Giant Steps for Harp: New Approaches to the Pedals

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Critical Commentary

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Abstract

This Creative Practice research project begins with the observation that harpists seem to spend more time thinking about their hands than their feet, and addresses the essential but possibly under-appreciated harpist/pedal kinaesthetic relationship. It asks: 'How can harpists have a deeper, more musical, dialogue with the harp's pedals?' In addition, the project seeks to create a research structure which might serve as a model for future musicians seeking to add research elements to their artistic practice.

The project, which employed a multi-mode Practice as Research (PaR) methodology, consists of a Creative Portfolio of compositions and performances, that was created in concert with a Critical Commentary.

The initial impetus for the research was 'Fast 7ths': a chromatic approach to dominant 7th chords, that was developed prior to this research by the author. This approach was then combined with an exploration of several pedal techniques, particularly multi-pedals (moving multiple pedals with one foot) and pedal slides (pedal glissandi), which were contextualized in pedal harp history from the 18th century to the present, and then used to create the materials in the Creative Portfolio.

The Critical Commentary, in addition to providing the contextual / historical framework also traces the genesis of the Fast 7th system via an autoethnographic exploration of three significant moments in the author's early harp development which directly led to his discovery of this system. Finally, it interrogates the elements in the Creative Portfolio, making explicit the aspects of the Portfolio which are better explained using text.

The Creative Portfolio consists of performances of three harmonically complex 'impossible' jazz standards, made playable with the use of these pedal techniques, twelve compositions by Stickney, including ten Pedal Etudes, two additional pieces, and new pieces by nine non-harpist composers.

The 'impossible' jazz standards are performed in video format, and include a dynamic graphic pedal map I developed, which animates a traditional pedal notation system to render the pedal movement more visible.

The compositions utilize a new harp pedal notation system, developed as part of this research, which features a dedicated third stave, allowing for greater rhythmic accuracy and graphic clarity. Additionally, one of the pieces is a 'meta composition', a DAW-based system which proposes a bank of harp elements specifically created to allow composers to create pedal-rich compositions without the precondition of possessing specific harp pedal knowledge.

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Note: As this Critical Commentary exists in constant dialogue with the Creative Portfolio, hyperlinks and QR codes give access to video and audio materials at appropriate moments throughout the text.

Portfolio

These materials are also available on the included USB stick, and on the following webpage:

https://www.harplab.net/GSH-portfolio/

To use QR codes, either scan with a smartphone's camera or use a dedicated QR code reader application.

Creative Portfolio Contents and Locations

'Impossible' Standards: (Location: USB key, website)

1. *Cherokee,* Ray Noble
2. *Well You Needn't*, Thelonious Monk
3. *Giant Steps*, John Coltrane

Stickney Compositions: (Location: Appendix D, USB key, website)

1. Pedal Etudes
    - *i.* *Gone Monkfishing*
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Other Composers (Location: Appendix E, USB key, website)

1. *Winter Roads*, Kitty Brazelton
2. *The Carnival*, Sean Callery
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Part One: Introduction, Context, and Methodology

Chapter 1: Finding our Feet

Introduction

This chapter will provide background stimulus and context to the Giant Steps for Harp (GSH) creative practice research project. It will present the research questions and will examine the questions and issues which led to them. Finally, via a brief autoethnographic reflexive narrative, the chapter will explore three key moments in my musical development which directly led to this project.

Enter the Harpist

Playing the pedal harp is a complex, multi-mode, whole-body activity. To simultaneously produce harmony and melody, the harpist coordinates hands and feet, informed by the senses of hearing, sight, and touch. But touch doesn't mean merely 'fingers on strings': In the many years I've spent working with harpists at five conservatories in five different countries, and in countless workshops around the world, three of the recurring issues I've encountered are related to the harp's pedals—or rather, the relationship the harpist has with the harp's pedals.[1]

1) Complex harmonic passages, involving many pedal movements, are often played in a less than optimal manner, limiting tempo choices, increasing the possibility of mistakes, and impinging on the harpist's musical intention.
2) Harpists avoid certain chromatic possibilities in improvisation (sometimes unconsciously) because the progressions seem impossible or at least impractical.
3) Traditional harp pedal notation is limited in its ability to convey precise rhythmic nuance. In this respect, pedal notation is tacit, which potentially inhibits the flow of necessary musical information and the evolution of pedal technique.

Video 1: General Harp Info

[1] For a quick refresher about the harp pedal system, consult this video:

To be clear, this isn't a new problem. As Bochsa states 'The use of the pedals has become the instrument's greatest difficulty: it takes just as much, and perhaps even more, nimbleness and agility in the feet than in the hands' (1830, p. 21).[2] The question is how to respond to this problem; how to find this 'nimbleness and agility'?

I have perceived through my own practice and my experiences with students, that harpists often treat the foot pedals as mere switches, rather than as an organic and equal part of the music-making. Perhaps what is lacking is a deeper awareness of the pedals, considering the relationship with the feet in the same terms as the relationship with the hands, defining harp playing as a *quaternary* rather than a *binary* activity. As harpists potentially spend the first few years of their study without interacting with pedals, they might not realize how similar their practice is to that of organists, whose feet create sound via the pedal board, while also manipulating registration settings with the toe pistons. Even if harp pedals don't directly produce sound themselves (usually), their positions and movements have a direct harmonic and rhythmic correlation with the music being produced, in constant dialogue with the hands.

Hand/String Bias

It's easy to see how this situation might have arisen. Novice harpists often start with a lever harp—a smaller harp with semi-tone levers on each string rather than pedals,[3] and the pieces they play at first are normally mostly diatonic, with few lever changes. As accidentals in these beginner pieces occur only rarely, the hand motions to move the necessary levers can be seen as an interruption to the 'real' work of playing the strings. Instead, the concentration is on elements like hand position and coordination, note-reading, rhythm, and sound quality.

Later, once the beginner harpist has switched to the pedal harp, the possibility of 'hand/string bias' continues. The pedals might be perceived as a mechanical 'means to

[2] *Le jeu des pédales est devenu la plus grande difficulté de l'instrument : il faut autant, et peut être plus encore de prestesse et d'agilité dans les pieds que dans les mains*. (Translation Stickney)

[3] also known as a Celtic harp

an end', as a clever way of moving many semi-tone levers at once, while keeping the left hand free for plucking strings. As the harp's pedals continually form some sort of key or diatonic situation it's easy to think of this position as neutral, with occasional accidental changes, an F♯ here, a B♭ there. However, to misquote Derrida, 'il n'y a pas de hors pédales.'[4] There is no outside of pedals; everything is pedals. There is no 'neutral' pedal position.

Every pedal is constantly active, constantly doing its job of defining one out of three possible semi-tones for its specific string. As the pedals are 'parked' using wooden notches to hold them in place, it's easy to forget that all seven pedals represent on-going, active choices by the harpist/composer, choices that directly determine which pitches are subsequently available via the strings. When harpists think about 'the pedals', they're usually thinking about pedal *movement*, from one position to another, flat to natural, natural to sharp, etc. In fact, the only time pedals *aren't* providing an active harmonic role is when they're being moved from one position to the next. Although it might seem like an oxymoron, pedals are harmonically active when they're stationary.

The hand/string bias doesn't merely affect the individual player. Harpists and composers often work in a symbiotic relationship, with the result that this tendency can be transmitted not only from teacher to student but also through repertoire.

The Composer/Harpist Closed Circle

A second problem is linked to the relationship between the harmonic demands made by composers and the 'common practice' pedal techniques validated by harpists. Non-harpist composers depend on harpist feedback to understand what's 'possible' in harp writing, and harpists play repertoire which conforms to pedal 'common practice'—or they 'correct' the composition to render it 'possible'. In this way, harpists define and reinforce the perceived chromatic limitations of their instrument, through their practice, their repertoire choices, and their interactions with non-harpist composers. 'The pieces for the harp, written for the repertoire of the harp, […] are definitely composed

[4] '*Il n'y a pas de hors-texte…*' (Derrida, 1967, p. 227)

according to what is possible. There are few things…that are written without considering the instrument's techniques'[5] (Blasel, 2018). One way that this closed circle is broken is through transcription, playing repertoire from other instruments on the harp, which sometimes challenges the pedal status quo (we'll see examples of this in Chapter 2). But perhaps an even more efficient approach would be to write repertoire explicitly proposing new pedal techniques, working directly with harpists and composers to integrate these new approaches. This is one of the objectives of this project, Giant Steps for Harp.

Giant Steps for Harp

This creative practice research project engages with the linked issues of both enabling a stronger kinaesthetic mind/foot/hand connection while also adding and improving strategies for accurate pedal manipulation. It uses a Practice as Research methodology, as well as various pedal-intensive techniques, including one from the 18th century in which multiple pedals are moved with one foot. This single-action harp technique, though largely forgotten since the advent of the double-action pedal harp, has nevertheless persisted on the outer fringes of harp knowledge, with occasional mentions in method books and repertoire. Ideally, the creation of new repertoire containing a curated use of pedals, and the proposition and expansion of this early pedal technique for the double-action pedal harp, will create a situation in which harpists will be invited to reconsider their basic kinaesthetic relationship with the instrument, while also expanding the repertoire and enriching the harpist/composer dialogue.

The kinaesthetic element (Rovan, 2000; Gillespie, 1999) involves the spatial awareness of the foot/pedal's position, both vertically, in knowing to/from which position (or which 'in-between' fraction of a position) the pedals are being moved; and laterally, in knowing if the pedals are notched or un-notched. It also involves the awareness of each pedal's current position, not merely those in movement. This awareness is multi-modal: intellectual, merely remembering where the pedals are; aural, 'hearing' the relationship of the pedals' position to the current musical situation; and especially kinaesthetic,

[5] '*Les pièces pour la harpe, écrit pour le répertoire de la harpe, […] sont écrites en fonction évidemment de ce qu'on pouvait faire. Il y a peu de choses… qui sont écrites sans tenir compte de la technique instrumentale.' (translation Stickney)*

'feeling' the current positions of the pedals, through the historical traces of the feet's pedal journeys.

To foreground certain active pedal techniques (including multi-pedal movements and pedal slides) with the goal of increasing harpists' kinaesthetic pedal awareness and fostering a more active pedal relationship, the following research questions are proposed:

1. How can I broaden and deepen my understanding of various harmonic, melodic, and textural pedal techniques (multi-pedal, pedal-slides, liminal pedal approaches)?
2. How can I incorporate research methods, specifically those related to Practice as Research, into my current artistic practice? How can I evolve from being a musician with questions to becoming an artist/researcher?
3. How can these various pedal techniques be promoted in the harp world, in different musical genres and situations, i.e., in composition, transcription, improvisation, interpretation, so that current and future harpists can improve their kinaesthetic awareness; not only of their feet/pedals, but in their non-harpistic pursuits as well?

Background Stimulus

I have had the good fortune of having been present in the jazz harp scene for over forty years and thus have been able to meet and work with many of its important players, many of whom are now sadly deceased. This period ranges from the first jazz harp festival in 1978, to the present, during which jazz harp underwent an important evolution and growth, in the number of players, their technical level, and their visibility in the jazz world. As a result, my personal harp development has occurred within the context of this wider jazz harp evolution.

In order to understand the inspiration for this project, and what led me to this topic at this particular time, it seems useful to briefly explore my early harp background in the manner of Bartleet's autoethnographic approach (2010), with specific focus on three

events that shaped my approach to the pedals and in turn, informed my approach to music-making in general:

1) Switching from lever to pedal harp.
2) Learning about pedal slides.
3) Discovering 'Fast 7ths'.

Using my own experience, through a self-reflexive approach, corresponds to the process described by Ellis and Bartleet: 'In practice-led research, composers and performers are uncovering the ways in which their personal lives and cultural experiences intertwine in the creation and interpretation of musical works' (Bartleet & Ellis, 2010, p. 337). Specifically, even though I was aware of the three events to be discussed, it was only by examining them through a reflexive lens that I was able to realize their significance, and the connections between them.

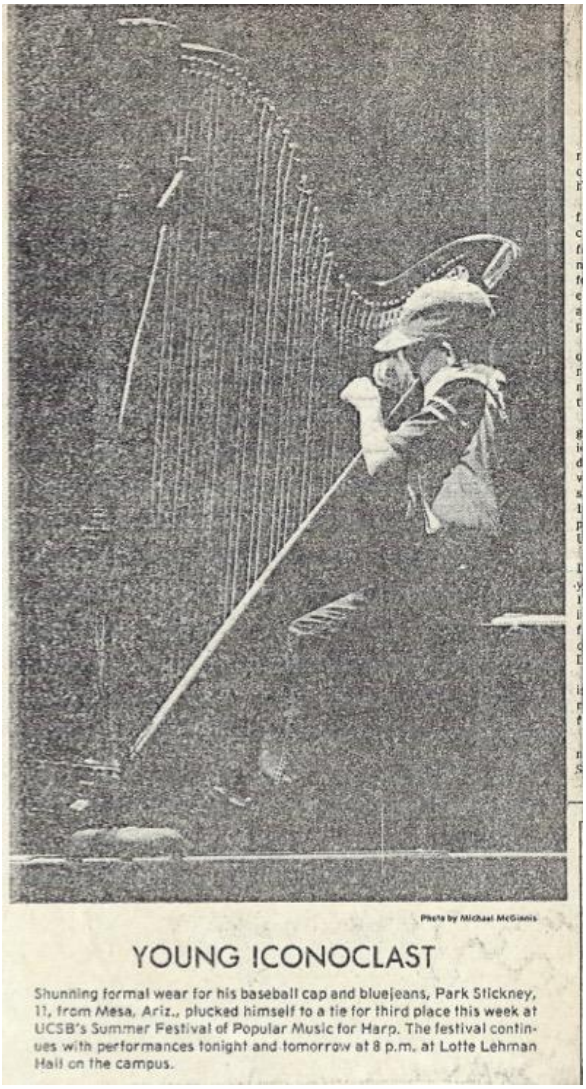


Photo by Michael McGinnis

YOUNG ICONOCLAST

Shunning formal wear for his baseball cap and bluejeans, Park Stickney, 11, from Mesa, Ariz., plucked himself to a tie for third place this week at UCSB's Summer Festival of Popular Music for Harp. The festival continues with performances tonight and tomorrow at 8 p.m. at Lotte Lehman Hall on the campus.

Figure 1: Newspaper clipping from 2nd jazz/pop harp festival 1979[6]

From Lever to Pedal: The First Jazz Harp Festival

In 1978, when I was 9 years old, and had played the lever harp for two years, I attended what was arguably the world's first jazz harp festival, the International Jazz and Pop Harp Festival, in Santa Barbara, California. This festival consisted of a competition, concerts and seminars involving many of the important actors in the field at that time.[7] I decided to enter the competition, which involved arranging and performing pop/jazz pieces in

[6] (McGinnis, 1979)

[7] Mimi Allen, Kippi Lou Brinkman, Stella Castellucci, Deborah Henson-Conant, John Escosa, Eleanor Fell, De Wayne Fulton, Harvi Griffin, Corky Hale, Daphne Hellman, Joe Longstreth, Carrol McLaughlin, Verlye Mills, and Jack Nebergall were among the faculty and participants.

specific styles. As the competition's pop/jazz repertoire was more chromatic than that of most normal second year harp pieces, and as my arrangements required ever-increasing lever changes as they progressed, it soon became clear that the lever-harp was a limitation. My teacher then suggested that I move from lever to pedal harp, perhaps earlier than would have been the case in a more traditional pedagogic timeline. I believe that the timing and circumstances of this lever-pedal change were a significant element in my musical development, one that put me on a different harpistic path, outside of the usual pedagogic system.

The crucial issue is that I changed harps because of harmonic complexities that *I* created and chose, rather than being obliged to change because of external pressure by repertoire composed by others. The pedals were a welcome solution to these chromatic problems, rather than an extra burden, and there was, from the start, a recognition of the direct harmonic link in the interaction between feet and hands. At least in my case, a successful transition to pedals was based on early introduction, in a creative musical context involving improvisation, arrangement, and composition.

Encountering the Pedal Slide

The second event occurred at the festival when, in one of the daily theory classes, I encountered a technique which was a revelation, and which has been omnipresent in my playing ever since: the pedal slide.


Video 4: Pedal Slide Scale

On the double-action pedal harp, the normal procedure for defining/changing pitches is the following: if one needs to alter a string's pitch, for example if a C♯ is required when the C strings are currently C♮'s (because the C pedal is in the natural position), the appropriate pedal (C) is moved to the new position (in this case, moved from natural to sharp), before the new pitch (C♯) is required. The important detail is that the pedal is moved *before* the string is plucked, when the string itself isn't vibrating (Video 2). If one plays a string and then moves the pedal *without* first dampening the vibrations of the plucked string, the result is a twanging mechanical semi-tone mini-glissando (Video 3), a mischievous, comic sound, like a cartoon sound


Video 2: Normal Pedal Movement


Video 3: Pedal Slide

effect, that nevertheless allows the harpist to play quick 2- or 3-note chromatic scales (Video 4).

After first encountering this technique in California, I subsequently attempted to incorporate pedal slides whenever possible, initially merely as something that sounded interesting, but very quickly as a means of creating scales that would be otherwise impractical. It's important to realize that the pedal slide is often regarded more as a 'special effect' rather than as a normal note in classical harp music, as harpists find the difference in tone between a slid string and a plucked string to be too jarring, too interruptive of the musical line. Even Bochsa, who acknowledged in his *New and Improved Method of Instruction for the Harp* the possibility of making chromatic scales using pedal slides, cautioned that 'This mode of playing produces a wretched effect' (Bochsa, ca. 1883, p. 41).

Since that first interaction with pedal slides, my harp approach has always been pedal-centric, perhaps because of the pleasure I found in playing notes with my feet, or perhaps because I found the idea of playing my instrument with four limbs, arms and legs, satisfying. In any case, I've always been fascinated by the foot facet of the harp, whether for pedal slides or complicated harmonies. This fascination with moving pedals may have influenced my interest in jazz, improvisation, and composition, or perhaps it was the other way around. I often perceive the relative dissonance of a chord based on the number of pedal movements necessary to achieve it. When I play highly chromatic pieces, whether classical harp repertoire like Renié's *Danse des Lutins*, or jazz standards like Coltrane's *Giant Steps*, I find the foot movements as equally satisfying and as musically relevant as the hand movements.

Even though the pedal movement itself is mostly silent, the harpist creates (and hopefully perceives) a spatial and kinaesthetic interpretation, a danced 3-D pedal map, which reflects the harmonic status of the harp at each moment, and of the music being played. Additionally, the performer hears subtle sounds generated by the discs moving on the strings, often inaudible to the public. These two elements provide a rhythmic counterpoint to the 'actual music' being played—sometimes completely in harmony with it,

other times providing a polyrhythmic and polymelodic commentary. Whether the harpist perceives this meta-music is another question.

Fast 7ths

This pedal-centric musical approach, combined with my exploration of jazz repertoire on the harp, was what led me to the third significant event in my harp development, albeit an event that happened many years later: the discovery of multi-pedal techniques, which led to the creation of a system that I called 'Fast 7ths.' (Video 5)

Video 5: Fast 7ths

At a certain point I realized that it was often necessary to move neighbouring pedals, e.g., F♯ and G♯, or C♯ and D♯, sequentially and rapidly. With quick pedal movements, there is an increased risk of various types of pedal errors: '…rapid pedal changes can however be quite dangerous, as there is a real possibility for the interpreter to lose control of the pedals and throw the harp into an entirely different harmonic layout than the one that is required.' (Bova, 2016, p. 291). It occurred to me that simultaneously moving the two pedals with the same foot might be a useful alternative, as it would halve the number of pedal movements as well as the necessary foot speed. I'd never encountered this technique before, neither in my lessons or in harp repertoire. Although it seemed risky (one could still lose control of the pedals), it also seemed possible that the risk might be less than with rapid pedal movement. It also seemed logical that the more one used this technique, the more control one would have, and the less unstable it would be. This turned out to be the case, as I was relatively quickly able to move these neighbouring pedals without problem. At this point I didn't know that harpists had been using these multi-pedal techniques in sporadic moments for centuries. Even though I independently discovered the possibility of double pedal movements, I wasn't the first person to have this idea, something I learned a few years after my initial encounter with multi-pedals.

It became clear that the harmonic contexts that allowed these double pedal moves were significant: in my case, it was often for dominant 7th chords. This led to the realization that all twelve dominant 7th chords could be played with one foot movement, using

only enharmonic sharp spellings, four of which used multi-pedal movements. This technique, which I called 'Fast 7ths', because it allowed playing dominant 7th chords efficiently and quickly, made possible a new harmonic complexity in my playing. In addition, as it made possible and practical previously *im*possible and/or *im*practical chords, this tool opened the door to the exploration of many other chords and theoretical concepts. With each new chord I added to my harmonic palette, my theoretical knowledge grew, which in turn gave me indications where to look for other chords and topics, including ensuring that I was using each chord in all 12 keys, not just the ones that arrived spontaneously in my pieces or improvisations, that is, not just the ones that occurred most naturally to my hands and feet.

Thanks to this feedback loop I was able to more fully explore musical elements which had previously been more theoretical rather than practical for me. These included tritone substitution, altered chords and scales, diminished scales, alterations on the dominant 7th (♭9, ♯9, ♯11, ♭13), the whole tone scale, and chromatic/circle-of-fifths sequences of dominant 7ths. Before Fast 7ths these topics were often too complicated to be effectively used in performance.

From Fast 7ths to Giant Steps

I've presented these three formative moments in chronological order. However, this creative practice project really began after the development of Fast 7ths. As this concept was constantly being validated through my teaching and my own practice, I wanted to find a way to expand on it, to both deepen and broaden my understanding of this idea. The Giant Steps for Harp (GSH) research project can be mapped in the following diagram:

Figure 2: Giant Steps for Harp mental map

At the centre is Fast 7ths which leads to the GSH project and then branches out. The original working question when I started reflecting on Fast 7ths was:

Since Fast 7ths are incredibly useful, why weren't they invented before? (Why me?)

An initial step to engage with this question was to simultaneously embark on three types of reflection: autoethnographic, historical, and practice-based, which map onto Stephen Brookfield's lenses concept (1995). The Background Stimulus section of this chapter is part of a retrospective auto-ethnographic look at the steps leading up to the development of Fast 7ths. This reflection helped me to perceive the line from the Santa Barbara festival through Fast 7ths and my active approach to pedals. Even though I was present during these events, their interconnection hadn't been evident prior to this reflective enquiry.

Next, I started a historical exploration of the multi-pedal technique, as multi-pedals form an essential ingredient of Fast 7ths. This exploration, which will be unpacked in Chapter 2, not only acquainted me with the previous stages of multi-pedal use, but also led to the idea of the closed harpist/composer circle, which ultimately informed the process of composing the Etudes composition and the interactions with non-harpist composers.

Finally, I reflected through practice, by engaging with several jazz standards which I'd always wanted to play, but for which I hadn't yet found pedal solutions as they seemed 'impossible'. Finding pedal solutions to practical problems was a way to reflect globally on the research project, and to enter the project via my practice. As will be discussed, this reflection produced two unforeseen concrete results (the x-ray pedal notation used in the 'impossible standard' videos, and utilizing the harp's discs to understand pedal movement). But the reflective value of the drawing's third stem can be found in the dozens of hours I spent focused on minute pedal movements, as well as the preludial joy of starting this exploratory journey by engaging in a familiar practice, albeit in an already heightened, reflective manner.

All the sections of this project simultaneously exist in theory and practice. The reflective sections (which often have been presented in this critical commentary) are easily

retranslated into the musical ideas which inspired them, and the compositions which make up the portfolio are the direct result of reflection, forming a dialogic circle.

Overview of Critical Commentary; from Questions to Action

This Critical Commentary serves multiple functions: As a means to dialogue with the praxis through writing (both from the writer/researcher and the subsequent reader/researcher viewpoints); as a repository of data (historical, practical, logistical) which informs the musical elements in the project; as witness to (and participant in) the wide-ranging Giant Steps for Harp project. The critical commentary is primarily useful in aspects of the project which are most easily explored and communicated through text, for example with the historical framework. The commentary consists, in addition to this introduction, of the following: a methodology section, contextual/historical framework, and chapters that dialogue with the three foci of the portfolio: the 'Impossible' Standards videos, my own compositions, and interactions with additional composers. It finishes with conclusions and ideas for future work in this area.

Chapter 2: A Contextual and Historical Framework

Introduction: 14 Moments

To engage with the future direction of multi-pedal and other active pedal techniques implies having a critically informed awareness about their present and past, which compels a historical exploration of the subject. This chapter will explore fourteen specific moments in pedal harp history, from the 18th to the 21st centuries, which are relevant to the current research, and will accomplish this via documents, method books, scores, images, and video. The purpose of this overview isn't to 'justify' the current use of multi-pedal and other active pedal techniques, but rather to serve as a lens through which to perceive the changes in both use and popularity of these techniques, which will then allow a better contextualization of the performances and compositions comprising the Practical Elements that will follow in Part Two.

Multi-Pedals and the Single-Action Harp

The idea to move multiple pedals with one foot, though largely an outlier concept now, dates to at least 1787 when it was used by Jean-Baptiste Krumpholz in his *Sonata No. 1, Op. 13* (Parker, 2005, p. 137). One finds numerous references to multi-pedal movements in single-action 19th century harp instructional method books (Naderman, 1800; Bochsa, 1830; Challoner, c1913), and examples are easily found in compositions of the era (Krumpholz, ca. 1787; Bochsa, 1830). The history and use of single-action multi-pedal techniques has been largely explored by the recent doctoral research of Kanemitsu-Nagasawa (2018), Cleary (2016) and the scholarship of Parker (2005) et al. Their research makes it clear that multi-pedal movements were a normal technique, for specific chromatic situations. The Giant Steps for Harp (GSH) research project builds on their work, in part, to engage with the question of whether Bochsa and other single-action harpists used multi pedals to create a Fast 7ths-style system.

1. Bochsa and the Possibility of Fast 7ths

Bochsa, in his Method explicitly mentions multi-pedals: 'Sometimes one encounters a passage like this...in that case put the foot entirely on the three pedals at the same time'[8] (Bochsa, 1830, p. 51).

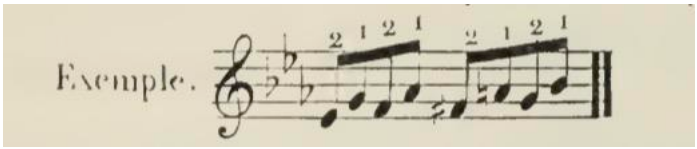


Figure 3: Bochsa triple pedal example (using the F, G, A, pedals)

Significantly, this movement is identical to the Fast 7th spelling for the F♯ dominant 7th chord, although the resulting notes created by the single-action and double-action harp are different as normally the two harps have different base tunings.

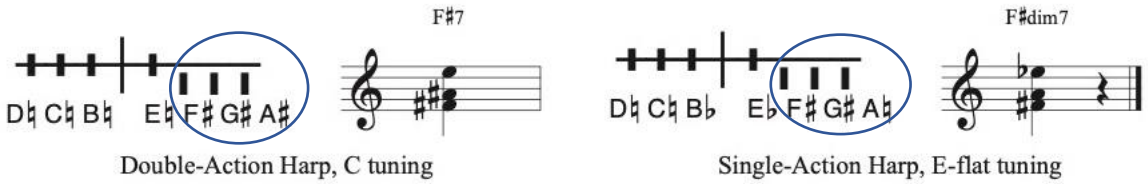


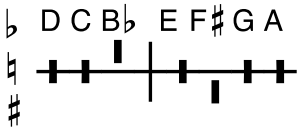
Figure 4: Triple pedal results in single- and double- action harps[9]

The fact that single-action harpists of the period were using triple pedal foot movements meant that they possessed one of the necessary requirements of the Fast 7ths system. However, the Fast 7th system is not just a method of playing all twelve 7th chords with one foot movement. Rather, its utility stems from the efficiency and speed derived from

---

[8] '*Il arrive quelquefois qu'on rencontre des passages tells que celui ci-dessous. Alors on met le pied entire sur les trois pédales à la fois…'* Translation Stickney

[9] This type of graphic pedal notation doesn't normally have the note names (e.g., D♮). These have been added here as a guide for the non-harpist reader. 'C tuning' means that the harp strings are in C major when all the pedals are in the middle position. The graphic notation indicates whether each pedal is lowered/♭ (above the line), normal/♮ (on the line), or raised/♯ (below the line).



The above diagram is for a harp tuned in C major–the normal tuning for double-action harps. In the case of a harp tuned in E♭ major–as in Figure 4–placing the E pedal in the middle (natural) position, creates an E♭. Similarly, placing the A pedal in the sharp (lower) position, creates an A♮.

dividing those chords between *alternating* feet when navigating the circle of 5ths or the chromatic scale. It's possible to play all twelve 7th chords on a single-action harp tuned in any key, including E-flat major, but not every key provides the crucial right foot/left foot symmetry. In E♭ major, for example, playing the chords chromatically from E7-F7-F♯7 uses only the right foot, and the A7 and B7 chords require both feet, breaking the bipedal symmetry.

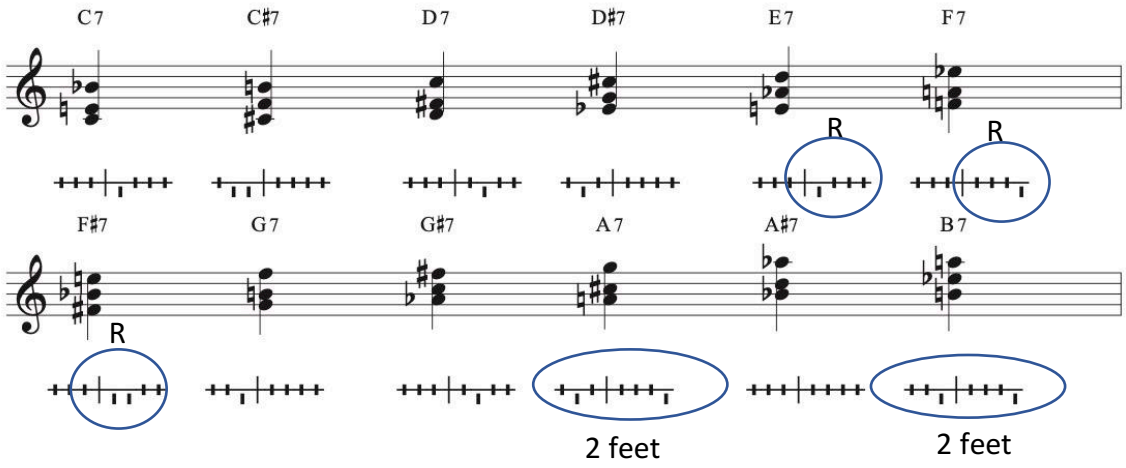


Figure 5: Simplest solution for all dom. 7th chords, single-action harp E♭ tuning

This invites the question of which single-action harp tunings permit Fast 7ths. It's clear that Fast 7ths are possible with single-action harps tuned in C major, as this is the default tuning for the double-action harp. I have conducted several Fast 7ths workshops with Austrian harpists playing the modern single-action Tyrolian harp. Although these harps are most often tuned in E♭ major, tuning the harps in C major permits players to use the Fast 7th system, as if they were playing a double-action harp. At the same time this tuning also introduces harmonic limitations as there are no flat keys available on the harp tuned in this manner.

