wanted to show how different air pressures (dynamics) affected the trill while sustaining a chord higher in register. This resulted in the quiet parts of the trill becoming unclear and uneven, because the reeds did not have enough air pressure to remain active consistently. This is heard especially during the *pianissimo* sections of the phrase where the tapping of the melodica's keyboard is louder than the trill. During the composition process for this piece I observed that the melodica, like singing, requires more air, but less pressure in the low register, and the higher register requires less air. Because of this, the melodica requires precise breath control to keep a consistent dynamic essential with many of the melodica's techniques.

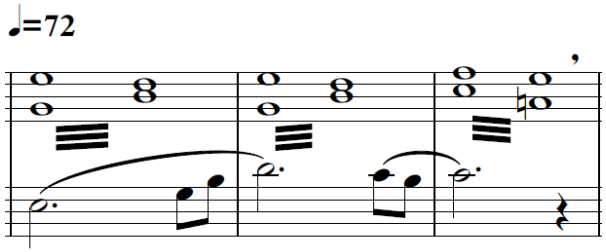

Figure 36. Melody with accompanying harmony, bars 19 - 21 (Appendix G)

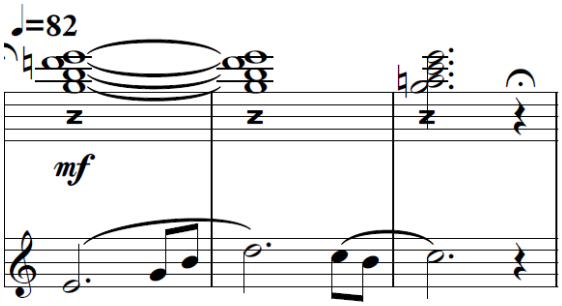

Figure 37. Melody with accompanying buzz roll harmony, bars 39 -41 (Appendix G)

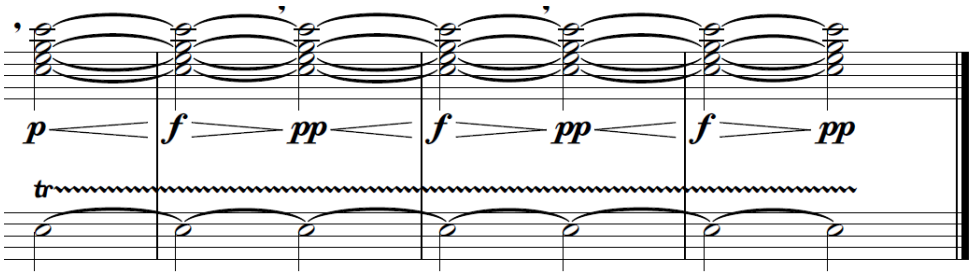

Figure 38. Sustained trill and chord, bars 46 – 49 (Appendix G)

A possible area for experimentation and technical development is to increase the speed of tremolos and the size of chord. Alternating chords could be done extremely quickly, and contain many notes; or, alternatively, this could be developed by combining other articulations such as tonguing while experimenting with extreme dynamics. Sanchez supports its idiomatic use of articulation, saying 'it offers the facility of articulation, the player is able to control the dynamics of interpretation with it' (Sanchez 2017). Sanchez highlights what many other participants of this study have stated to be an important element of the melodica: controlling articulation and dynamics through breath control.

Multiphonics

The New Grove Dictionary defines multiphonics as '[s]ounds generated by a normally monophonic instrument in which two or more pitches can be heard simultaneously'(Cambell, 2001: 383). The melodica is polyphonic, so this technique focuses on other ways to produce tones than in the standard ways. It can be achieved through harmonics, or, as Cambell further states 'singing one note while playing another on the instrument' (2001: 383), see de Broize-King 2018i 'Multiphonics'

Using the voice to sing pitches while simultaneously playing the melodica requires precise breath control. The piece 'Multiphonics' illustrates playing in unison, in harmony,

singing a lead melody, and acting as a pedal note. The technique requires more air than normal; however singing in *falsetto* (head voice) requires less breath than the chest voice. Singing into the instrument also changes the melodicas timbre, resulting in a 'growl' and 'buzz-like' sound. Batiste (2013) illustrates this at 1:23.

Pascoal (2007) showcases the most advanced example of this technique during *Rebuliço* (3:57 to 4:46), where the whole band stops, and it is just the melodica with multiphonics. He begins by doubling the melodica line in octaves, then by 4:02 he sings a third apart into the instrument. At 4:26, Pascoal sings a drone underneath the leading melody, emphasising the 'buzz' that Batiste mentions. During the final section of the piece, where Pascoal doubles the melody, there are vocal tuning fluctuations, creating vibrato. With regard to multiphonics, this video has been the most influential on the current study and I incorporate all these techniques into the accompanying original compositions.

Multiphonics were not mentioned during my communications with melodica practitioners, perhaps because it is an extended technique not yet commonly employed. The Melodica Men (2017a) released a video shortly after our communication on how to play multiphonics, which is informative, and which demonstrates the basics on how the melodica can play harmony while the voice simultaneously sings a melody.

Analysis

'Multiphonics' (de Broize-King 2018i) (Appendix H) explores numerous possibilities for using the melodica creatively. One of these is shown in Figure 39, bar 1 (0:03) which begins with a simple line sung by the voice as the melodica sustains a single note. The notation is worth mention as I chose standard noteheads to represent the melodica's notes, and diamond

noteheads to represent the voice. When a note should be performed with both the melodica *and* voice, then it appears with a triangle notehead as seen in Figure 40, directing the performer to double the middle note with the voice while performing the whole chord on the melodica.

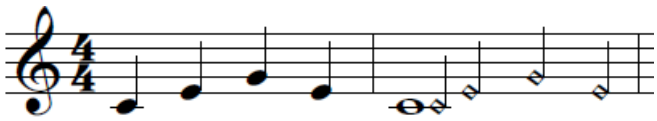

Figure 39. Multiphonics bars 1 – 2 (Appendix H)

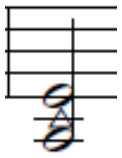

Figure 40. Multiphonics chord notation bar 4 (Appendix H)

From bar 5 to 12 (0:23), highlighted in Figure 41, the melodica plays sustaining chords while the voice is used as the lead melody. The voice begins in falsetto, above the melodica's register, then carries on in chest voice below the melodica (bar 9), demonstrating how the voice can travel from above the melodica's register to below it. Figure 42, bar 13 (0:57) takes influence from Pascoal's piece *Rebuliço* (2007) and has the voice as a drone underneath the melodica's line which is followed by a doubling of the melody at the octave, seen in Figure 43, bar 17 (1:14).

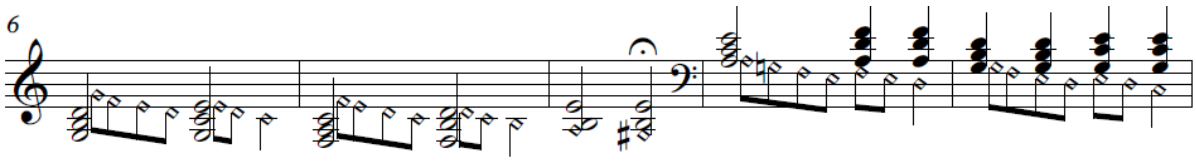

Figure 41. Multiphonic singing melody above and below the melodica (Appendix H)

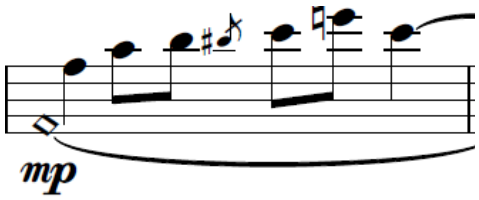

Figure 42. Multiphonics singing a drone in the bass clef, bar 13 (Appendix H)

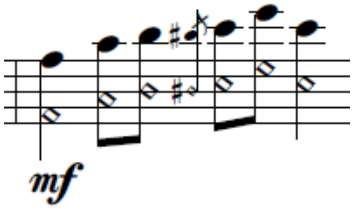

Figure 43. Multiphonic singing and playing in unison, bar 17 (Appendix H)

In developing this piece further, I utilised the melodica's polyphony by choosing a note to double in a chord and using a vocal slide to lead to the next note, demonstrated in Figure 44 at bar 21 (1:31). This combination of voice and melodica gives a sensation of performing one instrument as opposed to two separately.

When Pascoal's (2007) vocal pitch fluctuates, it produces a vibrato between notes which I have incorporated and developed in this piece, bars 26 to 29 (1:55) in Figure 45. At this point, I sing the same note as the melodica and gradually lower my vocal pitch, resulting in a vibrato effect that increases the further *flat* in pitch I go. This idea is repeated, now singing *sharp* against the note, which produces the same effect.

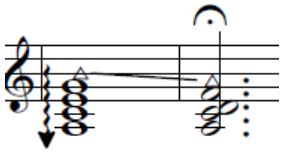

Figure 44. Multiphonic vocal slide, bar 21 (Appendix H)

Figure 45. Multiphonic vibrato effect, bar 28 – 29 (Appendix H)

Multiphonics is a common extended technique incorporated into many compositions for wind and brass instruments, however the polyphonic capabilities of the melodica provide a creative and expressive advantage. I anticipate future developments on this technique will involve creating contrapuntal multiphonic pieces or utilising the 'buzz' effect through singing.

During the research and practice for the above piece, I developed a technique to attain harmonics on the melodica, a traditional multiphonic effect used often on string instruments. This technique is shown in 'Extended Techniques' (de Broize -King 2018a) and is achieved by applying the same technique from pitch bending but using the very top range of the instrument and *overblowing* into the instrument. The note sounded is 2 octaves above the sounding note. This will be discussed further in 'Extended Techniques', later in this study.

Under Water

The melodica is an acoustic instrument with no electronics involved, it can thus be purchased at very low prices and is ideal for experimenting with in ways that can damage it beyond repair. Playing it underwater is a creative way to manipulate the sound, but it is inadvisable to do it with a professional grade instrument. I have not found any examples of performances underwater. However, when I asked Nomura how he has experimented with the melodica, he replied, 'I have experimented with the melodica in different situations such as under water when I played in a concert in a swimming pool' (Nomura 2017). With this knowledge and the initial idea from my research Director of Studies Christopher Hobbs, I began experimenting.

This required a container approximately 55cm wide (provided the melodica is 37 keys or less) so there is room for the melodica and the tube mouthpiece. A shallower box resulted in a comfortable playing position, because when the box is too deep it would hurt my wrists. Putting the box on a low table made reaching the melodica easier.

The container was filled with roughly 8 centimetres of with water so that the melodica was completely submerged. The container was not filled to the top as I needed to lift the melodica in and out regularly. Once this was done, the instrument could be submerged so it filled with water, ready to perform ‘Under Water’ (de Broize-King 2018j). An example of the setup can be seen in Figure 46.

Figure 46. Example of setup for ‘Under Water’ melodica piece

Playing an instrument underwater is unorthodox and requires more preparation than previous techniques discussed. This resulted in a restricted time frame in which to experiment in this area. I decided to incorporate chords, clusters, single melody lines, and flutter-tonguing, as I found these to be the most effective and easiest to achieve underwater. I did not predict that eliciting sound from the melodica while submerged would require an extraordinary amount of lung power, making underwater playing difficult. In the first recording of this piece I believed to have captured many interesting sounds. However, after

emptying the container, I played the melodica to release it of its water and heard the unique sound, which caused me to rewrite and record the piece. This sound was the melodica saturated with water and slowly emptying, freeing up the reeds. This resulted in irregular vibrations, pitch fluctuation, and unpredictable harmonics. The direction of this piece now highlights that unpredictability, making use of the melodica moving in and out of the water.

Analysis

The performance directions for 'Under Water' (de Broize-King 2018j) (Appendix I) make clear that the two lines above the stave represent the constant water level (dotted line), and the melodicas keyboard level (solid line). Figure 47 shows the solid line moving in relation to the dotted line, directing the performer in when and how much the melodica should be submerged. This piece caused frequent reed 'chocking' (where reeds stop vibrating thus no sound is heard) mainly due to water blocking the reed, and from overblowing. Because of this, the performer would have a choice to either wait for the note to sound or to continue playing.

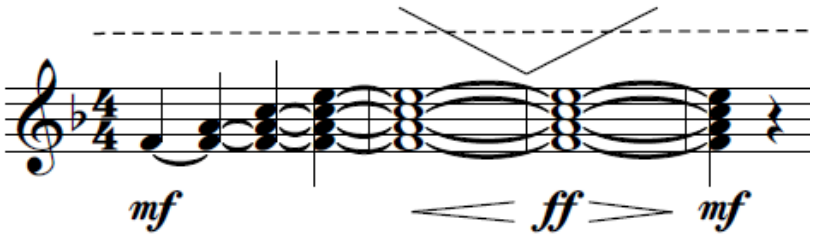

Figure 47. Example of lines on notation depicting melodicas level compared with the water, bar 1 (Appendix I)

Figure 48 shows the monophonic phrase in bar 16 (1:12) which caused frequent reed choking, primarily in the higher register. This was potentially due to the angle at which the melodica which was tilted, directing all the water to the high-pitched reeds.

When playing the opening phrase in Figure 47, bar 1 (0:10), the melodica was filled with water creating a unique sound where the reeds slowly activated from the low register to the top. Once the full chord is heard in bar 2 (0:15), the melodica is submerged to hear the contrast. This results in the chord flattening in pitch which could be an effect of water choking the reeds, preventing them from functioning. I found this sound interesting and decided to utilise it throughout the piece, seen in figure 49 at bar 12 to 13 (0:50), which demonstrates it by sustaining a chord and submerging the melodica repeatedly. The pitch returns to normal when exiting the water but flattens when submerging. The intensity of this effect will vary with different melodicas and performers, contributing to the unpredictability of the piece.

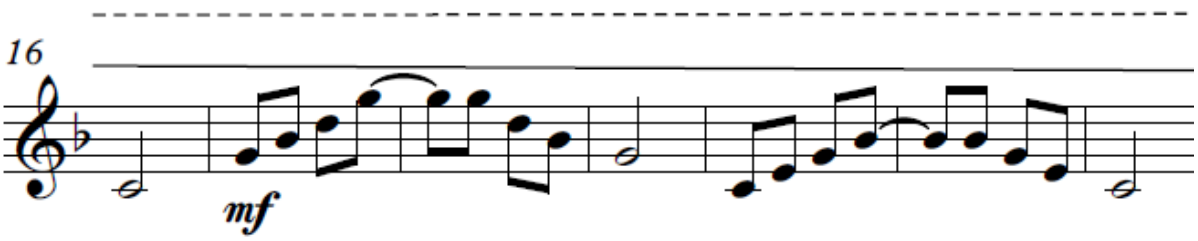

Figure 48. Monophonic lines which caused the reed to choke, bar 16 – 22 (Appendix I)

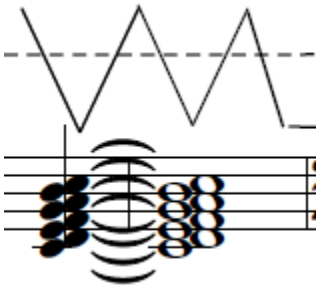

Figure 49. Submerging the melodica repeatedly, bars 12 – 13 (Appendix I)

Exploring polyphonic playing with various articulations was a natural development from monophonic playing and exhibited interesting results such as the flutter-tongue in Figure 50, bar 35 (2:07), which responded better than expected underwater, potentially due to the intense air pressure that forced the reed to vibrate regardless of being submerged.

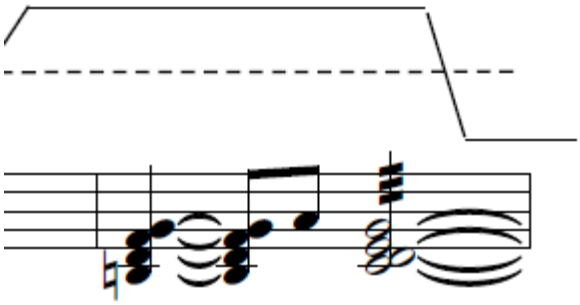

Figure 50. 'Under Water' flutter-tongue, bar 35 (Appendix I)

There are many routes to take from this piece, such as combinations of other techniques like tremolos and preparing the melodica. Experimenting with different parameters, for example other models of melodicas or changing the water level, may uncover more possibilities. To improve this piece in the future I would be inclined to use a different microphone setup. Using an underwater microphone instead of the two microphones surrounding the container would benefit the recording, because it would capture raw sounds not heard in the current recording, and also avoid capturing the unwanted noise of air being released from the melodica.

Extended Techniques

The piece 'Extended Techniques' combines many of the techniques discussed in this study and shows how they can be utilised together (de Broize-King 2018a) (Appendix J). The instrumentation consists of three melodicas, accordion and piano. The accordion is present to demonstrate two different free-reed instruments performing together and what timbre results. The piano is a common accompanying instrument and performs a harmonic backing for the melodica to play over, which is a very likely situation for most melodica players. The three

melodicas consist of the Suzuki pro 37 and M-37C, which provide contrasting timbres with lead melody and harmonic accompaniment, and the Hammond bass extending the melodicas register.

Analysis

This piece is influenced by *P-blot* as is based around numerous extended techniques. It begins with standard playing, then introduces grace notes and various articulations from bar 10 (0:17), swiftly moving into a multiphonic phrase combining tremolos at bar 12 (0:24). This is performed within four bars, shown in Figure 51, displaying the accessibility of the techniques, as little preparation is needed to transition from one to the other. Bar 14 (0:26), in Figure 52, introduces a descending flutter-tongue phrase that is followed by a legato semiquaver run emphasising quick changes in articulation. Alternating between flutter-tongue and legato was challenging, as the mouth becomes tense and the muscles associated with the technique fatigue. This makes it difficult to achieve consistent flutter-tonguing after excessive practice, so I recommend reducing this fatigue by practicing with a relaxed tongue and regular breaks.

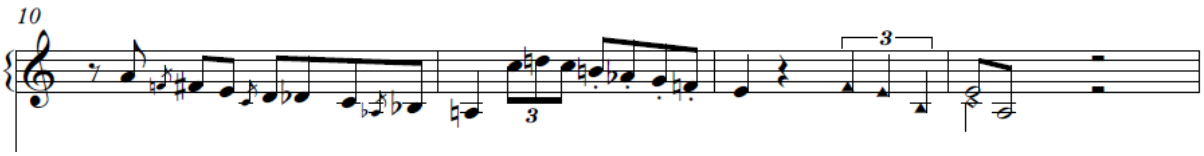

Figure 51. Extended Techniques, bars 10 – 13 (Appendix J)

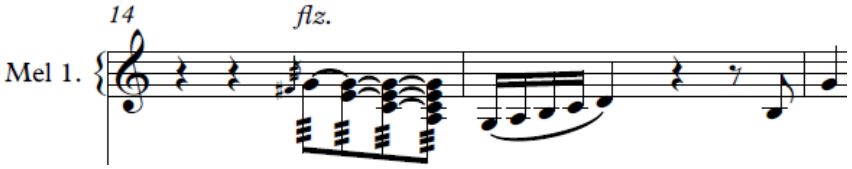

Figure 52. Descending flutter tongue phrase, bars 14 – 15 (Appendix J)

Bar 8's (0:14) single-line melody is developed into chords at bar 17 (0:30), shown in Figures 53 and 54, which highlights the polyphonic advantages of the melodica. Polyphony on the melodica is a reccurring element of the instrument in this research and an important factor in the practitioners' interest (confirmed in their questionnaire responses). A further demonstration of the combination of monophonic and polyphonic playing is Figure 55 at bar 18 (0:33), where the melodica plays a virtuosic sequence followed by a chord swell. The melodica's acute response to breath and key response lends itself to virtuosic lines. Many examples of this are heard in Pascoal's *Rebuliço*, where he performs a virtuosic solo (2007).

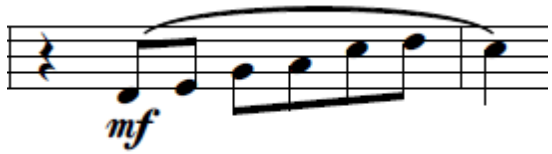

Figure 53. Extended Techniques bar 8 (Appendix J)

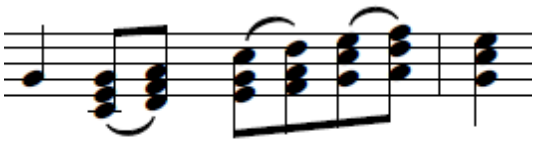

Figure 54. Extended Techniques bar 17 (Appendix J)

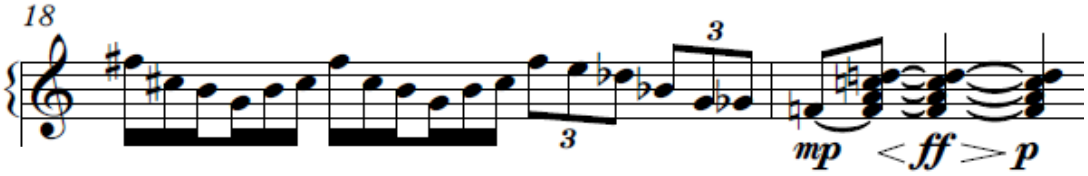

Figure 55. Extended Techniques showing a virtuosic phrase, at bar 18 – 19 (Appendix J)

Pitch bending is introduced at bar 25 (0:47) on the bass melodica where it bends for five bars then returns to the original pitch, seen in Figure 56. During this, the alto melodica is introduced bending a chord over the bass melodicas note which gives an interesting effect of unstable pitch, shown in Figure 57. The video of 'Extended Techniques' illustrates how to move the keys to obtain the pitch bend.

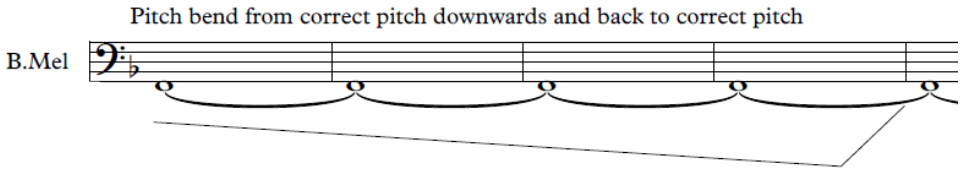

Figure 56. Extended Techniques bass melodica pitch bending, bars 25 – 29 (Appendix J)

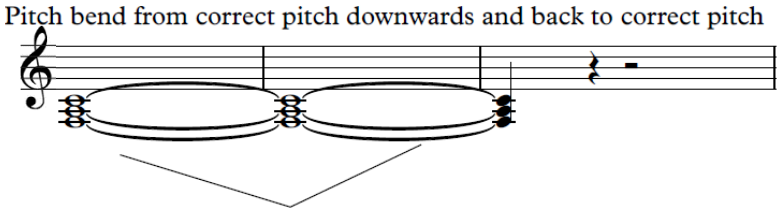

Figure 57. Extended Techniques pitch bending chord, bar 26 – 28 (Appendix J)

Figure 58 highlights the trills and tremolos at bar 29 (0:56) but with the one-handed technique. Initially, one melodica plays the trills in its highest range, which develops at bar 35 (1:08) when both melodicas tremolo chords an octave apart, (Figure 59). This effect is especially expressive when used with other melodicas to broaden the texture and utilise the whole register. This is emphasised by the section that follows in Figure 60 at bar 39 (1:15) and the ending where the whole range of the melodica is incorporated, reflecting the piece 'Chords' discussed previously.

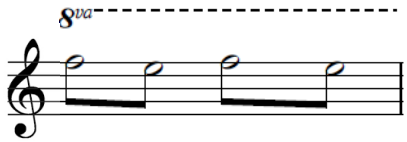

Figure 58. Extended Techniques, bar 29 (Appendix J)

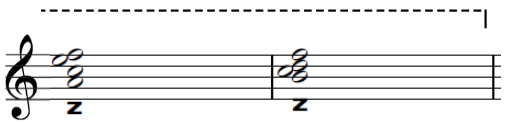

Figure 59. Extended Techniques, bars 35 - 36 (Appendix J)

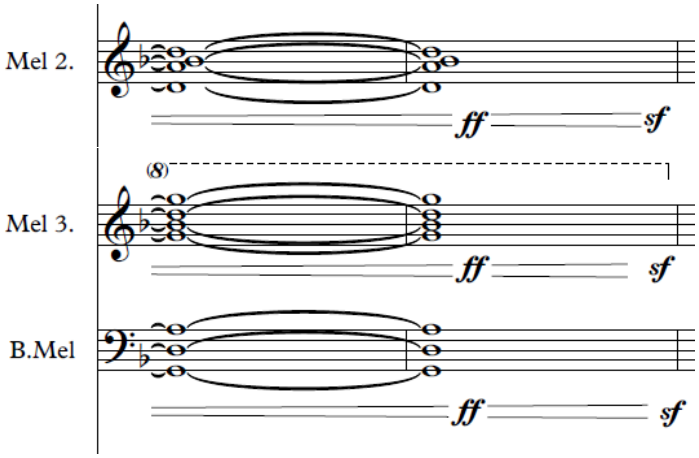

Figure 60. Extended Techniques, chords at bars 39 – 40 (Appendix J)

Tube interactions feature briefly in this piece, entering at bar 43 (1:23), shown in Figure 61, with a call and response between the two melodicas. This requires time for the performer to switch to the tube mouthpiece, if they have not already. This bar incorporates pinging the tube during the initial sounding chord with melodica one, followed by melodica two pinging a previously sustained chord. This short phrase is difficult to play, as there is little time between each tube interaction to catch the tube and repeat the motion.