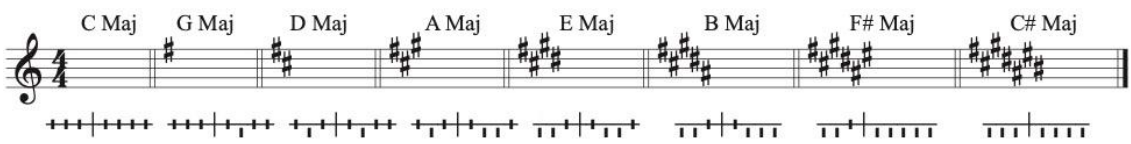


Figure 6: All available keys for a single-sction harp tuned in C major

A useful technique to determine which other harp tunings permit Fast 7ths, is to use the two whole-tone scales as an indicator. If one can map a whole-tone scale on each side of the harp's pedals, then the Fast 7ths system is possible. As was discussed in the Fast 7ths video, the notes in the two whole-tone scales are exclusive: each whole-tone scale

allows for the construction of half of the existing dominant 7th chords (without the fifth). If both whole-tone scales can be played on alternating sides of the harp in a given tuning, it will be possible to play six dominant 7ths on each side of the harp, and thus the Fast 7ths system will be possible. This diagram shows all seven single-action tunings in which this is the case.

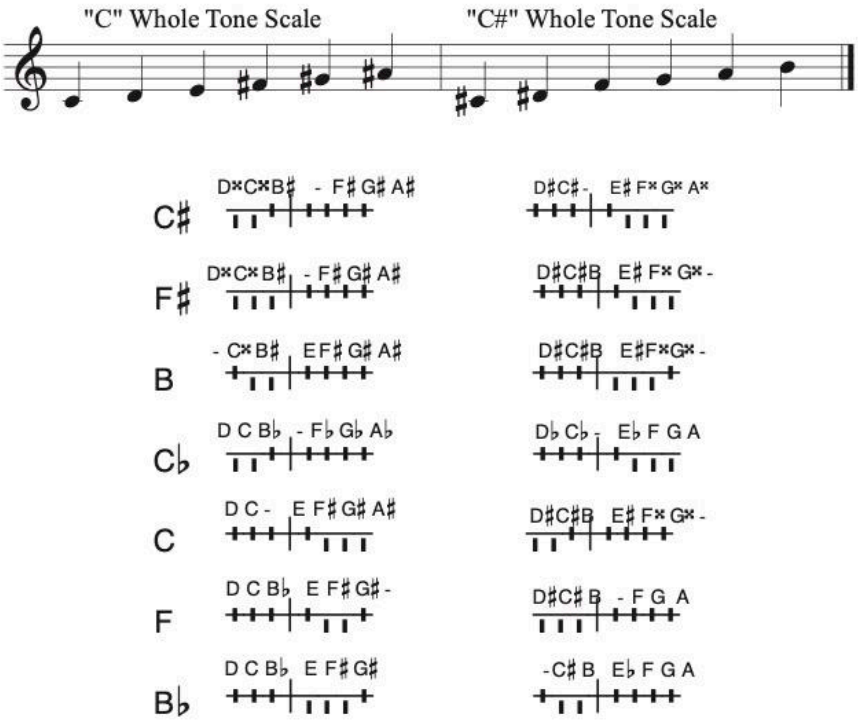


Figure 7: All possible single-action tunings for Fast 7ths (pedals labeled for clarity)

Of the seven possible tunings which allow for Fast 7ths, B♭ major was often used in single-action harp practice, for example as a preferred tuning for Mozart's Flute and Harp Concerto, K. 299 (Cleary, 2016, p. 120). The only difference between the single-action Fast 7ths system using B♭ maj. and the double-action system with C maj. is that the alternating three pedal / two pedal movements are on the inside pedals with the single-action harp (CB and EFG) and with the outside pedals on the double-action harp (CD and FGA).

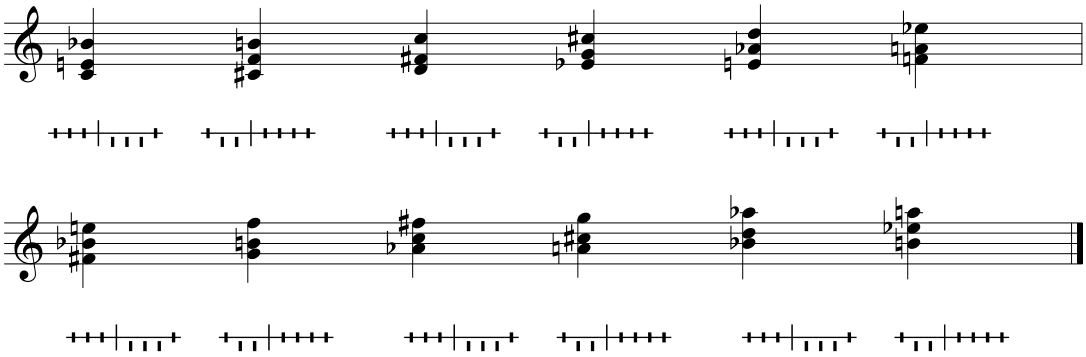


Figure 8: Simplest solution for all dom. 7th chords, single-action harp, B♭ tuning. [10]

Given that Bochsa and his colleagues used triple pedals and occasionally tuned their instruments in B♭ major (one of the seven possible tunings for Fast 7ths in the single action harp) it's clear that they could have discovered the Fast 7ths system. However, one doesn't find evidence of this system, for example chromatic series of dominant 7th chords, in the harp compositions of the era. At the same time, one often finds chromatic series of diminished chords in the works of Bochsa et al. As both diminished chords and dominant 7th chords contain harmonic tension, in the form of tritones, one could imagine that the progressions of diminished chords in Bochsa's compositions served the same compositional/harmonic purpose. This speaks to the discussion of multi-pedals and Henriette Renié later in this chapter.[11]

The triple pedal movement used by Bochsa in Figure 3 was used to access the F and A pedals, with the G pedal being included as a non-harmonic consequence. A different approach to this 'forced G pedal' technique was to fold up the G pedal while playing, allowing clear access to the F and A pedals. This movement was used in the music of Spohr *(Cleary, 2016, p. 148)* and was described by Challoner in his *New Preceptor*: 'put up the G♯ Pedal near to the side of the Harp' *(Challoner, c1913, p. 22)*. While reflecting on the possible applications of this folding technique for my double-action harp practice, I realized that there's also a third possibility which allows one to depress the F and A pedals without touching the G pedal, but without the extra folding movement. This third possibility is

[10] See Appendix A for the double-action Fast 7th system using a C maj. tuning

[11] Additionally, realizing that B♭ major is a viable alternative for Fast 7ths and the single-action harp will undoubtedly be useful for Tyrolian harp players.

made possible by the fact that the harp's pedals each have different stem lengths from the screw to the rubber cap:

Figure 9: Pedal stems, original position (E F G A pedals from left to right*)*

After unscrewing and exchanging the G and E pedal stems, the F and A pedals surrounding the G pedal were now effectively 1 cm longer. This allows one to depress the F and A pedals without touching the G.

Figure 10: Modified pedal stem order

From a Fast 7ths perspective, this allows two possibilities for the F♯7, both with one foot movement, one with G♮ and one with G♭ (forming respectively the ♭9 and 9 on the F♯7).

Figure 11: Two possible F♯7 chords enabled by pedal modification

2. Backofen and Pedal Notation

The second significant element of this section deals with pedal notation. Johann Backofen's approach to this issue is noteworthy because of the extreme precision of his pedal notational approach. Most importantly, he experimented with notating the pedals on a separate third stave, a method which I would independently develop 200 years later, as part of this research.

Any pedal notational system needs to communicate two main elements: the accidental in question, and whether the pedal is notched or unnotched. Backofen added a third element, the idea of un-notching a pedal before releasing it upwards, which he notated with this sign:

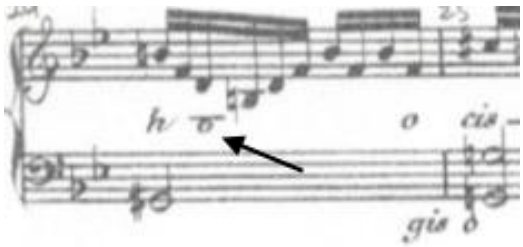


Figure 12: Backofen's un-notching symbol *(*Kanemitsu-Nagasawa*,* 2018*)*

Backofen appears to be the only composer of his era explicitly notating this movement. Significantly, this technique is an important part of my notational system, as it allows one to assure the 'acquisition' of multiple notched pedals before moving them. My approach to this third-stave notation will be explored in Chapter 5 of the Practical Elements section of this commentary.

Backofen may have only used this third stave as a pedagogic device, and perhaps only for a few years. Kanemitsu-Nagasawa shows that Backofen, in the 1801 and 1807 editions of his *Anleitung zum Harfenspiel*[12], used a middle stave pedal solution for an excerpt from an earlier Krumpholz work; later, in his *Harfenschule*[13] (1827) Backofen presented the same excerpt without the third stave. (Kanemitsu-Nagasawa, 2018, pp. 92-94). Even if Backofen may have abandoned the third stave idea, the realization that a previous harpist had also experimented with this approach helped to validate the idea

[12] Instructions for Harpists

[13] Harp School

for me, and allowed for a useful comparison in our respective notational choices and solutions. It's possible that the music of Backofen's time didn't involve enough pedal movements to necessitate a dedicated stave. I find, however, that this notational method allows a composer to notate many simultaneous pedal movements clearly, and in a small space. More importantly, it shows precisely when these movements are to take place and makes explicit the rhythmic movement of the feet.

Multi-Pedals and the Double-Action Harp

With the invention of the double-action pedal harp in 1810, the single-foot multi-pedal technique becomes less visible but remains present. Cleary finds mentions of multi-pedal use in 19th century method books by F. C. Meyer (1825), T. Labarre (1842) and A. Prumier (1865) (2016, pp. 218-219). This section will continue the exploration of significant moments and actors, from 1901 to the present, starting with Wilhelm Posse's *Eight Etudes for Harp.*

3. Snubbing Posse's Pedals

The *Eight Etudes* by Wilhelm Posse (1901) are not only an excellent example of multi-pedal techniques for the double-action harp, but also an example of how these techniques were consciously ignored by generations of harpists. Posse specifically states at the beginning of each etude that 'Where two indications are printed one below the other, both pedals are to be depressed at the same time' (Posse, 1901), explicitly requesting double pedalling.

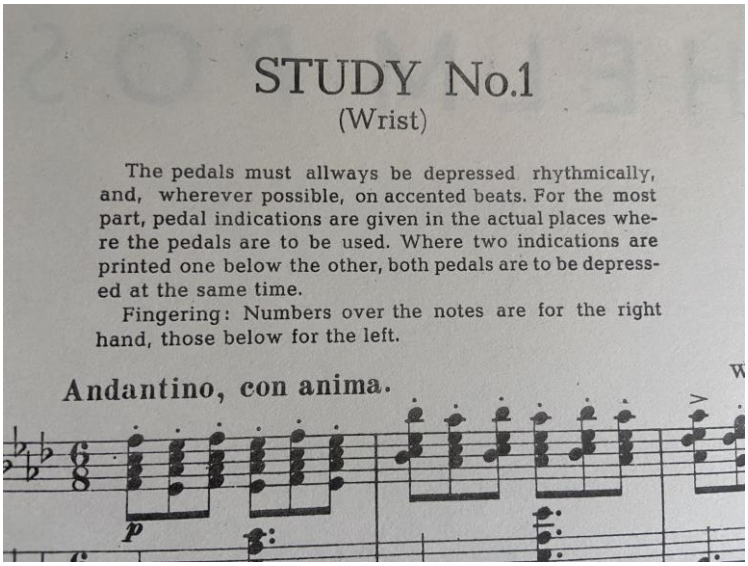


Figure 13: Posse Study #1 (1901)

Despite this instruction, harpists often systematically 'correct' the parts to avoid what they perceive as mistakes. For example, Milan Conservatory harp professor Maria Elena Bovio confirmed in an interview that, in Italy from 1950 until the Bologna Accords in the 1990s, *every* classical harpist who studied in a conservatory was required to play six out of the eight Posse etudes, and it seems that *nobody* followed the multi-pedal instruction, as multi pedal techniques were completely unknown at that time (Bovio & Dall'Olio, 2021). To be fair, this shows that there are often multiple solutions for complicated pedal passages. However, if one compares the original Posse with the 'correction', it's easy to see that the consequence of avoiding multi-pedals is moving more pedals, more quickly, and less organically with regards to the harmonic and rhythmic situation of the piece. As an example, this passage from Etude No. 1 contains three cases of multi-pedal ♮-♭ pairs:

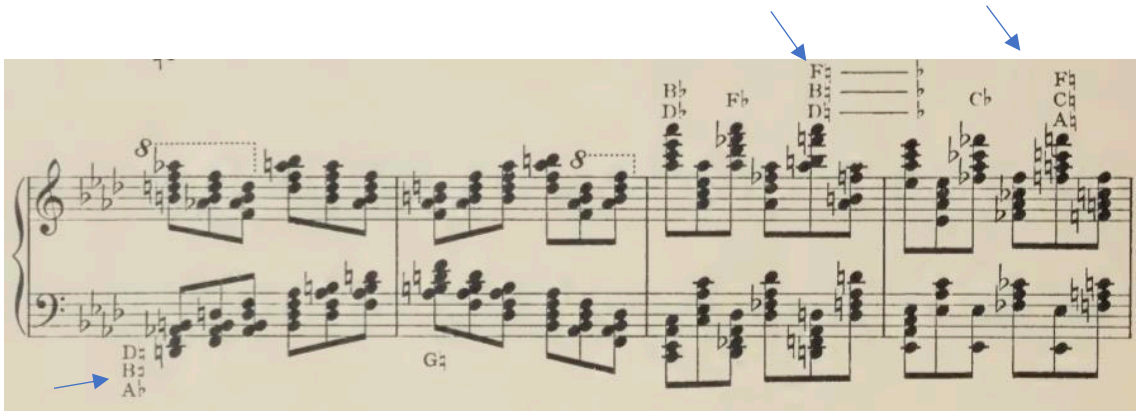


Figure 14: Posse Study #1, mm 52-55

Harpist Gabriella Dall'Olio was willing to share the solution she previously played, which avoided the use of multi-pedals:

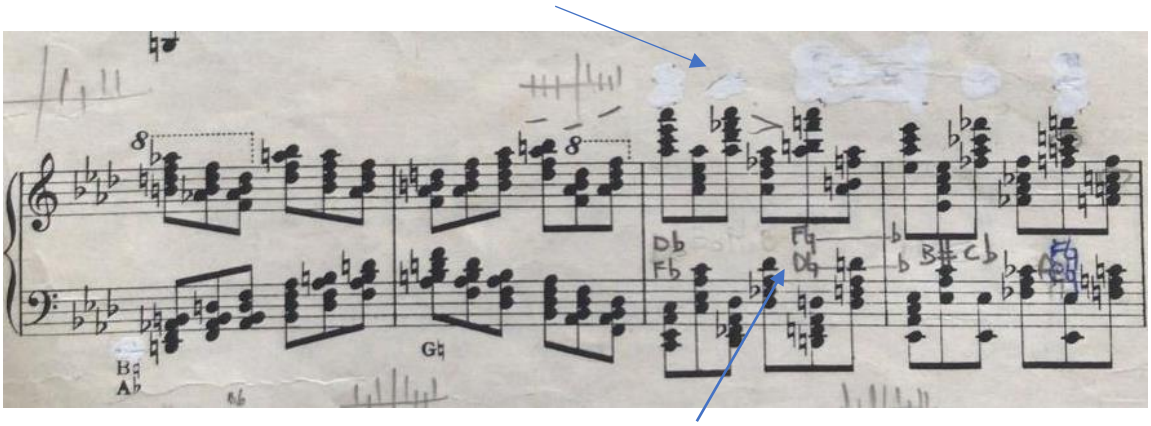


Figure 15: Posse Study #1, mm 54-55, showing Dall'Olio's typex and modified pedals

For example, consecutively moving the D♭, B♯ and C♮ is an awkward action that directly affects the possible final tempo of the piece, as one can't play the piece any faster than one can complete this pedal movement. It seems ridiculous for a global musical decision (tempo) to be subordinate to a technical issue, especially one that stems from avoiding a technique that the etude was specifically created to explore.

The etude continues with a similarly significant passage:

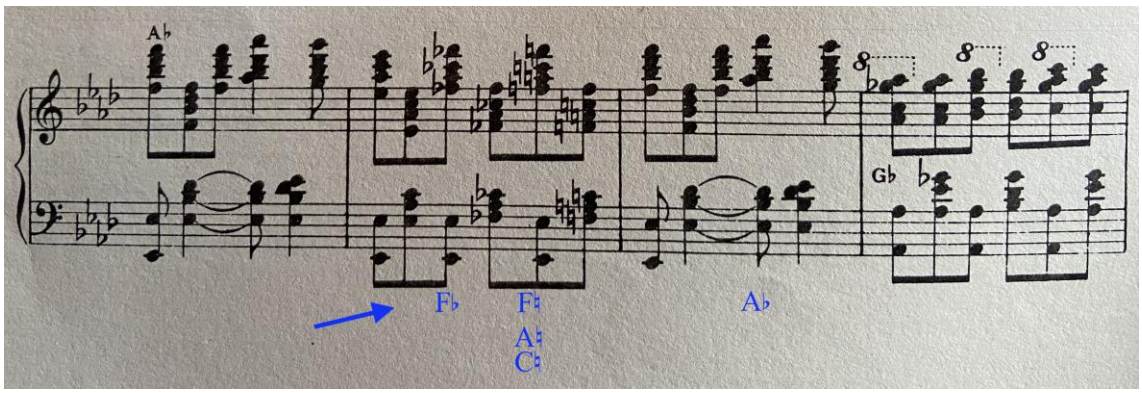


Figure 16: Posse Study #1, bars 56-57, showing original pedals[14]

[14] Pedal notations in blue were added by the author. Posse's notations are in black.

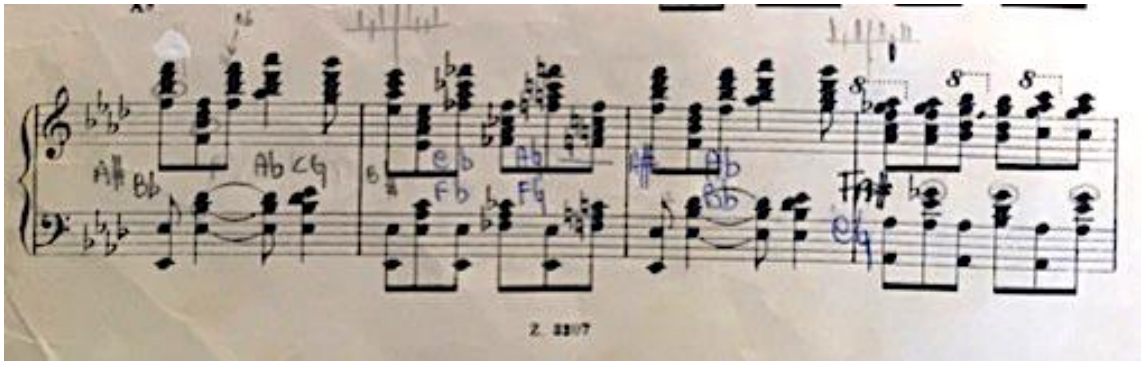


Figure 17: Posse Study #1, bars 56-57, Dall'Olio's non-multi pedal solution

Note that in Figure 16 the original pedal solution has half as many pedal movements as the solution in Figure 17 (five instead of ten) and that these are more rhythmically integrated with the harmonic changes of the passage.

The Posse Etudes remain an important part of the harp repertoire for advanced/conservatoire-level players. Despite this, I have yet to encounter a harpist who plays the pedals as marked, nor has anyone explained that this omission is by conscious choice. One of the hopes for this research is that Posse's perceptive use of pedals will be recognized for its merits.

4. Salzedo and Renié

Two other 20th century harpist/composers, Carlos Salzedo and Henriette Renié have a less active relationship with multi-pedals. In the glossary of symbols in *L'Étude Moderne de la Harpe* (1921), Carlos Salzedo indicates his concept of how multi-pedals are to be notated:

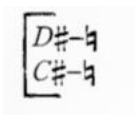


Figure 18: Multi-pedal notation in *L'Étude Moderne de la Harpe*

However, he notes: 'This motion—impracticable excepting for very brief durations—is advisable only when the other foot cannot reach one of the pedals, or when three pedals have to be moved simultaneously' (1921, p. 7). Here, by 'three simultaneous pedals', one can assume that Salzedo doesn't mean three pedals with the same foot, but rather three *total* pedals, two on one side of the harp, with one foot, and one on the other

side, e.g. C♯ D♯ with the left and F♯ with the right foot. However, an exploration of Salzedo's compositions doesn't reveal an actual use of this multi-pedal technique; it's assumed that he included it in the glossary as a way of being thorough (van Leeuwen, 2021; Giles, 2021). In any case, this shows that Salzedo was aware of the concept of multi-pedal, even if he didn't use them himself.

Another significant multi-pedal encounter involved Henriette Renié. Renié, like Salzedo, a student of Alphonse Hasselmans, proposed a multi-pedal solution in her pedal harp edition of Debussy's *Dances Sacré et Profane,* a composition which, even more than Posse's etudes, is an essential part of the pedal harp repertoire. In bar 55 there's a passage consisting of descending diminished 7th chords, that is infamous among harpists for its treacherous pedals. Swanson speaks of 'The combination of chromaticism and speed that collide there to produce one of the most awful pedal sequences in the harp literature' (2007). Renié's solution to the passage is to move (and then notch) the G and E pedals with the right foot and the D pedal with the left foot. It must be noted that this proposal involves notching the two pedals in natural while avoiding displacing the already notched F♮, adding a significant degree of complexity.

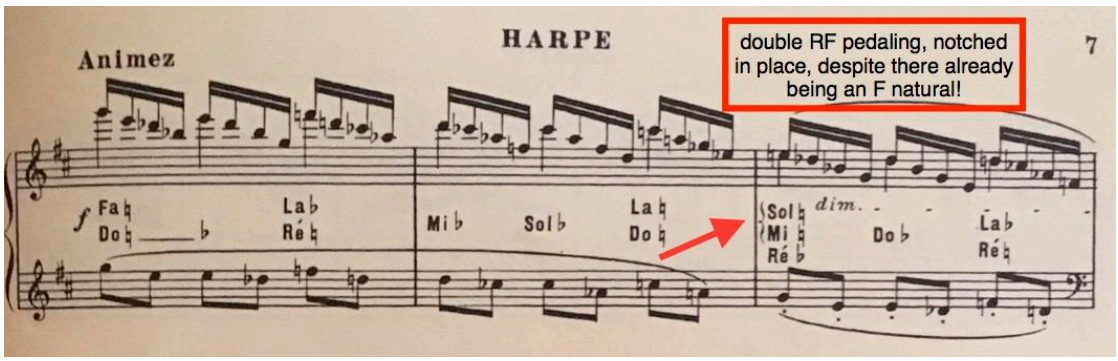


Figure 19: Debussy's *Danse Sacrée* showing Renié's proposed solution

As Swanson also notes, 'Everyone that I talked to, absolutely everyone, had something else taped over these six bars. To my knowledge, no one plays them exactly as they were published' (2007). But the salient point is that, when faced with this specific pedal/note problem, Renié chose a multi-pedal solution. It's important to note that the *Dances*

were originally composed for the Pleyel cross-strung chromatic harp which has no pedals. Even though they are both harps, the inherent differences in the chromatic and pedal harp's chromatic mechanical approach are significant enough that effectively Renié was making a transcription from chromatic to pedal harp.

One finds examples of multi-pedal in several other Renié transcriptions. For example, in her transcription of the Bach G maj. Partita (BMV 829), there's an indication at bar 52 of the *Praembulum* that the F and G pedals should be moved together, which suggests multi-pedalling. Admittedly, one could also achieve this by crossing under with the left foot, which is a much more common technique, and one that we'll examine with Stella Castellucci.

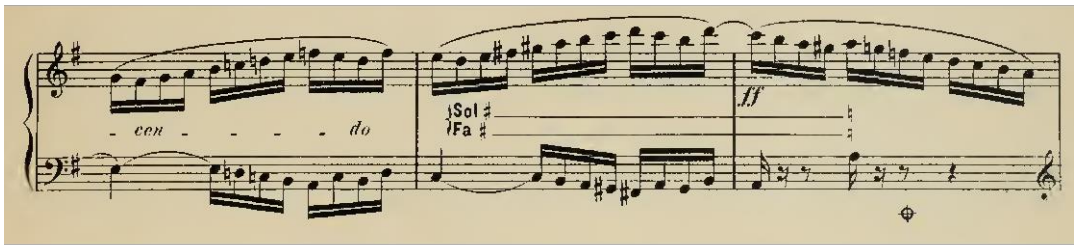


Figure 20: Renié Bach Partita, probable multi-pedal solution

Additionally, In Renié's transcription of Bach's Prelude in D minor (BMV 851) she proposes a solution which represents a clear proposal of multi-pedal use at bar 24, as the left foot is moving the D pedal while the right moves G and E.[15]

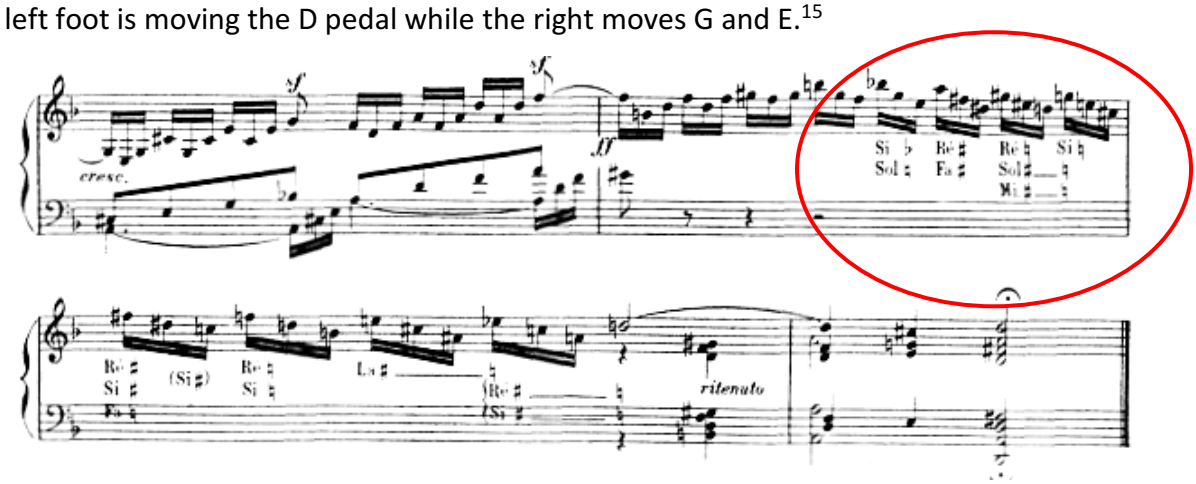


Figure 21: Renié Bach, bar 24, explicit multi-pedal solution.[16]

[15] The author thanks harpist Charlotte Seale for bringing this example to his attention.

[16] The F♮ on line 2 seems to have been incorrectly noted on beat 1

As with the Posse etudes, this passage is also occasionally rewritten by other harpists to avoid the multi-pedals. Here is harpist Charlotte Seale's solution:

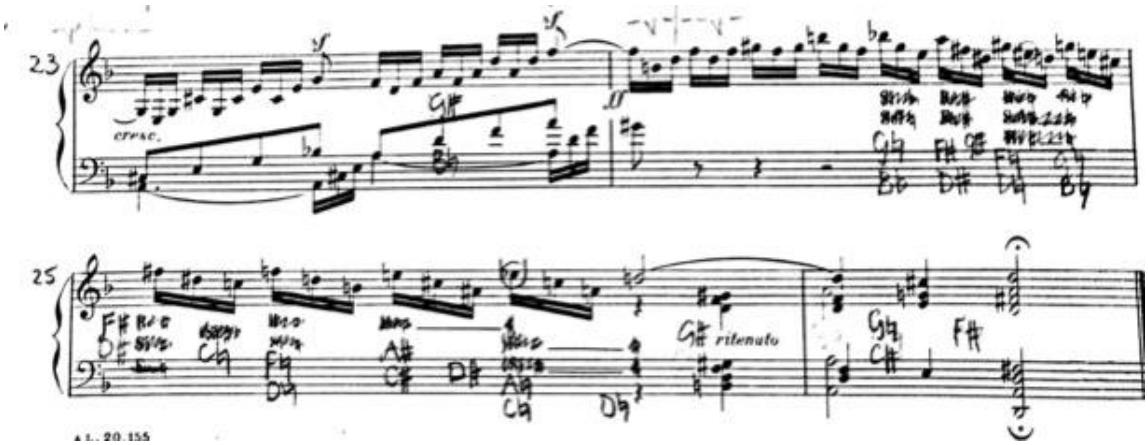


Figure 22: Same passage showing Seale's solution to avoid multi-pedals.

Here are the two solutions notated using my proposed third stave method, as I find that this makes a direct comparison of the pedal movement clearer. The main difference is that on three occasions the harpist must move the pedals twice as fast (semi-quavers rather than quavers). This not only has a direct impact on the final tempo of the piece, but also adds the complication of a metric change—albeit a simple one, temporarily doubling the pulse, but still an additional factor to be negotiated.

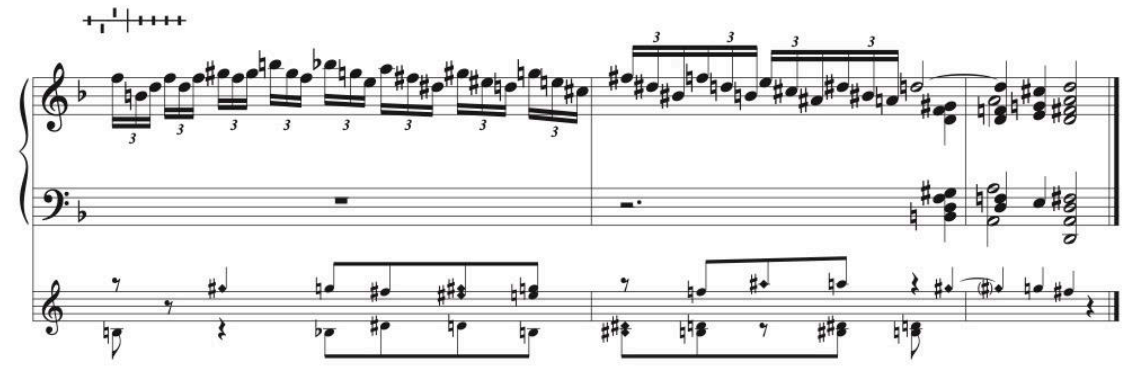


Figure 23: Renié original solution (Fig. 21) in 3 stave notation. (Video 6)

Video 6:
Renié Bach Multi-Pedal Solution

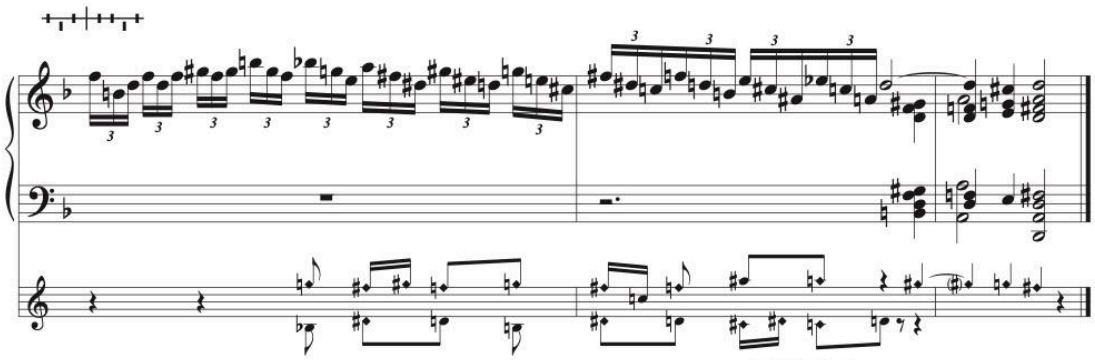


Figure 24: Non-multi pedal solution of Fig. 22 in 3 stave notation. (Video 7)

Video 7: Renié Bach non-Multi-Pedal Solution

An alternative possibility would be to modify the voicing of the descending diminished triad itself, taking advantage of the third (m3) when it didn't involve adding extra pedals and otherwise doubling one of the notes of the tritone. This preserves the basic diminished triad harmonic color of the passage while allowing for a smooth pedal line.

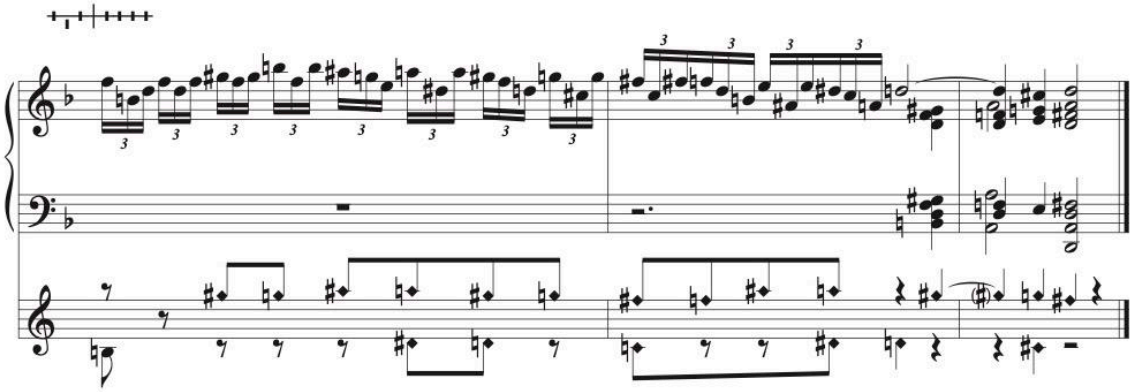


Figure 25: Diminished triad / tritone solution (Video 8)

Video 8: Renié Bach Tritone Solution

One possible objection to this solution is that alternating tritones and diminished triads changes the harmonic shape of the phrase. If the harpist wished to retain the original chord shape while taking advantage of alternating feet pedal movements, an unconventional solution could be to replace the diminished triads with dominant 7th (fast 7ths). One might consider this harmonically possible, as diminished triads and dominant 7ths both make use of tritones.

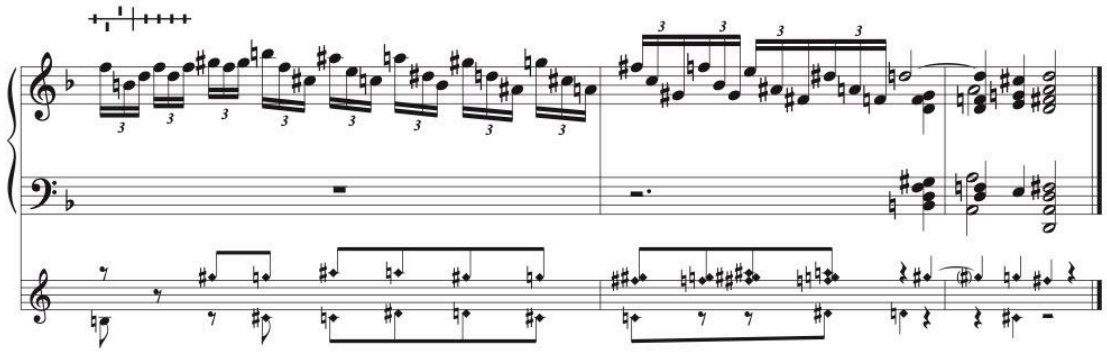


Figure 26: Solution using Fast 7ths (Video 9)

Video 9: Renié Bach Fast 7ths Solution

This solution retains the same harmonic shape as the original, while still allowing a smooth pedal solution. It's easy to argue that this moves from transcription to arrangement, and even to re-composition. But at the same time, it removes any pedal difficulty, and aligns a smooth pedal motion with the musical line. All four of the proposed pedal solutions for this passage represent choices, each with their own consequences, as can be seen in the following diagram:

Pedal Solution	**Advantage**	**Possible Disadvantage**
Multi Pedal (Fig. 23)	Smooth pedals	Uses multi-pedals
Single Pedal (Fig. 24)	doesn't use multi-pedals	Less smooth pedals
Tritone / Dim triad (Fig. 25)	Smooth pedals	Changes the passage's parallel chord line
Fast 7th (Fig. 26)	Smooth pedals, doesn't change the passage's parallel chord line	Changes the harmony (Dom7 instead of Dim7)

Figure 27: Comparison of Renié Bach pedal solutions

The variables of pedalling and enharmonic spelling, and the various degrees of fluidity (of musical line, of foot movement), invite reflection on the importance of the exact original notes in constructing the overall musical idea. On the piano this isn't an issue, and the use of descending diminished triads is a practical and compelling option. On the harp, in this situation, one must make philosophical / musical choices—and the decision to accept the primacy of individual notes over the larger *architectural intentions* is a fundamental choice which perhaps deserves constant interrogation.

Thus far this commentary has explored examples of Renié's multi-pedal use in transcriptions of non-harp repertoire. This is by design, as she seems to utilize multi-pedals more frequently in transcription than in her own compositions. A case in point is the first page of her pedal-rich composition *Danse de Lutin*s. In bar 10, one could easily move the G and E pedals from flat to natural with the right foot, without notching. This is especially effortless as they then return to the flat position in bar 11, at a moment when one is also obliged to move the C pedal to the flat position with the left foot (Video 10).

Video 10: Renié *Lutins* Bar 11, Multi-Pedal

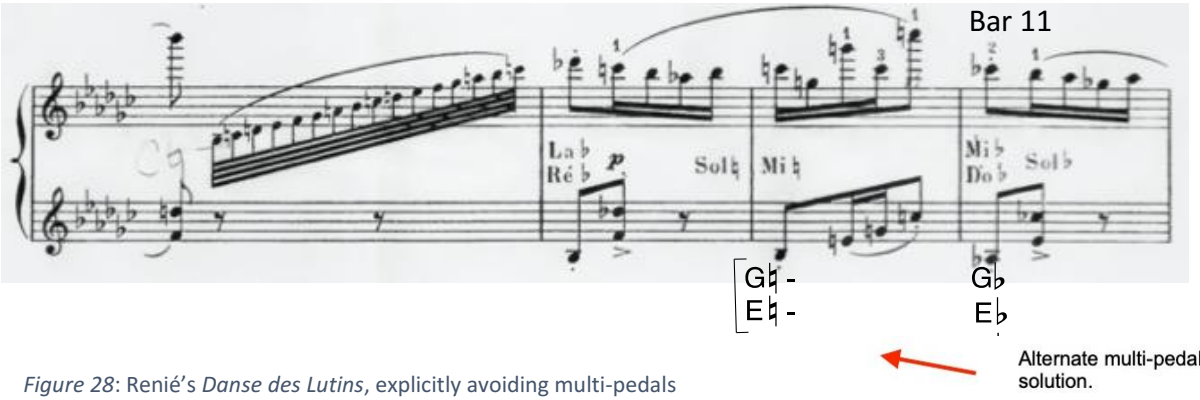


Figure 28: Renié's *Danse des Lutins*, explicitly avoiding multi-pedals

In this instance, however, Renié specifically notates the pedals sequentially, first the G♮ then the E♮ (Sol♮ and Mi♮), both moved with the right-foot, and in bar 11, the E♭ and C♭ together (two-feet), followed by the G♭ (Video 11). This is basically the same pedal dilemma she addresses in the Debussy *Danses*. However, in the *Danses* she chooses a multi-pedal solution and here she avoids it, even though in *Lutins* a multi-pedal solution would be easier, as it wouldn't be necessary to notch the pedals, as they both immediately return to the flat position.

Video 11: Lutins Bar 11 Pedalling as Notated

At the same time, at bar 37 of *Lutins*, Renié proposes a solution that could be either multi-pedal (Video 12) or could imply crossing the left foot over to manipulate the E pedal. (Video 13)

Video 12: *Lutins* Bar 37 Multi-Pedal Solution

Video 13: *Lutins* Bar 37 Cross-Pedal Solution

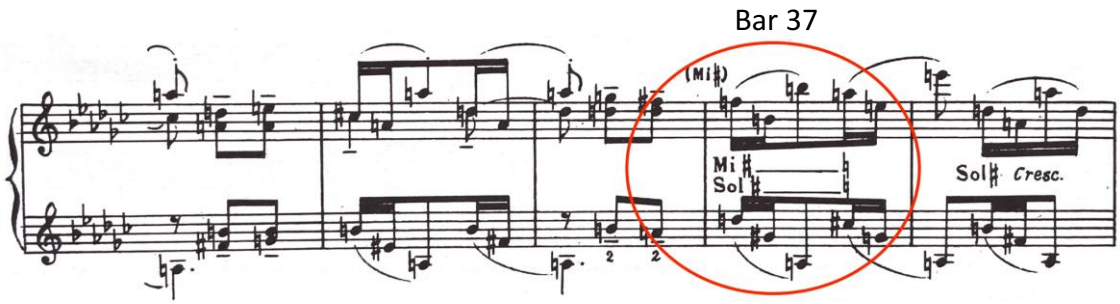


Figure 29: *Danse des Lutins,* bar 37, either multi-pedal or crossed-leg pedal

In any case, even though Renié occasionally used or implied these techniques, its relative scarcity in her work, combined with the seeming absence in the work of Salzedo brings up an interesting question. What happened? Why did harpists stop using/teaching/ writing for these techniques? I wonder if it's possible that there's a connection with Hasselmans, who was the teacher of not only Salzedo and Renié but also of Marcel Grandjany, Lily Laskine, Marcel Tournier, and Pierre Jamet. None of these harpists, including Hasselmans himself, used multi-pedals in any significant way in their compositions. And all of them went on to teaching careers which influenced generations of harpists throughout the world. Hasselmans (1845-1912) was a contemporary of both Zabel (1835-1910) and Posse (1852-1925), both of whom used multi pedals in their compositions. He also created new editions of Bochsa's compositions, so it seems implausible that he wouldn't have been aware of multi-pedalling. Is it possible that as he didn't utilize them (at least in his composition), his students continued in the same vein? In any case, this research project is more concerned with 'Where shall we go from here?' than 'How did we get here?' The intention is to locate this research contextually and historically, while attempting to not pass judgements about the enharmonic and technical decisions of other harpists.

It might be that the use of multi-pedal movements is linked more to harmonic choices / desires and repertoire, than to a conscious decision to avoid using pedals in this manner. As multi-pedal movements have been used in varying degrees since the beginning of the pedal harp, perhaps their periodic re-discovery says more about the types of music being played than the harpist doing the playing. For pre-20th century pedal harp practice, the main method for determining multi-pedal use is from harp scores and methods, as there weren't recordings or films. This means that the historical record of the first 200 years of the pedal harp is limited to the extant documents of composers and pedagogues, which is one step removed from the direct practice of performers. Since the

advent of recording, it has become possible to supplement this document-based record with evidence from films, videos, and occasionally photographs. As multi-pedalling can be difficult to establish from sound alone (with some exceptions), these visual recordings allow a unique tool to understand if and how harpists are engaging with these techniques. This serves as a supplement to current texts and compositions, not as a replacement, as the first-person narrative offered by a harp method written by a practitioner remains as valid and useful as the texts of Bochsa and Backofen.

5. Casper Reardon

One prime example of a harpist whose use of multi-pedals is made explicit by film/video is Casper Reardon, often considered the first jazz harpist. Video and photos provide two examples of multi-pedals from Reardon. In the 1937 film *You're a Sweetheart*, a closeup of his feet shows him depressing the D♭ and B♭ pedals simultaneously with his left foot following an E♭ diminished chord. (Swanson, 2018)

Figure 30: Multi-pedal use by Casper Reardon (Swanson, 2018)

Similarly, in a seemingly candid photo taken while he was playing *Young Man with a Harp* with composer Dana Suesse, one can see the same foot position:

Figure 31: Lateral foot position suggesting multi-pedal use (Mintun, 1940)

Whether this image is further evidence of multi-pedal use, a lateral foot position, or merely a resting foot posture, is of course debatable and speaks to the limitations of photographs when compared to video. Nevertheless, the video footage makes it evident that Reardon used multi-pedals in his playing. Salzedo, Reardon's teacher at the Curtis Institute, reportedly claimed that Reardon was able to 'move all 7 pedals at once' (Giles, 2021), and a 1936 article in The New Yorker reports 'Casper feels that it's his pedalling which makes him as good as he is' (Cooke & Maloney, 1936, p. 18). Unfortunately, Casper Reardon died suddenly at the age of 33 in 1941. Had he lived longer, it's easy to imagine that he would have been a popular champion for jazz harp in general, and the use of multi-pedals specifically.[17]

[17] Reardon would have been 70 at the time of the first jazz harp festival. As he was born in 1907, he could have become a direct link from Posse (1852-1925) to harpists like Dorothy Ashby and Alice Coltrane, which might have even altered the very existence of this research project.

The present state of multi-pedal is evidenced in online videos as well as in current harp method books and technical guides. Among the relevant videos available on the internet, five are especially significant and will be discussed here. Three are by jazz harpists both with and without multi-pedal, and two are by classical harpists and involve transcriptions of piano music for the harp.

6. Wild Flower

Wild Flower

The first video is by Stina Hellberg Agback and features her rendition of Wayne Shorter's *Wild Flower* (Agback, 2017). The video is significant in that it demonstrates a clear and recurrent utilization of multi-pedal movements when she moves the G and A pedals from the flat to the natural position (at 00:00:05 for example). As a document, the video also says something about the general 'state of multi-pedal' among jazz harpists in 2017. The fact that Agback made a video specifically to highlight this multi-pedal technique suggests that the technique is known to (at least some) jazz harpists, but that it is enough of a novelty to warrant a dedicated video.

7. A Night in Tunisia

Tunisia

A contrasting video is Edmar Castaneda's version of *A Night in Tunisia*, published on YouTube (Castaneda, 2016). This jazz standard, by Dizzy Gillespie, seems to be an ideal candidate for multi-pedal, as the A) section of the piece alternates between E♭^{9} and Dm$^{6/9}$, requiring that the D, B, and E pedal cycle back and forth, between flat and natural. There are other possible multi-pedal solutions, for example by treating this section as D♯^{7} to Dm, but this original solution is the cleanest, and the most efficient.

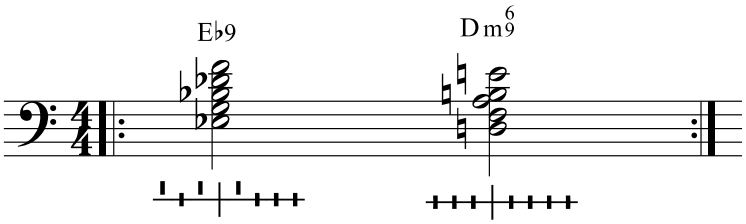


Figure 32: A Night in Tunisia pedal solution

Castaneda's main instrument is the Columbian harp, which normally has no pedal or lever mechanism. It's rare to see a video of him playing pedal harp, and there don't seem to be any that show a direct view of the pedals, as of this writing. At first glance, then, it seemed impossible to know if he was using multi-pedal techniques or not. However, in the video, if one zooms in on the mechanism of the harp, where the discs turn and shorten the strings, it's possible to identify which strings are being modified, which enharmonic solution he uses, and whether it involves multi-pedal techniques. This is the same technique which I used to determine the appropriate pedals in the 'x-ray' notation for the Impossible Standards, as explored in Chapter Four.

In this case, it's fairly clear that Castaneda moves the D and B pedals sequentially, even though moving these pedals simultaneously with the left foot would be a much more efficient solution. To corroborate this, I contacted him directly, and he confirmed that, although his feet were resting horizontally on the D and B pedals, he wasn't pressing both pedals simultaneously (Castaneda, 2021). Instead, he was using his toes for the D pedal and then subsequently his heel for the B pedal. He said that he never uses multi-pedals as he felt that 'his feet were too small,' although he then added 'maybe it's just that I never tried' (Castaneda, 2021). This is a recurring theme in discussions with harpists during this research project.

8. Jazz Harp! Solo Demonstration

Jazz Harp!

Motoshi Kosako, like Edmar Castaneda, is mostly self-taught on the pedal harp. His video *Jazz Harp! Solo demonstration* (Kosako, 2015) gives some very clear examples of various types of multi-pedal pedalling. For example, in his piece *One of Eight*, he moves 3 pedals with the left foot from natural to flat, and then back to natural again several times, for example at 07:13 and 07:44. This video is the first time I've encountered someone else doing this specific left foot 3-pedal move.

9. Harp Tuesday, Episode 61

Harp Tuesday

The two other significant videos are of classical harpists playing transcribed repertoire. Josh Layne is a Canadian harpist who has had an instructional harp YouTube series called

Harp Tuesday since 2011 (Layne, 2011). Episode 61, part 2 is called *Changing 3 Pedals at a Time!* (Layne, 2013), and shows his auto-discovery of double multi-pedal pedalling, combined with the left foot reaching under for the E pedal, in order to play Beethoven's *Piano Sonata No. 23*. This video is significant for several reasons. It confirms that multi pedal movements aren't universally well known in classical harp circles. This is underlined by the exclamation mark in the title, as well as his narrative of how he had the idea that this technique would solve the specific pedal problem of this piece. Also, the fact that the piece in question is a transcription also supports the idea that if harpists remain within their traditional harp repertoire, there's less chance of this technique becoming mainstream, whereas through exploring repertoire from other instruments, or by composing/improvising, harpists may more readily be faced with harmonic problems for which multi-pedal movements are the logical solution.

In the Lang video's comment section, the German composer Bernd Schumann makes a relevant observation: 'Great! As a composer I always thought this should be possible, but the harpists would think I'm stupid. Now I can show them that video...' (Schumann, ca. 2018). This demonstrates a slightly different situation; a composer who might have written using this technique but didn't dare because he didn't have the specific harpistic knowledge and wasn't advised by a harpist who was familiar with these techniques. Both the Layne video and this comment seem to indicate that multi-pedal techniques are 'just below the surface', not far out of reach or out of the imagined experience of harpists and composers. This also speaks to the continuing challenge of adequately communicating the possibilities presented by the active pedalling techniques being explored in this research. This challenge will be further explored in Chapter 6, *Working with Composers*.

10. The Unplayable Piece on the Harp!

Unplayable Piece

The final video is Chiara Pedrazzetti's *The Unplayable Piece on the Harp!* (Pedrazzetti, 2018), which features her transcription of a piano piece by Debussy. As with the previous Josh Layne video, the video's title also features an exclamation point. The situation is virtually the same, a transcription of a piano piece, that pushed the harpist to think 'out of the box,' taking advantage of enharmonic respellings, and at least one 3-pedal

movement (at 01:08). I know that Pedrazzetti had encountered Fast 7ths multi-pedalling, as she was a student of mine at the Royal Academy of Music, years before she made this video. However, it's significant that she was able to take this 'jazz technique' and apply it to her classical playing. The title of the video also supports the idea that 3-pedal movements, although an old idea, are still a revelation to current harpists. I wonder how long this can continue to be the case. Hopefully, with this research as well as other work in this domain, the day will come when this technique will be seen as a normal practice, just another tool in the harpist's kit.

Multi-Pedal in Selected Current Method Books

In addition to performances on video, one way to understand the position of multi-pedalling in current practice is via the examination of current jazz harp and composition method books. An exploration of five method books, which range from 1983 to 2019, reveals different approaches to this subject. Two methods don't mention multi-pedals at all; two others mention them but also limit and discourage their use; and one includes their use as a normal technique.

11. An Approach to Jazz and Popular Music for Harp

One of the earliest method books about jazz harp, *An Approach to Jazz and Popular Music for Harp* by Stella Castellucci (1983) contains some examples of highly chromatic chord progressions that suggest a multi-pedal approach, and that are notated using the same technique seen in Salzedo's method. However, the accompanying text doesn't mention multi pedal use.

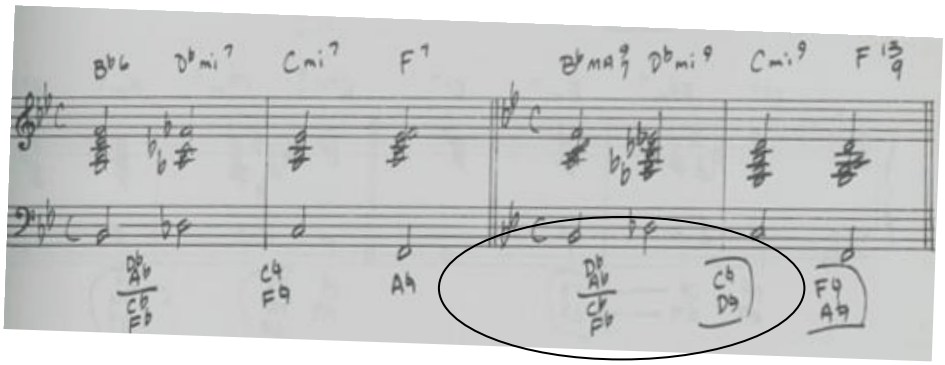


Figure 33: Example of potential multi-pedal (Castellucci, 1983, pp. 82-A)

In an interview, Castellucci confirmed that she doesn't use multi-pedals, although she did often use cross pedalling (right pedals with left foot and vice versa). Like Bova, she believed that there was a physical barrier to female harpists using double pedals: 'Men have bigger feet. That's the only thing that stopped me from doing it [double pedals]' (Castellucci, 2020). At the same time Castellucci is known for her rich harmonic vocabulary which she achieves without multi-pedalling, a reminder that there are numerous approaches to pedal use, and that this is a subjective choice. Even though this research project promotes multi-pedal techniques, it does so because of a belief that this can help with the overall goal of kinaesthetic awareness, not from a dogmatic idea of multi-pedals for multi-pedal's sake. At the same time, I find that this particular excerpt works well with a multi-pedal approach:

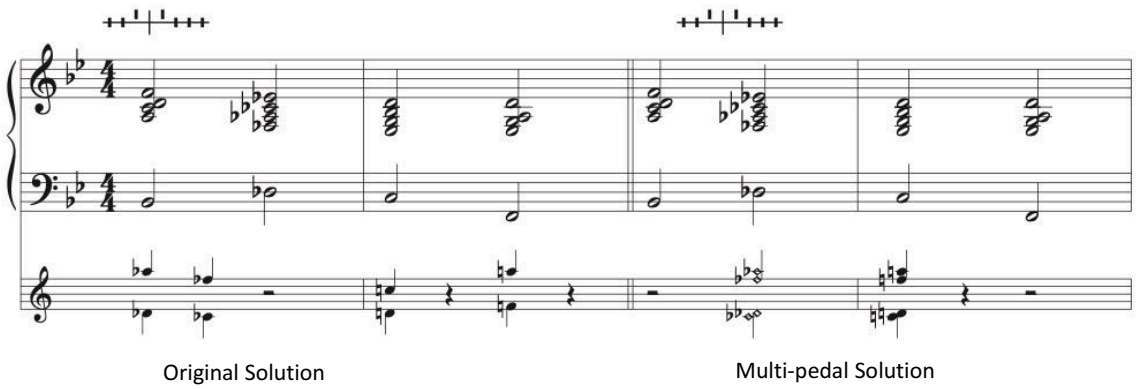


Figure 34: Alternate pedal solution for Castellucci excerpt in Fig. 33

Significantly, Castellucci notes that the cross-pedalling and extreme chromatic chords in general can be a 'bit of a scramble and sometimes not practical' (1983, p. 82). Perhaps harpists can profit from both her rich harmonic concept and the multi-pedal techniques proposed in this research.

12. Berklee Harp

Berklee Harp, by Berklee College of Music harp professor Felice Pomeranz (2016), a long-time friend and colleague, delves into harmony specifically in a jazz harp context. The method makes no mention of multi-pedals, but as a pedagogical choice rather than as an inadvertent omission. In a conversation about this choice, Pomeranz explained that she's aware of multi-pedal techniques, but doesn't use them herself, as she feels that single pedal movements are sufficient for her musical needs. Moreover, she prefers to

play in high heels, and thus finds multi-pedal techniques to be impractical. Pomeranz feels that the multi-pedal approach is more appropriate for students who already have a grounding in jazz harmony and confirmed that she includes multi-pedalling as an optional approach for her harp students at Berklee (Pomeranz, 2020).

13. Jazz Harp: a Practical Method

Jazz Harp: a Practical Method by Marcella Carboni (2018) similarly offers a hands-on harmonic approach to jazz harp. Carboni, a long-time student of mine, explicitly uses and teaches multi pedals, and this is evident in her book, which mentions them in several places. It's significant that she acknowledges that some uses of multi-pedals are more complicated than others, while still being encouraging, warning merely 'all the right conditions must be there to perform them with confidence.' (Carboni, 2018, p. 94) It's also important that she mentions multi-pedals as a fait accompli: 'press several pedals with the same foot where necessary' (2018, p. 127).

14. En-harmony for Pedal Harp and *The Modern Harp*

The opposite approach can be seen in Vanessa d'Aversa's book *Fast En-harmony for Pedal Harp* (2018). Although she mentions the possibility of multi-pedals, she is careful to underline what she perceives as their limitations: that the two pedals must be adjacent, at the same level (natural, sharp, flat), and must end up at the same level. She also mentions that the harpist has '[to have] a foot large enough to control the movement of both' (2018, p. 17). I find these perceived limitations, which originate in Lucia Bova's book *The Modern Har*p. (2016, p. 284), counter-productive for two reasons. Firstly, the limitations mentioned by both Bova and d'Aversa merely reflect common practice (or rather one interpretation of common practice), and in no way represent objective physical limits. Framing these subjective constructs as facts reinforces the 'pedal status quo' and risks limiting the physical creativity of harpists. Secondly, the distance between two adjacent pedals is only 4 inches (including the pedals).

Figure 35: The distance between two pedals[18]

Bova, whose text admittedly is not jazz-specific, goes further with the following phrase about multi-pedals:

> 'Even though some harpists succeed in using this technique, and even if it is thanks to the fervour of this minority that performers and instrument builders alike are stimulated to improve their results, that which is theoretically possible must be distinguished from reality' (2016, p. 284).

I believe that the liminal space between Bova's 'theoretically possible' and 'reality' (accepted practice) is where the greatest chance for progress and evolution resides. In categorically positioning multi-pedals as merely theoretically possible, Bova does a disservice to this process.[19] Nevertheless, her unsympathetic account of multi-pedals is useful in contextualizing this research project, which aims to explore the boundary of possible/impossible, and hopefully to push back against this boundary.

Contextual Framework

The 'state of the harp' is in constant flux, and this chapter's exploration of 14 'moments' (specific harpists, composers, as well as musical texts), is not meant to be an exhaustive historical account of multi-pedal use from the 18th through the 21st century. Rather, the aim of this historical and contextual framework has been to situate this research project, while also providing insights into the 'changing fortunes' of multi-pedal use,

[18] (Photo Stickney)

[19] Bova's book, to be fair, is aimed more at the use of harp in general orchestration and contemporary classical repertoire.

from its initial position as an orthodox technique to its current mixed role, situated somewhere between suspicion and acceptance. In addition, it has used these moments to introduce and begin to interact with some of the concepts which will be more fully explored in later chapters.

Chapter 3 Methodology

A methodology can be understood as a dynamic structure, an active reflection of the project that is enabled by it. Giant Steps for Harp (GSH) used elements of the Practice as Research (PaR) methodology even before I knew that such an approach existed. Once I had read Nelson (2013), Haseman (2006), and others, I recognized that PaR was already very much in resonance with my actual practice. The major necessary adjustment was a more conscious utilization of critical thinking and reflection as well as the need for keeping a record of my progress. This realization allowed a deeper understanding of the boundaries and methods of this project and permitted me to profit from other explorations of this methodology.

Haseman writes about performative research: '…many practice-led researchers do not commence a research project with a sense of "a problem."' He feels that their inspiration is more of 'an enthusiasm of practice': something which is exciting, something which may be unruly (Haseman, 2006, p. 4). This was certainly the case with my research. Looking back at the various steps and stages in this project, it is clear to me now that the original impetus for the work was simple: to spend some time deeply thinking about approaches to harp pedals to see what I could find. This was a continuation of the pedal-centric arc in my own practice, from lever to pedal harp to pedal slides to multi pedals to Fast 7ths. This seems to be a clear opportunity for 'practice-led research', that Gray defines as 'research…initiated in practice, where questions, problems, challenges are identified and formed by the needs of practice and practitioners' (1996, p. 3). After a few side journeys that were ultimately essential in making the final direction clear, it was possible to concisely state the research questions and hoped-for outcomes, as well as to make explicit the methods and techniques that would be used in the research. Gray speaks to these detours:

> The main methodology is responsive, driven by the requirements of practice and the creative dynamic of the artwork. It acknowledges complexity, and real experience and practice—it is 'real world research', and all 'mistakes' are revealed and acknowledged for the sake of methodological transparency' (Gray, 1996, p. 15).