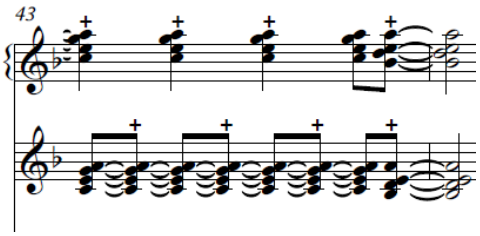

Figure 61. Extended Techniques tube interaction, bar 43 (Appendix J)

This leads to the technique that produces a harmonic pitch (mentioned briefly in ‘Multiphonics’). The video shows how to perform the harmonic, using a closeup shot of the melodica (shown in Figure 62 below). The harmonic is played at bar 46 (1:30), Figure 63, and harmonises two octaves higher than the initial note. In my own practice, harmonics are something I have attained by accident on rare occasion, but during my practice surrounding pitch bending, I found that slightly pressing the highest few notes on the melodica and exhaling intensely achieved a harmonic. I chose to incorporate this into ‘Extended Techniques’ with close up visuals depicting how to achieve it.

Figure 62. Frame from ‘Extended Techniques’ video illustrating how to perform a harmonic (de Broize-King 2018a)

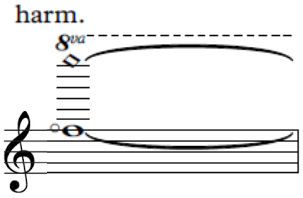

Figure 63. Extended Techniques harmonic, bar 46 (Appendix J)

If I were to continue this research in the future, I would combine more techniques simultaneously, for example tremolos with one melodica and pitch bends with another. Being creative in combining numerous techniques would undoubtedly yeild interesting timbres for future compositions. A different route of development could be to compose work for one melodica which exercises its polyphonic advantages with two hands, addressing its creative and expressive capabilities in a situation where an individual could practice without need for other musicians or backing tracks. Japanese practitioners are already utilising the melodica in this way, so there exists a strong foundation to build upon.

Conclusion

The aim of this study was to shape an understanding of the melodica and improve its perception through compositions demonstrating its creative and expressive capacity, which links to the beginning of this study where Gieshoff said,

> the melodica retains its particular charm of being a toy-like instrument which in turn means that it's not as balanced and 'perfected' as other instruments (e.g. piano). Its unevenness can be exploited creatively by performers and composers. (Gieshoff 2017a).

I have used the melodica as a creative and expressive instrument in this research despite its toy-like portrayal in society, and have provided substantial evidence of its

capability and diversity, shown through the ten original compositions, and my compositional analysis of them. I have offered an insight of its current perception from musicians through interviews, questionnaires, videos, compositions, and my own personal experience with the melodica. Other melodica players have influenced my work and increased my understanding around the potential for a melodica player's expressiveness and creativity, and I anticipate these findings will be discussed to the benefit of the development of the melodica, leading it to a future where all its elements are applied and exploited to their fullest.

The use of video and scores was not only to demonstrate how I achieved certain techniques, but an attempt to make the melodica more accessible to the public through this work and the Internet. It is my hope that the materials produced in this research have a positive impact on melodica playing. Since releasing the compositions public on YouTube, I have had very positive feedback and much interest shown in the melodica's capabilities. Separate from the Internet, my enthusiasm for the melodica is shared through many projects I am involved with, principally through The Upsiders band. Through this, I have advanced my skill level and share my enjoyment for this wonderful instrument with the public, increasing its awareness as a serious instrument rather than a toy.

During this research, Yamaha has released its first melodica aimed towards adults. This stands as evidence the melodica is beginning to flourish in Japan; but in western culture it is yet to be accepted in the same way. For the melodica to progress as a serious instrument it requires commissioned works to take full advantage of its capabilities, more musicians incorporating its sound into their music, and more sophisticated models to be designed and introduced to the market. This is currently happening through the Melodica Men who recently released advanced duet books and their own melodica brand, which prove an increasing demand for melodica music.

As people's perceptions of the instrument change, the degree to which it is incorporated in performance and composition will increase, which in turn will further its recognition and therefore public appreciation. The melodica's development is in its infancy, and composers will continue to experiment. As Gieshoff says, 'there are plenty of possibilities to experiment with various parameters…in order to discover more complex sound worlds' (2017a)

This study has various limitations, firstly being the absence of scholarly literature surrounding the melodica. This may be due to its toy-like perception, giving the impression it is not worth studying. Also, the melodica is most popular in Japan giving reason to believe if any significant research focusing on the melodica exists, it will be written in Japanese. This would make finding sources more difficult. Another limitation is regarding this study's research method, namely practice-based research. With the practical element of this thesis, being the original compositions, I was hoping to achieve the goal of showing the melodica's capabilities. However, this is subjective to the listener, and my personal stance on the melodica can be seen as biased.

As a result of this research, I have become more confident in experimenting with the melodica's capabilities and become a better composer and performer. I believe the pieces I have composed show a diverse range of expressiveness, however after this experience I feel I can now execute these techniques better and compose pieces that demonstrate more creative ways of using the melodica. This research can be taken to PhD level through many routes, for example, the melodica and use of electronics, or melodica pedagogy. The popularity of the melodica is increasing due to its accessibility and versatility, subsequently I believe it requires further research. I hope this study is used by musicians to improve their awareness of the melodica, but predominantly inspire them to perform, compose and experiment with the instrument further.

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Appendix A

Notation for the piece ‘Flutter Tongue’

Flutter Tongue

Performance Directions

Flutter-tonguing requires a relaxed tongue. Practice rolling your "R's" before hand with and without the mouthpiece.

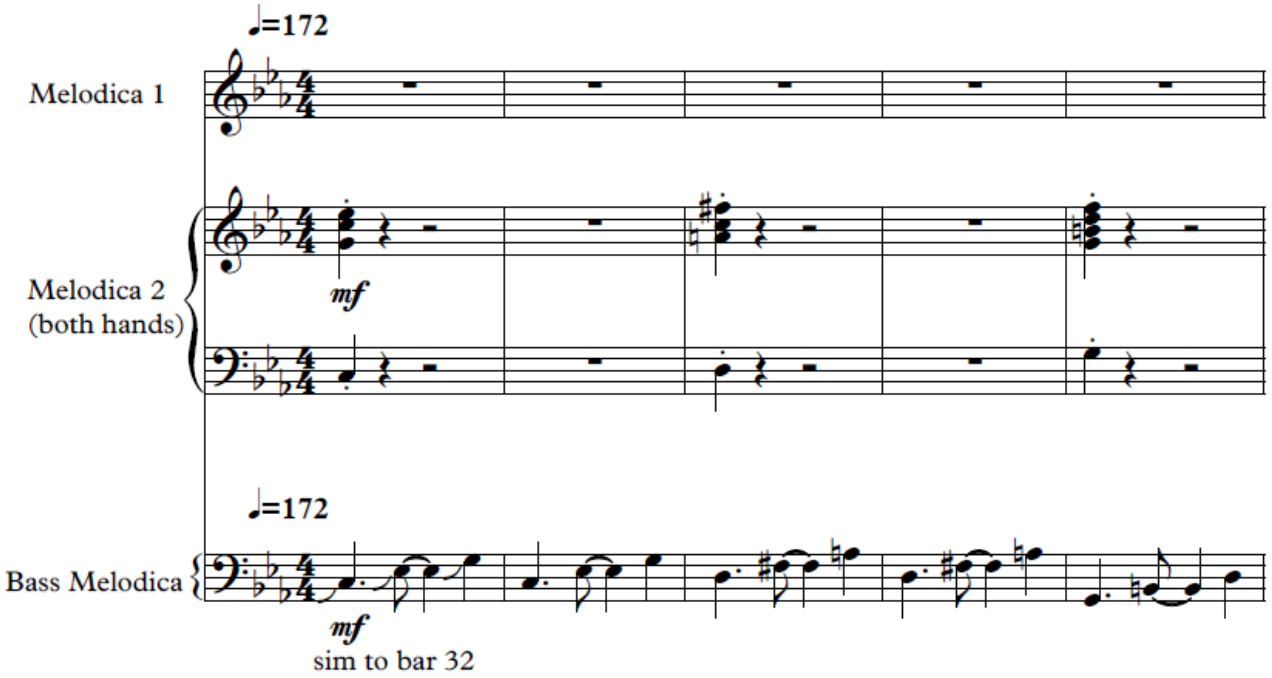
The first encounter of flutter tongue is represented with both "flz." and the tremolo marking. After this it will be represented only by the tremolo marking.

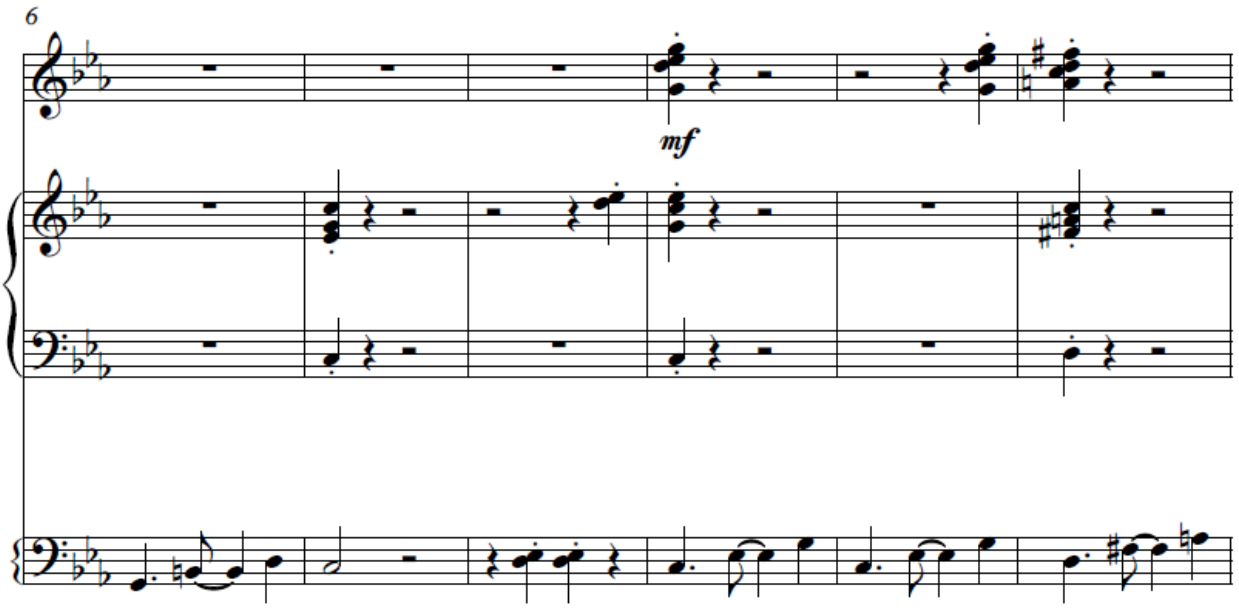
Good breath control is needed as flutter tonguing will naturally make you play louder.

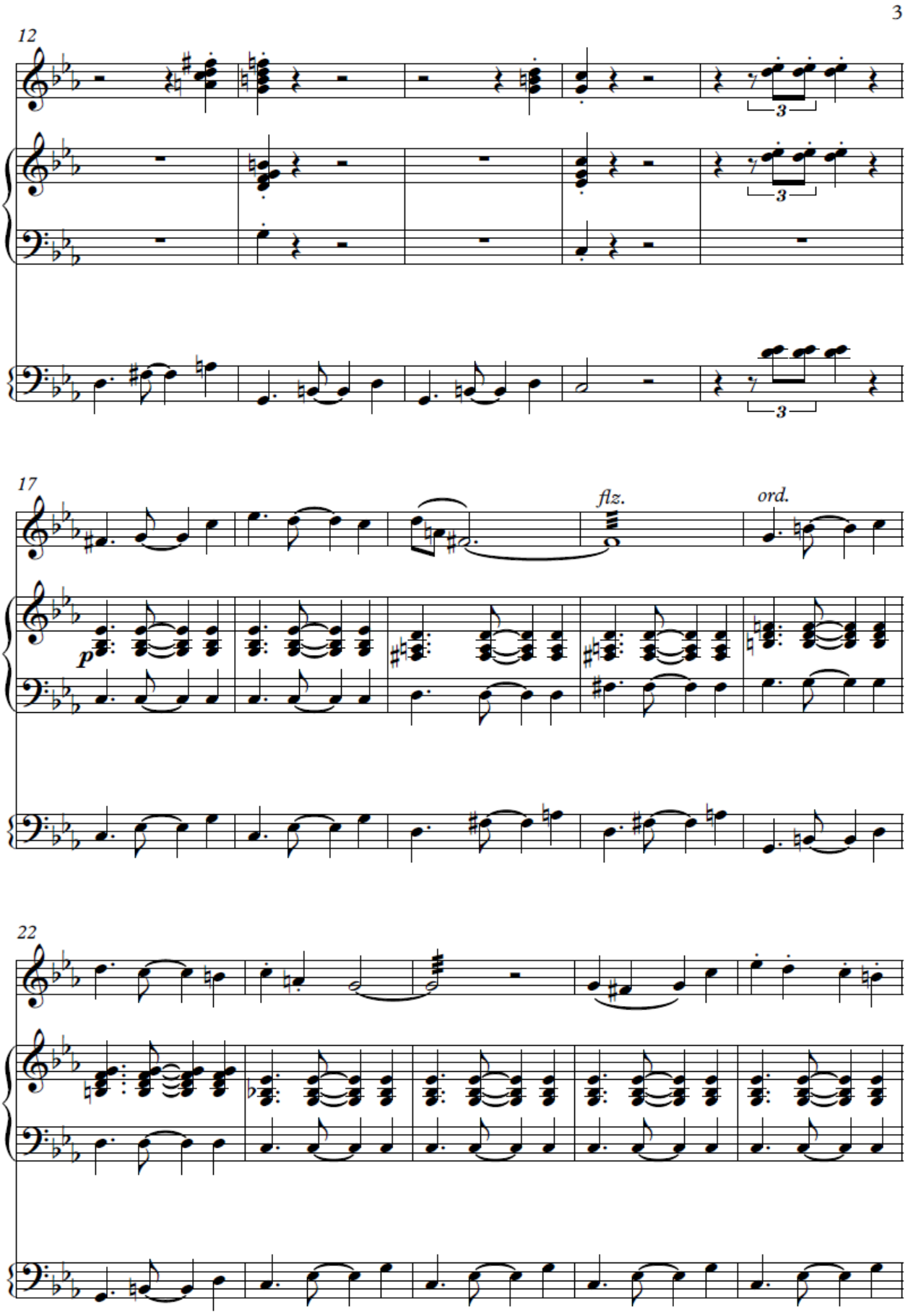
Melodica 2 should be played either strapped around the body, or on a platform, so you can play with 2 hands.