However, the time leading up to this moment of clarity was also part of the research project itself, as this project has several different simultaneous layers and goals. As Haseman notes: 'it may well be that it is only in the final stages that a practice-led researcher will articulate and explicitly connect the problem with the trajectory their research has taken' (Haseman, 2007, p. 5).

From Artist to Artist-Researcher

While this project deals ultimately with multi-pedal utilization and kinaesthetic relationships between harpists and their instrument's foot pedals, it also has a meta-story about an artist practitioner exploring what it means to become a researcher, a process that implies a rethinking of one's approach as well as the acquisition of new tools and techniques, methods, literatures, vocabularies, contexts, sources, practices, and colleagues. The goal, at least in this case, is not to abandon one's art in order to become a literary theorist, semiotician, etc., but to discover which of the technologies of these worlds resonate with one's artistic practice, which tools will enable artists to find new directions, new inspirations, by better understanding themselves and their practice.

The specific manifestation of this multi-mode Practice as Research methodology included reflective practice, participant observation, and autobiographical inquiry, as well as a contextual literature review. An essential aspect of PaR for me was Nelson's 'imbrication of practice and theory' (Nelson, 2013, p. 20), that manifested itself in a multi-mode approach of playing, composing, writing, reflecting, in an on-going perpetual feedback loop. Or, as Bartleet and Ellis put it 'In terms of process, many musicians spend their daily lives moving through cycles of creation, reflection, refinement and performance. These cycles often occur in communion with a wide range of sources that inspire and inform the creation of the work' (Bartleet & Ellis, 2010, Loc 4308).

The 'daily life' of this project was accurately summed up by Nelson's 'doing-reflecting-reading-articulating-doing' (Nelson, 2013, p. 32). Specifically this meant spending time at the harp, playing and composing, as well as at the computer, writing, recording, composing, reading, or in long discussions on harmony, rhythm articulation, pedal awareness with colleagues, or my dog, or with myself while swimming, etc. Nelson also

foresees this: 'The workings of the unconscious mind can be mobilized in sleeping and daydreaming. Some practitioners like to take a walk or a bike ride, others find travelling on a bus or train helps' (Nelson, 2013, p. 28). This was certainly the case in my situation. There was something about being in motion that brought a new perspective and allowed the budding ideas formed at the harp to bloom.

The primary specific methods employed in this project were journaling, composition, improvisations, conversations with colleagues, critical reflection, and deep reading. Probably the most important constant, the 'essential glue' of the project was journaling. This took many forms, whether scribbled, dictated, typed; either recording quick thoughts in transit, freewriting, or making formal daily notes, depending on the logistics, circumstances and type of work being done. This echoes the thoughts of Barrett and Bolt: 'In artistic research data collection might involve the keeping of visual and other journals, sketches, photographs, filmed documentation, recordings, interviews and other inventive methodologies. The approach used will reveal "data" to be discovered and discussed' (Barrett & Bolt, 2007, Loc. 4308).

As for the research undertaken directly with the harp itself, methods included improvisations, both free and focused; searching for solution to new repertoire; composing; and being critically engaged with harp playing that was only tangentially related to this project, and that often led to unexpected new insights and directions. Much of the improvisation happened as part of the composition process for the pedal etudes. As one of the compositional challenges for the etudes was to confine the focus of each etude to one specific technique or issue, I used improvisation to explore the desired concept. This was helpful both to define the concept, and to try to build a structure that embodied it, while also ideally setting out in a different musical direction than previous compositions. Ultimately the most effective process was via semi-focused improvisation. The essential was to have a light directorial touch on the 'flow' of music creation, and try not to disturb what was happening, while still being able to engage critically with the material.

Conversations with harp colleagues, composers, and other musicians, were a vital part of this work. These were captured in audio or video or via notetaking, either in the

moment or afterwards. As I teach and perform in several different harp communities, in different countries and languages, I was fortunate to be able to engage with a deep network of colleagues, that provided a large range of perspectives and experiences with which to test my ideas. Furthermore, the discussions with the nine composers during their composing process and my learning/performing process were invaluable—a way to test not only my ideas, but the *communication*/*transmission* of these ideas with non-harpists. This access to different harp community actors and stakeholders allowed me to define the project's path more clearly, and suggested new directions.

Finally, to triangulate and interrogate these experiences, the reading undertaken informed and challenged this research. It's impossible to know from the start exactly what one doesn't know, and what will ultimately be relevant to the project. This invites a wide-ranging exploration, combined with reflective practice, trying to understand what words and concepts belong together, and which ones are significant. For this project, much of the first year was spent engaging with Robin Nelson's *Practice as Research in the Arts* (Nelson, 2013), with each paragraph sending me on a journey, via other articles and dictionaries, that often ended up in ancient Greece with the philosophers, or in the land of literary theory. Nelson was a lodestar of the project, along with Brad Haseman, who I discovered via Nelson's frequent references to his *Manifesto for Performative Research* (Haseman, 2006). Haseman's writing on PaR was often in resonance with my actual practice—for example with his exploration of the 'research question/enthusiasm of practice' (Haseman, 2007, p. 4). Additionally, with Haseman, I experienced a profound revelation, an 'aha' moment, when he talked about how Performative Research 'celebrates multiple realities'. This moment of clarity inspired me to write the Haseman Etude, based on a passage in his *Manifesto*.

Using composition as a means to interrogate text was an epiphany, a 'living example' of the interconnected possibilities afforded by Practice as Research. I'd already done some composition in this general direction, with pieces based on resolving the Rubix cube, or in memorizing the tonal centres of the Beethoven Symphonies, but never as a way to enter in a two-way dialogue with text.

This technique of 'compositional reading' was often 'only' concerned with the process itself, without the additional goal of necessarily producing a finished piece. The *Haseman* pedal etude is an exception to this, as is the composition *Nelson* a piece, discussed in Chapter 5, which is based on a paragraph which occupied much of my first year of reading. This second piece, which is also included in the Creative Portfolio is methodologically significant as the quote on which it is based speaks to the necessary interaction of text with creative practice, forming a literal example of the interconnection of theory and practice.

Methodology as Fractal

After the fact, once all the methodological decisions have been made and the work is completed, it is easy to forget that the methods and methodology evolved in tandem with the project itself. Each new stage in the project has a direct methodological reaction, and vice versa, where both the project and the methodology to quote Haseman (and *Haseman*) 'Interact, shape, and interpret the other' (2006, p. 7). This recursive connection, like a fractal, is present (if occasionally hidden) in every step of the research.

Part Two: Practical Elements

The second part of this commentary interacts with the practical elements in the portfolio which include scores, videos, and audio recordings. Although these elements emanate from and thus embody the project's research questions, there remain aspects of the portfolio's compositions and performance which are best explored via text. Nelson's question 'Can we assume the research inquiry is self-evident in the practice?' is apropos here (Nelson, 2013, p. 36). The portfolio elements will be presented in the basic order in which they were conceived: first three 'impossible' standard videos, then a series of pedal etudes, and finally, interactions with non-harpist composers.

It should be noted that most of the portfolio recordings involve various degrees of audio editing (with the exception of the 'impossible' standard videos which were filmed in one straight sequence). This editing was undertaken in order to save time in the recording process, and wasn't a consequence of the new pedal techniques proposed. In every case, given enough time, a live performance of the compositions is definitely possible.

Chapter 4: 'Impossible' Standards—Playing with 'Unplayable' Pieces

One part of the practical component of this project was to learn three pieces that could only be played with multi-pedal techniques, and for which I hadn't yet found a practicable pedal solution. This chapter will explore relevant challenges and insights which arose for each of the pieces in both the musical and filming aspects of this section of the Giant Steps for Harp (GSH) project.

The pieces: *Cherokee*, *Well You Needn't*, and *Giant Steps*, have each been captured in video form, using string and pedal views as well as an additional 'x-ray' schematic that shows a changing pedal diagram representing the pedal's positions throughout the piece. Normally in pedal-view harp videos, the pedal camera is placed between the feet, which usually provides an adequate vantage point. However, in the current situation, as the feet are often turned sideways (when accessing multi-pedals), this classic camera angle is less effective, as the feet block the camera. The search for a camera angle which wouldn't be blocked by the feet ultimately led to the decision to film each side of the harp separately, and to supplement the two cameras with the 'x-ray' view.

The process involved in adding the 'pedal x-ray' view was also significant, as it allowed direct interaction with the tacit knowledge embodied in the foot/pedal interactions. After several trials, it became clear that the most efficient way to input each pedal diagram in the correct position was to proceed frame by frame, 1800 frames per minute. Although time and concentration intensive, it was also interesting to focus at a deep and slow level on the specific movements of the feet. It was possible to tell immediately when a foot was about to move towards a pedal as opposed to when it was tapping out rhythms. One could imagine the foot 'contemplating' a particular harmonic path, and then choosing a different direction (in concert with the hands and ears, of course).

To be clear about what the pedals were doing, especially when my feet blocked the camera, I worked with a recut version of the video, which had an extreme close-up of the harp's mechanism, allowing me to see the discs turning, and combining this with the partial views from the pedals and the soundtrack.

Figure 36: Closeup view of harp action to determine pedal position

It soon became evident that the pedal system doesn't merely involve three positions, flat, natural, and sharp. And not even five, including the in-between liminal area of each accidental. Rather, in the videos one can see, for example, a pedal being moved just out of the flat position but without a change in the pitch, before entering a 'buzz zone' while slowly changing pitch, and finally moving the final millimetres with the new pitch fully installed, without buzz, before finally arriving at the wooden frame. Watching this pedal choreography, one could imagine the foot 'thinking', preparing a possible movement, or perhaps reacting to the movement of a neighbouring pedal. It often occurred to me while watching these pedal movements at the slowest possible speed, that it would be useful to have a more exact method for recording and notating the movements of the pedals. A future step in this reflection could be a mechanical method to note the exact positions of the pedals relative to the harp in real-time, via sensors in the pedals. This could possibly be linked to the technology of the MIDI harp. This is beyond the scope of the current GSH project but could be a subject for a future researcher's explorations.[20]

[20] This method could indicate when the pedals are in the notch at rest, when there's contact from the foot (perhaps via pressure sensors), and then show the various paths of the pedals. It's possible that the MIDI harp could be an effective tool for this endeavor. The collected data could then be used in videos, as well as with software notation programs such as Finale and Sibelius to record the subjective and distinctive pedal preferences of each harpist as they played.

The following three sections explore in detail the motivations and challenges for each of the three pieces. The pieces are presented in the order in which I learned them, as the solution for each piece informed the process for the next. Of the three, the only piece that I'd previously attempted was *Giant Steps.*

Cherokee[21]

CP Cherokee

The first piece in this part of the project was *Cherokee* by Ray Noble. For the purposes of this project, the B section is the most interesting part of the piece, as it contains a series of ii-V-I cadences in tonal centres that descend by whole tones (B, A, G, F). This by itself doesn't pose a problem, as this kind of harmonic descent requires changing just two pedals, one on each side of the harp (from B maj. to A maj. needs a D♮ and A♮, from A maj. to G maj. requires C♮ and G♮).

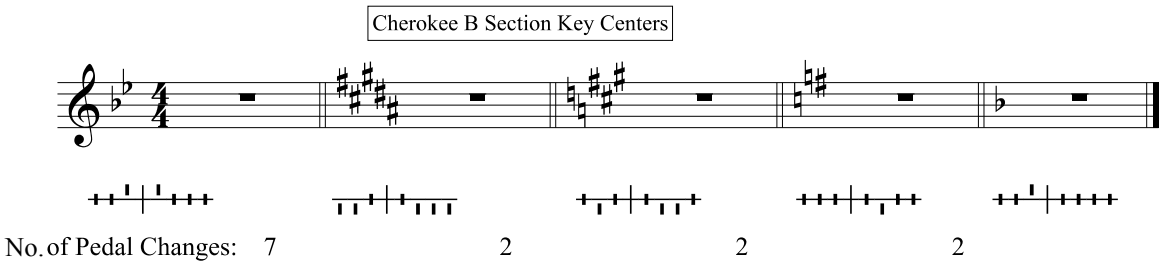


Figure 37: *Cherokee* B section key centres

The initial B maj. section, however, is preceded by a B♭ maj. section, meaning that the harpist must quickly change from two flats to five sharps, an ideal multi-pedal situation. After having interacted with this piece, it's clear that there are at least two ways to navigate the B section. The first would be to lock in the five pedals at the beginning of this section (making B♮ and E♮, then moving the five pedals and notching them in the sharp position). From that point on one could simply move the necessary pairs of pedals (D♮/A♮, C♮/G♮) between each new tonality. Unfortunately, this solution didn't occur to me until I started writing this section of the commentary, when I had to put into words why Cherokee was complicated from a pedal point of view. Although I would have liked to have realized this solution earlier, at least this can serve from a methodological point of view as an example of the dialogue between the written commentary and the

[21] The 'CP' in the QR/hyperlinks refers to the Creative Portfolio.

practical elements. Additionally, it is a concrete example of how writing itself can *directly shape* performance decisions, how it can 'afford additional opportunities for dialogic engagement' (Nelson, 2013, p. 33). It's clear that this sort of engagement illuminates possibilities and solutions which might otherwise remain invisible. It's significant that, in this case, the practical (harp-based) and reflective (writing-based) inquiries arrived at different solutions. For the purposes of this research, fortunately, either solution still requires multi-pedals as well as an active rhythmic involvement with the pedals.

My pedal solution was slightly different. The same pedals were moved, so all chords were spelled in sharps when possible (the B♭M7 forced the use of flats since there's no other way to play B♭ and A♮ together). The difference was that I never locked the pedals, and instead released each pedal from the sharp position into the natural position after it was no longer needed. This is definitely a more complicated pedalling than the previously mentioned 'notched pedals' version. Furthermore, additional harmonic tools like tritone substitutions (replacing the F# in the V of the B maj. ii-V-I by a C, changing it from a F#7 to a C7 for example) are also possible with the notched solution. There is, therefore, no advantage to my solution on the video to the 'notched solution'.

However, initial playing of the two solutions shows a potential subjective difference, which addresses this research's aim to increase foot/pedal kinaesthesia. The un-notched pedals, though more 'dangerous', have a more flowing feel. The sequence feels more alive, more open to change, whereas the notched solution feels more sterile, more like an arrangement, more fixed. Undoubtedly, the un-notched version has a much greater risk of pedal buzzes, of mistakes, but the feeling of keeping the pedals 'in play' might compensate for this. This speaks to the idea introduced earlier in this commentary that pedal movements themselves can be just as musically satisfying as the notes they produce. The tangible tension of holding multiple pedals out of the notch allows the hands and feet to truly be working as one, with the feet also providing micro colours (even through buzzing), and emotion (through the dramatic tension) that just aren't present in the locked version.

Well You Needn't

CP Well You Needn't

As with *Cherokee,* one of the challenges with Thelonious Monk's *Well You Needn't* was in its B section. As the piece's harmony only involves dominant 7th chords, this section should be relatively simple using the Fast 7th ideas. However, the problem is the melody, which arpeggiates the same chords, but with the addition of the 5th. As the Fast 7th system is based on the whole-tone scale (Video 5), and as the 5th of the chord isn't present in the relevant wholetone scale, having this note in the melody inevitably complicates the pedal sequence of this section. Without the 5th problem, the section (and the entire piece) would merely involve the two-pedal left foot and three-pedal right foot alternating movements. In any case, *Well You Needn't* is a perfect example of a normally impossible piece becoming manageable with multi-pedal movements.

Video 5: Fast 7ths

Giant Steps

CP Giant Steps

The final standard, *Giant Steps,* is a piece that has been an inspiration for this project, as it seems to represent a real 'frontier' for harp. *Giant Steps* is, of course, also an iconic work for the jazz community at large (Woideck, 2004). And the fact that 'finding a pedal solution for *Giant Steps*' is now part of the jazz harp scene's discussion (even minutely), represent a new era for jazz harp, the arrival at a new level, where our particular challenges are in parity with those of the general jazz community.

I'd already found a solo solution for *Giant Steps* prior to this research project, but it was impractical and unmanageable in performance and remained more of a theoretical solution. My goal, then, was to reopen this exploration and attempt to find a more feasible solution. One of the challenges with this piece was my desire to utilise specific voicings. I realized that playing *Giant Steps* in its most basic form (for example just the melody and just the bass line), alone on the harp doesn't present a particular challenge. Neither does playing the melody plus the root and 3rd of the chords. Even the melody plus triad versions of the chords is relatively simple. But having fully voiced 7th chords introduces many pedal complications. It's also worth mentioning that, on the harp, playing the full 7th chords also means that the harpist has access to these notes while improvising. The

overarching question with the harp is 'which 7 notes will be most useful in this situation?' And it's worth mentioning that the answer isn't necessarily 'The notes of the key,' even though this seems to be the normal approach in harp playing, taking advantage of the inherent diatonic nature of the instrument.

Nearly half of the major 7th intervals (necessary for the major 7th chord) can only be 'spelled' one way on the harp (D/C#, E♭/D, G/F#, A♭/G, A/B♭), which limits the flexibility of the harpist's pedal approach. For example, with D/C#, D♮ can *only* be spelled as D♮--there's no enharmonic equivalent. C♯, on the other hand could be spelled as D♭, except it *can't* because the D pedal is already being used to make D♮. Additionally, as with *Well You Needn't*, the melody often contains notes that aren't present in the whole tone scale, complicating pedalling (specifically perfect 5ths and major 13ths). The current *Giant Steps* solution involved defining C♭ major as the 'neutral' pedal position, and enharmonically spell everything either with flats or naturals, rather than the naturals and sharps that I normally favour. Pedals moved into the natural position were usually not notched but just held in place, as with the normal natural and sharp pedalling paradigm.

Giant Steps is easily the most challenging of the 3 pieces. I base this not only on my unique position as being the performer in the video but also from several issues that arose while watching the footage during the pedal analysis to add the 'pedal x-ray'. This speaks again to Bartleet and Ellis:

> 'Autoethnography also heightens reflexive awareness. That's the point of it, observing what you are doing and how you are doing it, constantly evaluating, critiquing, comparing to others, so there can be a tendency (Bartleet & Ellis, 2010) to feed off each other (Bartleet & Ellis, 2010, Loc. 5858).

One of the pedal movements unique to *Giant Steps* is 'acquiring' the three left pedals (D, C, B) in the natural position and then bringing all three to the flat position. This movement was the basis for the etude *Left Alone* and remains one of the more challenging pedal movements. Unfortunately, in the video one can see that I often miss this 3-pedal movement and am obliged to jump back with my foot to move the wayward pedal

(often the B). Although I'd be happy for this not to be the case and would much prefer to be able to show how a foolproof pedal movement can be applied in *Giant Steps*, I find it also interesting to demonstrate a technique that involves an extended learning curve. It's apparent that, even if it was the original intention, using a double pedal plus a quick corrective single pedal still falls within the necessary time limit, and also shows the effectiveness of multi-pedals—just two, rather than three. This passage would be even more challenging if the three pedals had to be moved individually each time.

Secondly, the LH accompaniment throughout the video is fairly static, involving the same chord voicings, always using basically the same rhythmic approach. Although I would prefer to play a more varied and interesting LH, the pedals in this piece are so present and active, that this all I can manage, at least for the moment. Lastly, not only am I unable (yet) to alter the LH chords significantly, I'm also reliant on the LH accompaniment to provide stability for the RH. In a few sections I try to play the RH without the LH chords (for example at 03:50). Although theoretically this should be easier, as there might be fewer required pedals, in practice, this turned out to be even more difficult, a fact which can be seen by rhythmic discontinuity and dropped chords. However, these challenges don't take away from the fact that this version of *Giant Steps* is essentially stable, allowing for a reasonably free RH improvisation.

These three 'Impossible' Standards served as a bridge from my pre-thesis artistic practice, to the composition of the etudes which followed them. The work on these standards commenced in a familiar manner, looking for pedal solutions, which allowed a 'safe space' for reflection as I continued to construct the framework of this project. This reflection led me to understand that I would also act as a composer in GSH, and that this would involve creating in a more focused and proactive manner than my previous compositional experiences. The Pedal Etudes, therefore, are a direct outgrowth of the 'Impossible' Standards.

Chapter 5: Stickney Compositions

Etudes Commentary and Discussion

The etudes serve a dual purpose in this research project. They have a direct connection to the third research question of the project—to mainstream multi-pedal techniques. But they're also linked to the first research question, as planning, writing (and writing *about*), recording, performing, and teaching the etudes provided many opportunities for reflection and understanding. This chapter will unpack some of the compositional motivation behind the etudes, and will make explicit their relevant pedal techniques.

The primary purpose of the etudes is to introduce multi-pedal and other pedal techniques to harpists and to make these ideas part of the harpists' normal harp practice. An additional goal is to confront the idea that these techniques are difficult, impossible, or outside of the norm. These compositions might serve as a model for composers, with the hopes that they would then also compose music employing these new techniques, reaching even more harpists, and accelerating the evolution of pedal awareness. Although there are other etudes that include pedal elements, like those of Posse (1901), these etudes represent, to my knowledge, the first time that these specific approaches have been systematically explored in this manner. If harpists learn and perform these etudes—if they become part of the repertoire—it will possibly serve to regularize the techniques. And since these techniques require a much more active pedal/foot control, it seems logical that regularizing these techniques will increase kinaesthetic pedal awareness among harpists.

Etude Inspirations

Although some of the ideas for the etudes were evident from the beginning, others stemmed from reflections and discoveries during the research process. An example of pedal concepts that came to light during the research project can be seen in *Left Alone* and *Just Right.* In this case, the realization that the specific movement addressed was challenging became evident during the process of figuring out how to play *Giant Steps*, the momentous jazz standard by John Coltrane. It was upon realizing that the problem

in playing this piece was less linked to knowing how to re-spell the chords enharmonically from the flat 'point of view', even though this was relevant and new. Rather, the challenge in playing the piece was ultimately linked to one specific foot movement, a realization that required the foregrounding of this foot movement in an extreme repetitive situation to become evident.

Each etude has its own impetus, and each was written to achieve a specific goal. Some, like *Chromatica* are intended to help harpists use their feet melodically, via melodic pedal slides. Others, like *Three Chord Wander* and *Gone Monkfishing* aim to familiarize harpists with the alternate enharmonic spellings of dominant 7th chords used in the Fast 7th system. Additionally, as multi-pedals are an essential element of this project, *Bi-pedal* is proposed as a means to cover all possible combinations of neighbouring pedals. In addition, nearly all the etudes reinforce the concept of not automatically notching the moved pedal, but rather holding it in place with the foot until no longer needed.

The compositional process for the etudes was twofold. First, and most importantly, I decided to isolate one technique per etude. This required reflexive thinking, often coupled with improvisation, to be clear about the boundaries between techniques, and what defined a technique as a cogent whole. The challenge was to be able to reflect on the techniques being used in the improvisation while still being free, that is, while still playing in a way that encouraged the use of these techniques and compositional flow.

Compositional Process

Once each pedal technique was identified and isolated, it was necessary to find musical materials which reflected the technique, and which ideally forced the harpist to use the pedals as intended. Many harpists are used to 'fixing' badly written harp parts, to correcting the misinformed pedal propositions of composers, and it was necessary to write 'un-fixable' etudes so that the easiest pedal solution was the one proposed. For this reason, following their composition, I worked with harpists of varying backgrounds and experience to 'road-test' the pieces. These harpists were incredibly useful in showing where there were problems in the composition or in the way the composition as notated. This was challenging, as some of the harpists who previewed these etudes were

able to find solutions that I hadn't imagined. I documented the harpist's input via recordings and written notes, and then implemented some of these ideas in successive versions of the pieces.

Etude Critical Analysis

The following section illuminates relevant elements in each etude, presented in the order in which I image the etudes will ultimately be published. These relevant elements are specific to each etude, but tend to include the pedagogic and compositional inspiration, compositional challenges encountered, insights uncovered, and ideas for future etudes, where relevant.

Etude One: Gone Monkfishing


CP Etude 1

This etude contains six of the twelve dominant 7th chords (C♯^{7}, D^7, D♯^{7}, E^7, F^7, F♯^{7}), used in a 3-note root-position voicing omitting the 5th. In order to allow the harpist to proceed from one chord to the next with facility and speed, the chords make use of enharmonic equivalencies, using only natural and sharp notes. (For example, F^7 is spelled F-A-D♯, rather than F-A-E♭). A future transposed companion etude *More Monkish* will address the other six chords of the series.

The didactic goal of the piece is twofold: to introduce the harpist to these 6 chords, spelled in this enharmonic manner, and played without 'parking' the pedals in their notches, as is normally the case in classical harp technique. In addition, the etude aims to give the harpist confidence in navigating these chords in a chromatic series. This skill is especially useful if the harpist wants to later modify a cadence with tri-tone substitution, for example, changing F^7-B♭^{7}-E♭M^7 to F^7-E^7-E♭M^7.

The melody is constructed in a way that obliges the pedals for the LH chords to be moved at certain times, and in certain ways. For example, the use of chord tones in the melody in bars 2, 3, 5, and 6, compels the player to release the engaged pedal in order to enable the melody note. This invites the player to reconstruct, both mentally and physically, the enharmonic spelling of the chords, and the required pedal movements, to better

achieve the etude's goal of firmly entrenching these enharmonic spellings and movements in the player's vocabulary.

Etude Two: Left Alone


CP Etude 2

This etude explores a specific pedal movement that occurs in my pedal solution to Coltrane's Giant Steps, a movement that is rarely, if ever, used in standard harp technique. It involves 'de-notching' the three pedals on the left side of the harp (DCB), and then releasing them one semitone up (to the flat position). This is comparable to the movement that Motoshi Kosako makes in *One of Eight* (Kosako, 2015), the difference being that he 'acquires' the pedals from the flat position and controls them throughout the movement. Therefore, no de-notching is necessary for the initial acquisition, and the subsequent intermediate de-notching (from natural to flat) is with pedals that have already been acquired by the foot. Once the foot is correctly positioned on the three pedals it's relatively easy to consistently move them throughout their various semitone positions. The challenge is to correctly 'acquire' the three pedals in the first place. To oblige the harpist to practice this re-acquisition, I've added a left foot pedal movement in between each three-pedal movement in the etude, which effectively 'resets' the pedal state. The harpist must then re-acquire the pedals from their notched position.

It's important, in this pedal acquisition, to control the pressure and angle with the foot to engage all three pedals. It's relatively simple to de-notch 2 pedals, but to 'catch' the third—especially the middle pedal, requires a fine degree of control (and practice). The shoes worn for this exercise are also significant. I've found that a rubber sole is useful to provide grip with the rubber caps on the harp pedals. The height of the insole is also significant, as the foot needs to have an active contact with the pedals, unlike with regular foot/pedal motions which merely require pressing down the correct pedal at the correct time.

An additional possible aid is to apply grip and/or anti-slip tape to the stem of the pedal. Grip-tape is used by skateboarders during jumps to create a firm contact with the board,

even in mid-air. Anti-slip tape is used on boats to aid in stability when walking. Both are adhesive and can be easily applied to the pedal stem.

As the pedals must be replaced in their original position prior to each repetition of the primary pedal gesture of this etude, there is a secondary skill practiced in playing this piece. The harpist is asked to move all three pedals, again with one foot, and to re-notch them. Even though this is also an unusual pedal movement (I've yet to see it in classical repertoire), it isn't the main goal of this etude. However, the skills developed in this additional pedal technique will almost certainly help harpists master the 'official' goal of the etude.

Etude Three: Just Right


CP Etude 3

This is the mirror etude to *Left Alone.* In *Left Alone*, the etude is built around manipulating the left 3 pedals, B-C-D. In *Just Right*, the four pedals on the right side of the harp are manipulated in two groups, E-F-G and F-G-A. *Just Right* represents a theoretical extension of the ideas behind *Left Alone*, and is an etude inspired by applying and repurposing ideas necessary for a specific purpose (playing *Giant Steps*) to other parts of the harp (the right foot pedals), creating skills for as yet unknown pieces. One possible performance idea would be to play both *Just Right* and *Left Alone* sequentially, in either order.

Etude Four: Chromatically Tritonic


CP Etude 4

As the tritone is one of the primary 'motors' of western harmony, an essential part of the dominant 7th chord (and others), it seemed useful to boost harpist's tritone awareness by creating an etude in which the left-hand harmony is entirely based on tritones. There are only 6 unique tritones, and this etude asks the harpist to play them in chromatic ascending and descending scales. The didactic inspiration behind the etude was that, if harpists are more familiar with tritones, they would more readily recognize them in other pieces, leading to greater harmonic awareness, which can also aid in tritone substitutions. This etude gives extensive practice in

spelling the tritones using naturals and sharps. A future 'sister etude', could involve the same pitches, but spelled in flats and naturals.

Out of the 6 discrete tritones, only one—F♮ and B♮—doesn't require a pedal movement, except for allowing the previous tritone's pedal to move to natural. This means that there's a pedal movement every minim throughout the piece, a constant foot dance which also traces the circle of 5ths. For example, the first 4 bars require the following pedals: A♯ D♯ G♯ C♯ F♯. As the circle of 5ths is omnipresent in western music, it's useful to explore it with hands, feet and ears in a focused manner, and this etude provides just such an opportunity.

The pedals are always to be moved vertically, never 'parked' in the notch, and the tritones are only spelled with sharps, e.g. always A♯, never B♭. In addition, occasionally accidentals in the right hand require double pedalling, for example in bar 2, when the harpist needs both G♯ and A♯ simultaneously.

Etude Five: Bipedal


CP Etude 5

This etude explores moving adjacent double pedals in all possible combinations, (DC, CB, EF, FG, GA), between the sharp and natural positions. The pedals are never notched in the sharp position, and all pedal movement is active and temporary. That is, the relevant pedals are moved into the sharp position when necessary, held in place with the foot, and then released to the natural position. A possible companion etude would be to transpose *Bipedal* down a semitone, allowing the harpist to explore the same pedal combinations from the flat to natural position.

Often the pedal movement is part of a pedal slide, either in the relentless rhythm of the left hand, or in the right-hand melody. In bar 7 the right hand's B♮ on the 2nd beat is created with a pedal slide, while the left hand plays a simultaneous chord. This coordination of sliding one note while playing another isn't always easy for harpists. The harmonically dense left-hand motive, made up of M2 and m2 intervals for the most part, isn't often encountered in traditional harp writing, which provides a challenge to the

harpist's ear: to assure that the notes played are correct, without being distracted by their cacophony.

The rhythmic elements of the etude are also designed to encourage (and basically oblige) the player to move the pedals in a clean and rhythmic fashion, as there isn't much time to place the pedals other than when they're indicated. In addition, the constant pedal motion hopefully suggests a dance-like movement which the feet perform while the hands provide a complementary accompanying melody.

Etude Six: Schrödinger


CP Etude 6

This etude explores a specific and uncommon double pedal movement in which one foot operates two pedals in two different semitone levels, on a diagonal, for example C♮ and B♯. I think of this as the 'motorcycle movement', as the movement resembles that of shifting gears on a motorcycle. This movement is much easier when the inner pedal is lower than the outer (e.g. C♮ and B♯), as the angle of the foot is much more natural. This etude deals only with the C/B and E/F combinations, although the technique can also be used with D/C, F/G, G/A, and is even conceivable across 3 pedals, for example F/(G)/A. These will possibly be addressed in a future separate etude.