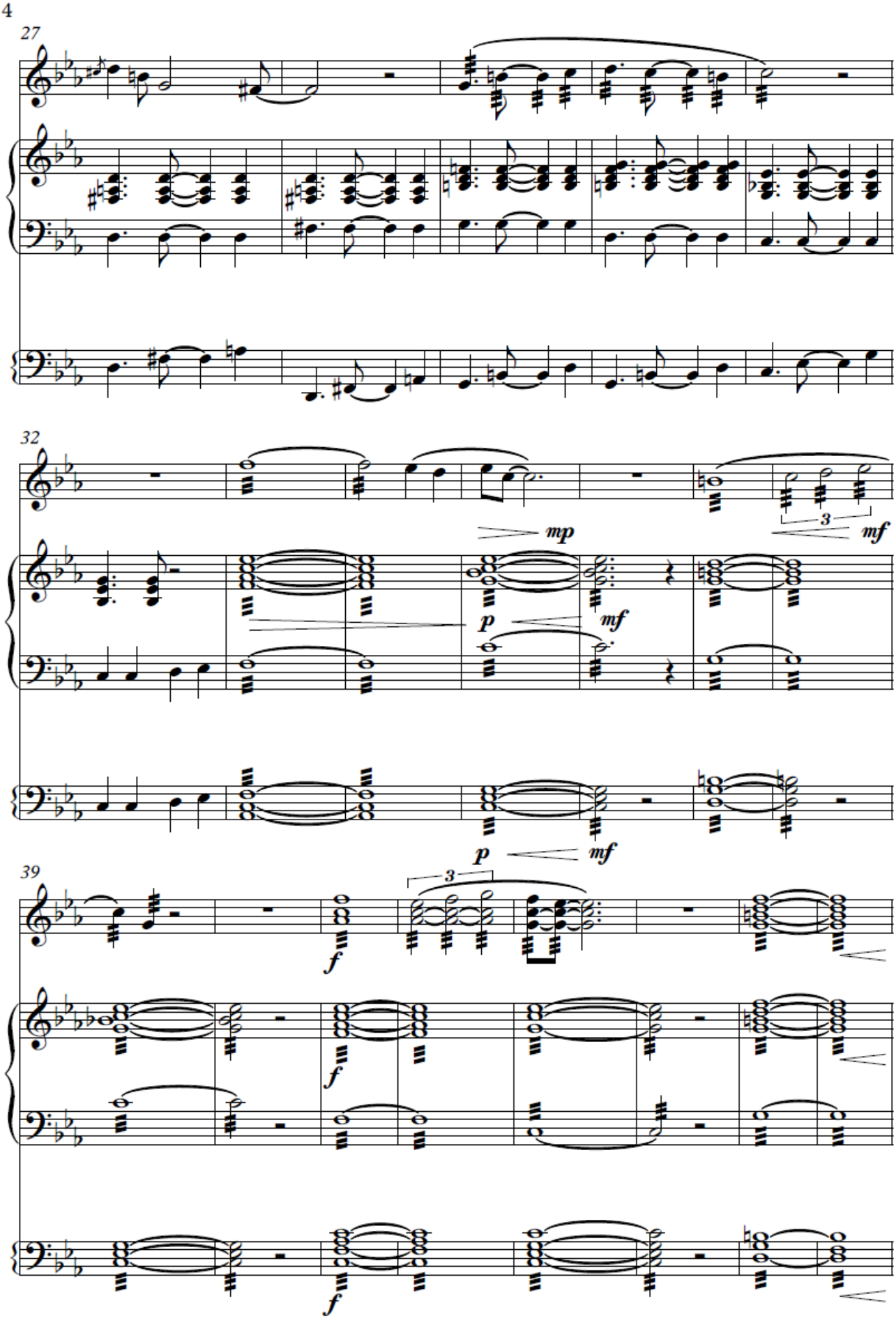
Flutter Tongue

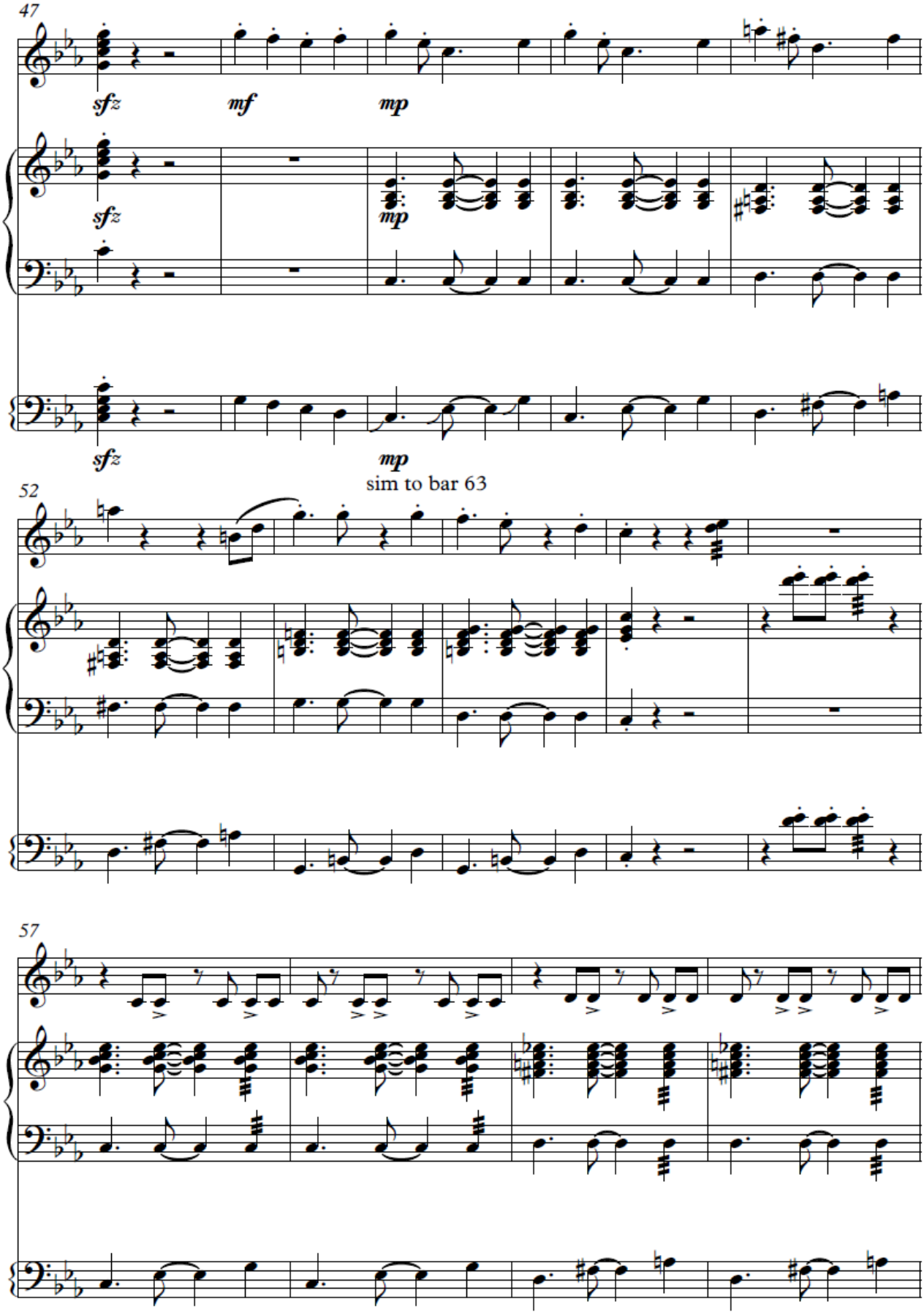
Nathan de Broize-King

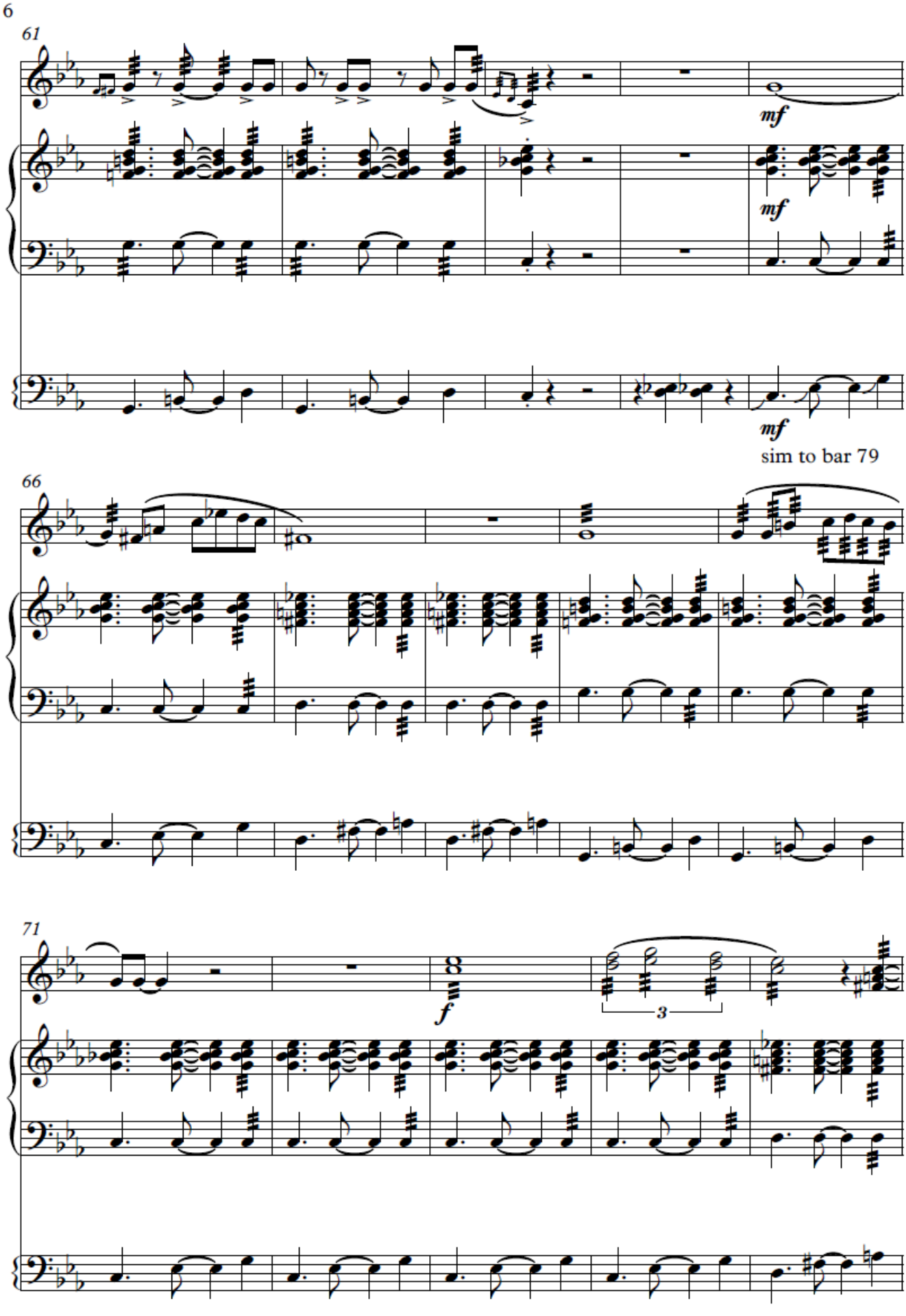


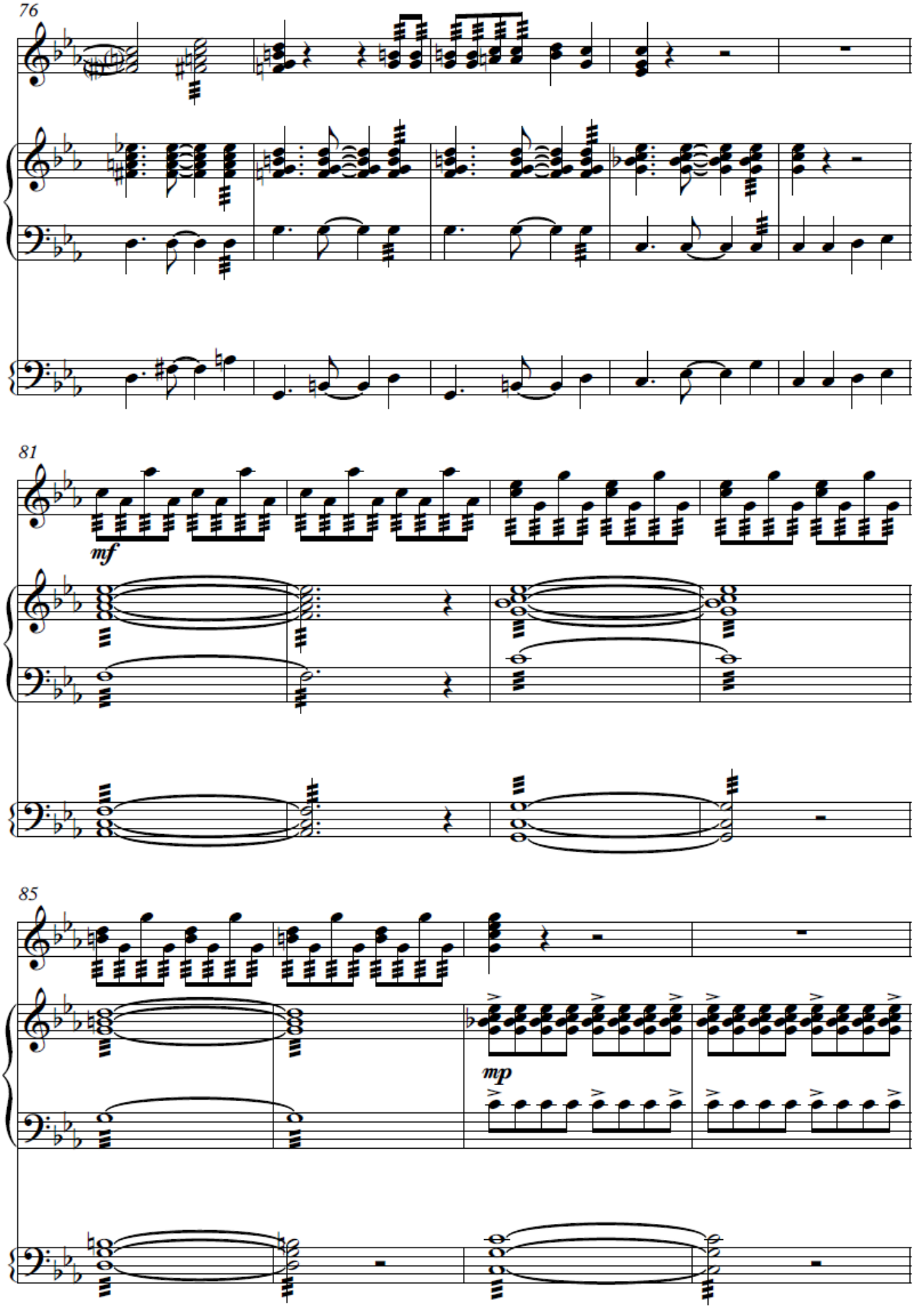


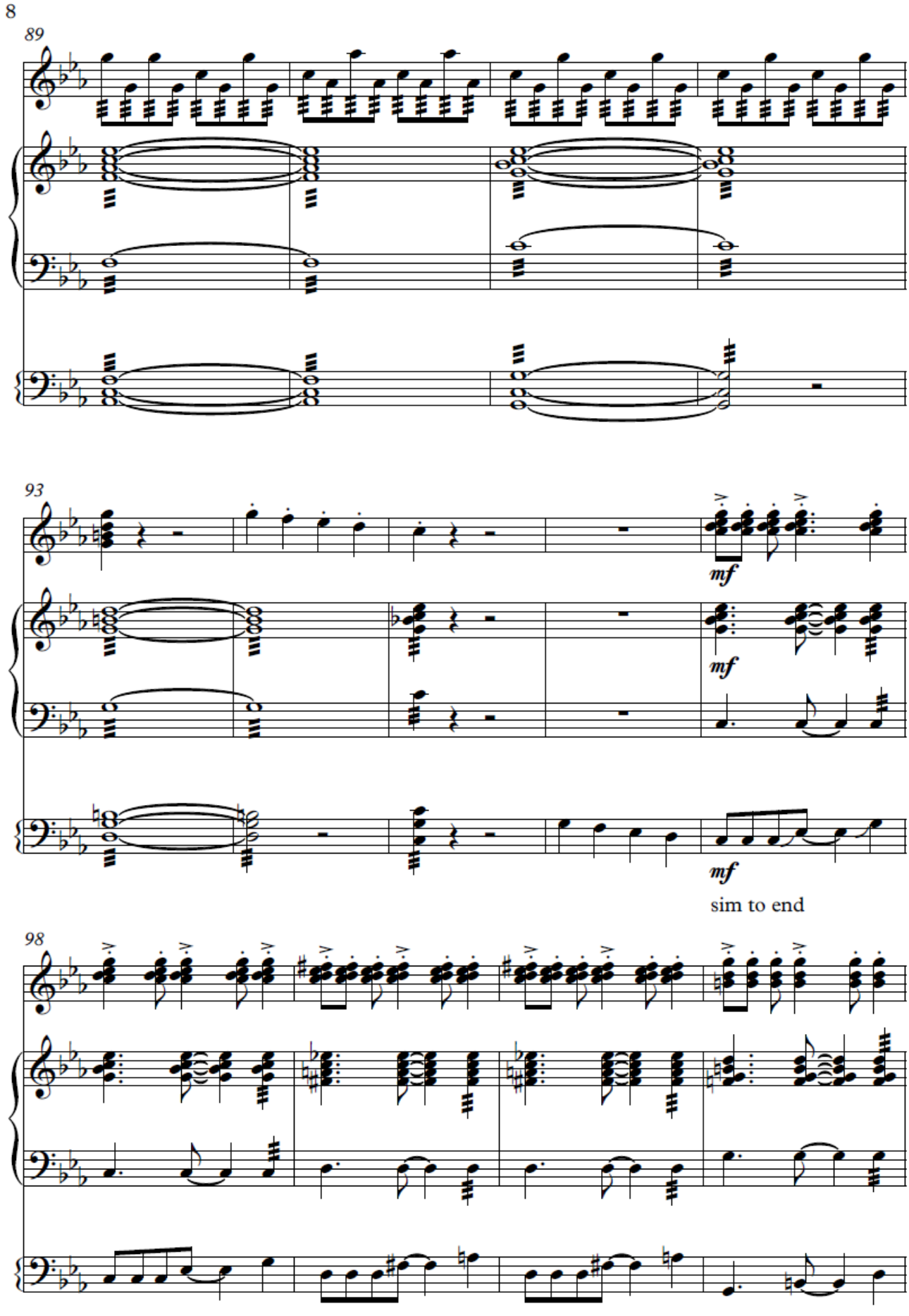

3
12
3
3
17
flz.
ord.
p
22

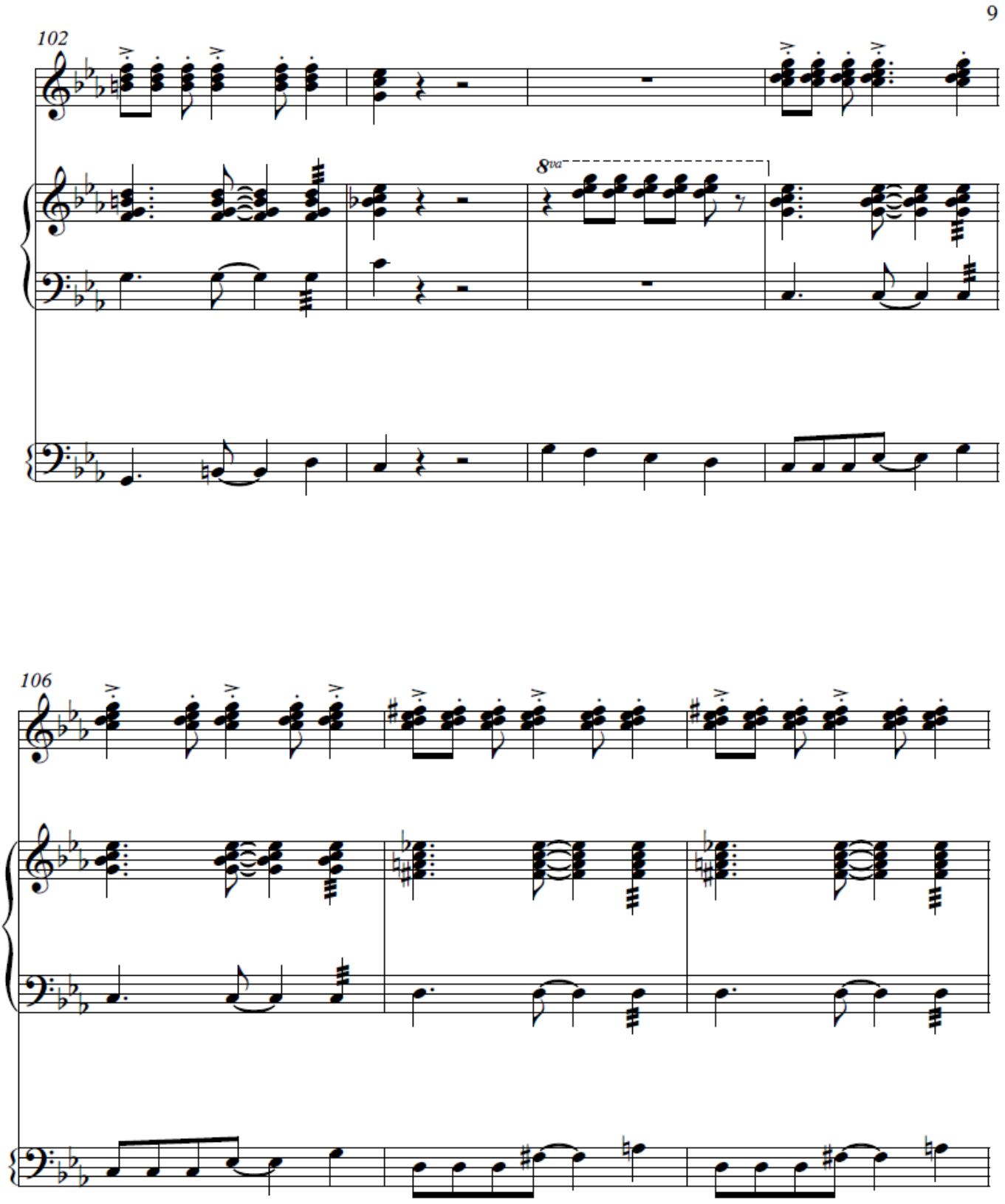

4
27
32
mp
mf
p
mf
3
39
f
3


47
sfz
mf
mp
sfz
mp
sfz
mp
52
sim to bar 63
57

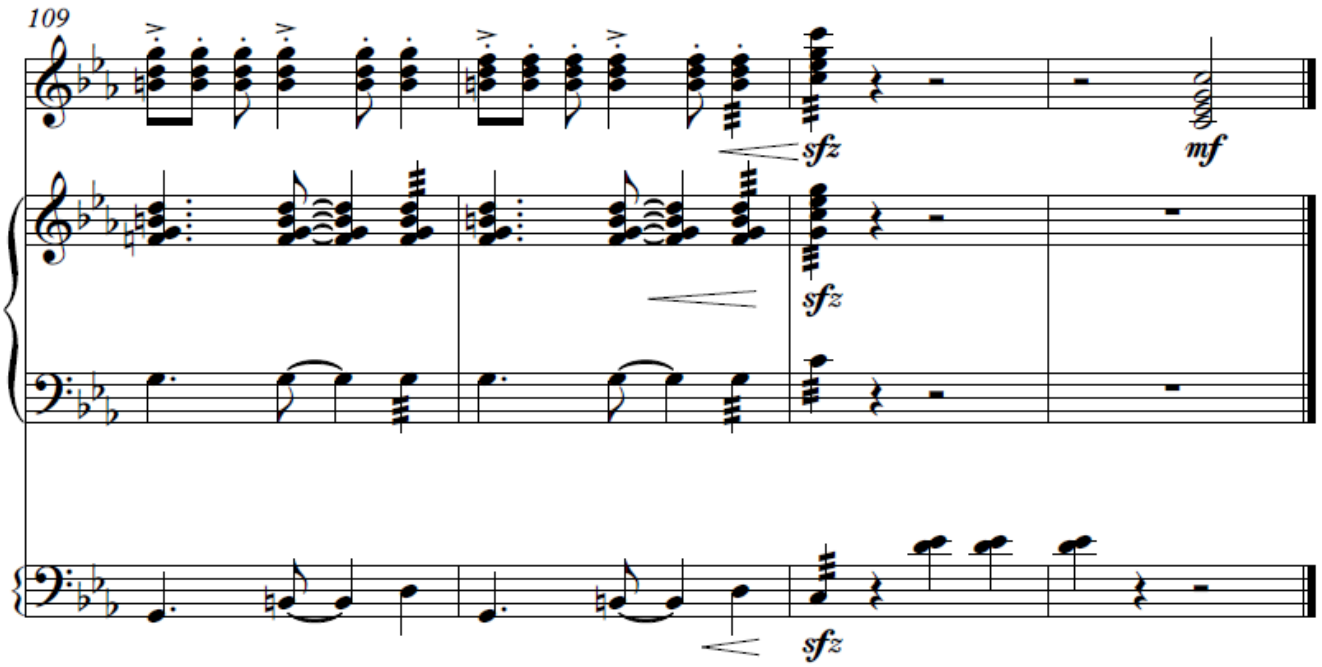

6
61
mf
mf
mf
sim to bar 79
66
71
f
3


76
81
mf
85
mp


8
89
93
mf
mf
mf
sim to end
98


9
102
8va
106

10



Appendix B

Notation for the piece ‘Pitch Bends’

Pitch Bends

Performance Directions

This piece requires a precise touch and breath control. To pitch bend the notes you must press the key down a fraction so the reed is patly activated by your breath. By pressing the note down further the pitch will rise to what it was originally tuned to.

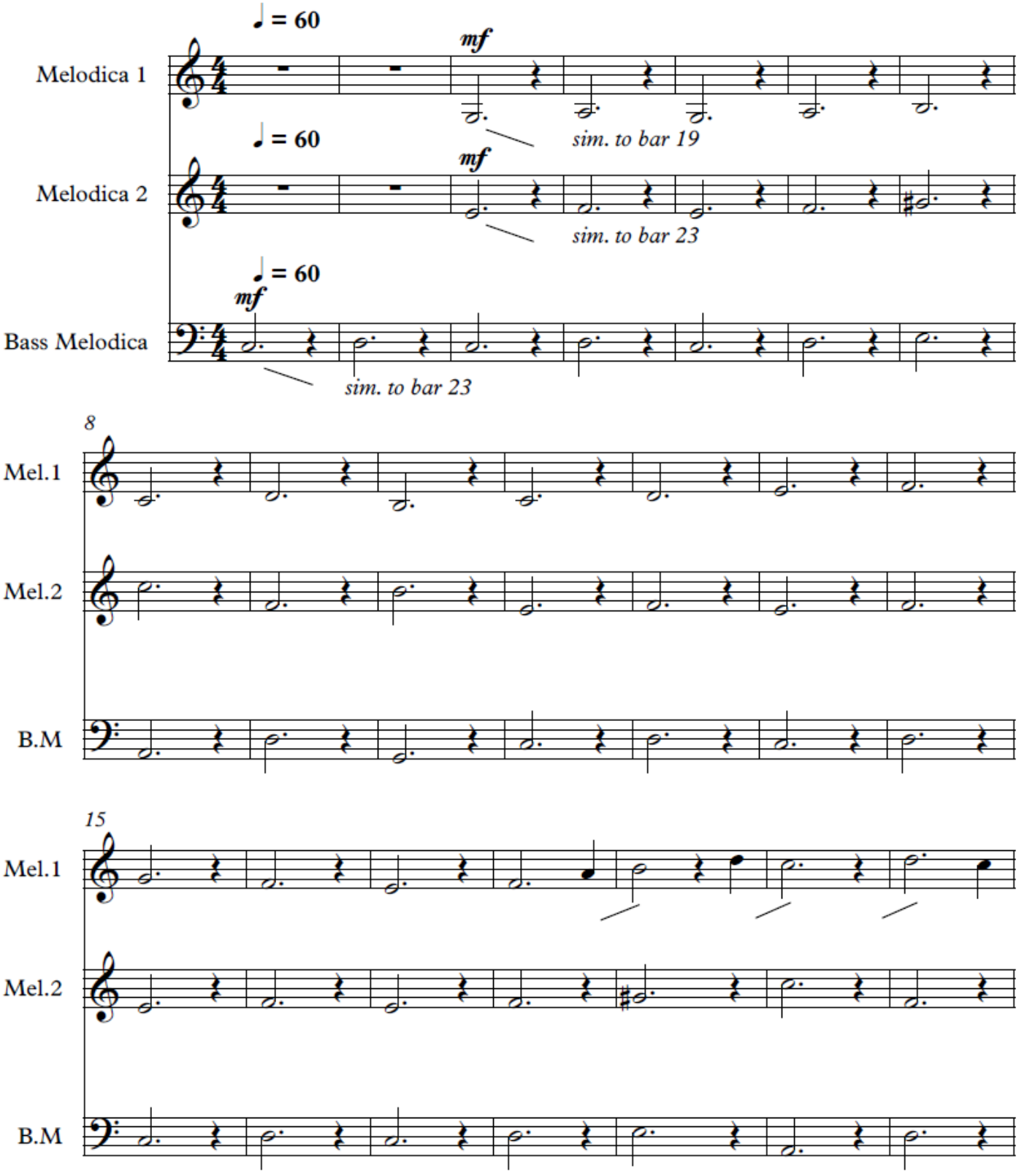
With this piece you should aim to get the biggest difference in pitch with the bends as possible. A semitone lower than the original note is a success.

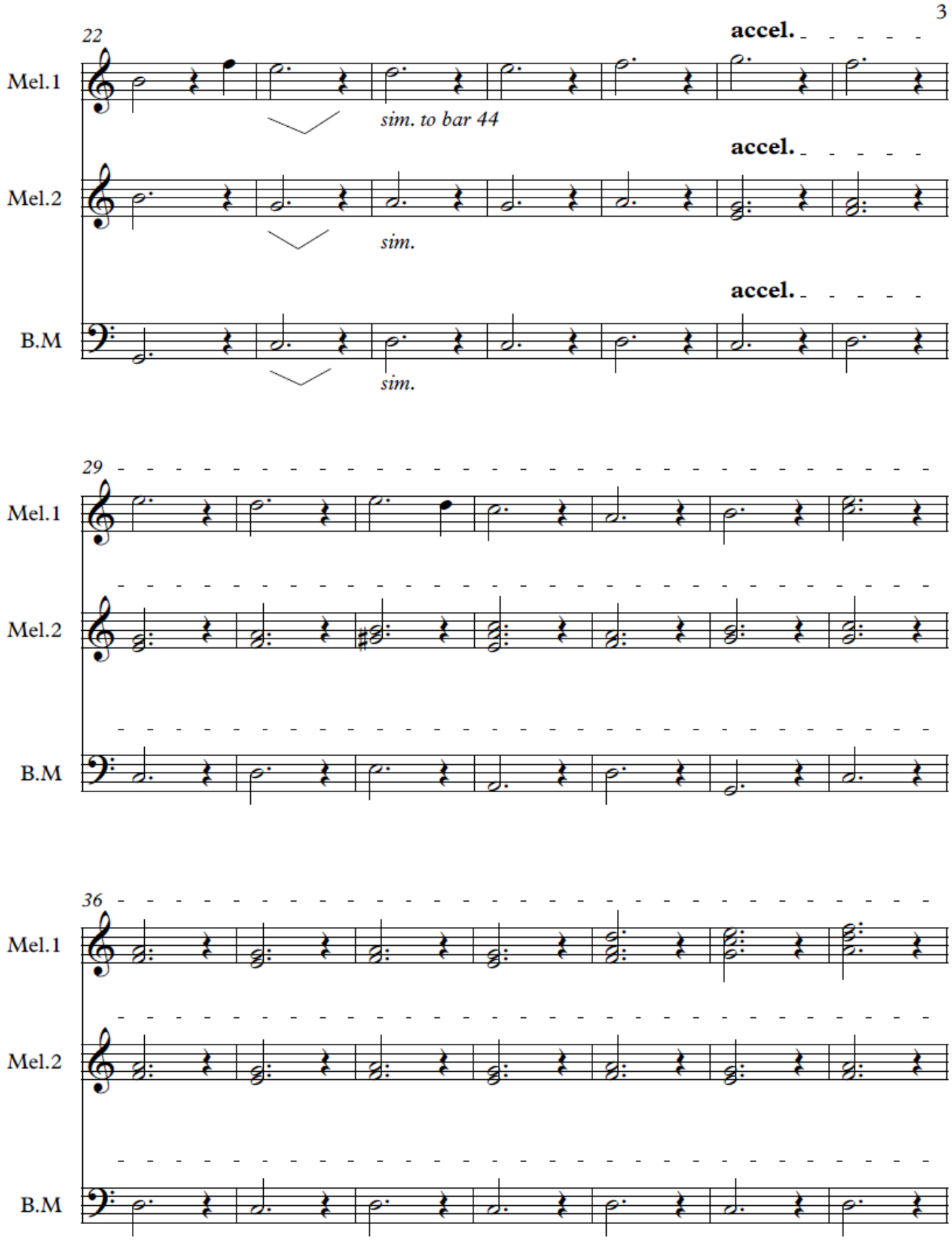
Pitch bending chords requires a very steady hand. I suggest resting your fingers against the front of the note as leverage due to the precise nature of the technique.