The etude is built around the possible intervallic relationships between the four pitches produced by the combinations of the notes C, B♯, C♭, B, E, F♭, E♯, F. Note that these eight notes only form four discrete pitches, C, B, E, F, with 4 enharmonic doublings, B♯, C♭, F♭, E♯. When combining these four pitches, one obtains the following intervals: Maj 3, min 3, Perfect 4. This etude explores these four intervals by moving the pairs of pedals in an order designed to create harmonic tension and surprise.

One challenge in writing this etude, given the choice to use these eight notes/four pitches, was to find a compositional framework which would provide a musical result but whose realization would only be possible using these pedal movements. The eerie tremolo, with fast 32nd repetition takes full advantage of this technique. It must be acknowledged that one could play this piece merely by repeating each string twice as

often. However, this would result in half the resonance, a greater chance of finger noise and buzzes, and will weaken the overall effect, especially considering the long four-bar phrases.

Additionally, the harpist is asked to change the pedals slowly from the 'up' to the 'down' position during bars 19-22. This isn't a completely new technique—it's used by Berio in his *Sequenza II* and Donatoni in his *Marches*—but it's more often used as an aleatoric pedal movement, where the pedals are randomly moved between the three semitone possibilities. The slow pedal progression from natural to flat doesn't create a glissando sound as one might expect (as when one slides on a violin's fingerboard). Rather, this passage creates several discrete textural and microtonal changes in the string's pitch, combined with mechanical buzzing as the pedal slowly turns the discs that interact with each string. The goal is to help the harpist gain more subtle pedal control, as well as to introduce these uncommon liminal sound possibilities. During this etude, the two sets of pedals are usually in one of two states (up or down), but occasionally they are in neither state (in between) or both states (one set of pedals up, one down). This is an indirect reference to quantum mechanics and the Schrödinger's Cat thought experiment, after which the piece is named.

Etude Seven: Chromatica

CP Etude 7

This etude was designed around the chromatic scale, utilizing pedal slides nearly constantly (approximately one third of the notes are played with the feet via pedal slides), and changing directions in a spontaneous, syncopated manner to create rhythmic intensity and unpredictability. Each successive note in the right-hand melody is a semi-tone up or down from the previous note. The only exception is in bar 15 where a major scale is used to create a cadence.

When the original theme is repeated in bar 32, an additional LH counterpoint is added, largely in contrary motion. At times one sees a situation in which one hand plucks a note while the feet create a pedal slide and then the two switch roles, alternating back

and forth and in opposition between plucking and sliding, a technique which I think of as 'skiing'. An example of this is in bar 35.

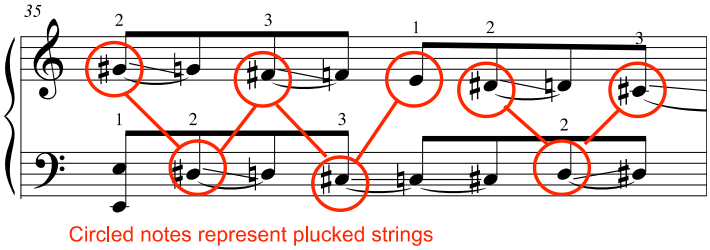
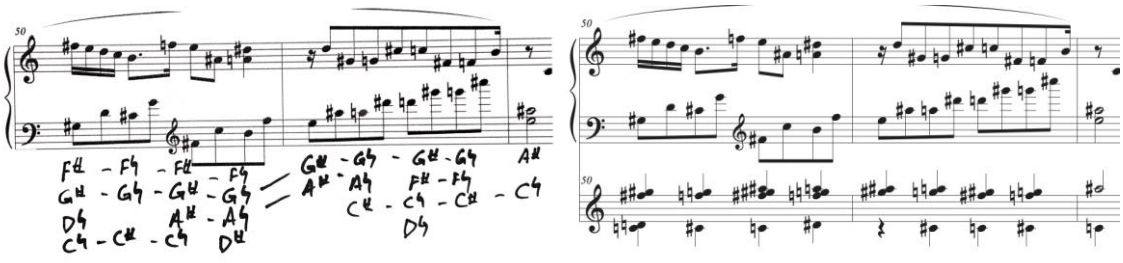


Figure 38: *Chromatica* 'skiing' technique, bar 35

As there are not only a great number of pedal changes, but also a very specific necessary rhythmic placement for these changes, this etude experiments with a new pedal notation, in which the pedals to be changed are written as notes on a third stave, with a different shaped note head to distinguish them from the plucked strings. The pedals accessed with the right foot are written on the top octave of the stave, and those with the left foot on the bottom. This makes it clear both when the pedals are to be moved and which foot is to move them. It also allows for the possibility of cross-leg pedalling, a situation where the left foot accesses pedals on the right side of the harp or vice versa. This notational method makes evident the underlying rhythmic structure of the pedal movements. This is a major advantage over the traditional pedal notation method, where the written pedal name and accidental only approximately indicates the rhythmic placement, which doesn't allow for nearly as much rhythmic precision.

A second advantage to this method is that it allows many simultaneous pedals to be clearly marked in a minimum of space:



Traditional Pedal Notation Proposed Pedal Notation

Figure 39: Traditional vs. proposed pedal notation

In addition to being visually and rhythmically clear, there are four other reasons that this pedal system is useful. First, it visually positions the instructions for the feet on the same

hierarchical level as those for the hands. Admittedly, one can often infer the pedal movements from the written notes, but when pedals are indicated separately, having them merely notated without rhythmic indication can easily make these pedal markings seem less important than the 'real written music', and can lead to the hand/string bias discussed earlier. Second, pedal markings can be written in the French solfege syllables (do, re, me...), in English letters (C, D, E..), or in the German variant (H for B♮), which can add an unnecessary (though small) layer of complexity. This proposed system is universal and avoids this situation. Third, by showing the pedal movement using musical notation, one can apply existing harmonic/melodic/rhythmic analytical tools to the pedal's movements. For example, one could visually perceive items like pedal hemiolas (which might not be audible, but which are present in the movement of the feet against the pulse). Finally, the third stave can be detached from the rest of the score, allowing direct comparison and sharing of pedal solutions.

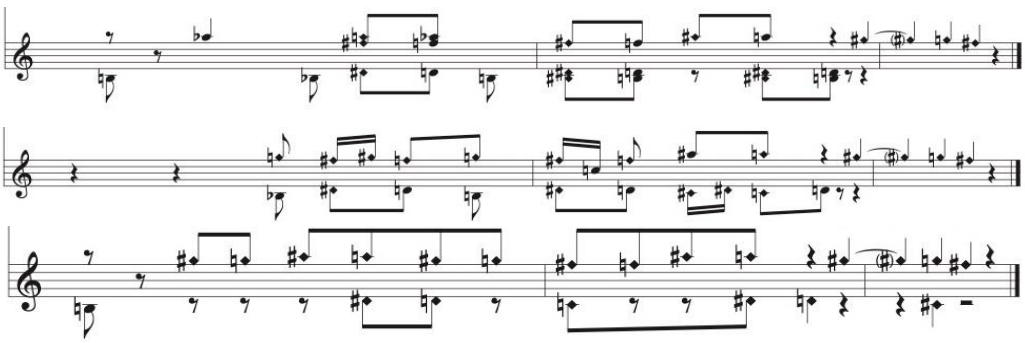


Figure 40: Comparison of three different Renié Bach pedal solutions

As was discussed in Chapter 2, a similar graphic pedal technique can be seen in Backofen's *Anleitung zum Harfenspiel* (1807, p. 42) but it seems that this was merely to demonstrate proper pedalling, as the dedicated 3rd stave is only seen on this one piece, and nowhere else in the two-volume method. His version is also different in that he doesn't differentiate between pedals moved with the left and right foot. I also think that having the extra stave on the bottom is clearer and allows for cross-staff beaming between the bass and treble clef staves.

Although some find Backofen's system 'cumbersome and occupies much space,' (Cleary, 2016, p. 54) one can assume that they're speaking about this pedal system in the context of 19th century harp music. I agree that in a context without many pedal movements, this extra staff could be seen as unnecessary. However, in the opposite situation—as is

often the case in these etudes, I believe that this new proposal for pedal notation adds clarity and useful insights.

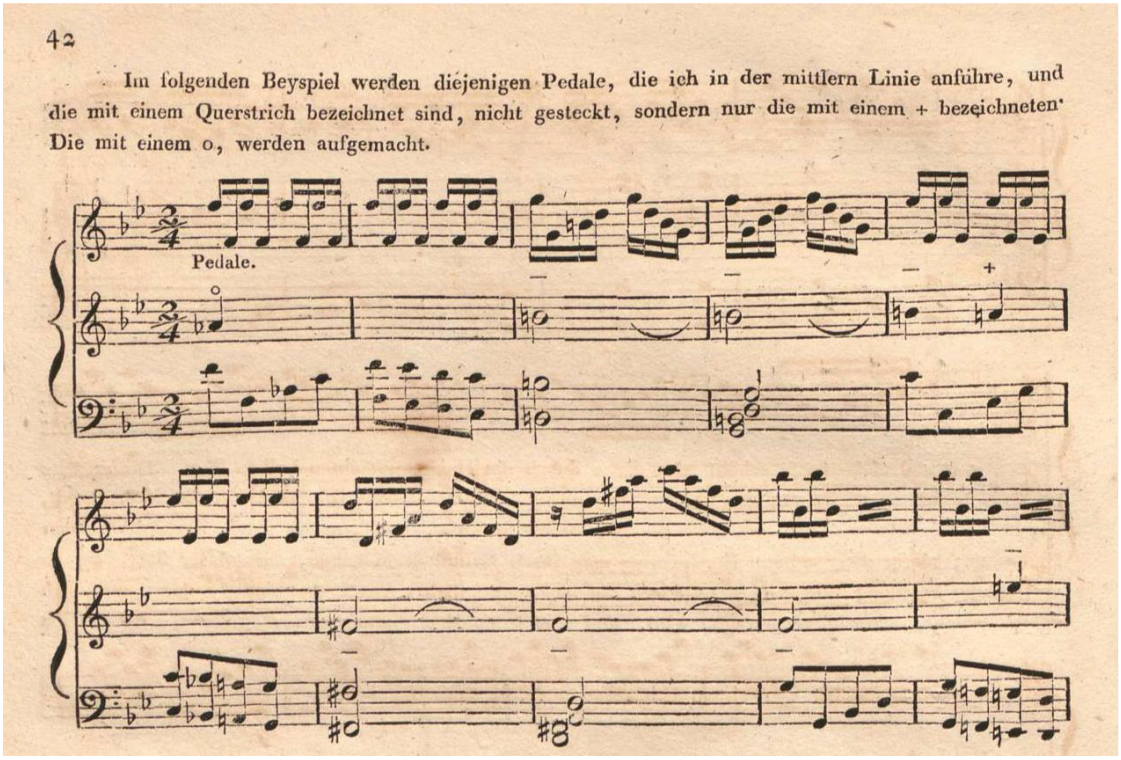


Figure 41: Example of dedicated pedal stave (Backofen, 1807, p. 42)

One of the unforeseen complications with *Chromatica* was that, as so many of the notes were played by the feet, it became more complicated to make appropriate fingering choices for the hands. This was partially because fingerings which normally wouldn't work were suddenly possible, as if the feet added extra fingers to each hand. For example, it was possible suddenly to finger a five-note phrase with only 4 fingers (4 3 foot 2 1).

In order to better understand this new situation, and to be able to make appropriate fingering recommendations, I ended up creating two 'helping etudes' for *Chromatica*, a version in which all of the pedal notes were first changed to rests, and then a subsequent version in which the rests were also removed, so it was possible to see exactly what the hand's responsibilities were—as well as to understand the rhythmic implications of the dialogue between hands and feet.

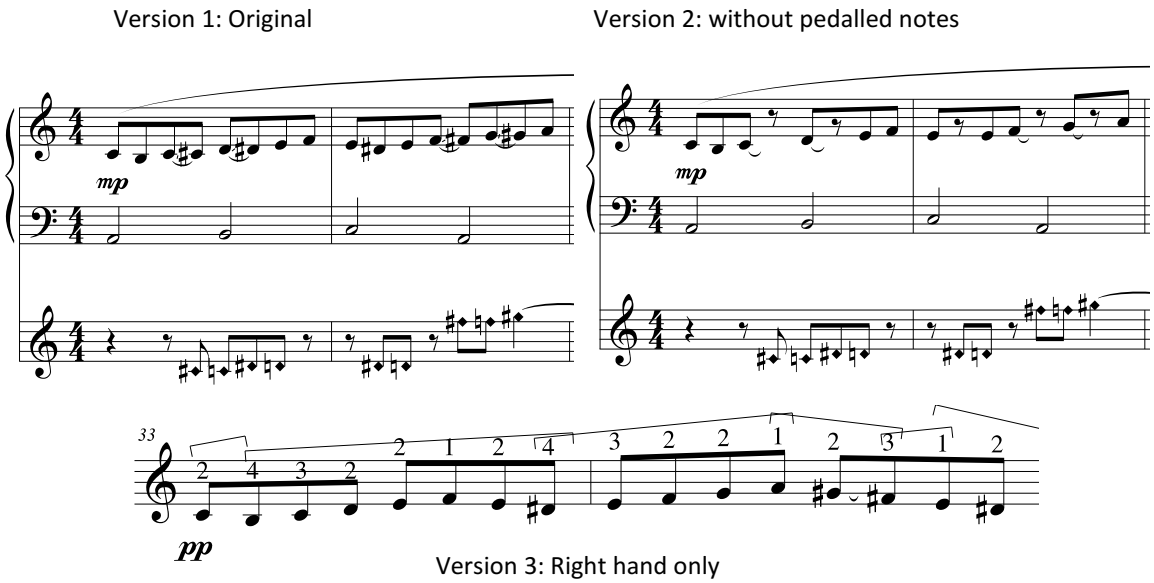


Figure 42: Examples of 'helper' version for RH clarity in *Chromatica*

Etude Eight: Three Chord Wander

CP Etude 8

This etude aims to familiarize the harpist with three of the twelve dominant 7th chords, as spelled in the Fast 7th enharmonic system, eliminating the 5th, and using only sharps and naturals. The etude uses chords which require one pedal movement, but which, when played using enharmonic equivalences look and feel incorrect to the hands and eyes.

Of the twelve dominant 7th chords, 3 use two-pedals ($D\sharp^7$, $G\sharp^7$, $A\sharp^7$), 1 uses three ($F\sharp^7$), 1 uses 0 (G^7). For the remaining 7 chords, 4 are 'normal'—spelled exactly as one would expect, albeit without the 5th (D^7, E^7, A^7, B^7), and the final 3, C^7, $C\sharp^7$, F^7, are the subject of this etude.

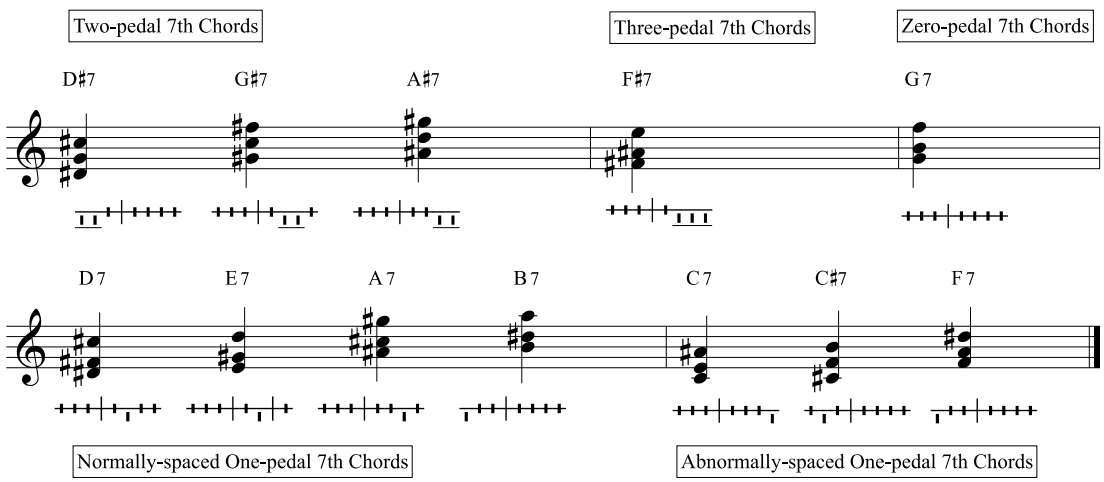


Figure 43: A taxonomy of Dominant 7th chords using the Fast 7th pedalling

The chords are presented in three different rhythmic voicings, for the most part in a repetitive triplet ostinato. Periodically the three notes of the chords are grouped into a dotted quaver rhythm, or all played together, in a manner more reminiscent of jazz comping. In addition, the order of the chords has been occasionally changed from time to time, to ensure that harpists don't just became experts at playing these 3 chords in this exact order, but, hopefully, have a mastery of each chord individually, no matter what the context.

This piece, with its incessant foot rhythm, is in resonance with R Murray Schafer's solo harp/percussion piece *The Crown of Ariadne* (Schafer, c1980). In the second movement, *Ariadne's Dance*, the harpist plays while tapping out a 13/8 ostinato with their feet, with bells attached to their ankles.

Etude Nine: LFR (Leprechaun Footwork Revealed)


CP Etude 9

This pedal etude is inspired by Henriette Renié's piece *Danse de Lutins*[22], a work known for its complicated pedal requirements. As these Pedal Etudes specifically aim to improve harpist's pedal technique and awareness, it seemed logical to repurpose a piece known for its intense pedalling as a starting point, a piece which 'requires nearly 300 pedal changes to be made in only three minutes of music.' (Haefner, 2017, p. 177)

This etude addresses the oppositions of fast/slow and complex/simple. *Danse de Lutins* is perceived as a fast and complex piece, especially because of the required footwork. However, once the pedal movements are taken out of context and placed in a piece of their own, suddenly the feeling is one of slow simplicity. I wonder if a big part of the pedal challenges with *Lutins* is actually due to 'pedal hysteria'—as the required pedal work has been societally labelled as difficult. Additionally, it's worth listening to the 'music' of the pedals, sounds which are linked to *Lutins* but which also create their own melody. *Lutins* doesn't have any pedal slides, so the feet aren't actively creating any sounding notes. However, I'm persuaded that it's useful for the player to be able to

[22] *Dance of the Leprechauns*

construct their foot dance with awareness of the pedal line's inherent rhythmic and melodic elements, as well as the ways in which these elements interact with the hands' actions. My hope with this etude is that the harpist, by spending time focusing solely on these pedal movements will have a more positive relationship with them, physically, musically, and psychologically.

Additionally, this etude introduces the idea of using improvisation and 'musical repurposing' as a learning tool for any type of music, but especially in pre-composed classical music. I believe that using improvisation to explore the repertoire at hand is an empowering and illuminating technique. It allows the player to understand how it might have felt to compose the work, and to reflect on the notational choices that the composer made. After all, the notes on the staff paper can be seen as a 'message in a bottle', as the composer attempts to communicate their musical ideas to a possibly unknown future performer. A deeper unpacking of this technique is outside the scope of this project but is a subject that is worth further exploration.

The compositional approach for this etude was deconstructive. I concentrated on the first 5 pages of *Lutins*, eliminated melody, harmony, and all the original notes from the Renié work, leaving only the pedal movements, which I rendered visible and audible by adding a note marking the pitch enabled by each pedal movement. Thus, in *Leprechaun Footwork Revealed* each string played requires (and represents) a pedal movement, apart from the first two notes, the D♮ and A♮, which are there solely to ensure that the harpist must start with the same pedals as in the original piece. (Otherwise, they could pre-set the D♭ and A♭, the 2nd chord of the etude). The first half of the etude, then is the 95 pedal movements of the first section of the original work.

To make the etude more visually clear, as well as more musically interesting, I made two changes: As the original piece is in 3/8, and pedal movements tend to be on the first beat of the bar, I grouped four 3/8 bars into one 12/8 bar. Then, since most of the pedal movement was on the downbeat, I was able to transform the 12/8 time signature into 4/4. Additionally, I decided to eliminate the pickup bar, by moving everything one beat to the right, as it made for a more interesting melodic phrase while still respecting the order of pedal changes.

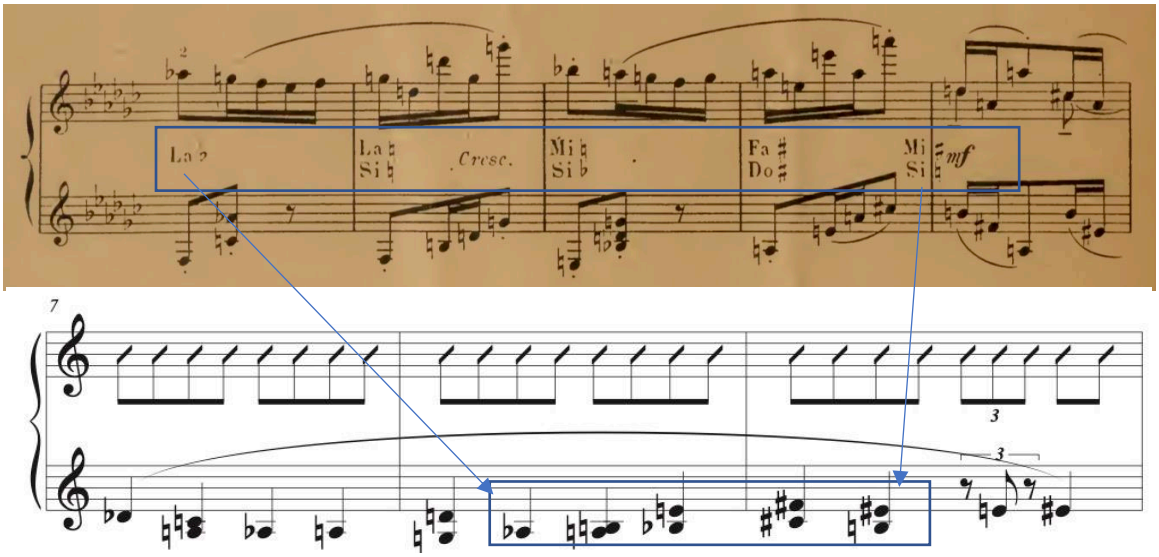


Figure 44: *Lutins*, bars 29-33 and *LFR*,18 bars 7-9

Whenever a pedal movement occurs after the downbeat in the original piece, a triplet was used as a means of accurately locating this rhythm in the new construct. This occurs around twenty times.

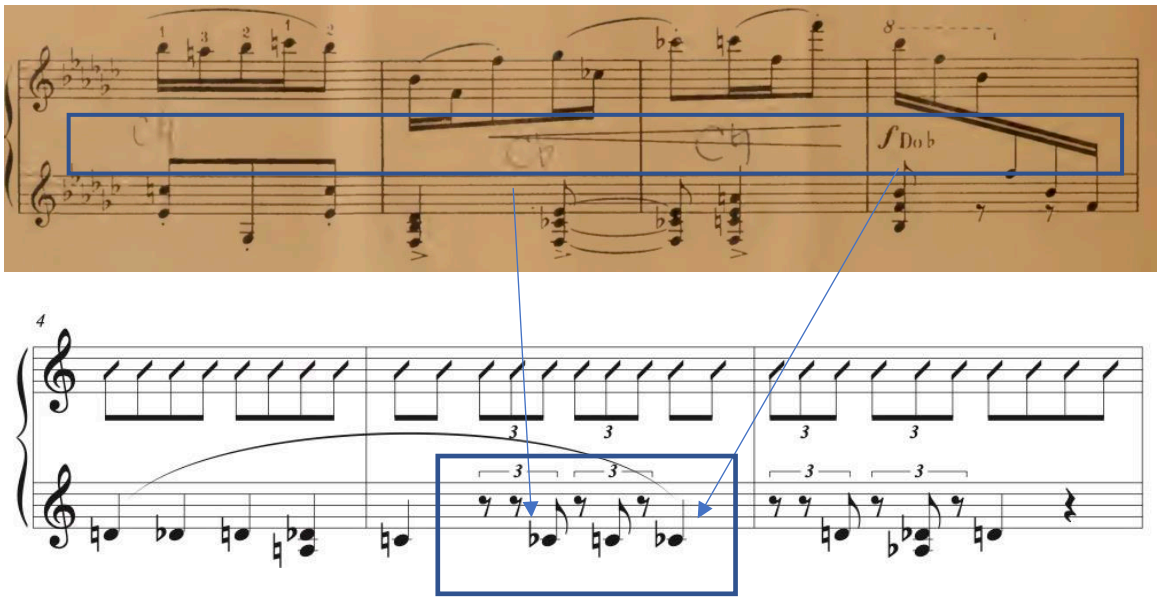


Figure 45: *Lutins*, bars 16-19 and *LFR* bars 4-6

Additionally, there are a few sections in the original piece with no pedals. As this etude is a pedal etude, I cut these 'empty' bars. Thus, the pedals still occur in the same order as in the original, just with fewer non-pedal gaps. If one were to play the original notes of '*Danse de Lutins'*, while looking at the pedal notations of LFR, and took 'foot breaks' at the appropriate moments, the notes in the Renié piece would be correct. To complete the etude, the pedal sequence is repeated, in reverse order, from 'Z to A' (or rather from 'Y to A', as Z serves as a pivot note). This palindromic organization thus takes the etude one step further from its origins in *Lutins*, and allows the performer to make the claim that they know the *Lutins* pedals 'forwards and backwards'.

A slow tempo and a quiet dynamic register were added. The point of this etude is to have the harpist concentrate on the pedals, not only technically, but musically. Taking the pedals out of their original context, slowing them down, and adding an intensely calm dynamic, forces a different kind of relationship between the performer and the pedal movements. It's perhaps as close as one could come to an etude composed solely of pedal movements. Finally, an improvised right-hand possibility was added. The etude can be performed without it—it's entirely up to the performer. Suggested rhythms are given, quavers for the 'normal' pedal movements that occur on the beat, and subdivided triplets, quadruplets, sextuplets, for the times when the pedals fall elsewhere in the bar. The performer has the option, of course, of playing polyrhythmic duple quavers against the LH triplets, but I felt that the implied RH triplets etc would allow the harpist to phrase the LH notes more easily.

As the improvised RH is different every time, each performance of this etude is radically different. In addition, having a random RH, in which the actual notes are immaterial, allows the harpist to concentrate on the pedals/LH while still preserving the quaternary two arms/two legs mindset. It's also possibly a helpful gateway for harpists who are nervous about improvisation. Playing an improvised RH which is free, but with some optional rhythmic guidelines could be a liberating experience for some.

Etude Ten: Haseman


CP Etude 10

This piece combines several of the techniques explored in the previous etudes. Additionally, the etude addresses the subject of playing the same chord with alternate spellings. In this case, the C^7 is spelled both as C E A♯ and C E B♭, the latter to allow the simultaneous melodic use of an A♮. It's important to realize that the Fast 7th enharmonic spellings are only one of several ways of voicing chords. In these etudes they're given predominance as they're relevant to the work at hand. However, outside of the context of pedal etudes, it's useful to be comfortable with all the possible enharmonic spellings, as even seemingly clumsy ones (e.g. C♭ D♯ G♭ for a B major triad) can be invaluable in certain contexts.

The techniques used in this etude include all manner of pedal slides, as well as double pedal movements, double pedal slides, and skiing (sliding into a note while playing another note). It ends with an unrepentant two-foot quadruple pedal slide. The melody is a setting of a quote from Brad Haseman in his article '*A Manifesto for Performative Research*', a quote which has a strong resonance for me, with these etudes, and with the compositional processes behind them:

> 'Certainly, performative research is derived from relativist ontology and celebrates multiple constructed realities. Its plurivocal potential operates through interpretative epistemologies where the knower and the known interact, shape and interpret the other.' (Haseman, 2006, p. 104)

Etude Postlude

As has been explored in this section, these Etudes serve multiple functions within the GSH project. The Pedal Etudes, perhaps most importantly, will also serve as a channel to share these pedal concepts with other harpists and composers, inserting new ideas into the 'closed composer harpist circle' discussed in Chapter 1. The process of composing them brought new insights about the pedals, ideas which in turn inspired new etudes, and informed the subsequent interactions with other composers, as will be seen in Chapter 6. Approaching composition through reflective practice helped to clarify and

sharpen my compositional tools, which then gave me greater confidence in this domain. Two of the immediate results of this compositional experience are discussed in the following section.

Additional Stickney Compositions

The joint processes of composing the etudes and interacting with the body of PaR literature were the inspiration for two additional compositions. These one-off pieces address specific ideas, either finding common ground between pedal and lever harpists in *Lever Mania*, or proposing a method for active musical dialogue with text in *Nelson.*

Lever Mania

Reflection on the new pedal notational system discussed earlier led to thoughts about how a dedicated third stave could be applied to lever-harp notation. One of the complexities of lever notation is in efficiently indicating the octave for the specific lever to be moved (as each string's lever is moved individually). It's clear that works for this harp often don't require a large number of lever changes, perhaps because the instrument is commonly played by beginning harpists, or because it often is used in more diatonic folk music. In contrast, the melody for the highly chromatic piece *Lever Mania* is built entirely around constant lever changes, and therefore requires a clear method of indicating these changes.

To effectively communicate these lever movements, I modified the new pedal notation system by placing the third stave above the treble staff. In the example below, a treble clef is also used for this 'lever stave', although the clef can be changed depending on the specific lever needs. Using this system with lever harps affords the same advantages of the pedal version, as well as an efficient and immediately obvious way to specify the octave of the required lever change. Since the levers only have two positions, it's not

necessary to indicate notching/un-notching as with pedal notation. For this reason, only diamond noteheads are used.[23]

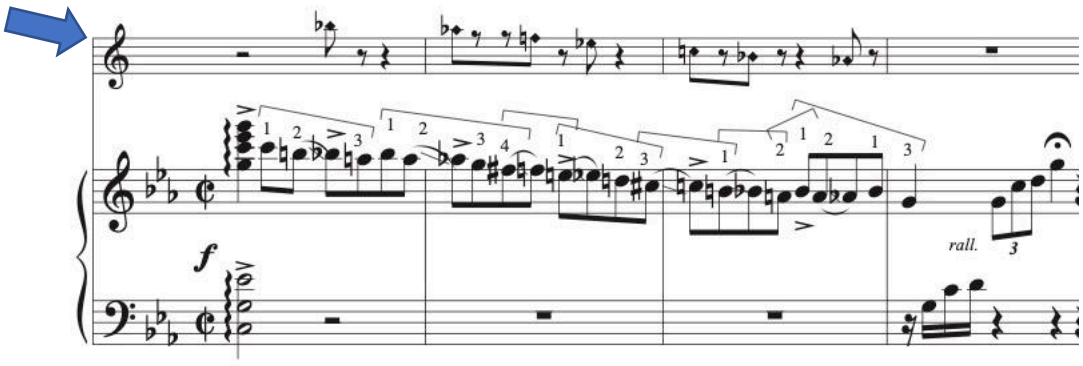


Figure 46: Excerpt from *Lever Mania*

Admittedly, including a lever piece in a pedal-based project could be seen as 'mission drift.' However, there's a significant cross-over between lever and pedal harpists, especially as most pedal harpists start as lever harpists, and as many then go on to teach beginners using the lever harp. One can easily imagine that this brief lever 'side journey' via *Lever Mania* will have the possibility to act (indirectly or directly) on the kinaesthetic awareness of harpists.