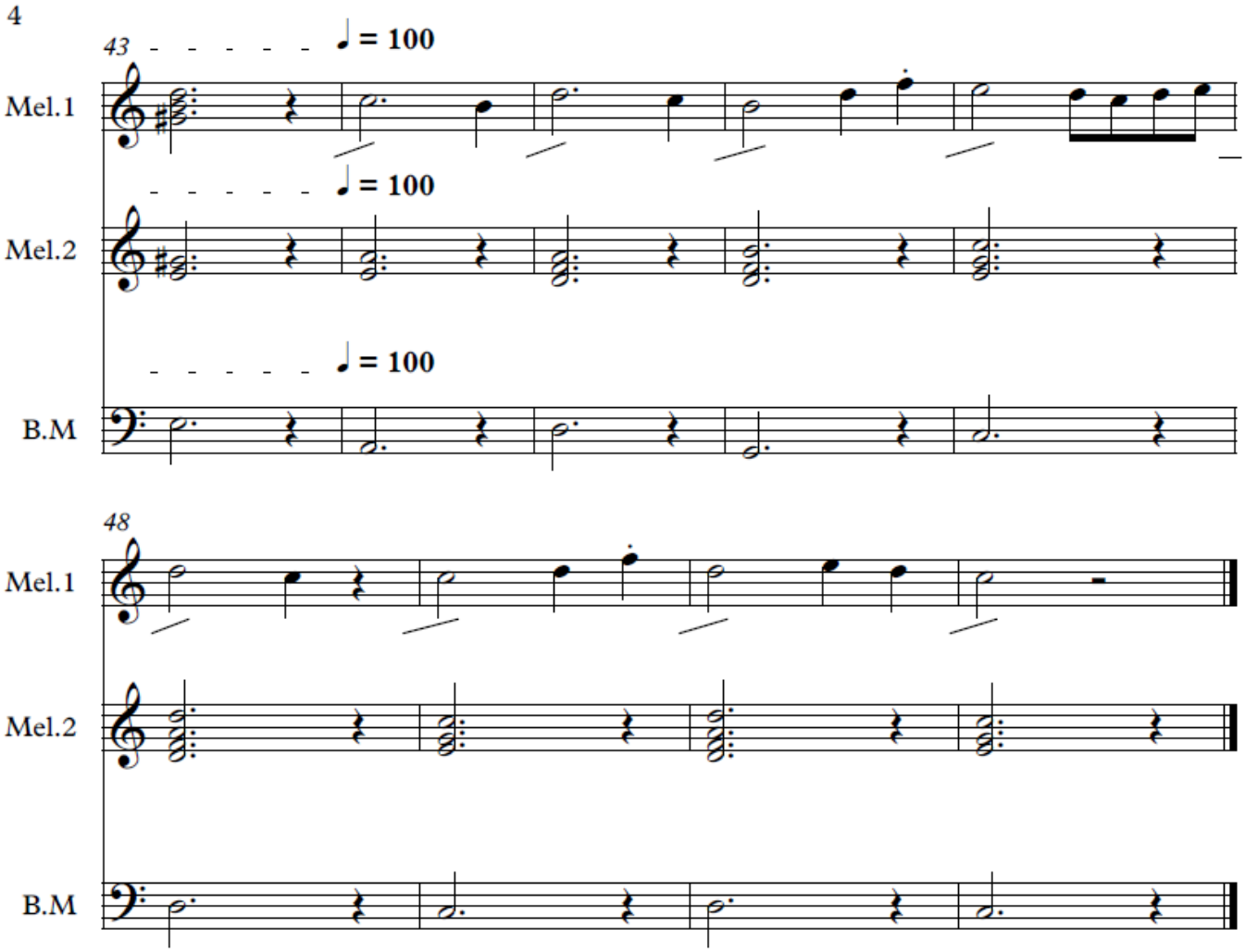
Pitch bend lines show rising up and/or down from the note.

Pitch Bends

Nathan de Broize-King




3
22
accel.
Mel.1
sim. to bar 44
accel.
Mel.2
sim.
accel.
B.M
sim.
29
Mel.1
Mel.2
B.M
36
Mel.1
Mel.2
B.M


4
43
♩ = 100
Mel.1
♩ = 100
Mel.2
♩ = 100
B.M
48
Mel.1
Mel.2
B.M

Appendix C

Notation for the piece ‘Alternate Tunings’

Alternate Tunings

Performance Directions

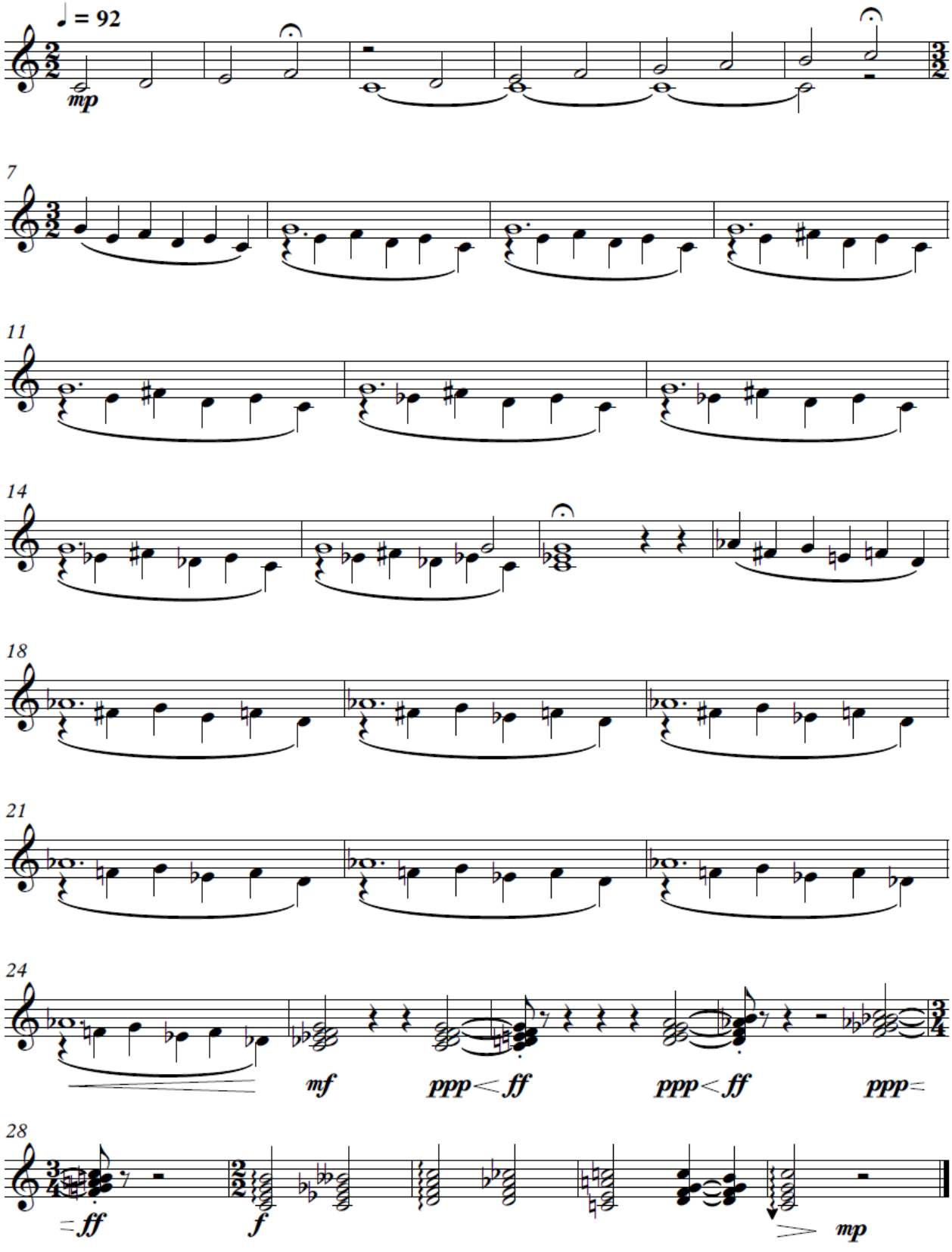
To retune the melodica see the melodica retuning document, and follow the melodica retuning tutorial.

You may use my tuning as a guide and be creative with your own.

Alternate Tunings

Melodica must be tuned
to alternate tuning.

Nathan de Broize-King



Appendix D

Notation for the piece ‘Swells’

Swells

Performance Directions

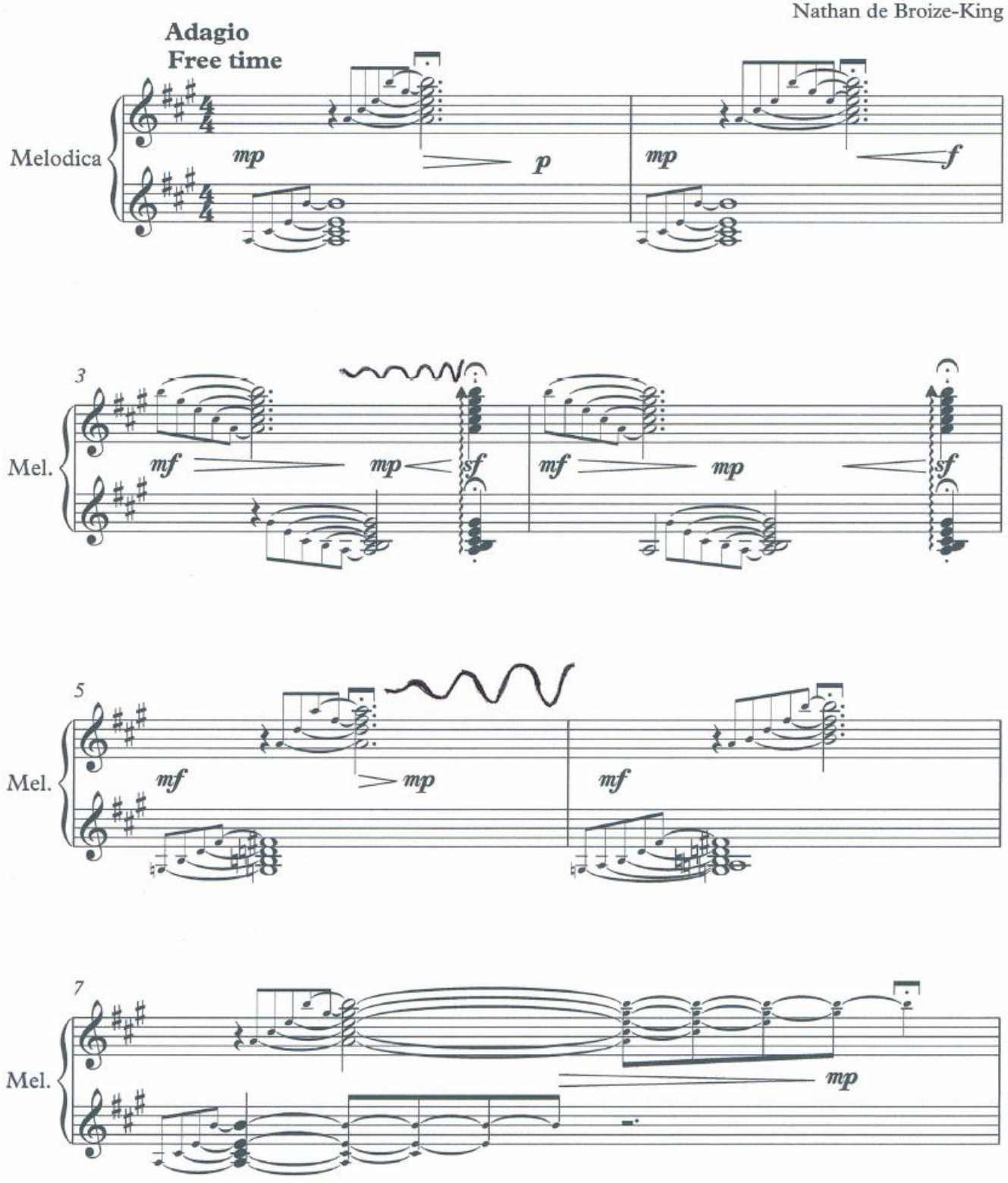
The performer has the freedom to build the chords at what tempo they feel free during the free time sections.

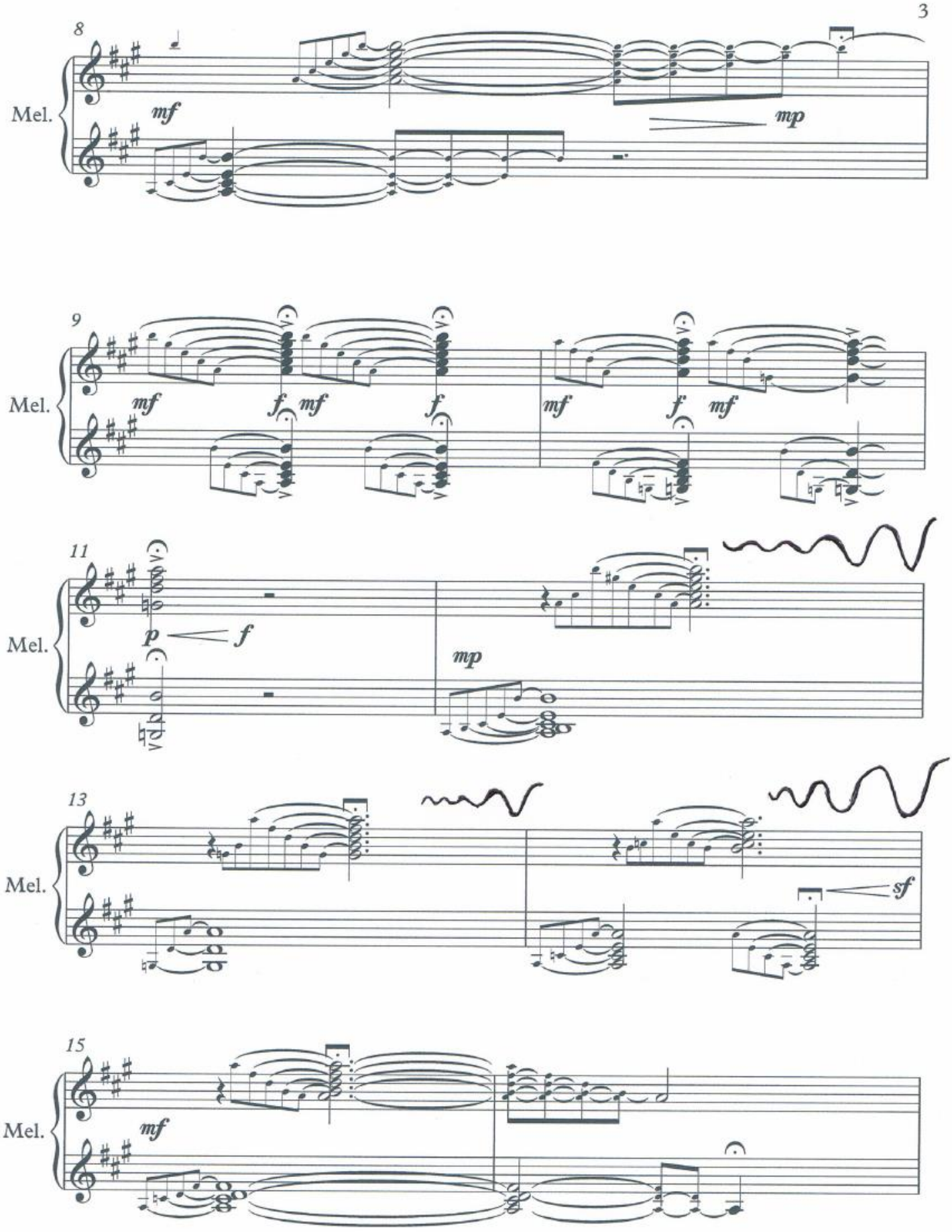
For vibrato directions, the shape of the vibrato lines will reflect the intensity, widness, and length of the effect.

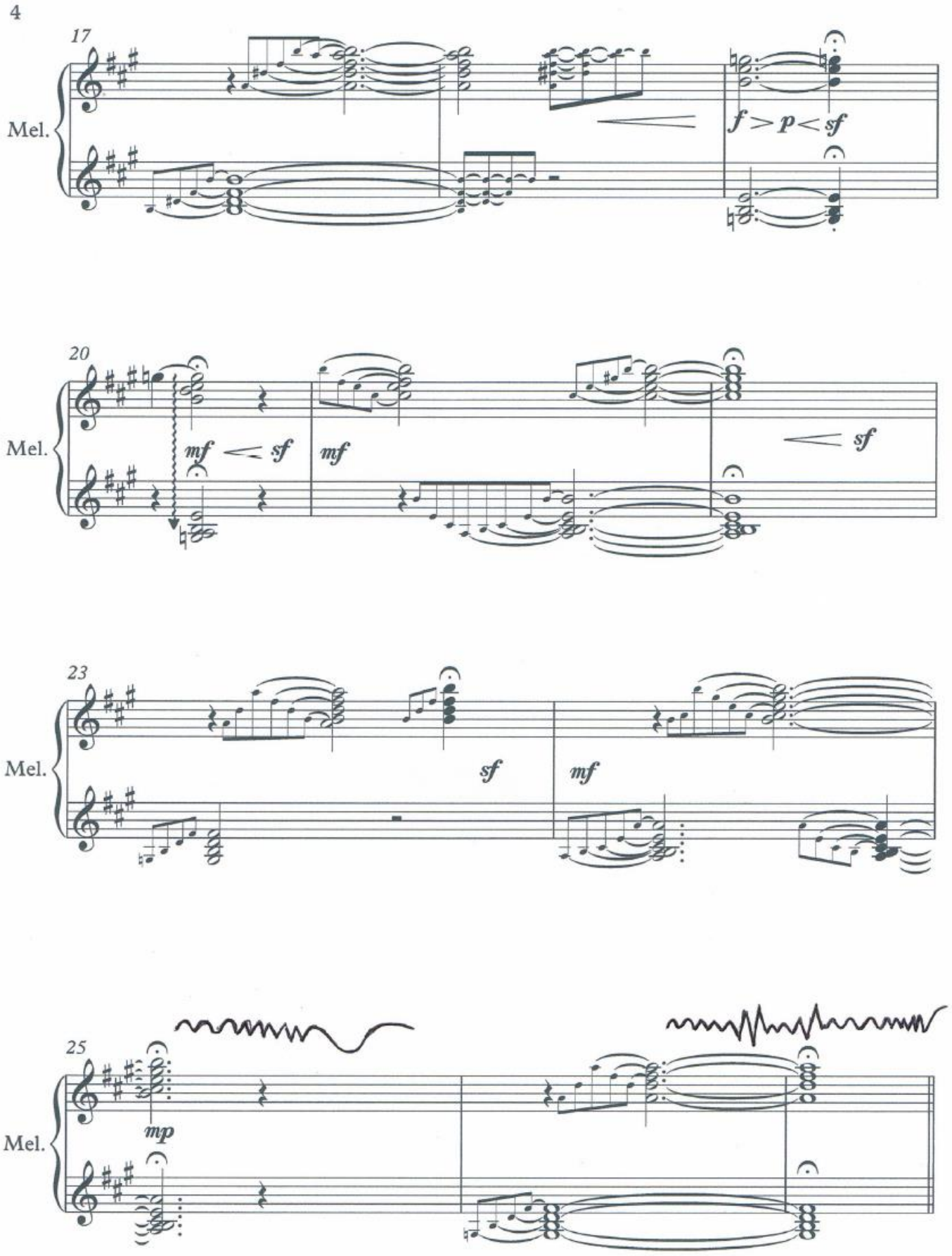
During bars 27-30 the vibrato must outline semiquavers, so two of each note are heard even though only one is written. This is shown with the tremolo marking and vibrato line.

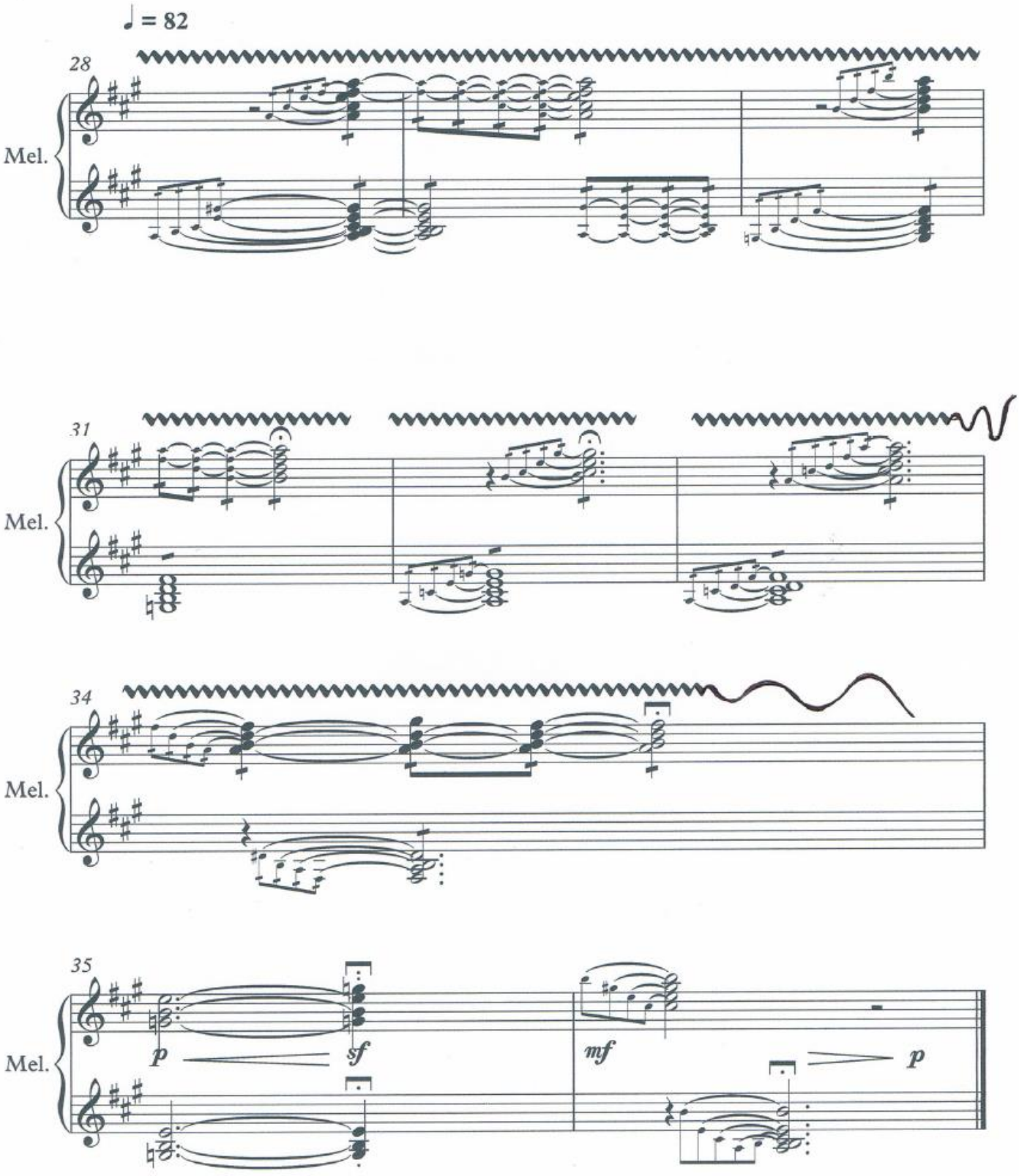
Swells

Nathan de Broize-King




3
8
Mel.
mf
mp
9
Mel.
mf
f
mf
f
mf
f
mf
11
Mel.
p
f
mp
13
Mel.
sf
15
Mel.
mf


4
17
Mel.
f > p < sf
20
Mel.
mf < sf
mf
sf
23
Mel.
sf
mf
25
Mel.
mp


♩ = 82
28
Mel.
31
Mel.
34
Mel.
35
Mel.
p
sf
mf
p

Appendix E

Notation for the piece ‘Chords’