Nelson

This piece was the result of the 'compositional reading' technique described in Chapter 2. As previously discussed, Nelson's *Practice as Research in the Arts* was an important source for the GSH project, a sort of Rosetta Stone which allowed me to interact with the body of PaR writing. Despite the general approachability of this book, one particularly rich paragraph presented a particular challenge (Nelson, 2013, p. 36), and I spent several months puzzling over it. Ultimately, compositionally interacting with this paragraph proved successful, brought understanding, and as a side benefit, resulted in this piece. This experience, like that which resulted in the *Haseman* pedal etude, confirmed the viability of compositional reading as a means of textual dialogue and interrogation.

[23] Although not required in this piece, one could imagine a situation where a lever would have to be 'preset' (placing the hand on the lever in advance). This could be notated with an 'x' as with the pedal notation. (Appendix C. shows the current propositions for this pedal notation system.)

In some ways *Nelson* sums up the entire GSH project. It is a harp piece which requires multi-pedals; is the result of a compositional process that actively dialogued with theory; and embodies these theoretical texts and concepts while also proposing them in (what is hoped to be) an empathetic and approachable manner

Nelson is the final original Stickney composition in the Creative Portfolio. The focus will now turn outwards, using the experiences and insights gained in the creation of these previous elements as a starting point for interacting with other composers.

Chapter 6: Working with Other Composers

This chapter will explore this project's interactions with non-harpist composers. It will give some background on each composer as well as why/how they were chosen for the project. Finally, it will unpack elements of the compositions which are best communicated via text. The pieces can be performed without access to this information, of course, but their reciprocal role within Giant Steps for Harp (GSH) is served by these elements being made explicit.

Background

After having investigated and challenged my initial pedal ideas and concepts in the 'Impossible' Standards section, and expanded these approaches in the Etudes, I decided that a logical step would be to work with a group of non-harpist composers. The goal was multi-fold: To test my ideas, learn how the composers would react to them, see how they would integrate these ideas into their compositions, create new repertoire, and expand the pedal conversation by bringing a collection of networks into play. I also hoped that interacting with the pieces these composers proposed would help to create new uses for these pedal concepts, as well as possibly new techniques.

Originally, five composers agreed to participate in the project. Ultimately this number reached nine, as four more composers joined as part of Darren Solomon's *PedaLogic* composition:

1. Kitty Brazelton, USA (www.kitbraz.info)
2. Sean Callery, USA (www.seancallery.com)
3. Henry Fourès, France (www.henryfoures.com)
4. Dominic Murcott, UK (www.dominicmurcott.com)
5. Darren Solomon, USA (www.darrensolomon.com)
6. John Fio, USA (www.johnf.io)
7. Robert Liebold, USA

8. Rodolfo Ortega, USA (www.rodyortega.com)[24]
9. Kari Steinert, USA (www.karisteinert.com)

Each of the composer interactions, and the subsequent pieces which resulted, can be examined from several points of view (or lenses). Three lenses are especially significant in the context of this project: that of the researcher (me), the composers, and of the other harpists who will ultimately (hopefully) play these pieces in the future.

My own viewpoint, the researcher lens, is linked to how the composer interactions shaped the trajectory of my research, bringing new ideas and challenges through our ongoing dialogues. Each of the five interactions was useful, in its own way, and each participated in the evolution of these pedal techniques, as well as in their notation. Some, like the Darren Solomon and Kitty Brazelton interactions, also provided insights into communication, in the challenge inherent in asking for a musical response to a technical question. All the interactions led to integrating new techniques, and expanding / repurposing existing techniques.

As this music was composed in an ongoing dialogue, which was documented in video and by email correspondence, the composers themselves have reported that their own experience with the harp, and harp-writing, have been informed by this process. It is my hope that harmonic possibilities and freedom inherent in these active pedal techniques will continue to inform their harp writing. Additionally, as several of the composers involved in the project are also teachers, it is hoped that this knowledge will be subsequently passed along to their students, whether specifically about the harp, or as a model for how to interact with different instrumentalists to engage with unfamiliar instruments.

Finally, assuming that these various output compositions have a performance life beyond this research project, the harpist's viewpoint, as 'end user' is significant. These active pedal techniques are intrinsically useful and can also contribute to the idea of

[24] Ortega's composition isn't included in the Creative Portfolio, but can be heard on the PedaLogic website, www.pedalogic.net

stepping outside of the perceived boundaries of 'normal' technique. This can be a liberating process, informing the questions of who we are as harpists, as musicians, as members of society, as humans. This leads back to the misquoted Derrida in Chapter 1. Just as there is no 'hors pedals', the ways that harpists interact with their pedals is a microcosm of their approach in the 'larger' issues in their lives.

The following sections will illuminate each of the composer interactions individually. The background or context of each composer will be briefly explored, as will the collaborative process of the interaction. Finally, any significant outcomes will be explicated. As most of the interactions occurred quasi-simultaneously, they are presented here in alphabetical order, as they are in the Creative Portfolio.

Kitty Brazelton, *Winter Roads*

CPBrazelton

Background

I've known Kitty Brazelton since the 1990's in NY, when I was part of her 9-piece band Dadadah. Her works range from operas, song-cycles, and concertos to 'cyberpunk' and 'chamber-folk' projects (Brazelton, n.d.). As she often includes the harp in her compositions and has a strong interest in how to write for the instrument, I was curious how she'd integrate my pedal ideas into her music.

Collaborative Process

After some back-and-forth communication about the project, she composed *Happiness Comes from the Other Side of the Mountain* for solo harp. The 15-page piece included a lot of pedal movement, but unfortunately not in a way that was directly useful for this project. There weren't any multi-pedals, or melodic pedal slides, and even though there were sections exploring the liminal spaces in between the pedal notch through slow manipulation, they didn't sufficiently address the pedals in the way I'd hoped. There were also free sections moving from one pedal setting to the next, but each subsequent setting involved only one pedal change. At the same time this section isn't so different from parts of Dominic Murcott's piece, wherein a stream of notes is steadily changed by

pedal movement. Additionally, the idea that the string choices themselves are interchangeable *does* redirect the focus on the foot movements.

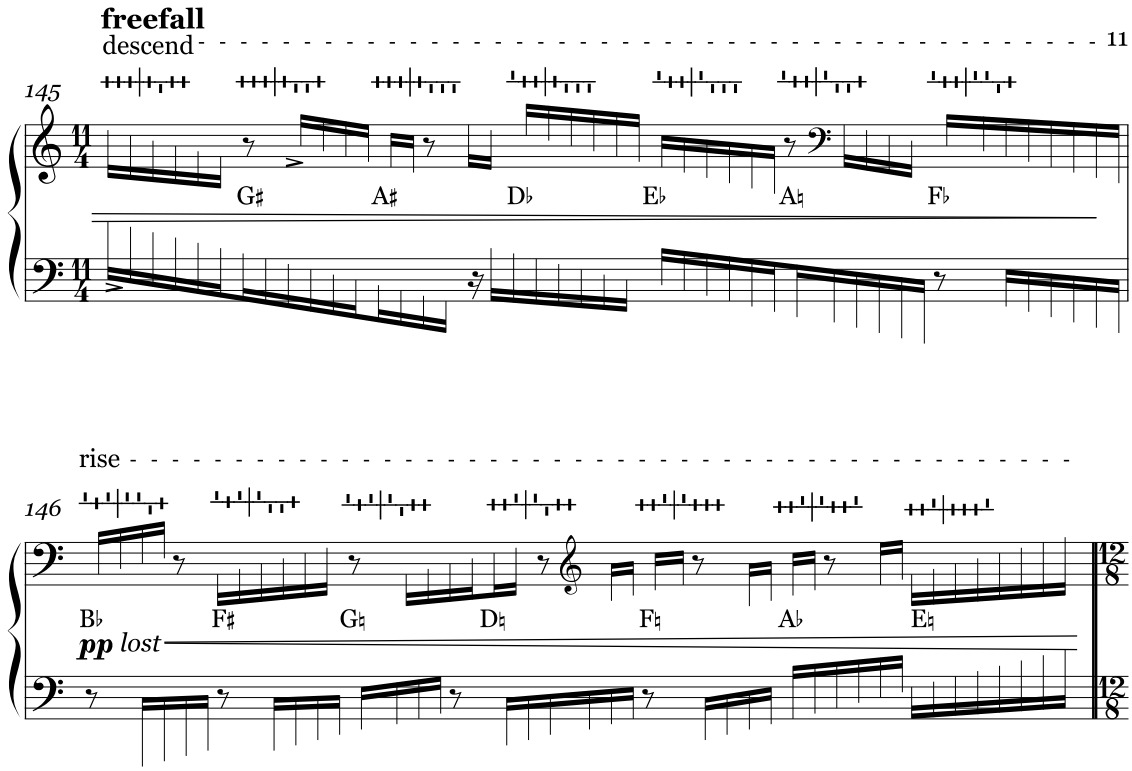


Figure 47: *Happiness Comes from the Other Side of the Mountain*, bars 145-146

Still, *Happiness* felt like a 'normal' albeit pedal-intensive work, which was frustrating. This subjective feeling might be better explained with two of the lenses, as I also needed to understand why a piece, which represented a certain amount of time, energy, inspiration, and which was written pro bono by a busy composer, didn't seem 'useful.' Looking at the piece as a researcher, the piece didn't provide any 'pedal problems' to test my various techniques, tests which might also lead to new techniques. It was useful, however with regards to understanding the element of communication inherent in these composer interactions. This was the moment when I realized that communicating my 'pedal needs' to a non-harpist was more complicated than I'd previously thought, even when working with someone with a long history of working with the instrument, which was the beginning of a dialogue which would continue through my collaborations with both Callery and Solomon.

From the composer lens, it seemed like this piece could still be situated in the existing harp/pedal paradigm. I decided that one way to explain the kinds of pedal use I was looking for was by showing some examples and created a multi-pedal sheet which was accidentally named 'Multli Pedals.'

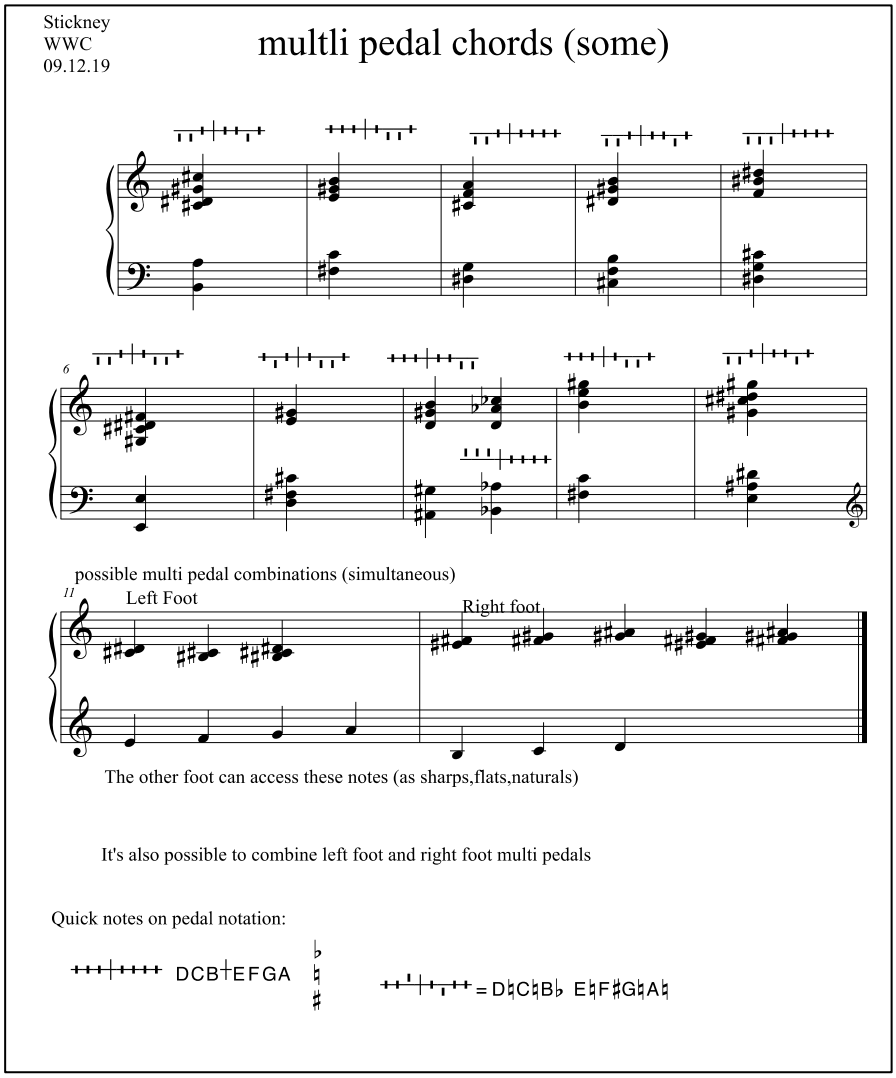


Figure 48: Pedal examples provided to composers

Brazelton responded with a second piece, *Winter Roads*, in which she directly incorporated these chords in a recurring section named 'Park's multlis muchly [sic].' This solved the problem of incorporating multi-pedals, with an almost 'found object' collage approach. A similar situation occurred in sections of the Henry Fourès piece. This situation may be a direct result of the fact that my primary utilisation of the multi-pedals is with the dominant 7th chords (for example with the Fast 7ths). The question, for which I haven't yet found a satisfying response, is how to motivate composers to write music which involves multi and active pedals without confining this composition to chords

based on the notes of the whole-tone scale, especially dominant 7th chords. It's also possible that this compositional brief is so specific that it's ultimately not a problem. Outside GSH, the goal isn't to have pieces which involve *mostly* multi-pedal-based music, but rather to open composers to the harmonic/melodic possibilities these multi-pedal movements allow, as one tool among many. However, *within* this project, and to spark conversation with composers about these pedal movements, it's useful to have a perhaps unusual amount of pedal activity, which then invites the 'dominant 7th problem.'

Brazelton and Pedal Notation

In her second piece, Brazelton also adopted my 3rd stave pedal notation. This was a surprise, as I'd assumed that I would be adding it afterwards. At the same time, she habitually writes in pedal markings (which is rare for non-harpist composers), so it made sense that she'd be curious to engage with this new system. This was useful for my research as she had a different take on how to apply the system (we hadn't discussed how the system worked beforehand). She used it without considering the possibilities of notching/un-notching the pedals, but rather assumed that any notation on the 3rd stave also implied pedal notching. She also used the graphical pedal diagrams and added traditional pedal notation (e.g. 'A#').

Although I think having both a 3rd stave and traditional pedal notation is redundant and can lead to too much information, seeing how Brazelton applied my system made me realize that I needed to come to terms with the question of notating pedal notching, and that my previous idea of merely using rests to indicate notching wasn't sufficient. In addition, I realized that in the pedal etudes, which were where I'd first developed my idea of this s3rd stave system, the pedals are never notched apart from their original positions. This situation is artificial, stemming from the compositional decisions of the etudes themselves. Brazelton's use, then, of graphic pedal diagrams is entirely logical, and something which I've subsequently adopted in my use of the system. In addition, the reflection on and ensuing modification of the 3rd stave pedal notation is a concrete example of the types of insights which are facilitated by practice as research.

Brazelton's 'Pedaliminality'

Brazelton made an active use of liminal/unnotched pedals, as a driving force behind several bisbigliando/tremolo sections. However, the initial notes she chose were in the upper registers, and it quickly became apparent that there was almost no sonic effect, unlike with lower octaves. This helped to provide boundaries for this technique, a limitation that I wasn't previously aware of. In general, this liminal pedal technique makes three types of sounds as the discs approach the string: Initially there's a microtonal effect, followed by a buzzing texture on the starting pitch, and lastly a buzzing texture on the target pitch. However, these effects are most apparent in the middle register of the harp—the higher one ventures, the shorter the duration of these sounds within the range of movement of the pedal. In strings two octaves above middle C, depending on the harp and the skill of the player, it's possible to achieve the third effect (buzzing on the new pitch), but not the previous two effects. In *Winter*, Brazelton proposed a compositional solution, by adding the same musical materials a few octaves down so the effect could be heard clearly, and then presenting the same materials at the higher octave (the original position in the earlier draft), so that, even if the effect was much more subtle (or even inaudible), the listener's ear would already be prepared for the sound, and would, in effect, provide some of the perception of the sound artificially.

Outcomes

It must be said that this piece (in June 2021), isn't yet ready for performance. However, since this part of the GSH project is more about *interaction* with composers rather than actual 'completion' of works (as with the Fourès piece later in this chapter), it made sense to choose this moment as a convenient stopping place within the framework of this project. The preparation and evolution that these pieces need before performance are on a timescale which is not only outside the scope of this project, but which also isn't inherently connected to it. This idea of using 'performance tools' (as if preparing a piece for live performance or recording) as a means to dialogue with compositions but *without* necessarily arriving at the performance itself is one of the slippery concepts in GSH, and is surely linked to the process of becoming a conscious artist/researcher, realizing that my tools, techniques, habits can be repurposed to other ends. Incidentally,

the realization that one can use a work in progress as a catalyst for further dialogue and reflection also represents an *additional* layer of practice-changing insight. Especially since, in theory, no piece is every truly finished, *every* composition can be interrogated as a work in progress on some level.

Sean Callery, *The Carnival*


CP Callery

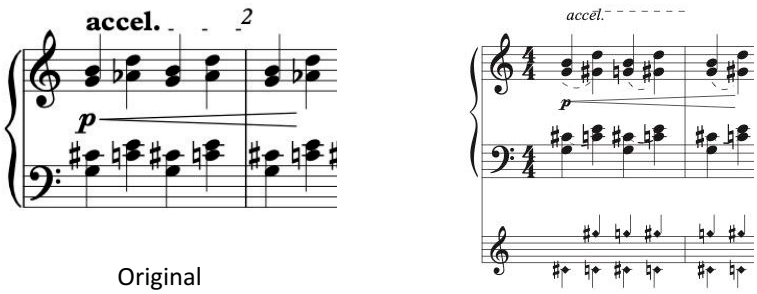
Background

I first met Sean Callery in 1986 when he, Darren Solomon, and I spent a summer performing in the Disney All-American College Orchestra. I knew that Callery, who currently composes primarily for television and film, works mostly using samples, and that therefore he might not be especially familiar with harp techniques and boundaries. He agreed, mentioning in one our initial discussions that 'as the harp was one of the first instruments to be sampled/synthesized, people wildly composed for it without knowing the rules'. He was excited to participate in the GSH project in order to address his 'bad harp habits' as a composer (Callery, 2020).

Collaborative Process

The work with Callery began with a two-hour discussion of the harp, during which I demonstrated the pedals and tried to make explicit the types of movements that I was looking for. Callery mentioned that, as a result of our conversation, he now conceptualized the harp as being closer to the organ than to the piano (something I also believe), and that this realization 'unlocked' the relationship to the pedals for him (Callery, 2020).

Callery's piece, *The Carnival*, didn't have any major playability problems. It was necessary to make some enharmonic decisions, for example whether it was better to play the G-A♭ ostinato in bar 1 as written, or as a G-G♯ slide.



Original

Proposed solution

Figure 49: Callery Bar 1 ostinato decision

In addition, working on the piece yielded one new foot movement, the 'heel lock', in which a pedal is notched with the heel while in a diagonal position. (Video 14)

Video 14: Heel Notch

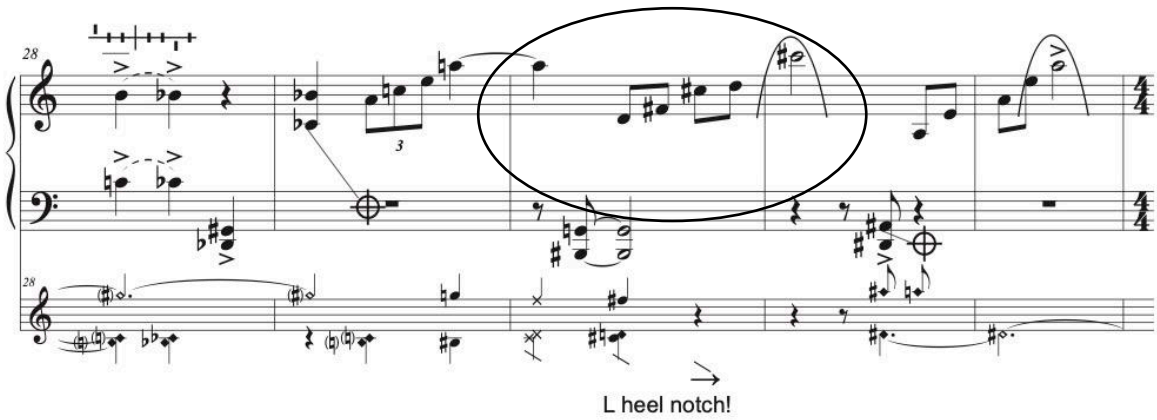


Figure 50: Heel Notch in bar 32 of *The Carnival*

Accidental Interactions

An interesting, inadvertent challenge with Callery's piece arose because of researcher error. When I initially transferred the piece from Sibelius to Finale, I accidentally changed the time signature, and un-synced the treble and bass staves, resulting in some unintended complicated pedal situations. This was especially true in the improvisation, which I described as 'more complicated to play than the musical results justify' in an earlier version of this commentary. Fortunately, I later realized my mistake; the composition had a strong 3/4 feel despite being written in 4/4, which led me to take a second look at the Sibelius original.

The actual composition, as intended by Callery was much more playable, while also having some interesting pedal situations with which to dialogue. However, rather than just being an 'unfortunate detour', the time spent with the false version was equally fruitful. It also provided 'raw compositional material' with which to interact, while still giving insights into Callery's musical intentions—intentions which were fortunately much easier to realize in the corrected version. This side-journey helped me to realize that one of the primary advantages of working with other composers, is to find new pedal problems to test my pedal concepts. In some respects, in the context of this research, the final composition is almost a by-product.

Outcomes

Several of the composers in the project mentioned that I could 'change any notes as needed.' To be clear, if the goal of the composer interaction had been to perform or record these pieces in a severely limited timeframe (as is often the case in normal performance life), I would have searched for a serviceable pedal solution as quickly as possible, regardless of its research utility. In this situation I would certainly have taken advantage of the possibility of changing notes (probably whether offered or not). However, the goal in GSH was different; part of what I was looking for was *precisely* these kinds of problems. Changing notes to 'defuse' the pedal problem would have defeated the purpose of the exercise. The interaction with Callery spoke directly to the question of 'what is this project' as well as to my question of 'how to be a researcher.' Even though I'm using my 'performing tools', that is, my normal praxis, which I've augmented for GSH by adding additional audio and video elements, this project is neither a performance project, nor a composition project (even though it generates composition which will hopefully be performed in other contexts, by other harpists), nor is it a recording project. It's a praxis-based research project that calls on all these elements while simultaneously being something else entirely—and which will also possibly affect future performance, recording, and composition.

Henry Fourès, *Pièce pour Harpe*

CP Fourès

Background

I've known Henry Fourès since 2008, when I started to teach at the *Conservatoire National Supérieur Musique et Danse de Lyon* where he was then director. Our main interaction prior to this project was during a spontaneous improvisation performance during an Open Day at the conservatory. But I'd always been in awe of him as a composer and musician, was surprised that he was willing to contribute a piece for GSH, and was nervous about being up to the task. All these elements, musical and psychological, combined to make his piece seem challenging. As it turned out, when I was finally able to engage with his composition, I realized that it was far more complex than I'd initially imagined.

Video 15: Two-handed Muffle Technique

Collaborative Process

The Fourès composition demanded more time, effort, and reflection than any other element in the GSH project. I received the score on April 12, 2019, following several meetings to explore the various possibilities for this composition as well as to demonstrate my pedal approach. On first looking at the score I was overwhelmed. I didn't know where to start, and instinctively knew that this piece was a big undertaking, a complicated work which was going to take a lot of time. I circled the score for a month, trying to decide where to begin, and ultimately decided to look at the various rhythms, to build a basic 'scaffolding' to define the worksite. My initial approach was taken far from the harp and its pedals, but rather at the piano, as I wanted to be able to immediately hear the harmonic language Fourès had employed, before making any decisions about pedals. Also, since Fourès is a pianist, I had the feeling that exploring the work first on the piano might make sense. Added to this, the percussive nature of the piano when compared to the harp, gave me a quicker insight into his rhythmic language. And finally, psychologically it felt safer to first approach the piece from a foreign instrument.

The work is divided into 3 large contiguous sections. The first uses the pedals as an almost vocal inflection, requiring a very delicate liminal control. This is exacting but not

extremely difficult. The third involves using the pedals in a controlled yet random manner, causing various note sets to interact in various ways.

The 2nd section uses the pedals in a very useful multi-pedal fashion, combined with a nearly constant series of semiquavers, starting at bar 21. Significantly, it also employs a muffling technique that I showed Fourès, and which he obviously found interesting. The muffling technique as I originally used it involves the fingers of both hands playing the exact same strings at the same time, usually in 4 or 3 finger patterns (Video 15). By employing different amounts of tension with different fingers, it's possible to have a constant rhythmic groove along with a 3-dimensional kora-like melody. It's relatively simple to use and provides a rhythmically rich and rapid effect.

The irony is that it had never occurred to me that this same technique becomes much more complicated, when employed by a non-harpist and notated. Fourès decided to have a nearly unbroken series of muffled semiquavers with occasional sounding notes sticking out of the texture, which he described as being like the percussive 'comping' chords of a jazz pianist. It's possible that there are different ways to realize this on the harp, but, after some reflection, and after having learned the RH patterns on the piano, I decided that the most efficient manner to play this passage was to have the RH play all the written notes, and the LH muffle as necessary.

This meant that the LH would have a special kind of fingering, involving the same kind of directional placing used with normal harp playing (and with the RH in this case), but with the goal of merely touching the strings in order to mute them. The two hands were almost acting as mirror images of each other, but not quite, so already there was a dialogue between them, when they moved in concert, and when in opposition. In practice the work on this piece happened in stages. Each stage required starting at a very slow tempo, usually more than 200% slower than the indicated 126=quaver.

The first stage, as already indicated, was learning the RH and its metric rhythms on the piano. Since I wasn't sure what was going to be important or relevant, I played both the melodic notes, and the first notes of each metric group (for example the first note of the groups of 3 and 2 in a 5/16 bar).

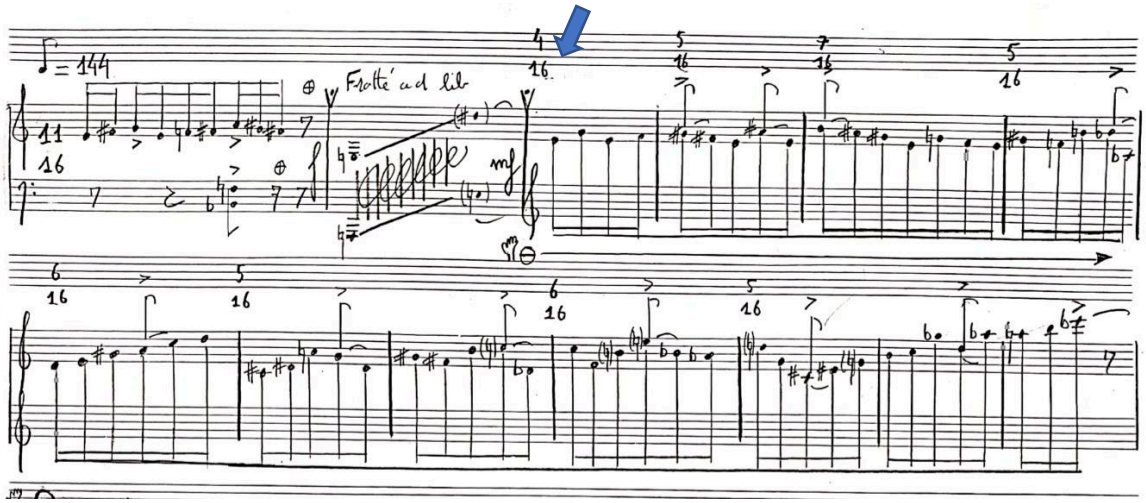


Figure 51: Fourès piece Bar 19-31, original manuscript

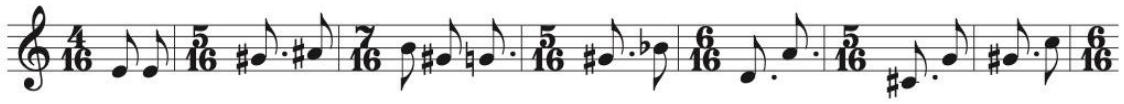


Figure 52: Fourès piece bars 21-27 showing rhythmic exploration (excerpt)

The next step was to transfer this material to the harp, after first deciding on fingerings which would allow this movement. At this stage I wasn't concerned with the accidentals while playing these pitches on the harp, as it was too early to be moving pedals. The next stage was to add pedals, which sometimes required changing the strings and fingering as certain accidentals proved unfeasible. Once I'd found a working version of this, I could make decisions about muffling. Again, these decisions sometimes forced changes in enharmonics / pedals / strings.

I discovered that, in the muffling section, it was counter-productive to use pedal slides, as they'd be completely inaudible. This meant yet another visitation of the notes and fingering to add the previously slid notes. Additionally, I had to often decide how long the ringing notes would last, as this would be affected by subsequent pedal changes. With so many possible variables, it was a slow process to make the various decisions necessary to find a playable version of this section.

Then I realized that it wasn't enough to just muffle the pitches. In the original technique, one hears a twanging sound, a buzz, at various levels. I decided that I was going to integrate this as well. This meant that the LH wasn't merely touching the strings, but *lightly*

touching them. The degree of pressure varied depending on the octave. Lower octaves required more pressure, higher octaves less pressure. This meant that in addition to the multi pedals, the LH muffling and the RH playing, there was now also a *lateral LH distance* variable—which is a variable which is completely new for harp playing, as usually harpists are more concerned about the amount of pressure directly applied on the string itself. To keep track of the LH, I repurposed the normal LH stave as a muffling track (much like the dedicated pedal track on the 3rd stave), and added fingering for the muffling, as well as for the pedalling. As these sections required so many simultaneous exacting movements, it became very important to be absolutely clear about which fingers where being used where, as there was no time to remember or figure things out. In addition, at the end of this section, Fourès added a vocal part, involving rhythmic vocalizing in the style of the South-Indian Tabla *bols.*

As I worked with these various levels, I constantly had to juggle how I combined them, as it was too much to do everything at once (for several months). So, I would practice pedals and muffling, or muffling and chanting, or pedals and chanting—all with metronome, often using my normal practice methods of miming the hand or feet movements, or using percussion instruments (shaker eggs, drums, the soundboard of the harp) to test each layer for stability.