Chords

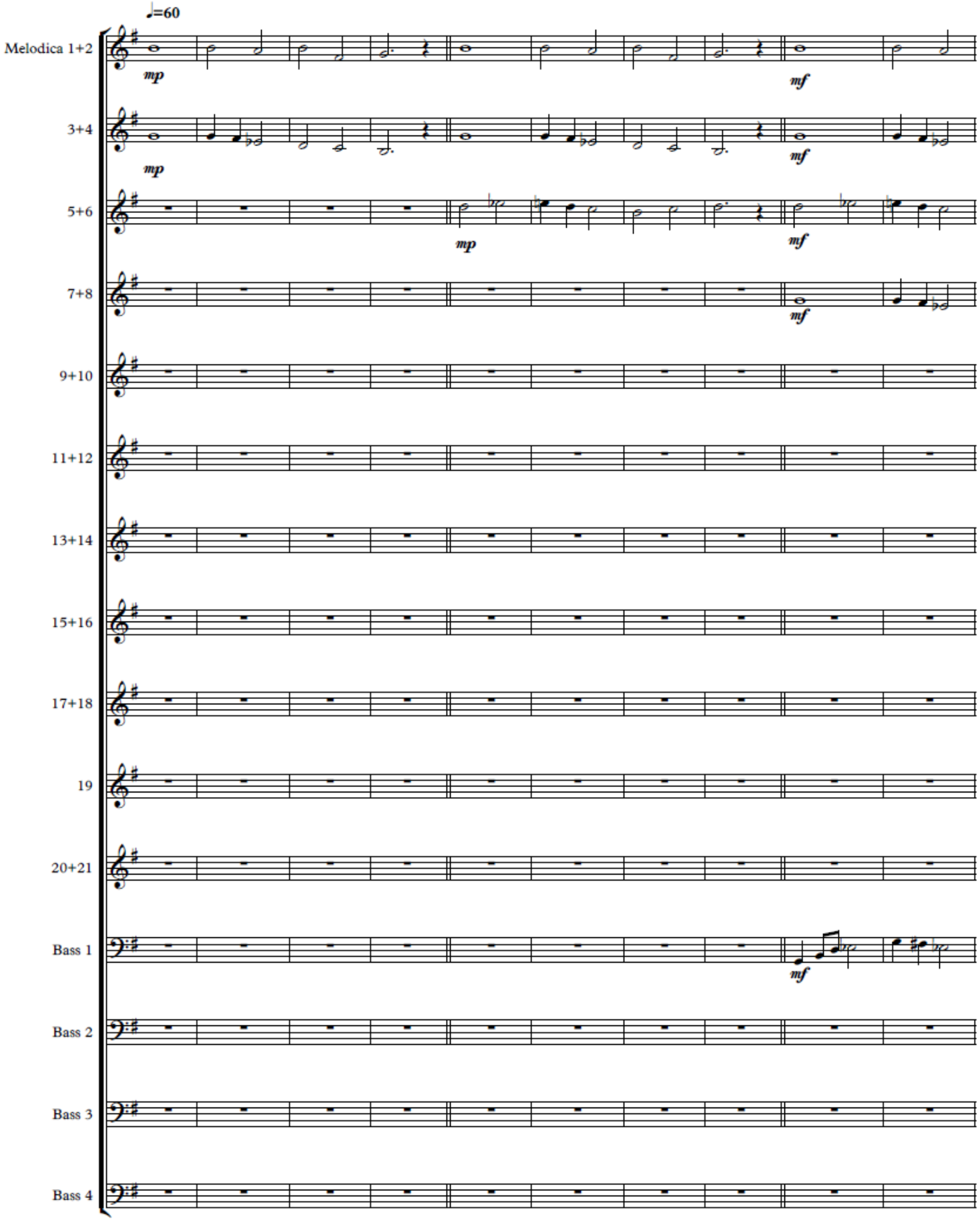
Performance Directions

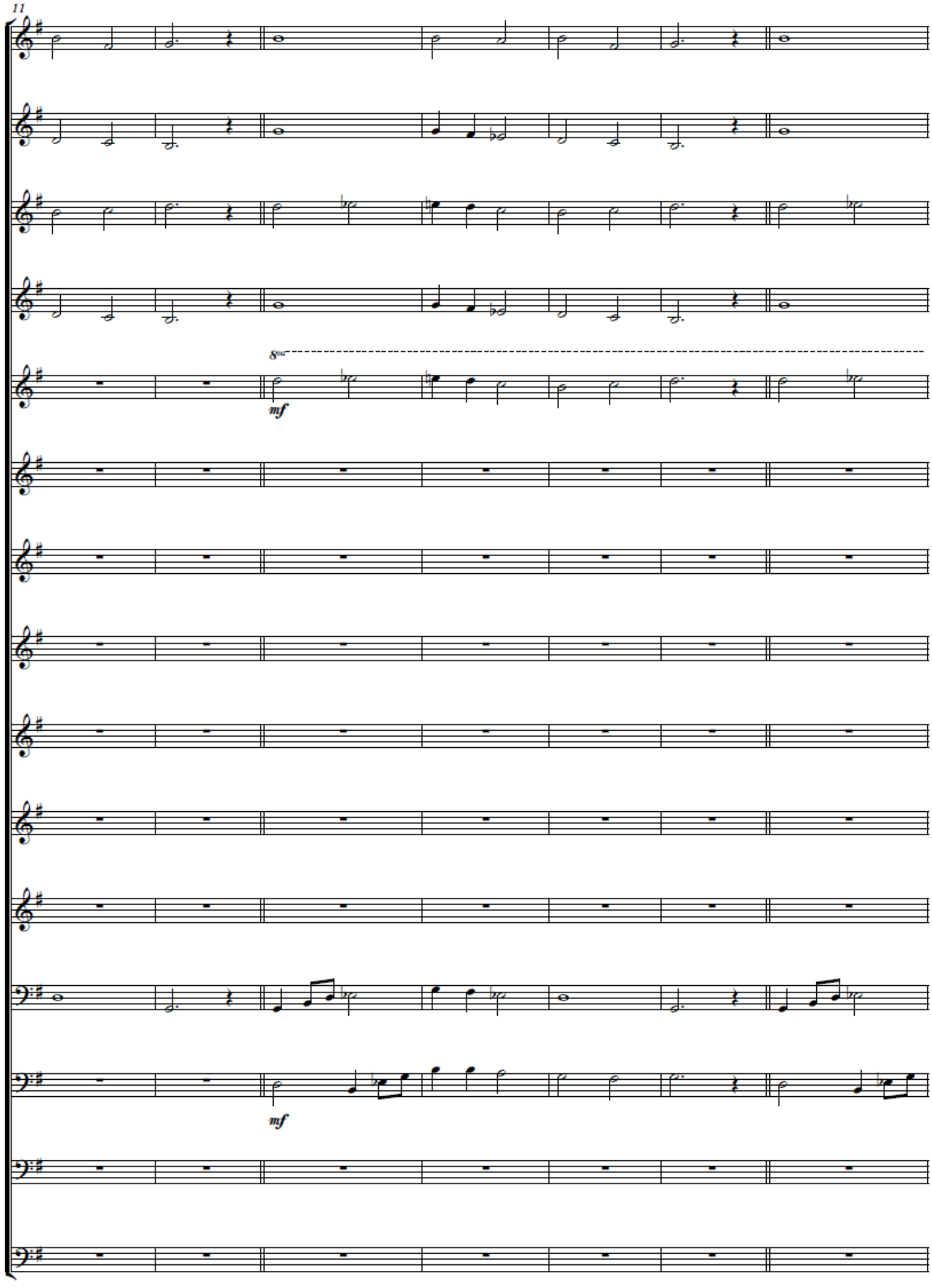
This piece should be played with as many different types of melodicas possible. This will create interesting timbres and produce a chorus effect from the small difference in tunings.

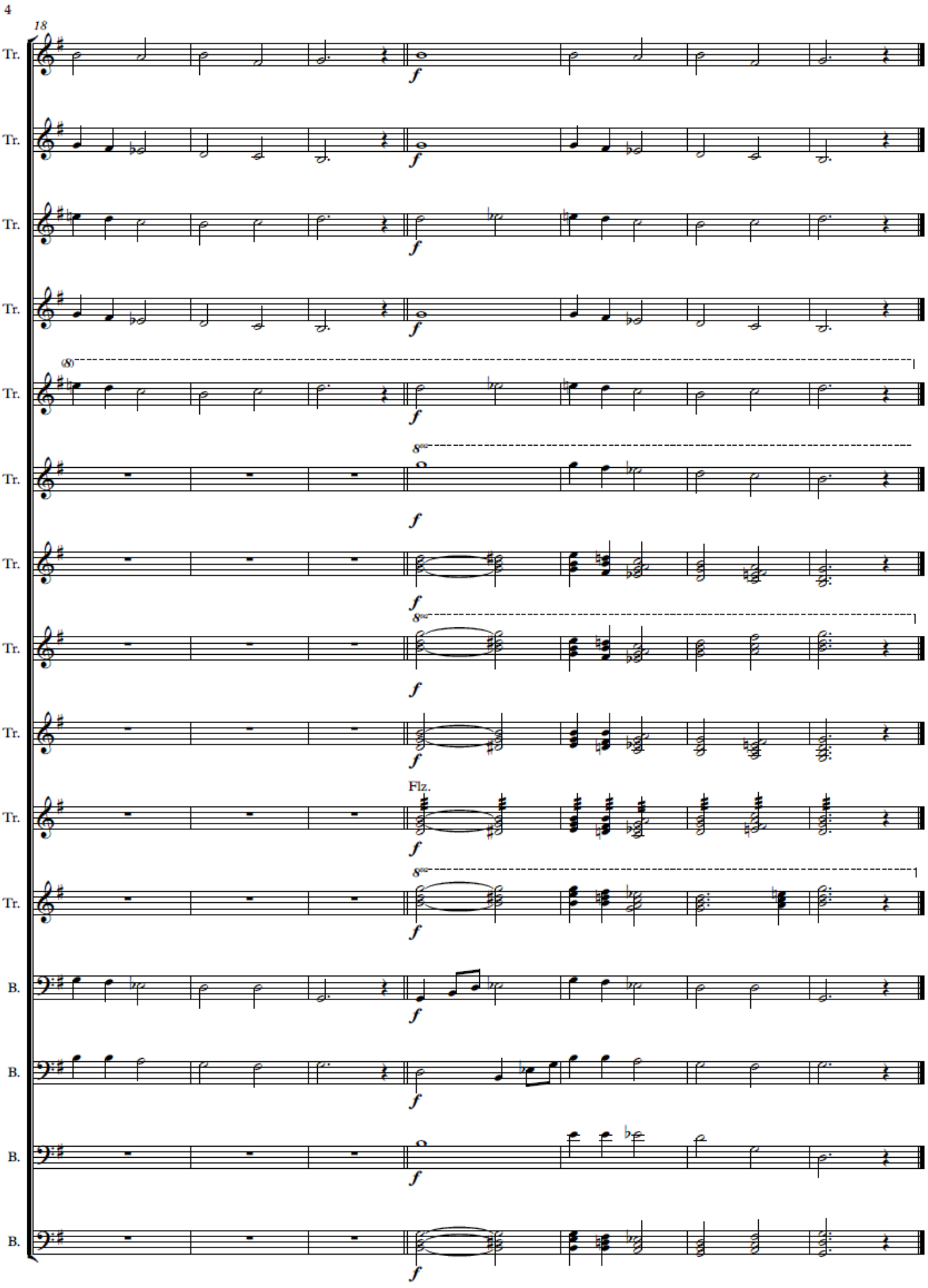
25 melodicas are not essential but the more used the greater the chorus effect will be.

Chords

Nathan de Broize-King




11
Tr.
Tr.
Tr.
Tr.
8va
Tr.
mf
Tr.
Tr.
Tr.
Tr.
Tr.
Tr.
Tr.
B.
B.
mf
B.
B.


4
18
Tr.
Tr.
Tr.
Tr.
(8)
Tr.
8va
Tr.
f
Tr.
8va
Tr.
f
Tr.
Flz.
Tr.
8va
Tr.
B.
B.
B.
B.

Appendix F

Notation for the piece ‘Tube Interaction’

Tube Interaction

Performance Directions

The tube is essential for this piece. For optimum comfort have the melodica on a platform at chest height. The tubes are not very long so can be uncomfortable to play with.

The melodica must be somewhere stable where you can play notes with your right hand and be ready to interact with the tube with your left.

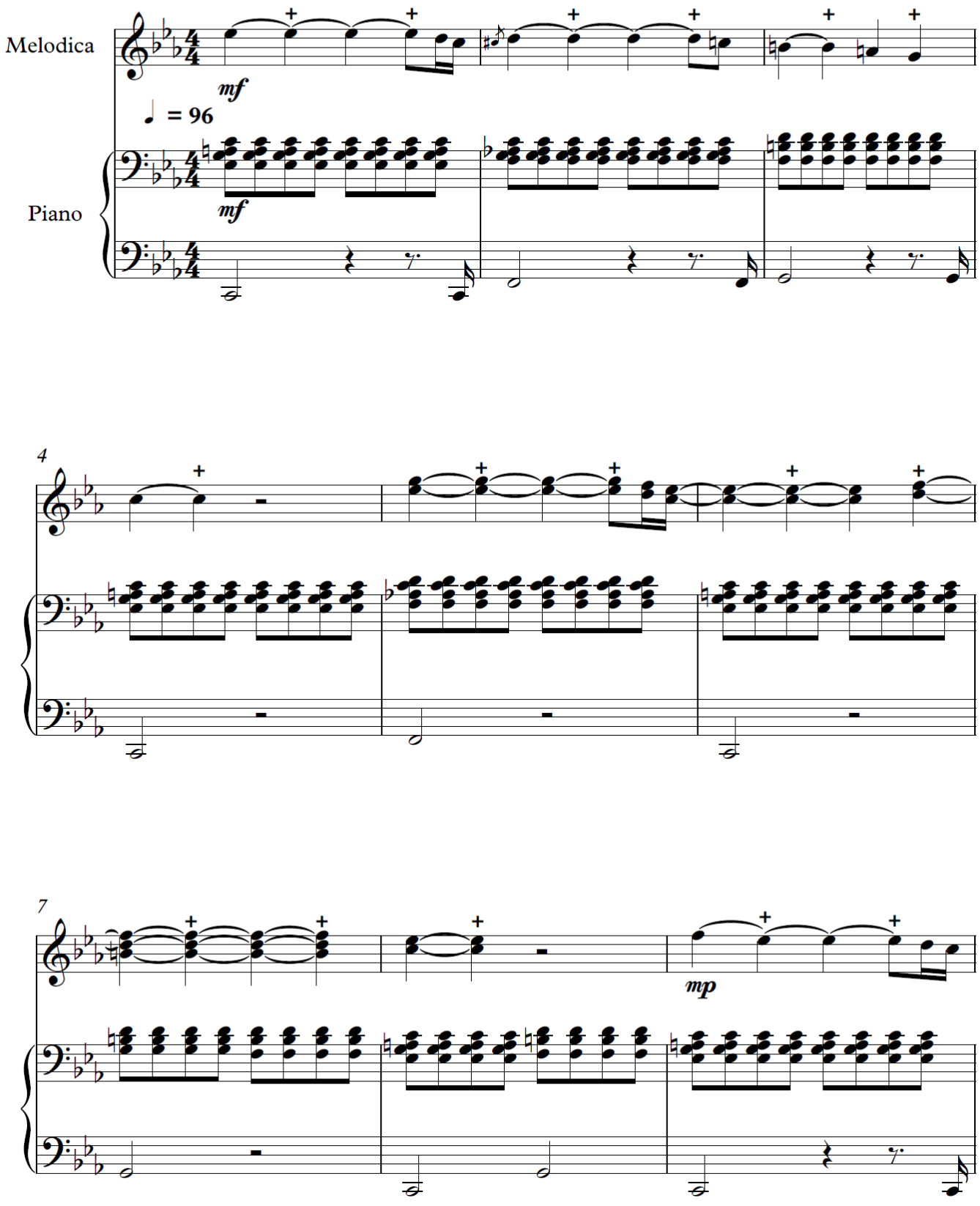
When pinging the tube be aware that the mouth piece may leave your mouth if it is not stable enough.

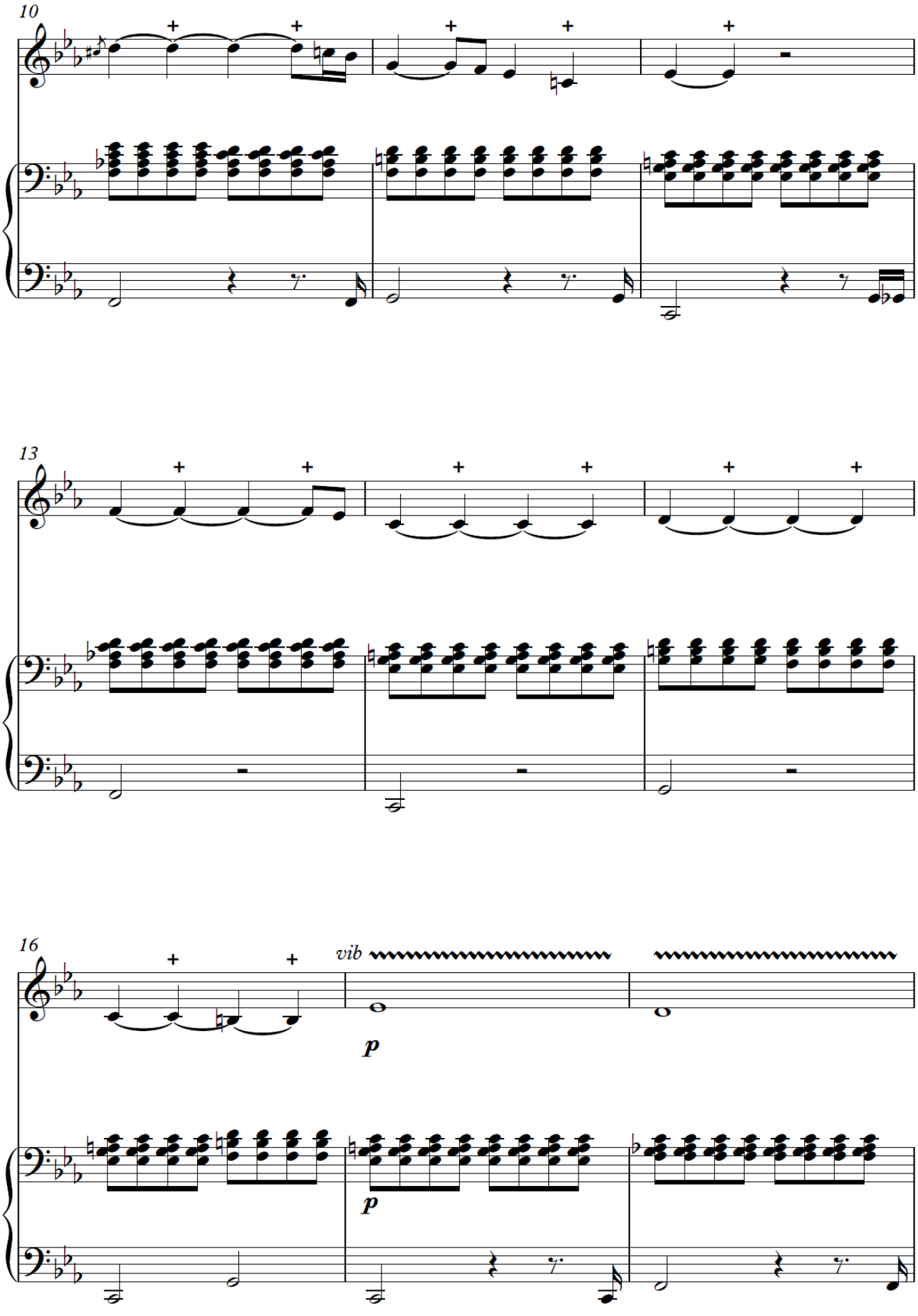
Tube Interaction

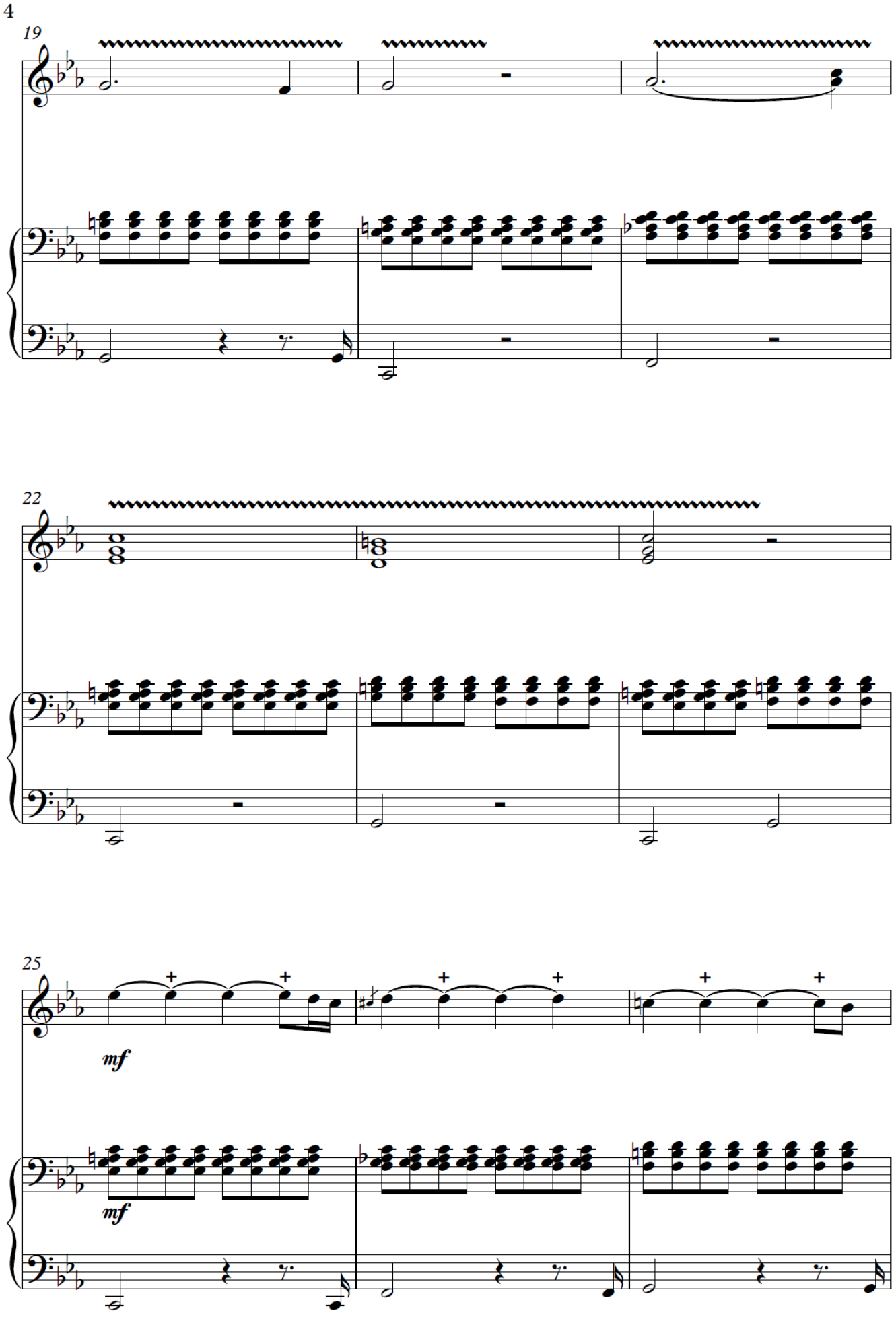
+ = ping air tube

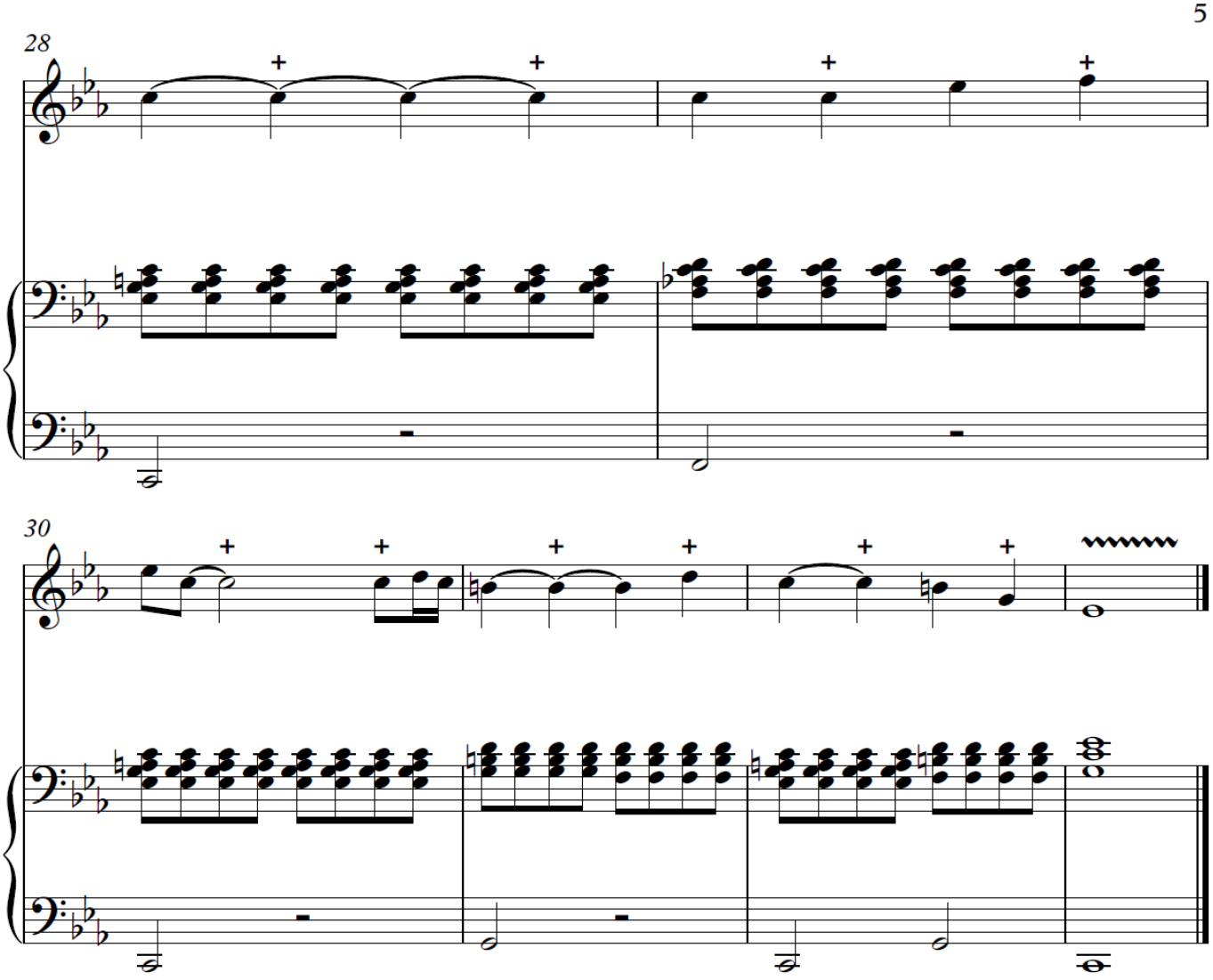
~ = shake the air tube for vibrato

Nathan de Broize-King




10
13
16
vib
p
p


4
19
22
25
mf
mf


5
28
30

Appendix G

Notation for the piece ‘Trills’

Trills

Nathan de Broize-King

Performance Directions

This piece should be played freely making use of slow and quick tremolos between notes and chords. The tempos are rough guides for the sections.

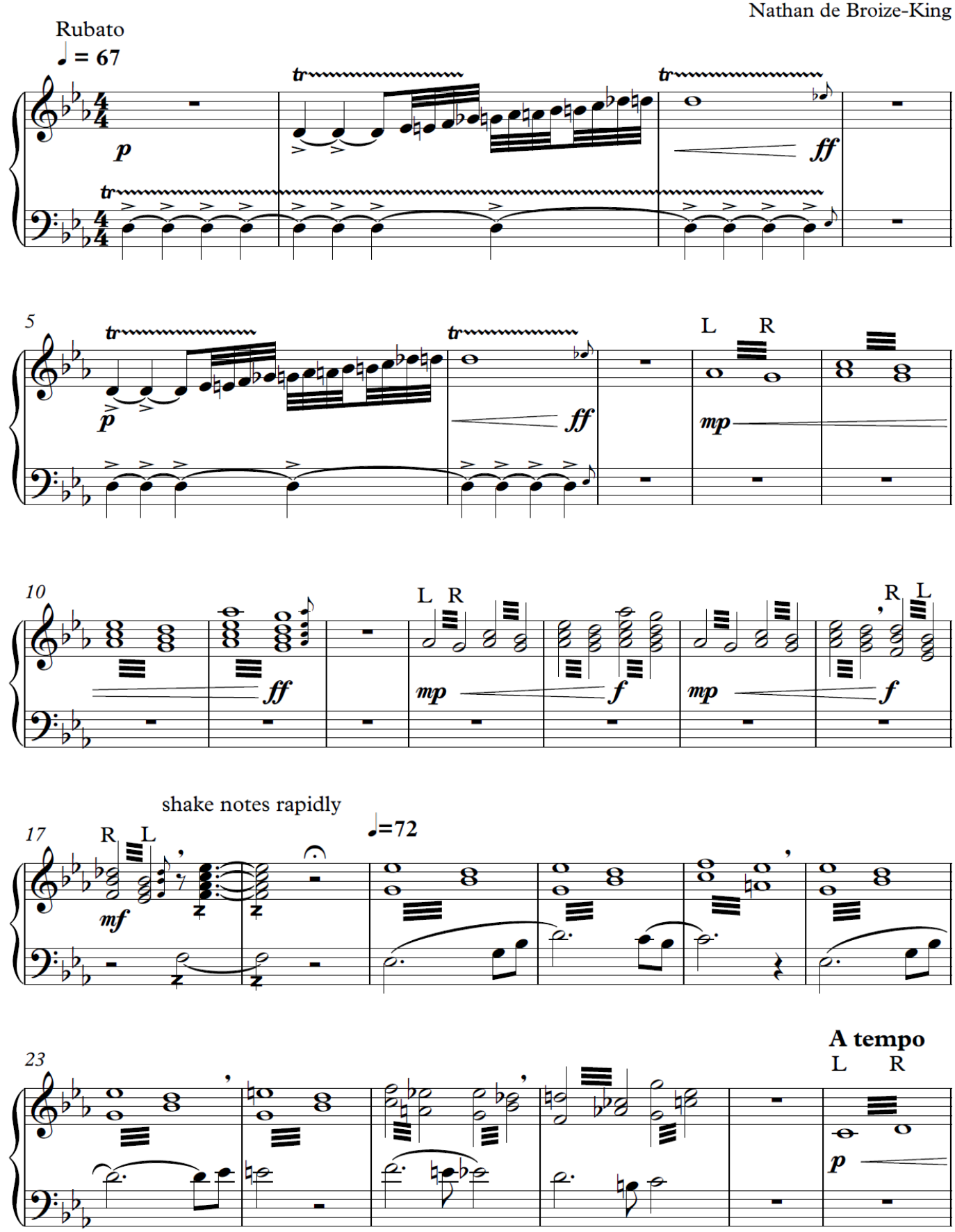
L and R stand for left and right hand, reccomending a more comfortable position when playing the tremolos. These are a guide and may change depending on the performer.

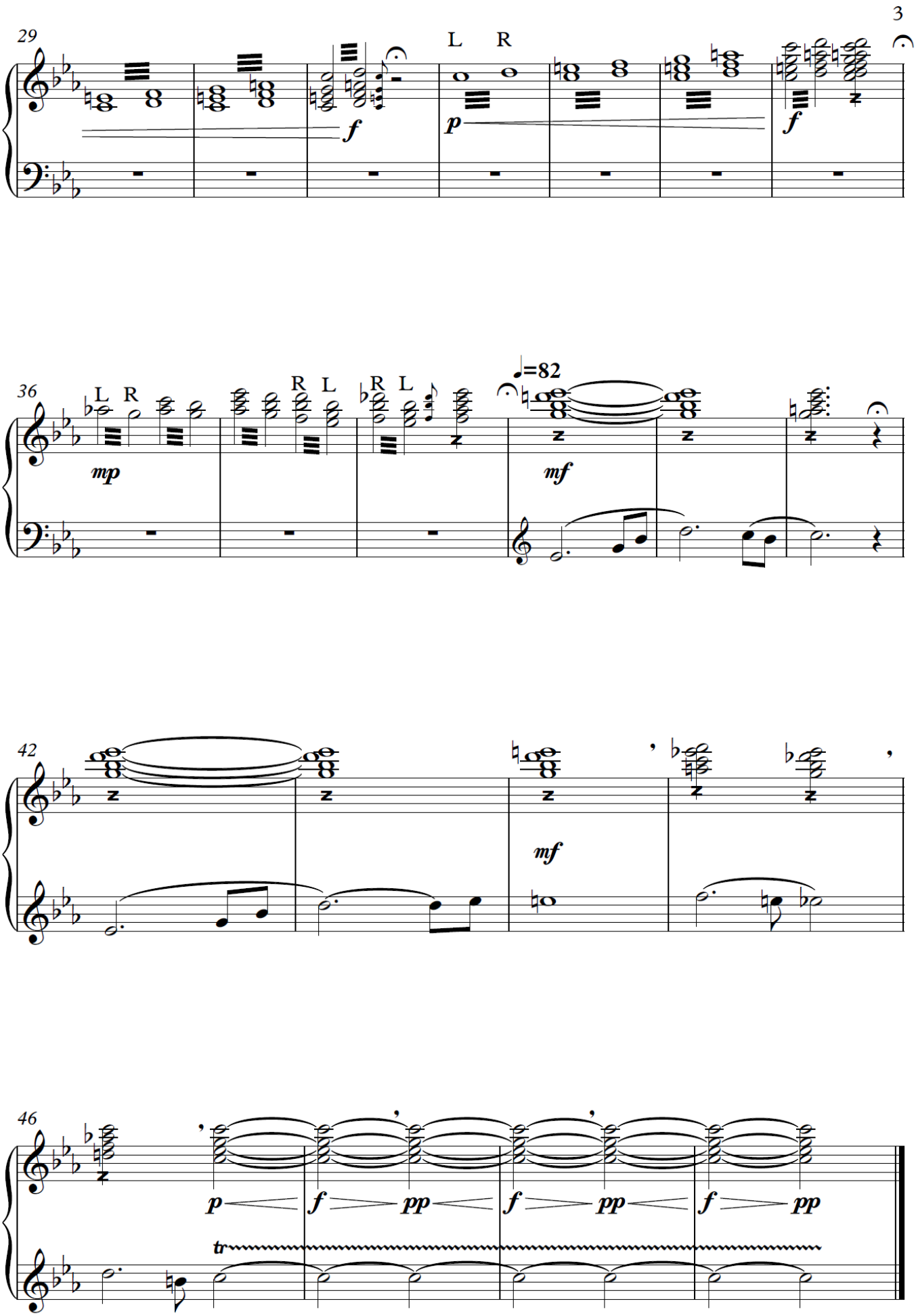
To play this piece most comfortably you must have the melodica hanging over your chest, and using the air tube. Your left hand should come round the back of the melodica, while the right hand plays the usual way up.

Buzz roll markings () on chords specify to rapidly roll chords. A loose wrist is required for this movement.

Trills

Nathan de Broize-King




29
L
R
3
f
p
f
36
L
R
R
L
R
L
=82
mp
mf
42
mf
46
p
f
pp
f
pp
f
pp
tr

Appendix H

Notation for the piece ‘Multiphonics’

Multiphonics

Performance Directions

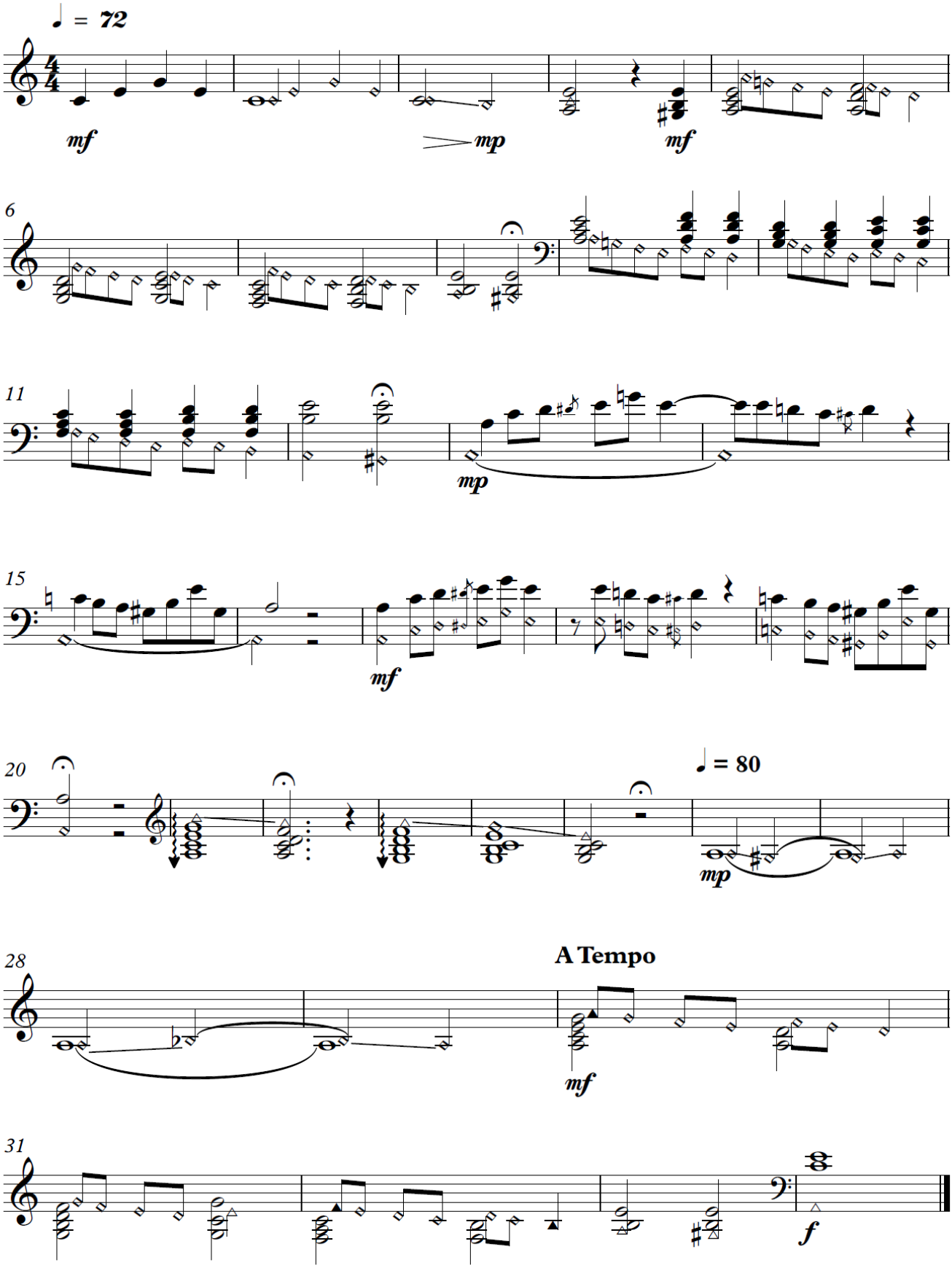
I wrote this piece mindful of my own vocal range; other performers may transpose to suit their own voices and may make any alterations necessary for optimum performance.

Be mindful when playing and singing as you will require more breath.

Multiphonics

◇ = singing through the melodica
▲ = singing and playing the same pitch on melodica

Nathan de Broize-King



Appendix I

Notation for the piece ‘Under Water’

Under Water

Performance Directions

Use a container approximately 55cm wide so there is room for the melodica and the tube. Make sure the box is not too deep, as this will make it more awkward to play the melodica.

Fill the container with water to approximately 8cm.

Submerge melodica completely for a few seconds before performing.

You will need to play with the tube connected, and will have to play mainly forte to push the water through. This requires a lot more breath than usual.

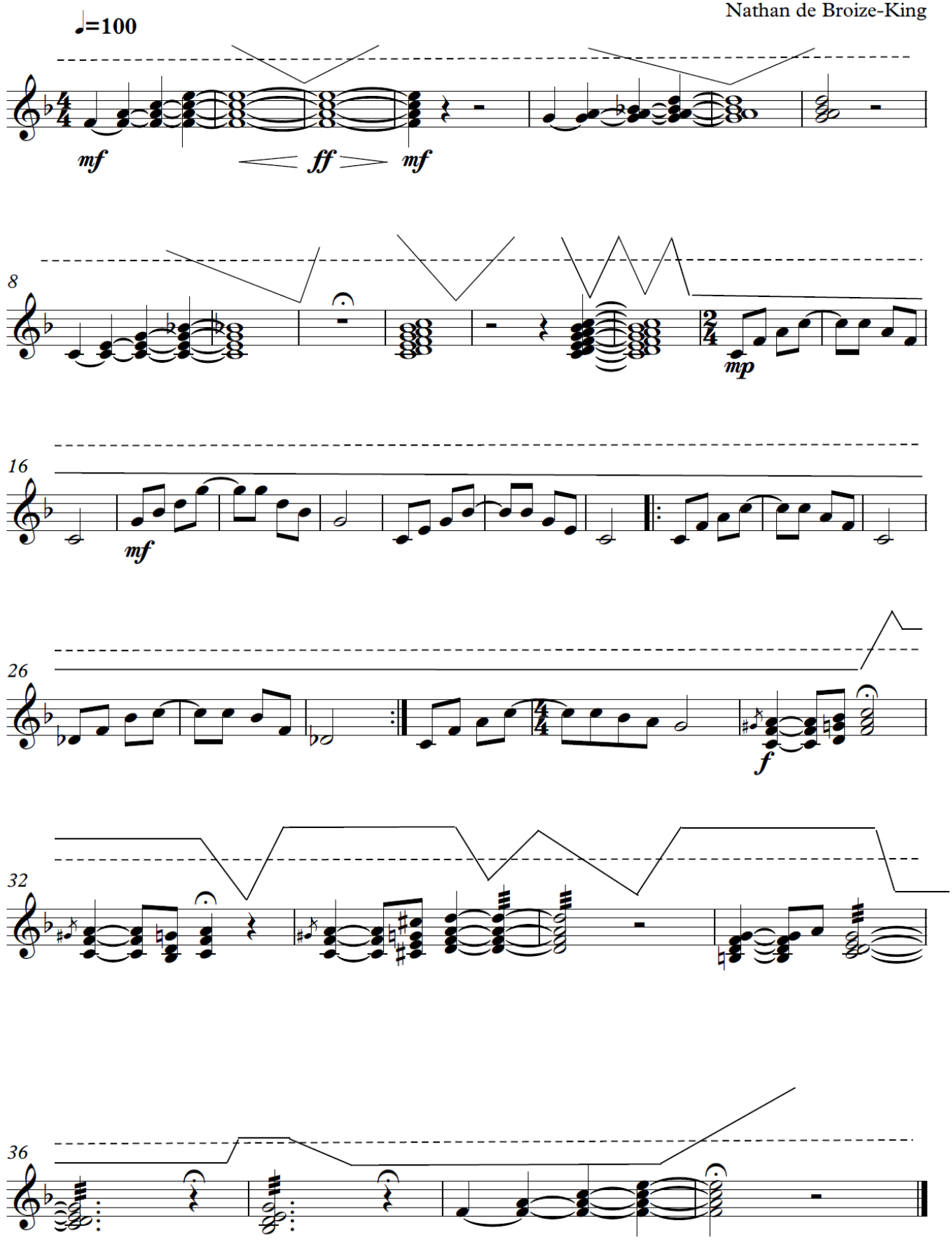
- - - - = the water level
— = the level of the melodicas keyboard in relation to the water level

Some notes may not sound. It is the performers choice to keep playing the note until it does sound, or to carry on playing even if it doesnt.

I advise using a cheap melodica and one without electronics.

Under Water

Nathan de Broize-King



Appendix J

Notation for the piece ‘Extended Techniques’

Extended Techniques

Performance Directions

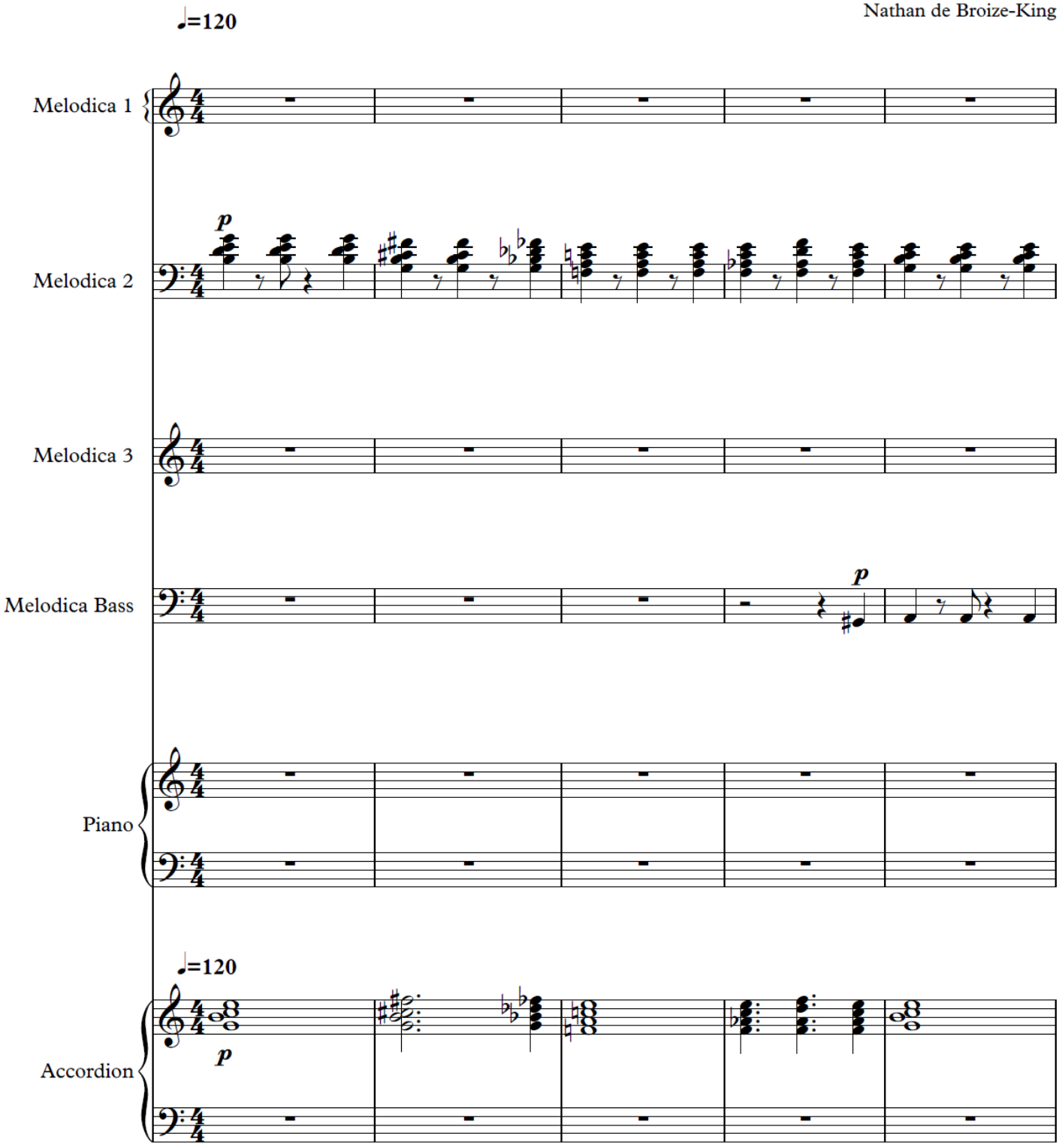
This piece uses many techniques from all the other studies.

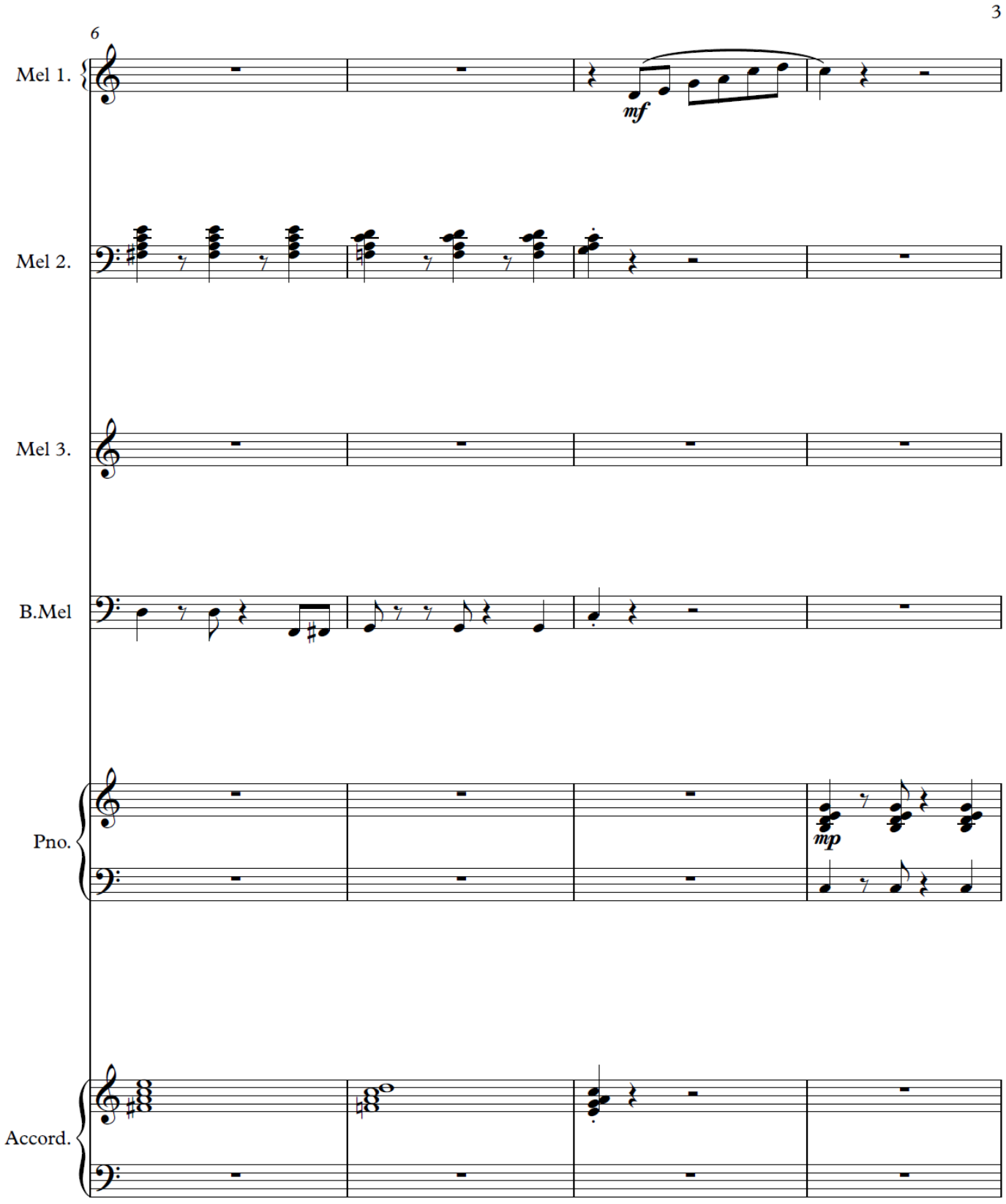
See other studies first to become familiar with the techniques and notation.