At first, I was frustrated that I was 'spending so much time thinking about muffling' as it seemed to have no direct bearing on this research. But then I realized that the complexity of this second section, a complexity that was largely due to the muffling technique, constantly forced deeply interesting realizations about notation, the pedal techniques themselves, practicing, learning, and rhythm. Additionally, because it forced me to focus and concentrate at ever deeper levels, this process allowed me to experience moments of actively 'feeling quaternary', feeling a strong flow of being present and equally active in both hands and feet. Even though I think that my normal practice involves this quaternary approach, and I'm generally satisfied with my pedal technique, this allowed me to experience this four-limb way of working on a different level.

The coordination between the 'non-sonic' LH and feet also created interesting rhythmic interactions. This was especially true in bar 40, where intersections between the

muffling and pedal changes, either together or in contrast, created a rhythmic counterpoint to the RH sounding notes. In order to play the section at tempo, it was necessary to take this hidden rhythm into consideration. I developed a method of notating this particular activity, once I realized that the changes between types of movements were possibly what was keeping me from being able to play this section cleanly.

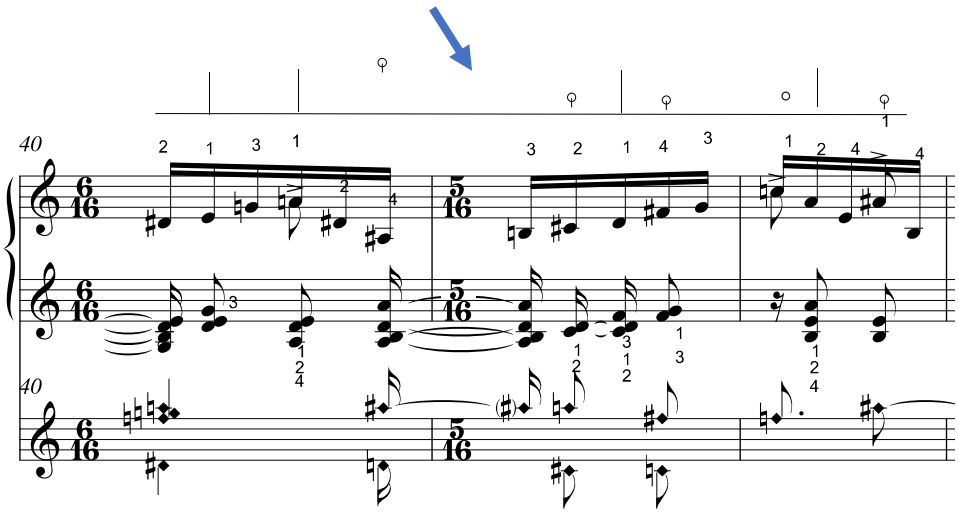


Figure 53: Fourès Bars 40-42

The vertical lines on the graph indicate muffling changes, the circles show either pedal changes (low circles) or a combination (high circles, both muffling and pedal changes). One could also show the hidden rhythm created by the muffling changes like this:

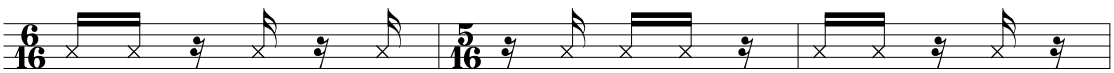


Figure 54: Hidden rhythms in bars 41-43

The work on the Fourès piece was also heavily influenced by notation. As so many performance variables had to be decided, it was necessary to constantly update the Finale score. This original Finale score was itself transcribed from Fourès' original handwritten score by Fabrice Pierre, my colleague in the Lyon Conservatoire. For the moment, I've used thirty-five different versions of the score, each based on small changes from the previous version. The issue was that, with so many details involved, it was impossible to handwrite corrections. This speaks to an issue which seems to be becoming more and more prevalent with advances in technology, that of music typesetting agency. With the growing popularity of Finale and Sibelius typesetting programs (among others), it has become ever more possible for performers to create their own scores. This is

especially true in this situation, as the Fourès composition isn't yet finalized, but when one considers how far technology has advanced from the advent of photocopiers (which was itself a liberating moment), to the current possibility of real score preparation agency, when many of the decisions of the physical layout of the score can be decided by the player, building on the initial proposals by the composer and publisher.

This reflection on notational agency speaks to the question of the role of the score. Does the written score represent instructions on how to place the hands, or is it a visual record of a certain sound? Nicholas Cook speaks to this with his comparison of Chinese *qin* tablature with staff notation:

> It [the *qin* notational system] is a tablature, meaning that it specifies what the performer should do (by contrast, staff notation is more like a picture of how the music sounds, so it specifies the actions less directly. (Cook, 2007, Loc. 299)

This situation became explicit during a meeting with Fourès and Fabrice Pierre during which we explored this piece together. Fourès had indicated with arrows how the sound of the string was to be changed, i.e. whether it was to be raised or lowered. However, since the pedals, which were being used to alter the sound through liminal manipulation, are arranged in an opposition with the direction of sound—that is, one depresses the sound to raise the pitch, sharps are down and flats are up—it become counter-intuitive for me. I found it much clearer to use the arrow markings to direct the movement of the foot, rather than to indicate the desired changes in sound. Of course, there are advantages to both manners of writing. If the soundscape is visually represented, it's easier to perceive the sonic changes themselves. But for learning the piece, I found it useful to not have to constantly remember that the arrows indicated sound not pedal direction. It's possible that, over time, I would have integrated this concept into my approach, and that my preference during that meeting was based more on the limited time I'd spent engaging with the piece. But, given the current technological possibilities, I would prefer a third option—having the score in digital format and being able to decide at will how the score would be presented—much like being able to decide which view is shown in Microsoft word (Print Layout, Outline, Draft, etc). Then it wouldn't be necessary to decide in advance the viewing preference for a given piece but could adapt as

needed. This could even be taken a step further, to decide to hide fingerings, for example, once they'd been integrated.

The ability to adapt the score to reflect each performer's preferences, as well as to take into account the changing requirements at different moments in the learning/performing journey is incredibly exciting. For example, removing elements (like fingering) from active view once they've been integrated could lead to a clearer visual experience. Even though I've spent the majority of my musical career thus far interacting with paper-based scores, the possibilities of modifiable virtual scores, among other factors—convenience, ease of use, portability, the environment (Palmer, 2010)—will, I believe, help to compensate for any lingering paper nostalgia.

This realization also reinforces my thinking about the pedal notation system that I began using in the etudes. At that time, I was concerned that this system would be of limited use, as normal harpists wouldn't be able to easily add it into their scores—or at least not as easily as just writing in the traditional notation. It seemed that relying on publishers adopting this system was a faint hope. But now it's become clear that I've been seeing this trend for some time, although on the periphery of practice. This is especially true in the Lyon Conservatory, where my colleagues Fabrice Pierre and Sylvain Blassel are heavily invested in this strategy. But the result is that each year, some of the students also realize that notation technology is neither complicated nor expensive, and that it has evident advantages. When one adds in the increased trend of using tablets instead of paper scores, it becomes clear that being able to make essential decisions about the way one's scores are organized is an important and probably lasting trend.

The Fourès piece also generated new pedal techniques that subsequently required new notation methods. One significant example is using fingering for the feet. Depending on the situation, I've developed two methods. The first is to number the big toe '1' and the rest of the toes '2', which designates which side of the foot will be on the pedal, and allows for pedal 'trills' between two pedals.[25]

[25] (See Appendix C for a Pedal Movement Glossary.)

Outcomes

I believe that this piece will have a future in the harp repertoire, not just because of the quality and innovation of the writing, but also because of the standing of the composer. And I'm curious to see how future generations of harpists will engage with this piece, which seems to resonate with the Berio *Sequenza*, a piece which was seen as difficult not long ago, and which is now a 'normal piece', a sign that each generation builds on the one preceding it.

Dominic Murcott, *Half Pedal Study*

CP Murcott

Background

As composer Dominic Murcott is also one of the supervisors on the GSH project, he arrived at his compositional duties with several years of 'insider knowledge'. Perhaps for this reason, or just because that's the kind of composer he is, his composition immediately fulfilled the compositional brief, exactly doing what I needed it to do, in an efficient and organic manner.

Collaborative Process

In addition to the years spent discussing pedals and their place within this project, Murcott and I sat down for a day of harp exploration, during which he proposed various directions and I explored how they might be realized on the instrument. He subsequently wrote a piece in which the pedals were the main actors, as the hands played a minimalist pattern which slowly evolved over the course of the work while the pedals explored liminal un-notched positions, affecting the sound of the hands, like a filter over a stage light.

The piece went through several different iterations. The original idea was to have a constant minimalist melody that was then affected by the pedals, especially with liminal half-notched notes. This minimalist concept remained in the final version, but a tempo variable was added, and the pedal interaction was expanded with a section that used an

equally spaced progression of notched pedals from natural to sharp and back, following the order of the pedals on the harp itself.

Notation and Page setting

The piece presented a logistical and notational challenge as the initial version was eleven pages long. An initial (and logical) step in organizing the page layout was to use repeats whenever possible. However, in bars 41-83, a section that consists of four groups of repeated bars, even though the strings remain the same, the pedals are systematically changed: from left to right (D to A), and from natural to sharp, and then the mirror opposite, from A to D, and sharp to natural. We decided that, in this section, the written note would indicate the *string* rather than the actual *pitch*, allowing for a one-page version of this section as opposed to three or more. The bottom stave pedal notations are numbered to indicate on which of the four passes the pedals are to be moved.

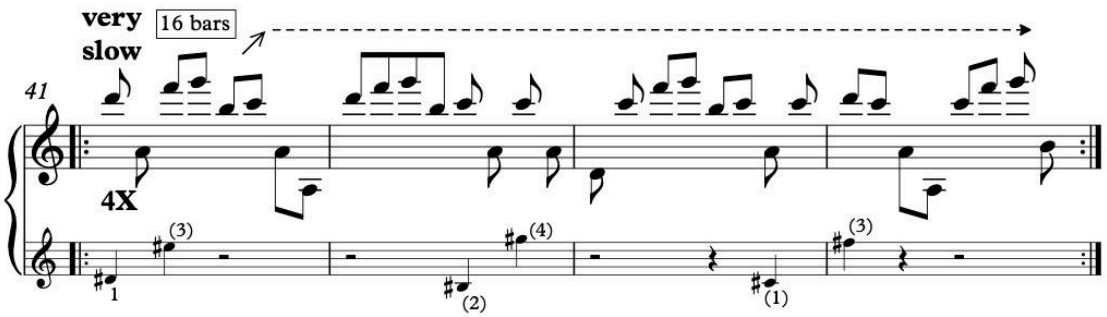


Figure 55: Murcott piece bars 41-56

This notational choice can be disconcerting for the performer used to 'hearing what they see,' but it raises interesting ontological questions about what the notes on the page represent (significantly, similar questions were raised in the Henry Fourès piece). These questions, and the situation which inspired them, seem to add more possibilities to harp notation, foregrounding the idea that notation can represent either pitch/musical ideas or the elements necessary to achieve those pitch/musical ideas—with the understanding that often the two are identical. Playing a non-pitch-mapped score is disconcerting. It takes practice to avoid reacting to the 'mistakes'. But this complication resonates with other boundary techniques, particularly with the pedal techniques explored in GSH. Perhaps this feeling of unfamiliarity is merely the result of pushing against these established boundaries, of experimenting with more nuanced approaches.

The second technique used was perhaps more prosaic, but still relevant. To minimize the number of pages, we realized it was often possible to combine the treble and bass staves, and to use stem direction and barring to indicate hand separation. However, the risk of this solution is less overall visual clarity, as the writing is necessarily denser. We proposed the solution of two different editions of the piece: a practice version, and a performance version. The practice version shows each hand on its own clef to allow for greater legibility. Once again this approaches the questions raised above about notated strings vs. notated pitch. Although harpists realize that notes played by the RH can be notated in the bass clef (and vice versa), it's still useful to realize that dividing staves between hands (or not) is a notational choice, which can have interpretive consequences. Notation which illustrates a musical line sometimes doesn't clearly indicate how the hands might be divided in making this line, leading to imprecision. The contrary is also possible: a score which clearly shows the role of each hand risks camouflaging the musical line.

Having multiple, targeted versions of the same score seems to address this situation. One might have the 'musical' version, showing notes where they sound, with few fingering/hand division/enharmonic/pedal direction indications. The contrary 'technical' version would be the opposite—a physical recipe for the piece. The performance/practice versions in the Murcott piece are a step in this direction, acknowledging the idea that performers might require different types of information at different moments in the dialogue with the piece.

Outcomes

Ironically, since the piece basically fits the brief, it has taken less long to learn (as contrasted with the Fourès piece, for example), and thus I have experienced fewer moments of reflexive breakthrough, as there were fewer problems to solve. However, I think that this work's role will be more as a vessel to communicate the ideas of multi-pedal techniques to other harpists. As the piece is not only fun to play but is also designed in a way that it's impossible to avoid the pedal subtleties, it's an ideal vehicle to advocate for these techniques. The Fourès piece, by means of contrast, might be less performed, as it's such a technically complicated work.

Darren Solomon, *PedaLogic*


Solomon

Background

Darren Solomon, originally a bass player, now principally composes for television and advertising, dealing almost exclusively with samples. Since our friendship sometimes seems like an endless philosophical discussion touching on music and everything else, I was curious how it would be to work together on this project.

Collaborative Process

As it turned out, the problems which arose in my work with Brazelton were even more prevalent with Solomon. He wrote a proof-of-concept sketch which, although beautiful, wasn't at all linked to the pedal needs of the project. It took many discussions for us to break through to the crux of the matter, and then a new problem arose: that the kinds of soundscapes that the multi-pedals encouraged weren't at all musically inspiring to him. Even though, as discussed above, the Fast 7th multi-pedal soundscape doesn't automatically indicate whole-tone or dominant 7th chord elements, it became clear that finding a way to write specifically multi-pedal music which mostly avoided these elements was a complicated task.

We fortunately found another option, one which not only resonated with Solomon's musical and production ethics and practices, but which by definition would increase the amount of multi-pedal harp works in the world, and increase communication between composers and harpists. At one point Solomon made a comment that it was 'a pity that there isn't just a toolbox of various multi-pedal modules' and that his students would really like such a kit. We subsequently decided that this toolbox would be Solomon's piece; that together we would write a collaborative conceptual meta-piece using Logic Pro, which itself would enable other composers and interested individuals to produce pieces involving multi-pedal.

The process was the following: Solomon produced a Skype recording session with me during which he described different sounds which he thought would be useful for the kit. I then recorded my interpretation of these requests, making sure that most of the tracks involved either pedal slides or multi-pedals. Once he was satisfied with the melodic/harmonic material, I then transcribed each of the 117 tracks into MIDI. This was important as Logic gives one the possibility of viewing MIDI data in various ways, including as a notated score.

The MIDI tracks were then streamlined to make them as small a file as possible. It was also important to make sure that the score view was clear and easy to read, so the MIDI files were refined to make sure that the information they contained would also be clear in score view.

Finally, to disseminate the piece, we each filmed a short video. Solomon explains the kit (which we call PedaLogic) from a technical point of view, how to use it to create a (multi-pedal) harp piece. My video explains the GSH project as a whole, the PedaLogic composition's role within it, as well as gives an overview of the harp's pedal system. My hope for this composition is that computer-based composers who interact with it will learn more about writing for the harp and be inspired to share their PedaLogic composition with harpists in their area. This in turn, might inspire the harpists to engage with multi-pedal harp techniques.

Outcomes

PedaLogic might provoke debate on whether it's a legitimate composition or merely a tool. However, this debate is outside the scope of this research. Ultimately, if PedaLogic is a conceptual composition that outputs other compositions as part of its structure, or if it's a tool which enables composition, or if it's a combination of both, or something else altogether, it doesn't really matter. PedaLogic still represents a tangible output, resulting from a period of creative interaction between this artist/researcher and a colleague composer, an output which exploring and further the subject matter of GSH and working towards the goals outlined in the research questions of this project. This project

doesn't pretend to enter the debate of 'what is music?' but rather mines an entirely different area, for an entirely different public.

The Future of PedaLogic

For the moment, four composers have written short pieces using PedaLogic. Even though the PedaLogic composers are using (or partially using) a predetermined set of materials, the interaction with their compositions can be seen through the same three lenses as with the other composers. For example, each piece posed its own unique 'pedal problems.' This was a surprise. I'd assumed that, since I had created the original source material, the resulting pieces wouldn't create any new pedal problems. However, it turned out that recombining these various elements created complexities I hadn't predicted. The recordings and scores are posted on the PedaLogic website (www.pedalogic.net) with the hopes that composers curious about harp pedals will come across it and be inspired to write something—and that harpists will also explore the pieces.

Part Three: Outcomes / Next Steps

Chapter 7: Mapping the Research Questions onto the Outcomes

This final chapter has two sections. The first will summarize nine significant project outcomes via the project's original research questions, with the goal of making explicit this project's claims for new knowledge. Even though some aspects of the project clearly map more readily onto a specific research question, most of the work dialogues with all three questions. For example, working with composers to create works which will help to mainstream active pedal ideas (Research Question Three/RQ3) also expanded my own ideas about the pedals (RQ1) and the process itself utilized my nascent research tools (RQ2). The outcomes will be presented in an order similar to that in which they originally appear in the Critical Commentary, which in turn maps onto the intellectual and practical order of their creation/discovery.

The second and final section will explore the future directions for this research. This will include both the continuation of aspects already undertaken, as well as other elements and directions which were touched on in the research, but which fell beyond its purview.

For reference, here are the original three research questions:

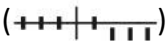
> RQ1. How can I broaden and deepen my understanding of various harmonic, melodic, and textural pedal techniques (multi-pedal, pedal-slides, liminal pedal approaches)?
>
> RQ2. How can I incorporate research methods, specifically those related to Practice as Research, into my current artistic practice? How can I evolve from being a musician with questions to becoming an artist/researcher?
>
> RQ3. How can these various pedal techniques be promoted in the harp world, in different musical genres and situations, i.e., in composition, transcription, improvisation, interpretation, so that current and future harpists can improve their kinaesthetic awareness; not only of their feet/pedals, but in their non-harpistic pursuits as well.

Outcomes

1. Pedal solutions for 3 'Impossible' Standards.

Cherokee, *Well You Needn't*, and *Giant Steps* are pieces which, when played alone, require intense multi-pedal solutions. They served as a bridge between my pre-project practice and the subsequent reflective work during the project. Searching for pedal solutions while also reflecting on the practice led to deeper pedal and harmonic understanding (RQ1). This in turn led to the composition of two of the etudes, *Left Alone* and *Just Right* (RQ3). Additionally, the discovery of an alternate *Cherokee* pedal solution through a freewriting (text) session foregrounded the value of multi-mode activities as part of my artistic practice (RQ2). The future publication of arrangements of these three pieces will encourage their performance by other harpists (RQ3).

2. Dynamic application in video of the traditional static pedal

Normally this type of pedal diagram () is found periodically in harp scores to indicate the necessary current pedal state. Repurposing this glyph as a dynamic element in a video format is an original idea that strives to render the foot/pedal activity more explicit (RQ3), complimenting camera views of the feet. The meticulous frame-by-frame editing required to correctly place the hundreds of individual diagrams also gave me a new insight into and appreciation for the 'foot dance' (RQ1), even though I was watching my own performance. This brought a new level of objectivity to my practice (RQ2).

3. Book of dedicated Pedal Etudes

These compositions, possibly the first book of harp etudes specifically dedicated to the pedals, have already been performed by harpists at the Milan Conservatory, and have received enthusiastic support from several harp teachers. I believe that these etudes will be the project element that will have the most visibility, and that will be most likely to increase the acceptance of active pedal techniques (RQ3). The etudes will not only be useful as a means for harpists to learn about various types of active pedal movements, but also will serve as a practical means to gain experience in their use. In addition, writing the etudes required me to compositionally reflect both pedagogically and musically (RQ2), which brought clarity and agency to my compositional process and to my understanding of the varied landscape of these active pedal techniques (RQ1).

4. New notational method for pedals.

My pedal notational method was born of necessity given the large number of pedal changes in this project's compositions. Additionally, linking the pedal movement to a precise rhythmic structure endeavours to directly addresses the overall project goal of kinaesthetic foot awareness by foregrounding the 'foot dance' itself, independent of the harmonic consequences of the mechanical action. An unforeseen benefit of this notation is that this third staff can easily be shared among harpists as a text clipping (from digital scores) or photo/scan (paper scores), allowing for the efficient communication of pedal solutions (RQ3). Additionally, it proposes an effective lens for comparing similar pedal solutions (RQ1).

5. Using compositions to directly interact with theoretical texts.

Much of the academic research terminology was new to me at the beginning of this project. Using improvisation and composition, languages which I already understood as a lens to help construct my relationship with these theoretical subjects was an empowering and gratifying manner to proceed, and resulted in the compositions *Nelson* and *Haseman*. In addition, this compositional mixed-mode experience provided additional evidence of the value of the different facets of PaR, showing a direct example of theory and practice working together in literal concert (RQ2).

6. Harp modification: Rearranging pedal stems to move only the F and A pedals

This is a very specific outcome; a technical development that could be seen as a mere detail, although in the right context it has many useful possibilities. This idea stems directly from researching the historical practices of Bochsa and other single-action harp composers and imagining how it might be applied to my current practice (RQ1, RQ2).

7. Harp modification: Using skateboard techniques for a better pedal grip

As with Outcome 6, this harp modification serves a clear and specific purpose: to be able to more easily 'acquire' multiple pedals by increasing foot/pedal traction. This idea was the result of reflection linked to the dozens of hours of slow observation of the pedals while adding the x-ray pedal notation (RQ1-2). When other harpists learn of this solution, it's possible that they will find multi-pedals more accessible and will be perhaps more likely to incorporate them in their practice (RQ3).

8. Exploration of whether Bochsa et al. could have invented Fast 7ths

I still don't know whether Bochsa realized the pedallic link between the whole tone scale and the chromatic scale/circle of 5ths, which enables Fast 7ths. But it is clear that harpists, since the advent of the pedal harp, possessed two of the elements necessary to discover Fast 7ths: awareness of triple pedal movement, and use of one of the seven possible Fast 7th harp tunings (Chapter 2, Fig. 7). Perhaps Bochsa (or someone else) discovered the possibility of Fast 7ths, but chose not to pursue it in his (their) compositions[26]. But exploring this question allowed me to better conceptualize Fast 7ths (RQ1), and to understand that the bi-pedal element of the system is equally as important as the single foot movement per chord aspect.

9. Nine new harp pieces; Nine composer interactions.

Each of these compositions and composer interactions were vital to testing the new pedal notation method as well as to my understanding of the pedals, as the non-harpist composers proposed harmonic situations from a completely different conceptual viewpoint (RQ1). The pieces themselves will, once published, be performed by other harpists, and seen by other composers which will help to open the harpist-composer closed circle, as discussed in Chapter 1 (RQ3). In addition, I was able to use the various reflective techniques that I'd begun to develop with the 'Impossible' Standards and the Etudes in my interaction the new compositions. This was especially useful with the Fourès piece as finding a way to approach its exceptionally complex and rich harmonic and rhythmic texture was more problematic than with most repertoire.

Next Steps

Each of the elements of this project has an ongoing timeline. The compositions and arrangements will be refined, published, polished, performed, and recorded. New etudes based on ideas inspired from the first book will undoubtedly be written. I'll continue working with various composers and continue interacting with any new pieces

[26] Or at least those which are extant.

generated by PedaLogic, and will continue exploring the PaR literature, looking for additional ways to live this multi-mode approach.

As to the potential impact of this project, I believe that the various compositions, as well as the pedal solutions for the three standards will be explored and performed by members of the harp community. This will, in turn, affect harpist's relationships with their pedals, as well as, I believe, help harpists find a better equilibrium between their hands and their feet. I hope that this will, in turn, have an effect on not only the harpist's kinaesthetic awareness, but will also provide additional paths to a deeper harmonic and rhythmic understanding.

There are several topics which were on the periphery of GSH, but which ultimately remained outside of the scope of the project. These range from the mechanical to the political. As mentioned in Chapter Four, it would be interesting to find a way to automatically notate the x-ray pedal diagram on video via sensors in the pedals. This could also be useful for harpist interactions with notation programs such as Finale and Sibelius. In addition, several harp modifications occurred to me during this project, but they will have to wait, as they're beyond the bounds of this project and my current technical ability.

A more overarching topic deals with gender and the stereotype of women's feet as being 'too small' or 'too weak,' to use multi-pedals. This stereotype persists despite clear historical evidence to the contrary: Henriette Renié, Dorette Spohr[27], as well as my successful multi-pedal pedagogical interactions with hundreds of female harpists throughout my teaching career. One can add into the same conversation the related discussion of the role of fashion and high-heeled shoes in harpist's pedal choices. There was evidence of both these ideas in Chapter 2, and it's a subject that was constantly present during this research. Perhaps the hand/string bias I explored in Chapter 1 is as linked to gender issues ('small feet') as it is to pedagogical ones (when and how harpists switch from lever to pedal harp), especially as the majority of pedal harpists are women. It might also be that as a male harpist/researcher I don't have an effective viewpoint to explore this issue efficiently, and that this is one of the reasons

[27] Dorette Scheidler Spohr, single-action harpist whose husband, Louis Spohr, wrote harp compositions which she performed, and which explicitly used multi-pedal movements (Cleary, 2016).

my research took the direction it did. In any case, I think this is a subject which could profit from further exploration.

Finally, Giant Steps for Harp essentially began with an informal question about Fast 7ths: *Why didn't anyone figure this out before?* I'd like to end this commentary with an informal response, the result of four years of reflection, and one that has allowed me to find peace with the original question:

Maybe they did. Now it's your turn. Go play!

Having lived this research, and explored its many paths, I now have a more nuanced appreciation for this original question, as well as several different types of answers. Perhaps Bochsa also explored these same active pedal ideas; Perhaps Posse and Reardon did as well. Ultimately this journey has 'led me by the feet', to a deeper appreciation for my relationship with harp pedals, and the harp itself, while working towards the goal of increasing the harmonic possibilities for the instrument, and improving our kinaesthetic awareness. *Feet first!*

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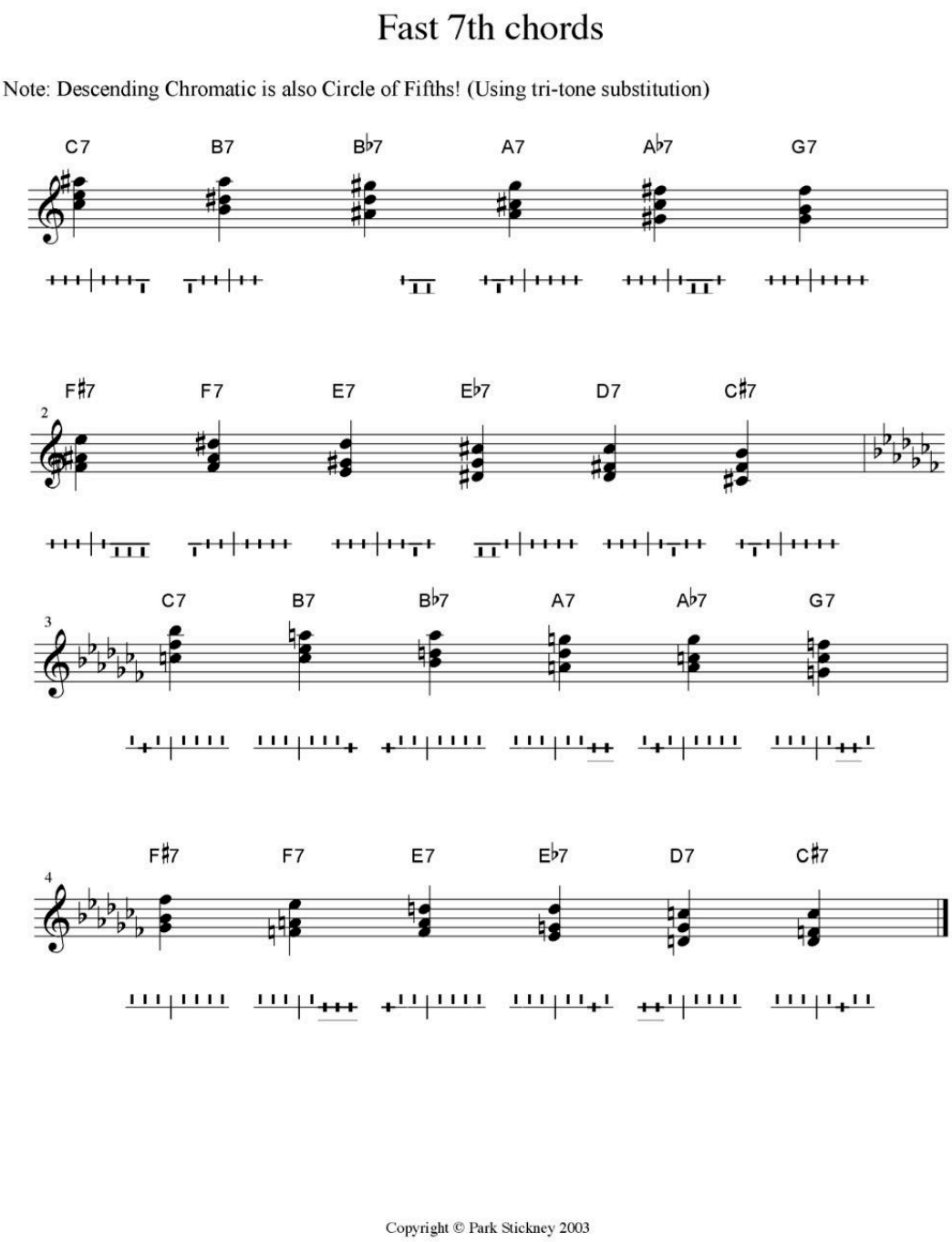
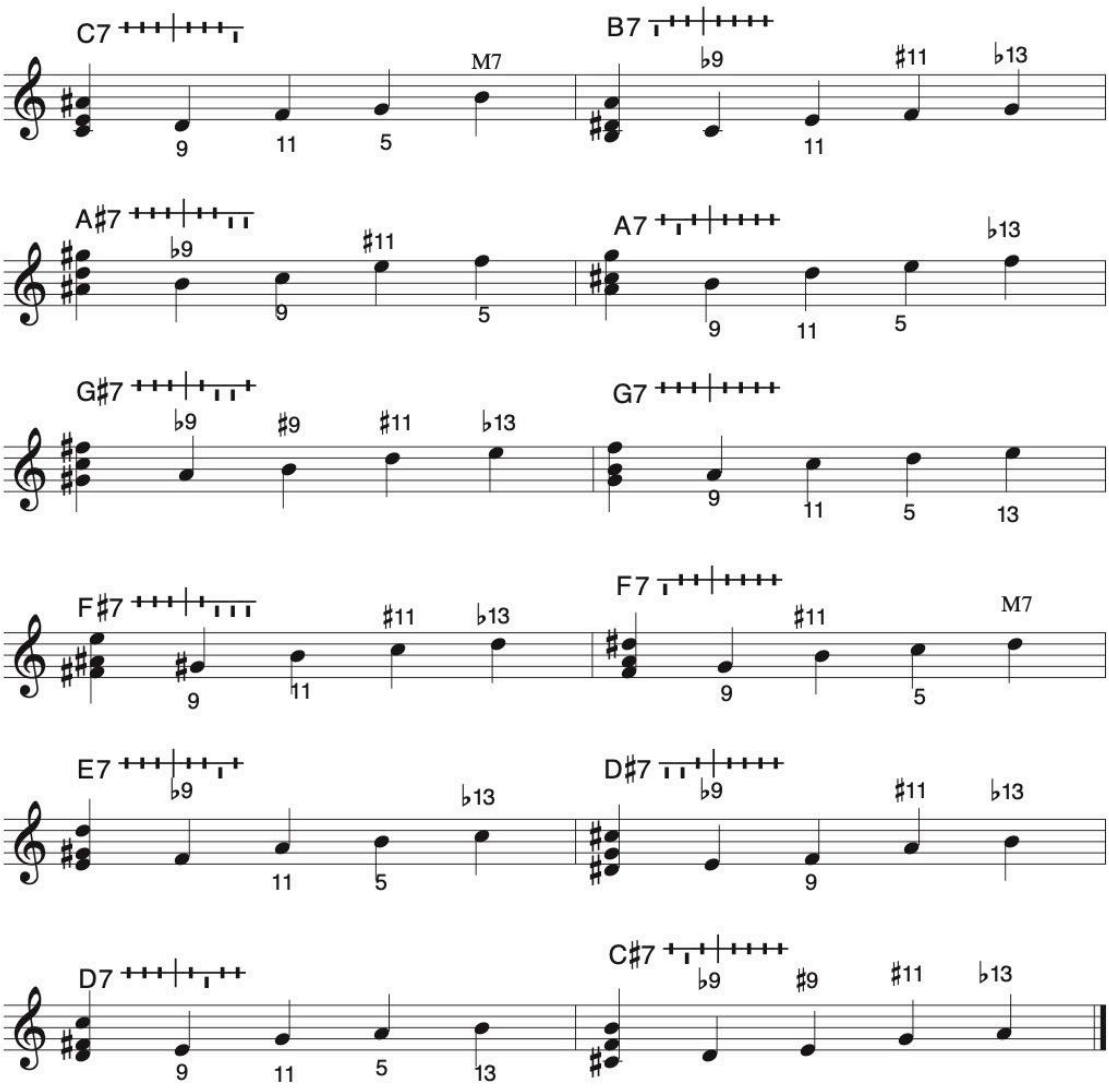
Appendices

Appendix A: Fast 7ths



Appendix B: Fast 7th Alterations

The four notes to the right of each dominant 7th chord show the available notes on the harp for each pedal setting. The harp allows 7 notes per octave; three are used to create the 7th chord, leaving four remaining notes. Diatonic chord notes are written below the staff; alterations are written above.