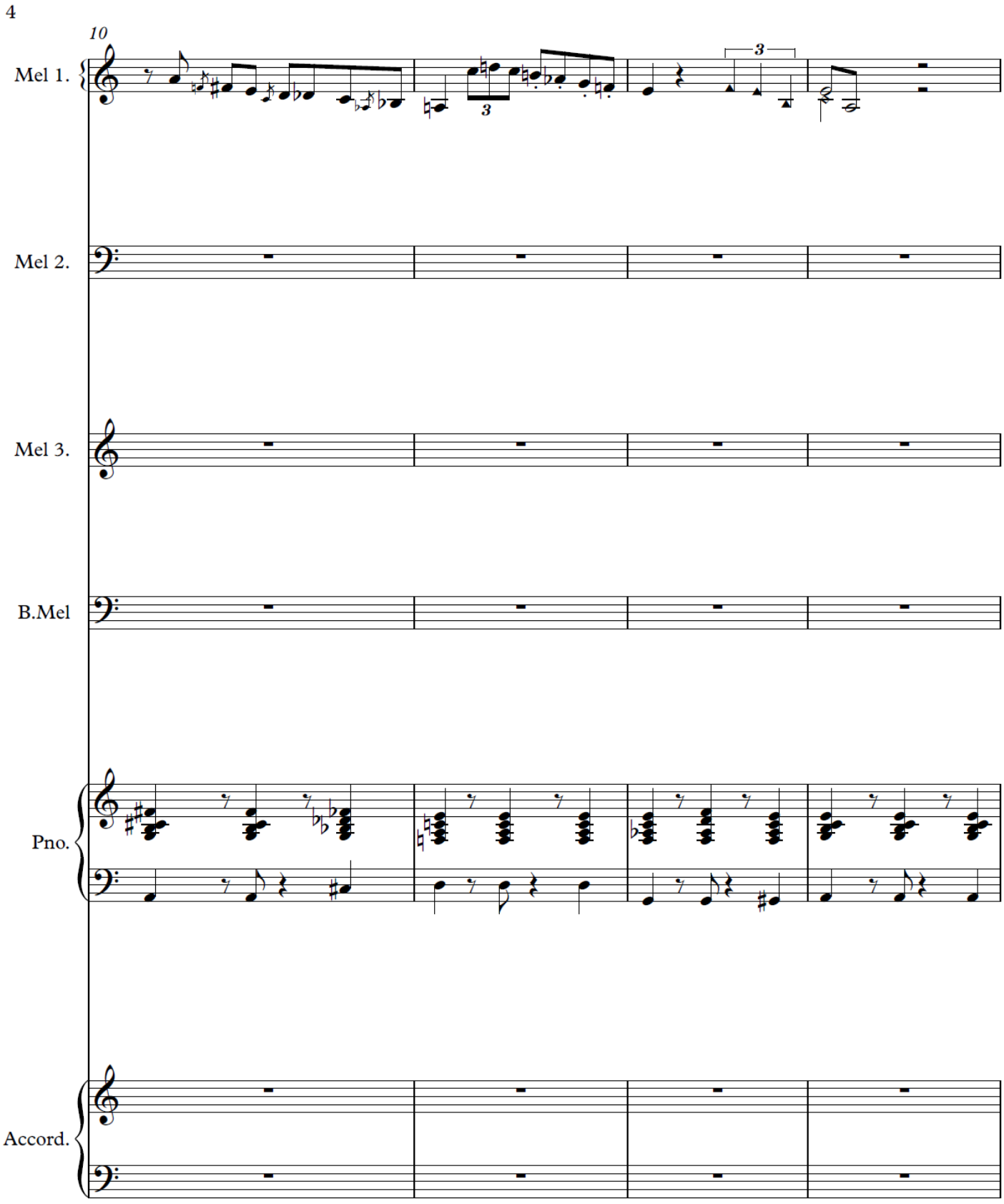
The harmonic in bar 46 (melodica 2) is produced the same way as a pitch bend by pressing down the desired note slightly, and blowing intensely.

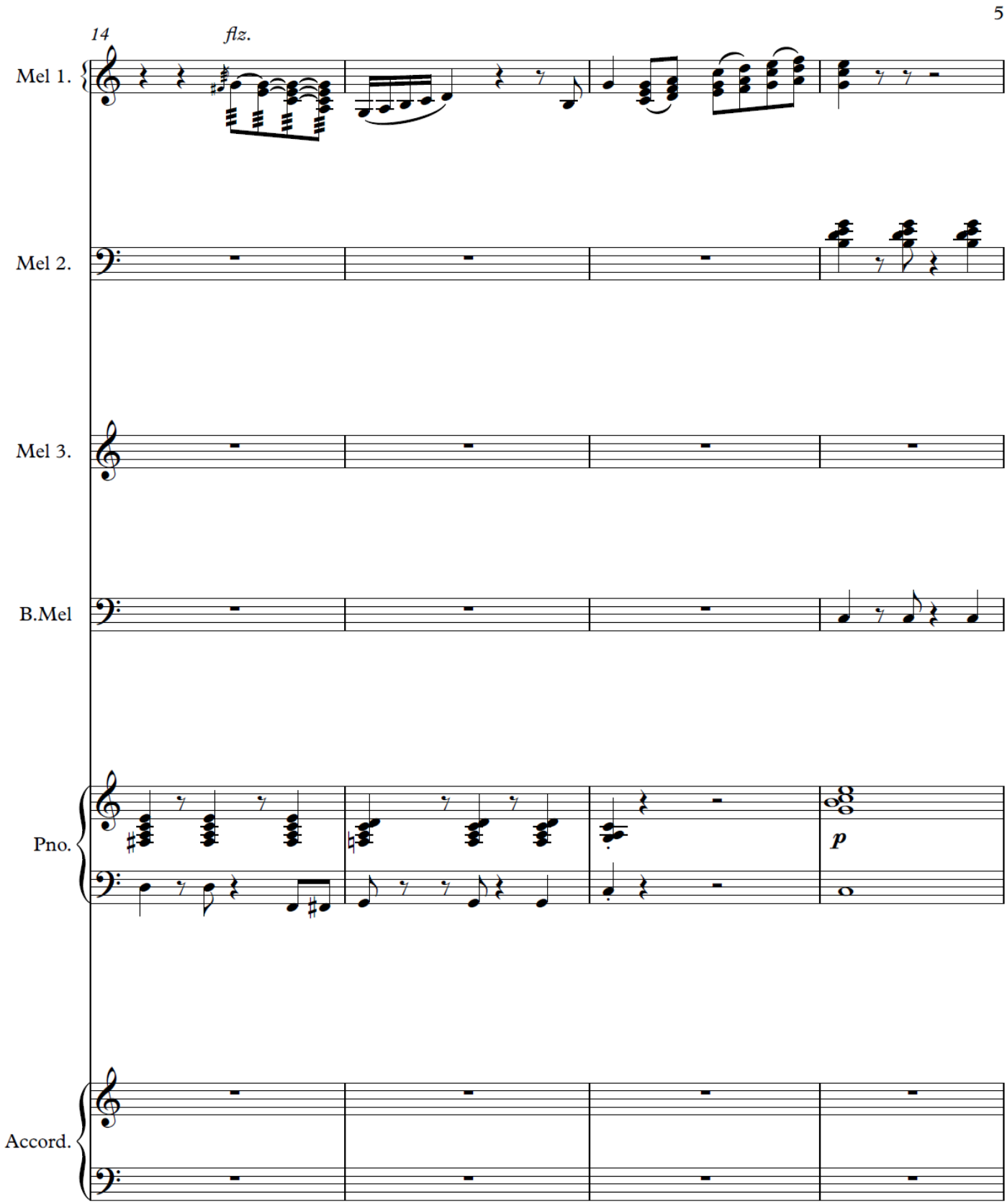
Extended Techniques

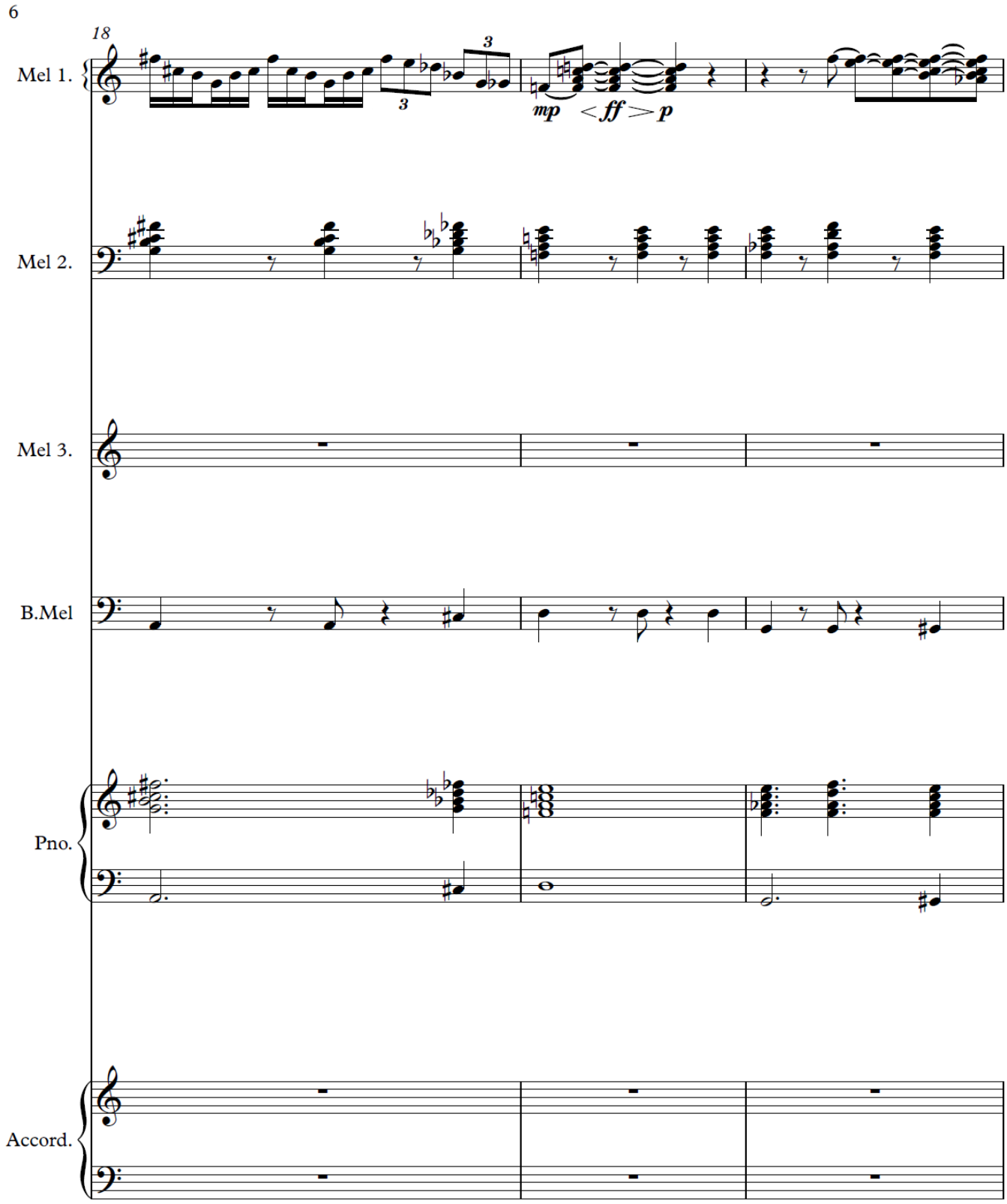
Nathan de Broize-King

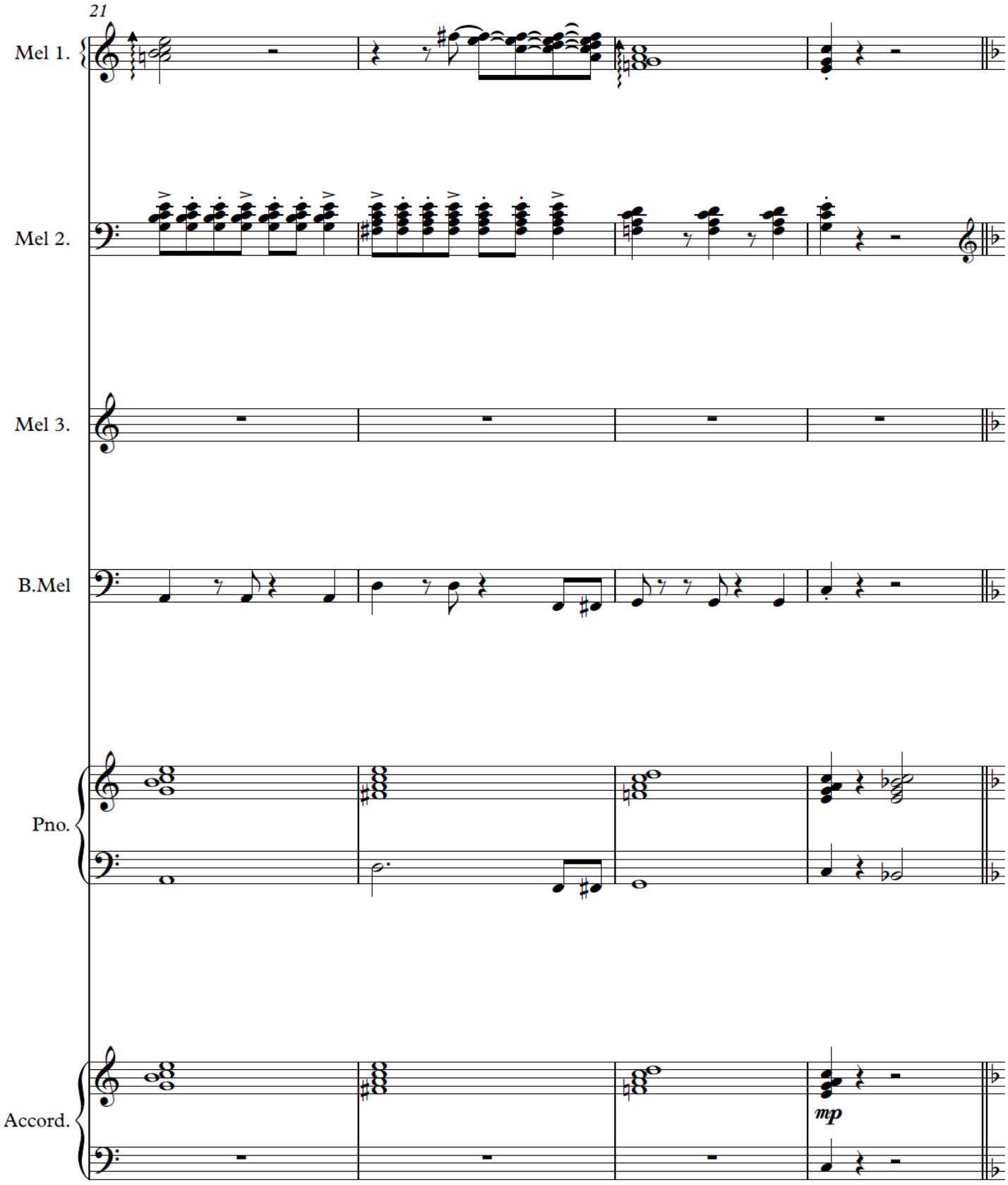


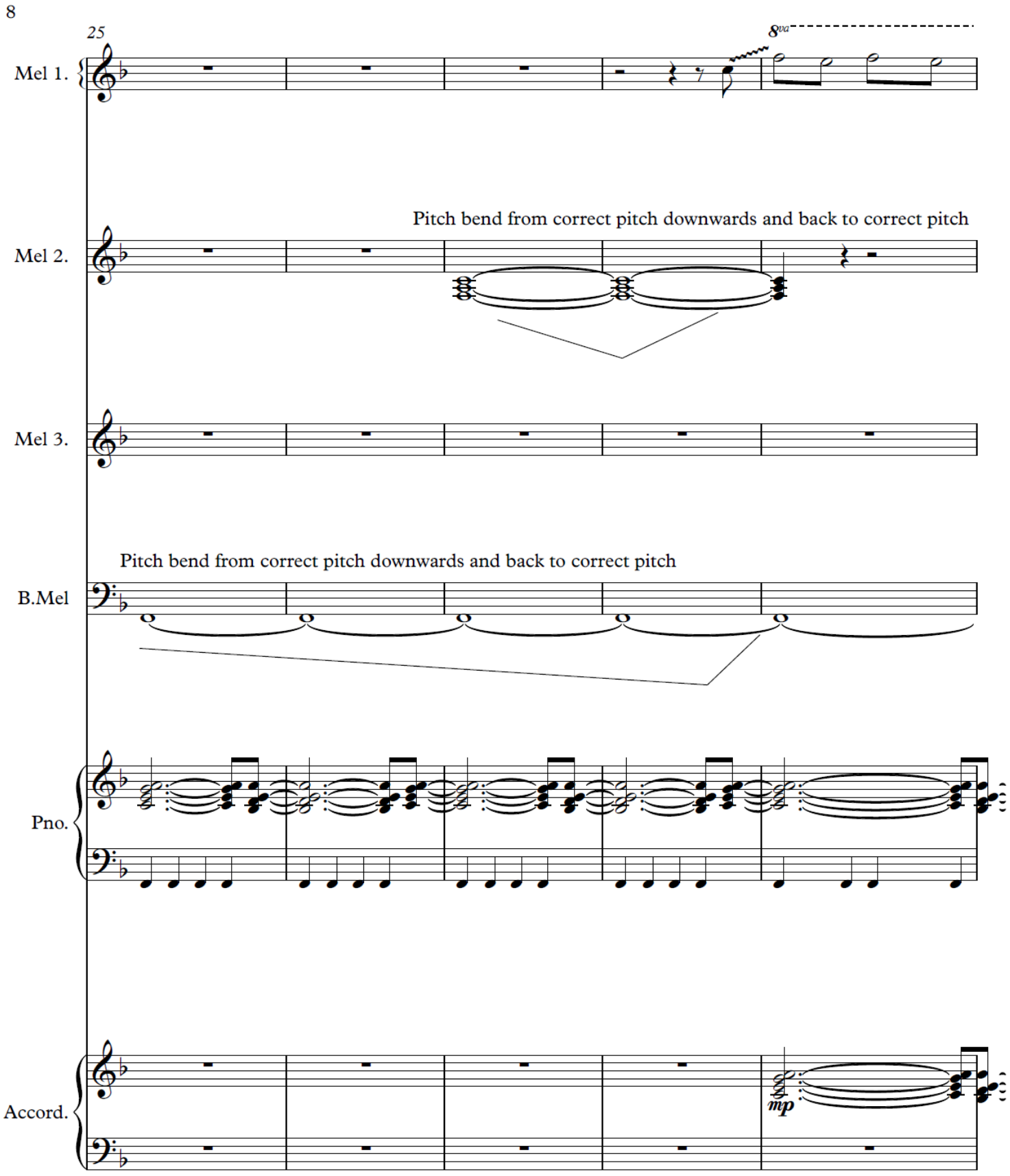

3
6
Mel 1.
mf
Mel 2.
Mel 3.
B.Mel
Pno.
mp
Accord.

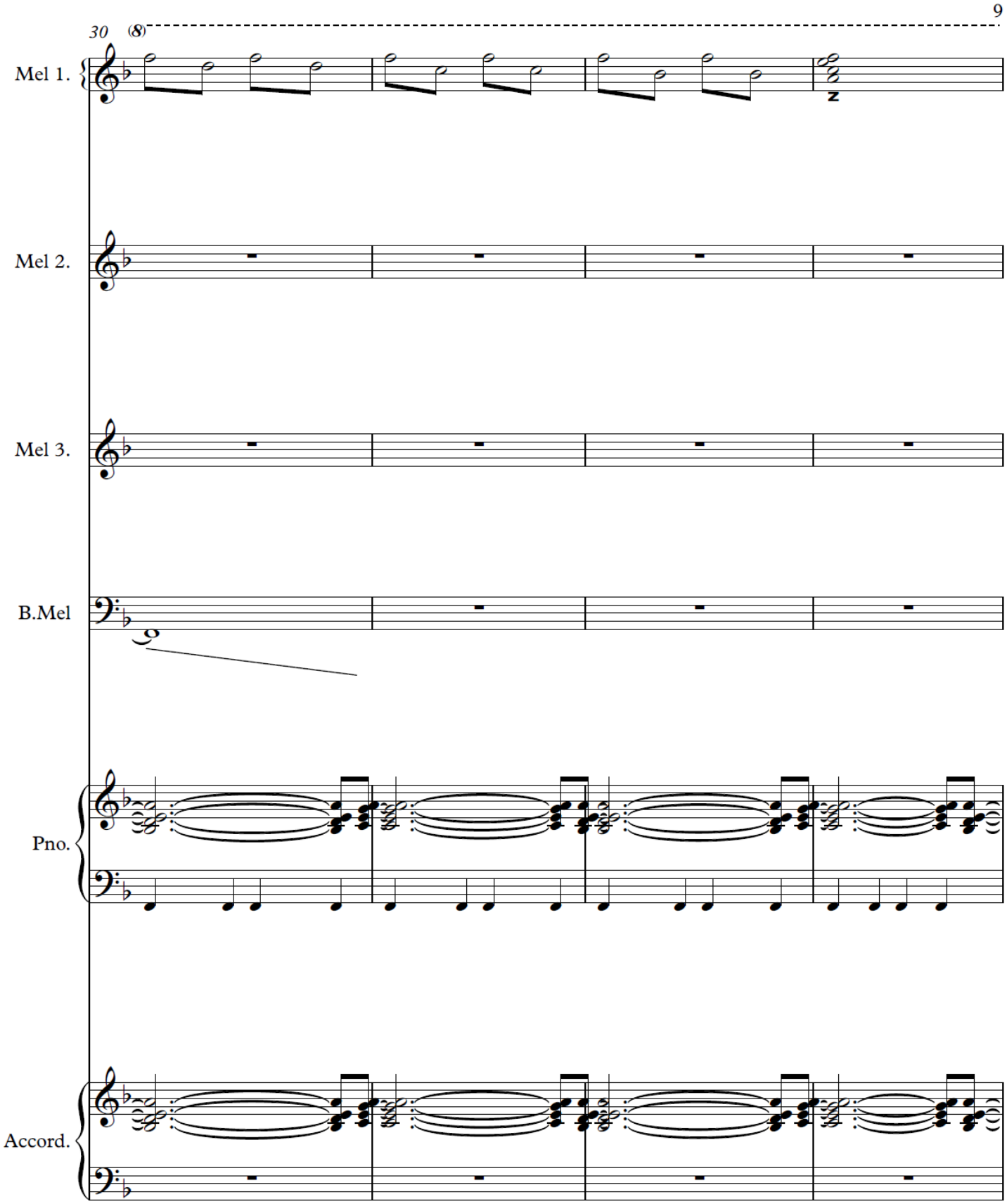

4
10
Mel 1.
3
3
Mel 2.
Mel 3.
B.Mel
Pno.
Accord.

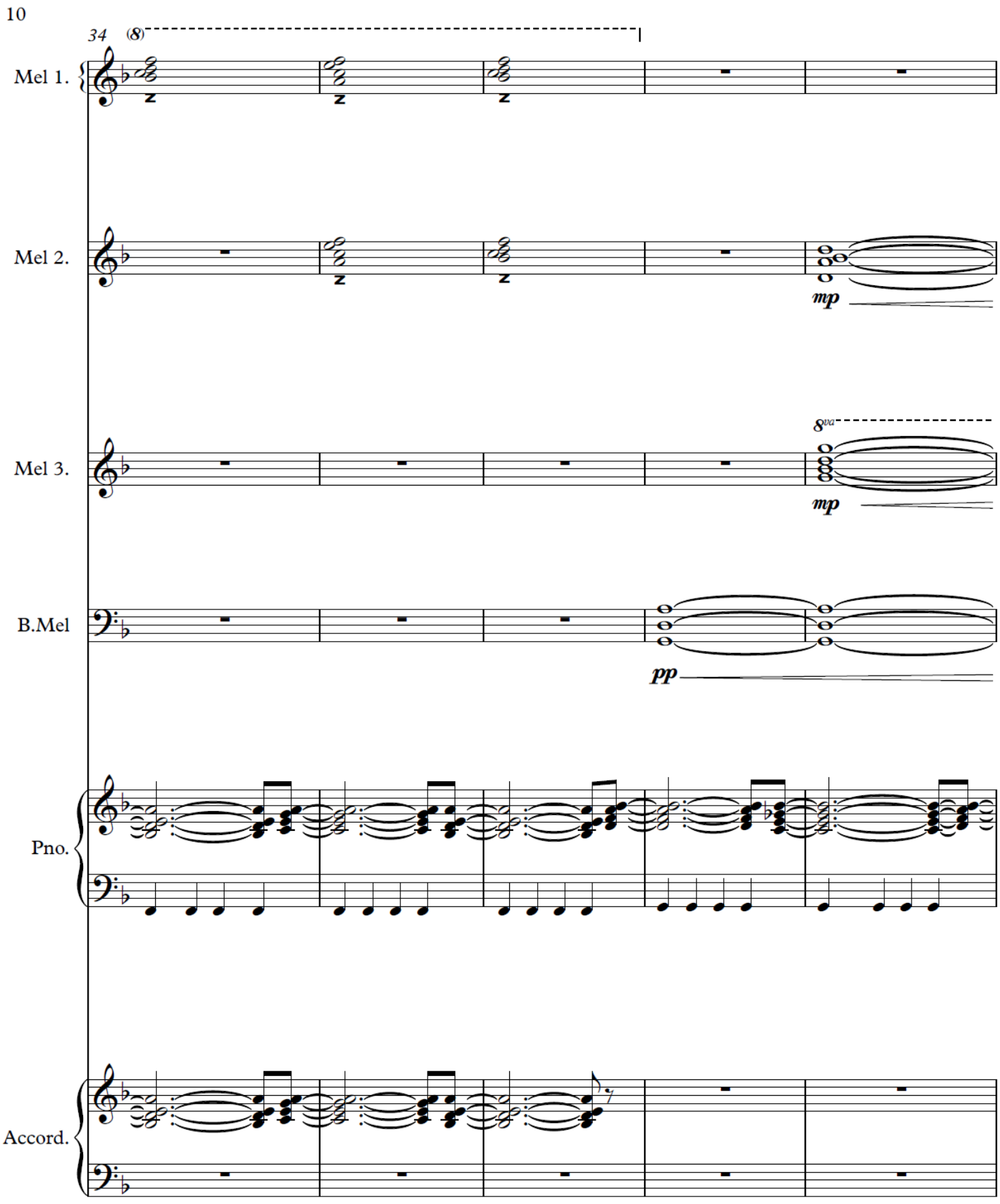

5
14
flz.
Mel 1.
Mel 2.
Mel 3.
B.Mel
Pno.
p
Accord.

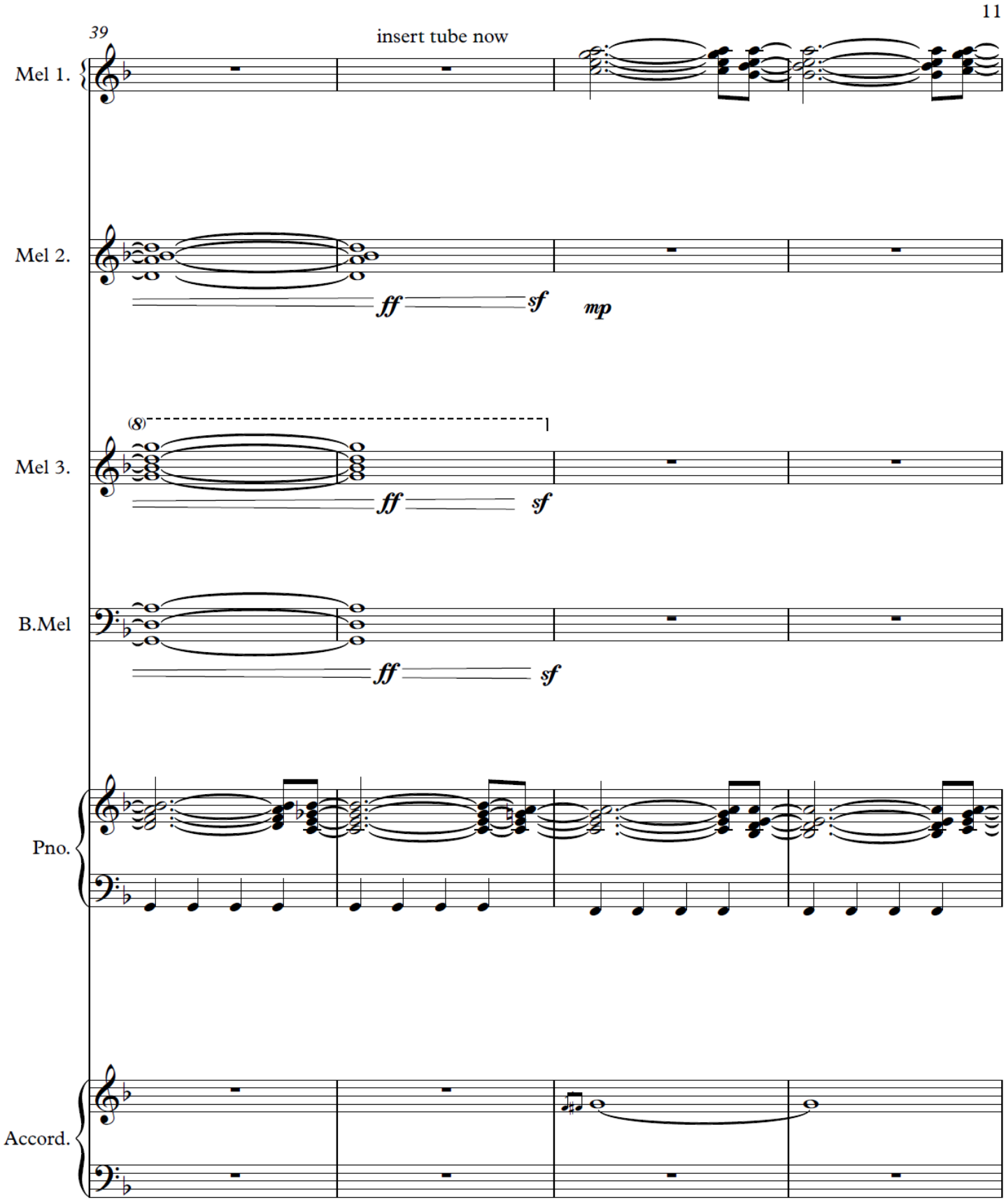

6
18
Mel 1.
3
3
mp
< ff > p
Mel 2.
Mel 3.
B.Mel
Pno.
Accord.

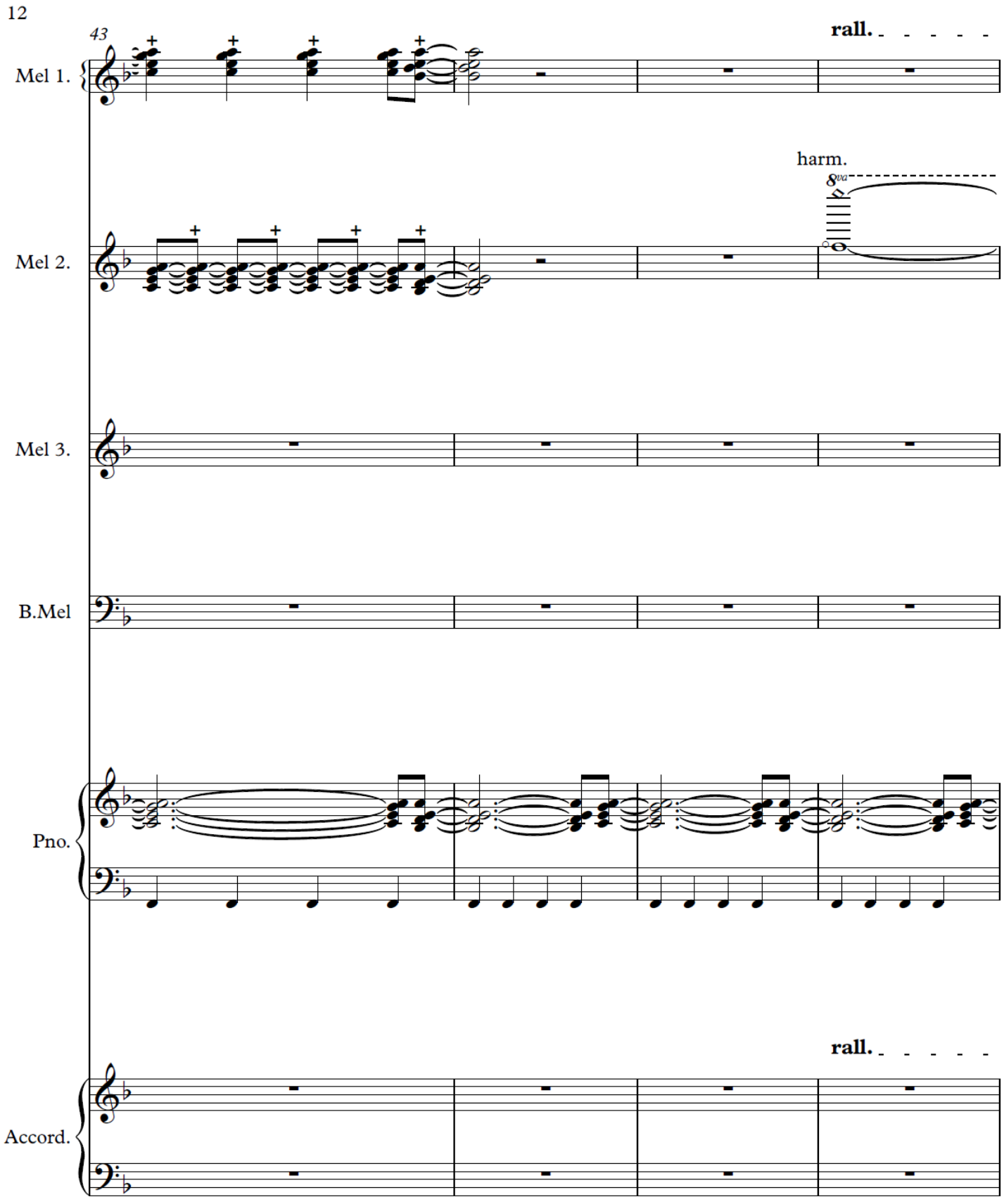

21
Mel 1.
Mel 2.
Mel 3.
B.Mel
Pno.
Accord.
mp

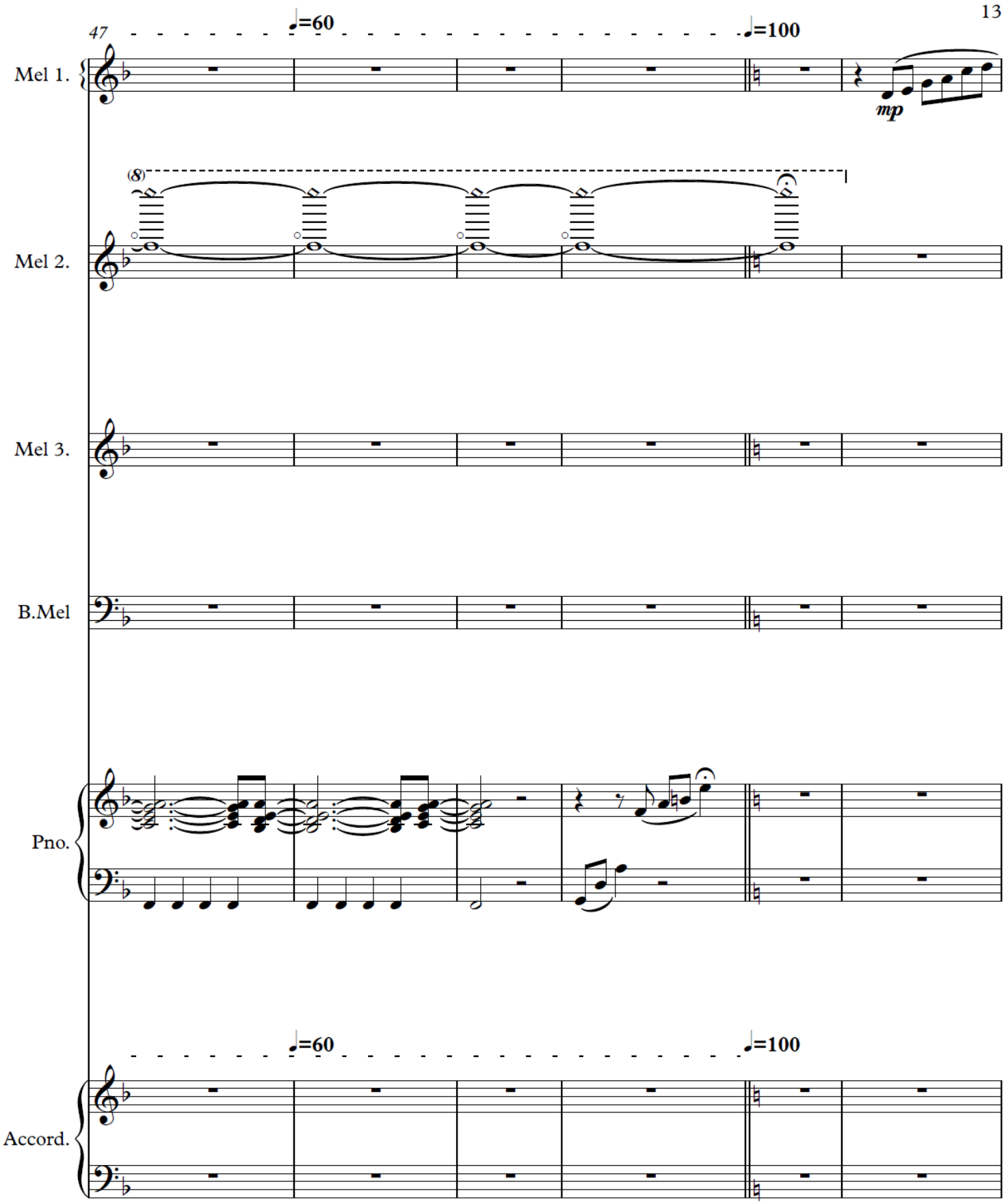

8
25
8va
Mel 1.
Pitch bend from correct pitch downwards and back to correct pitch
Mel 2.
Mel 3.
Pitch bend from correct pitch downwards and back to correct pitch
B.Mel
Pno.
mp
Accord.

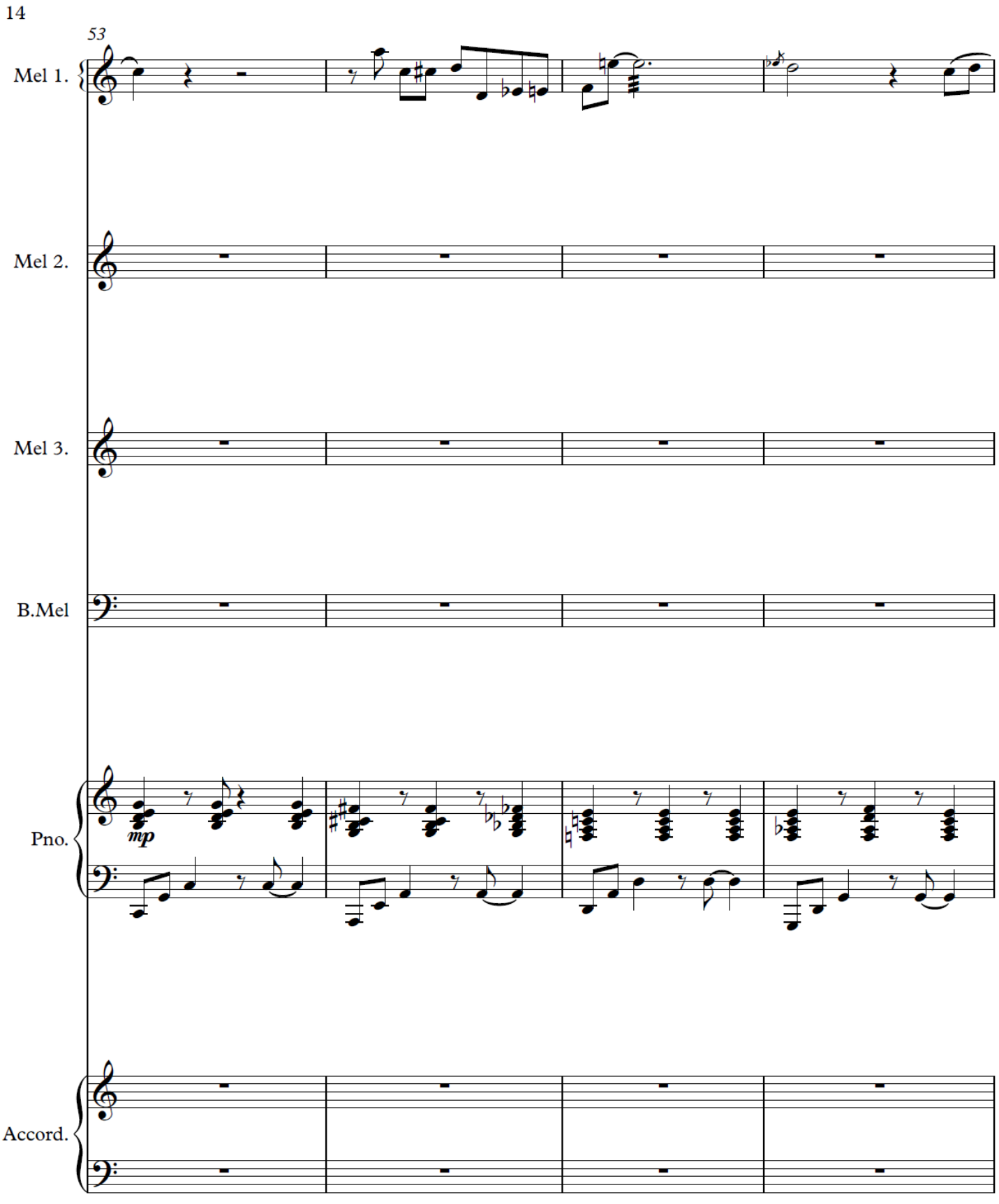

9
30
(8)
Mel 1.
Mel 2.
Mel 3.
B.Mel
Pno.
Accord.

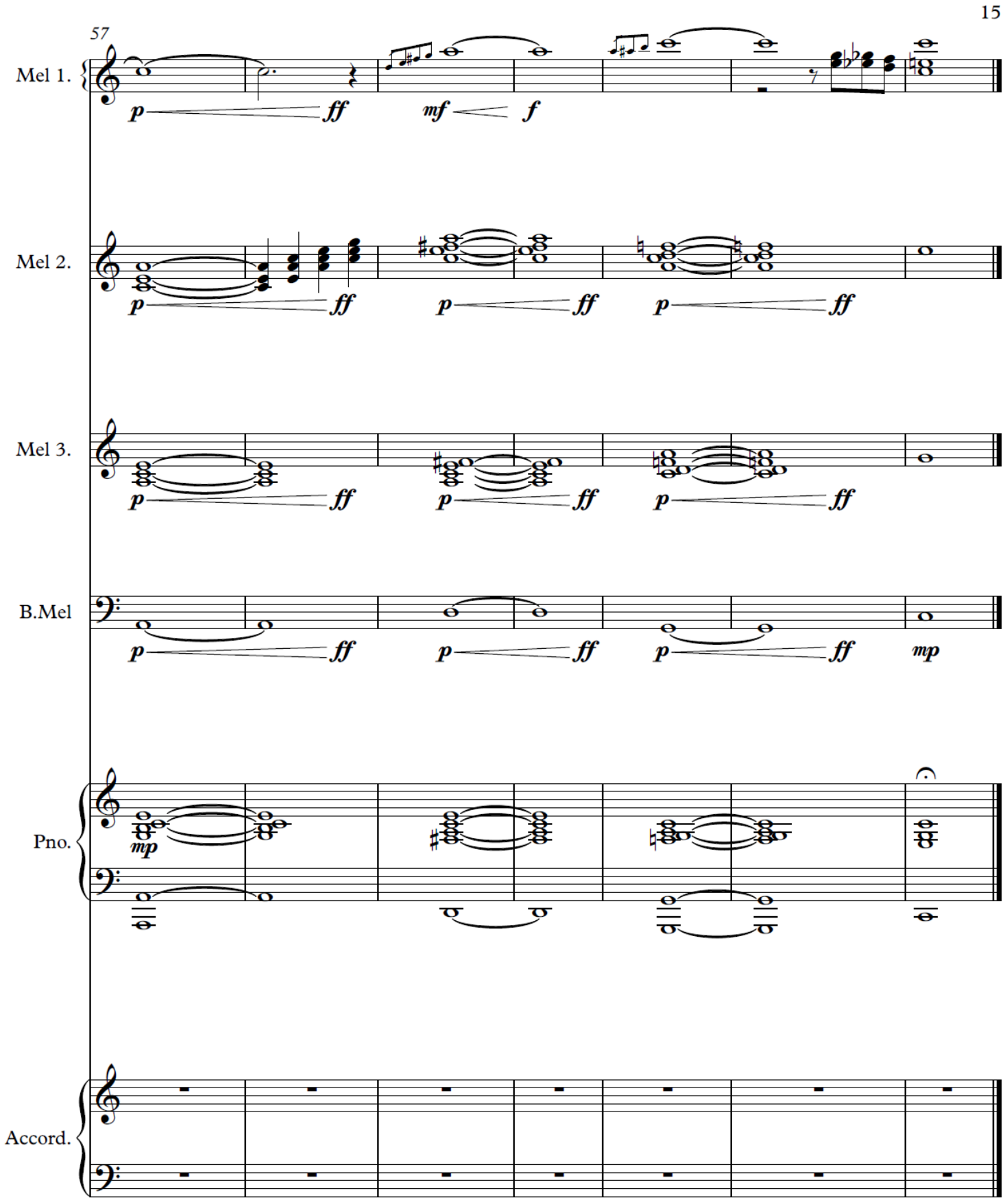

10
34
(8)
Mel 1.
Mel 2.
mp
8va
Mel 3.
mp
B.Mel
pp
Pno.
Accord.


11
39
insert tube now
Mel 1.
Mel 2.
ff
sf
mp
(8)
Mel 3.
ff
sf
B.Mel
ff
sf
Pno.
Accord.


12
43
rall.
Mel 1.
harm.
8va
Mel 2.
Mel 3.
B.Mel
Pno.
rall.
Accord.


13
47
♩=60
♩=100
Mel 1.
mp
(8)
Mel 2.
Mel 3.
B.Mel
Pno.
♩=60
♩=100
Accord.


14
53
Mel 1.
Mel 2.
Mel 3.
B.Mel
Pno.
mp
Accord.


15
57
Mel 1.
Mel 2.
Mel 3.
B.Mel
Pno.
Accord.
p
ff
mf
f
mp

Appendix K

Notation for Arne Gieshoff's piece 'verdreht'

Gieshoff, A. (2014) *verdreht.*[email] to de Broize-King, N. [29 January 2017]

Arne Gieshoff

verdreht

for Trombone, Melodica and Scordatura Melodica

Trombone

Melodica 1

Melodica 2 (scordatura)

Performance Notes

General

The two melodica players must sit on either side of the trombonist.

Accidentals are only valid for the note they are directly assigned to (incl. tied notes) but not for the whole bar or across octaves.

tempered quarter tones

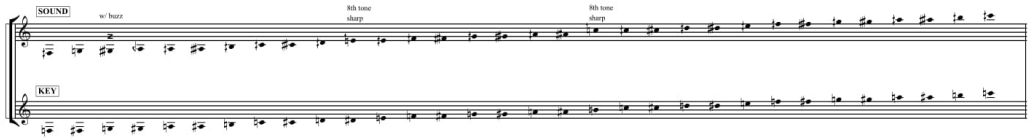
Trombone

Mutes required: Harmon, Plunger and Practice

Melodicas

The pieces requires two melodicas of the type 'Hohner Student 32' (Range: F3 - C6). They should be played using a Flex Tube.

Melodica 2 has to be retuned in the following way:



This tuning can be achieved by filing the individual reeds of the instrument accordingly. However, the G3-key must be clipped resulting in a buzzing effect for this particular pitch.

The scordatura melodica may be obtained from the composer.

Half-depress the indicated key/pitch and minutely change finger pressure.
This results in a fluctuation of pitch through unfocussed glissandi. This may be supported through a diaphragm vibrato.

Visual represantion of beating vibrato achieved through playing pitches in close microtonal proximity (Melodica 2 only!)

Duration: 4'

First Performance

26 January 2014

Birmingham Contemporary Music Group

CBSO Centre, Birmingham

Programme Notes

verdreht was commissioned as part of the BCMG / Sound and Music Apprentice Composer Residency for performance by members of the Birmingham Contemporary Music Group.

The German term 'verdreht' translates as *contorted, dippy, distorted, misrepresented, perverted, pixilated, preposterous, skew, twisted, wry...*

In some ways the music behaves like an unwinding, broken, mechanical toy forming bizarre shapes; - or like a contorted barrel organ (Ver-Dreh-Orgel).

The score bears the following quote taken from Kurt Schwitter's text *My Art and my Life* (1940-46):

'One needs a medium. The best is, one is his own medium. But don't be serious because seriousness belongs to a passed time.This medium, called you yourself will tell you to take absolutely the wrong material. That is very good, because only the wrong material used in the wrong way, will give the right picture, when you look at it from the right angle. Or the wrong angle.'

***verdreht* was commissioned as part of the Birmingham Contemporary Music Group / Sound and Music Apprentice Composer Residency for performance by members of the BCMG.**

One needs a medium. The best is, one is his own medium. But don't be serious because seriousness belongs to a passed time. This medium, called you yourself will tell you to take absolutely the wrong material. That is very good, because only the wrong material used in the wrong way, will give the right picture, when you look at it from the right angle. Or the wrong angle.

- Kurt Schwitters: *My Art and my Life* (1940-46)

Arne Gieshoff

verdreht

for Trombone, Melodica and Scordatura Melodica

imbarrazante; poco meccanico ♩ = 63

harmon mute (stem in)

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