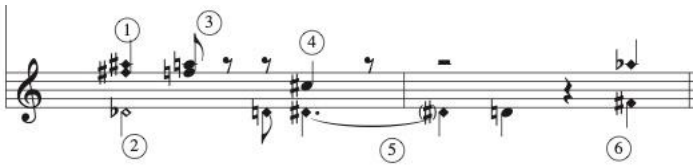


Appendix C: Pedal Movement Glossary

This is an explanation of various signs which make up the proposed Third Stave pedal notation system.

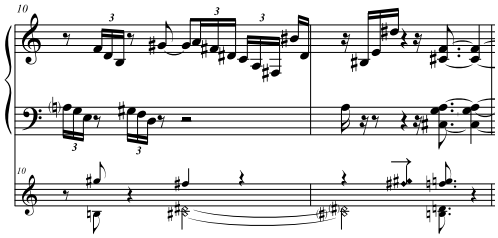
The right foot pedals (E F G A) are notated on the upper portion of the staff, and the left foot pedals (D C B) on the lower portion. Pedals are notated with a diamond notehead while un-notched (active), and with a traditional round notehead when notched.

Cross-pedalling (moving a left foot pedal right foot and vice versa) is indicated by marking a pedal In the "wrong" octave on the stave, e.g., a C♯ on the upper portion of the stave.

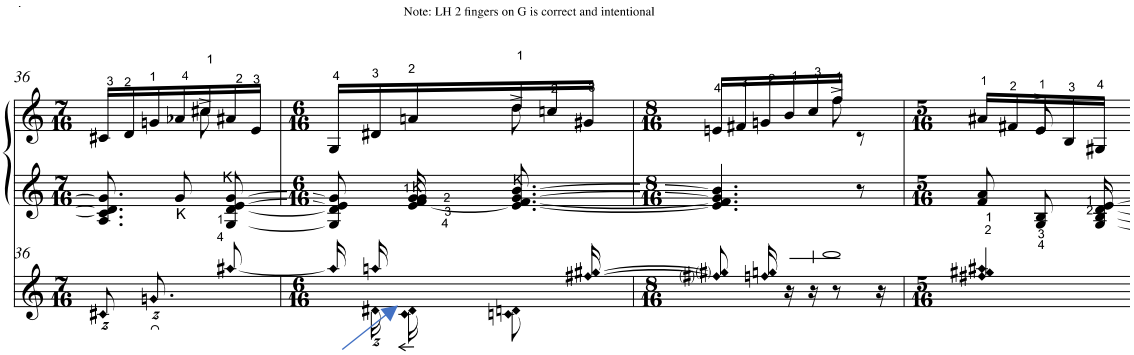


1. F and A pedals moved to sharp and held out of the notch until 3.
2. D pedal moved to flat, then natural, sharp, always un-notched until 5.
3. F and A pedals notched in natural position.
4. C pedal moved with right foot (cross-pedal).
5. D pedal notched in natural position.
6. F pedal moved with left foot (cross-pedal).

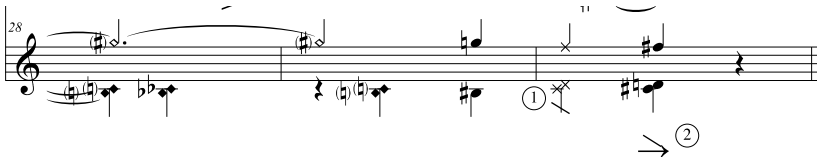
An arrow is used to indicate if a pedal is to be un-notched prior to being raised or lowered. This is often used to 'acquire' multiple pedals before moving them.



Later‹ l placement of the foot is indicated by this sign:



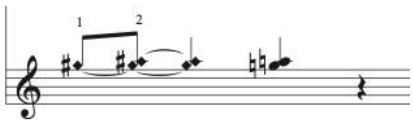
Diagonal placement of the foot is indicated by a slash. Placing the foot in position prior to moving the pedal is indicated by an 'x.'



1. The left foot is placed diagonally on the D and C pedals
2. The foot moves the pedals down (to D♮ and C♯) and notches them (heel notch)

Foot 'fingering'

The foot is divided into two 'fingers', the 'big toe' is notated as 1, and the others are collectively notated as 2. This indicates that the foot is to be placed on two pedals perpendicularly to the harp.



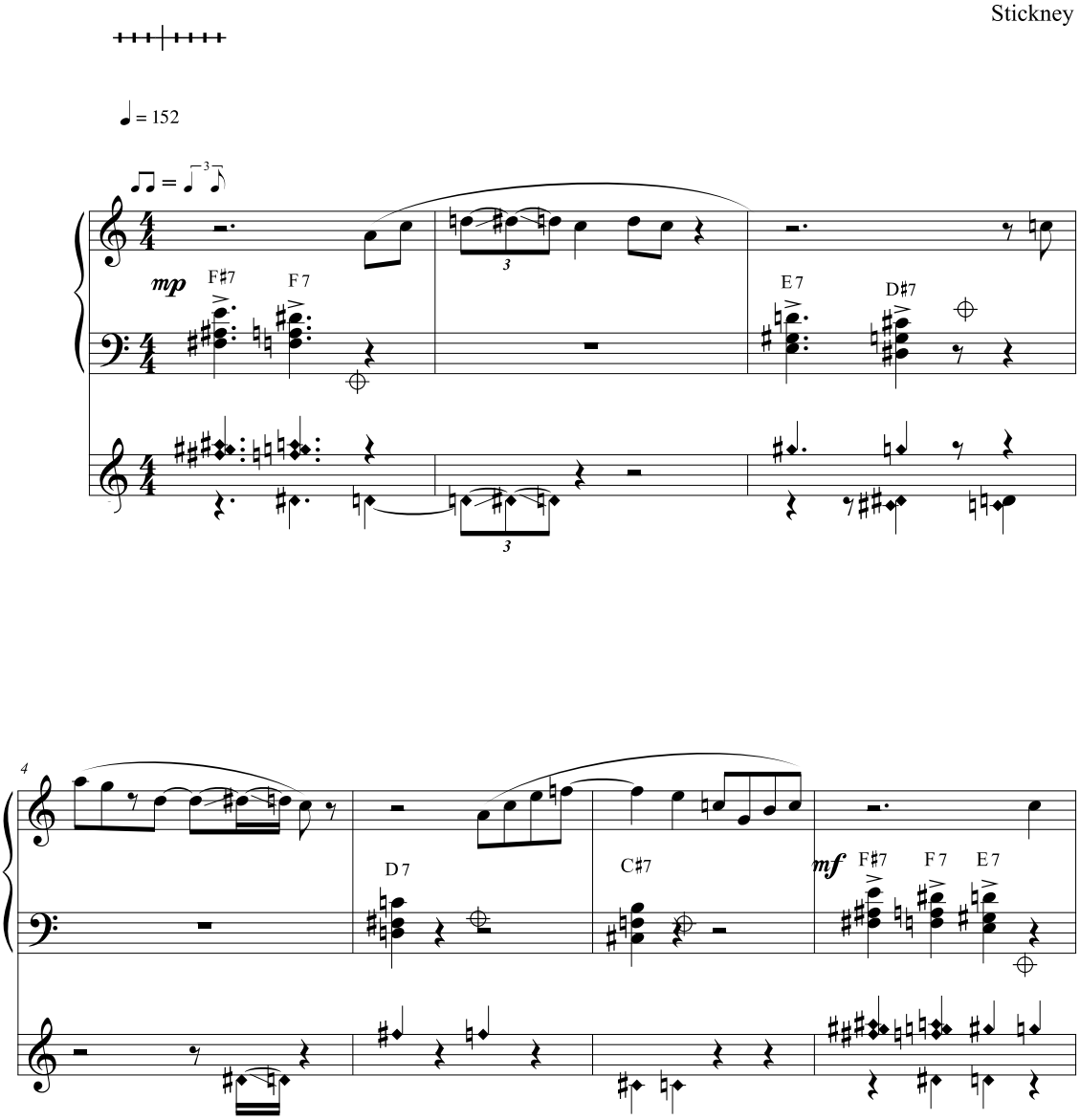
Appendix D: Scores for Park Stickney Compositions:

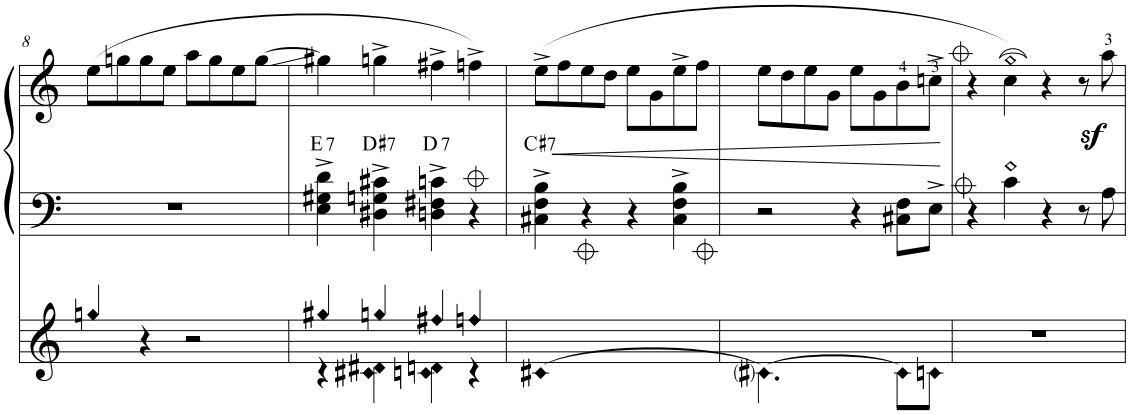
D1. Pedal Etude Scores

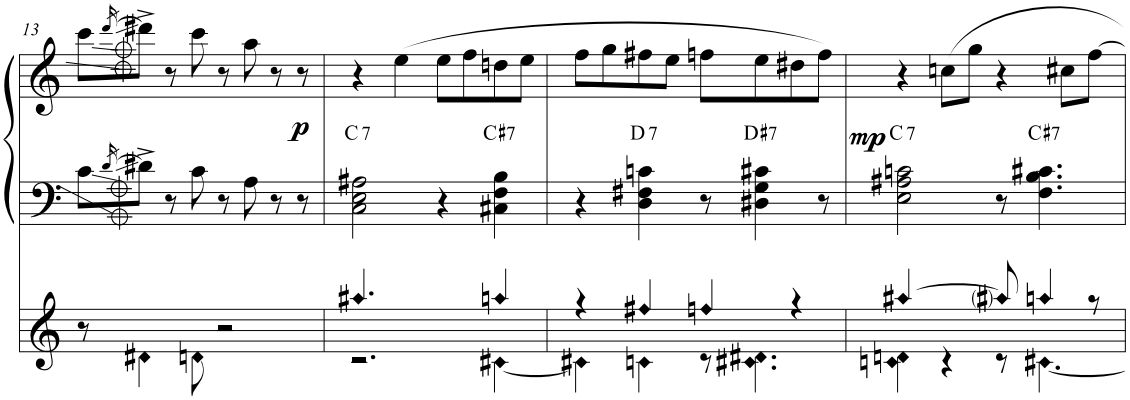
D1a. Gone Monkfishing

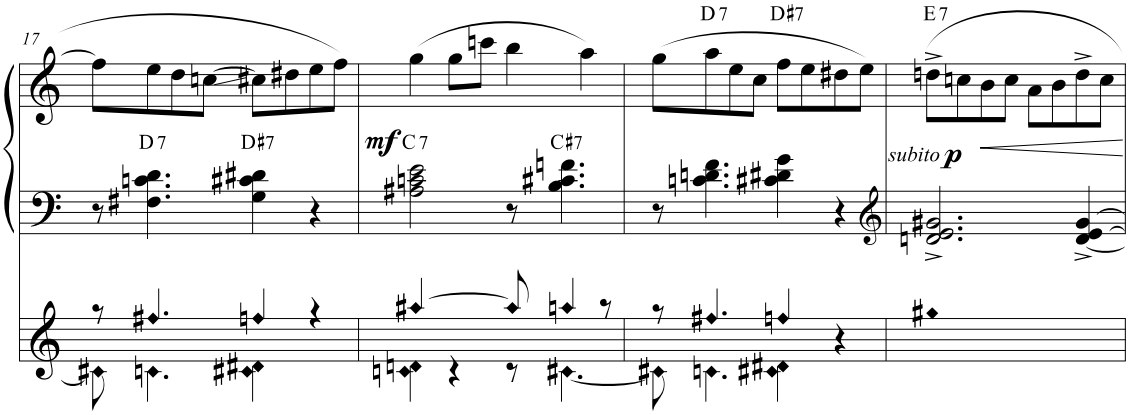
Gone Monkfishing

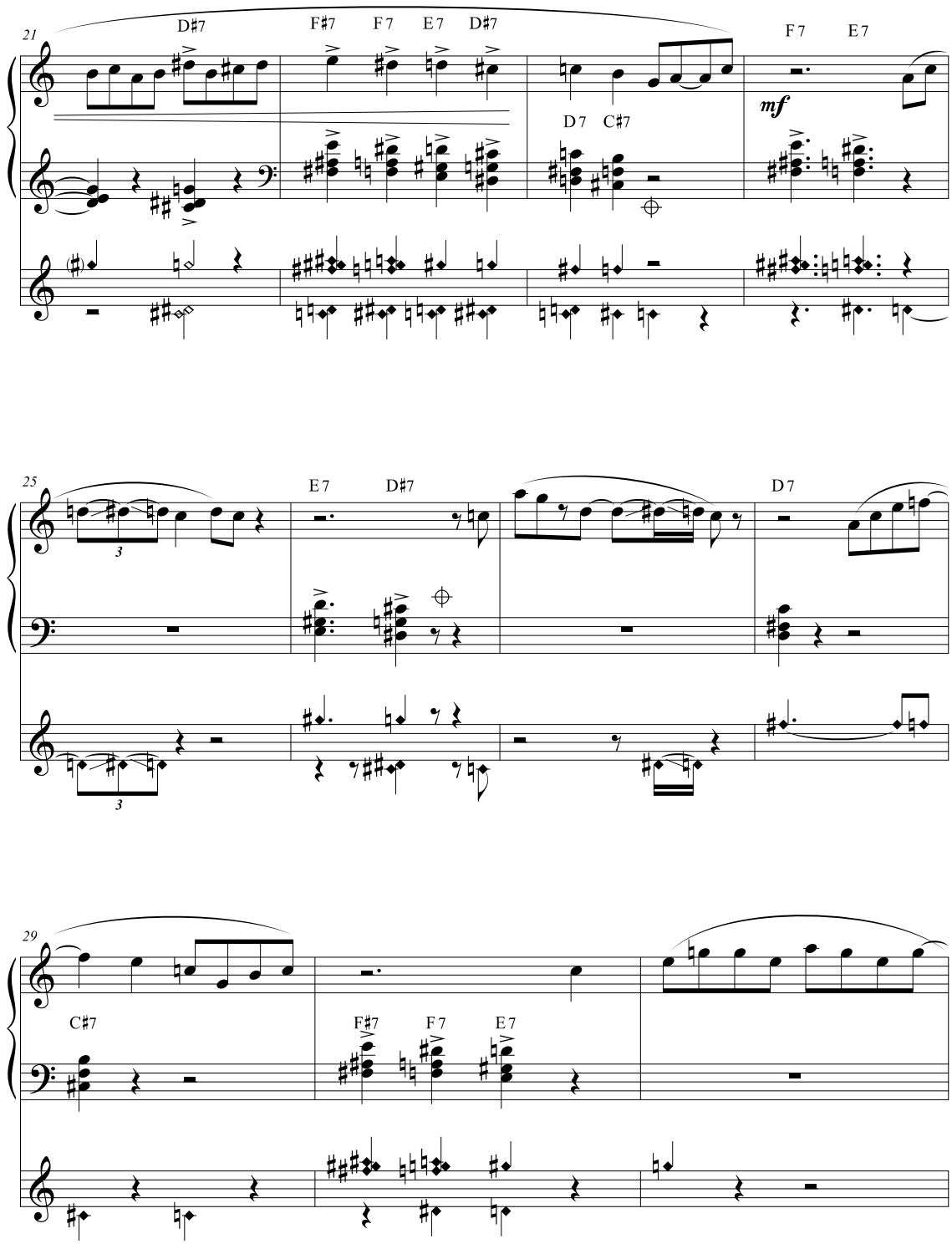
Stickney

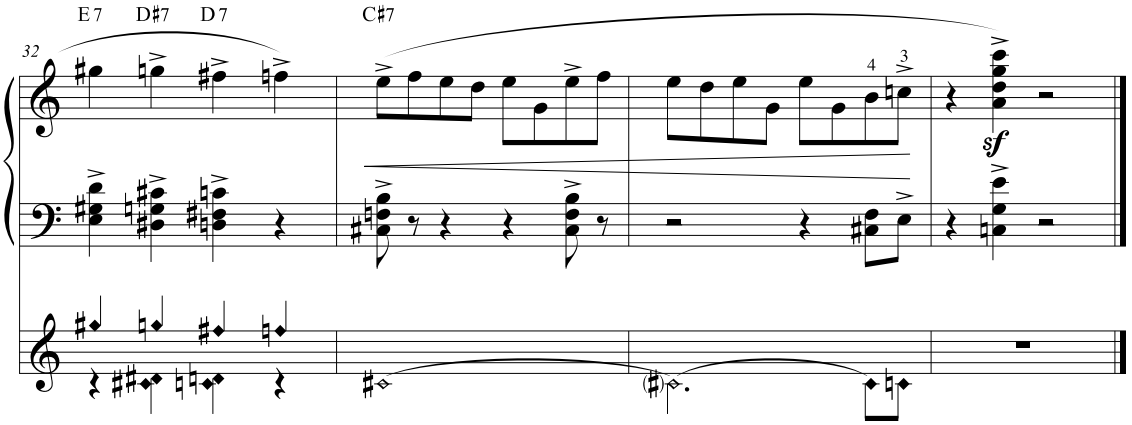



8
E7
D♯7
D7
C♯7
sf


13
p
C7
C♯7
D7
D♯7
mp
C7
C♯7

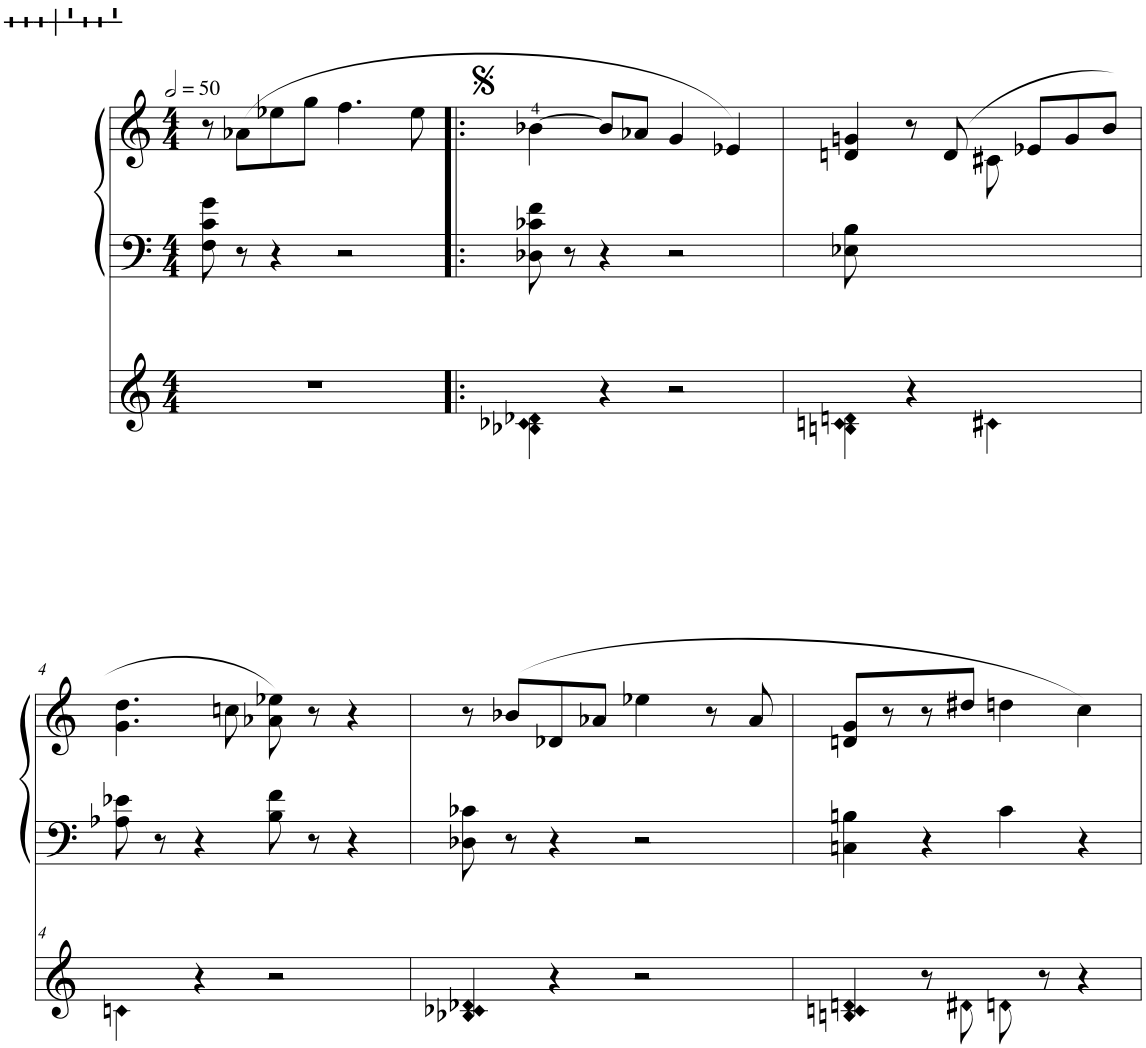

17
D7
D♯7
mf
C7
C♯7
D7
D♯7
E7
subito p

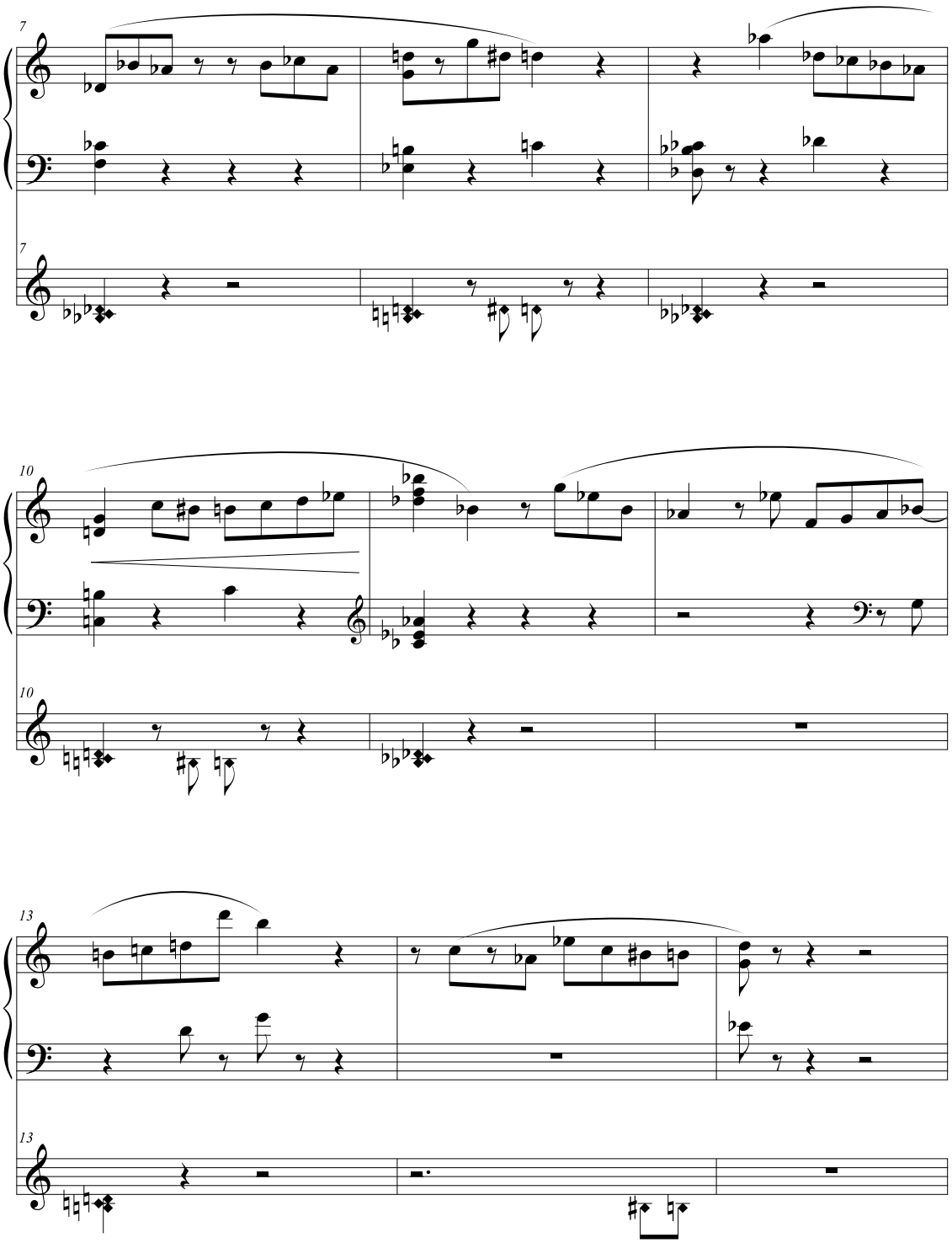

21
D♯7
F♯7
F 7
E 7
D♯7
F 7
E 7
D 7
C♯7
mf
25
E 7
D♯7
D 7
3
3
29
C♯7
F♯7
F 7
E 7

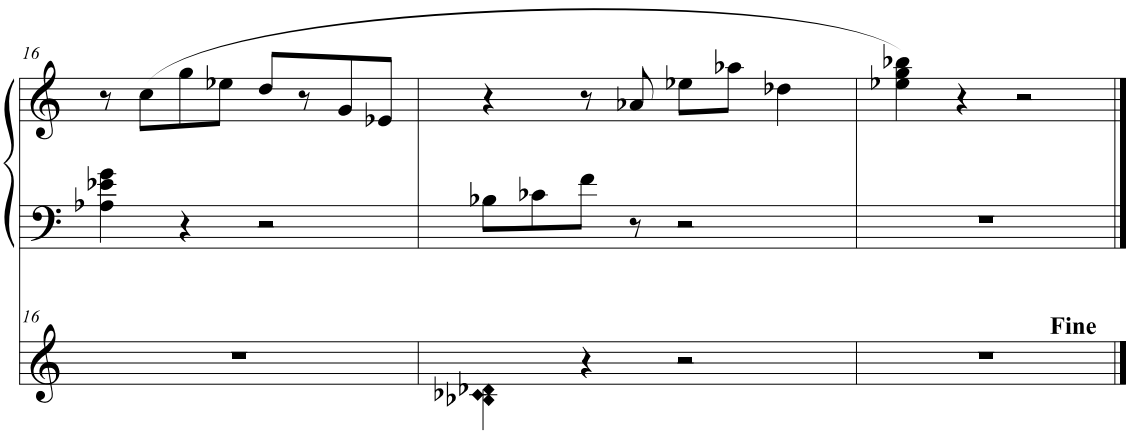

E7
D♯7
D7
C♯7
32
4
3
sf

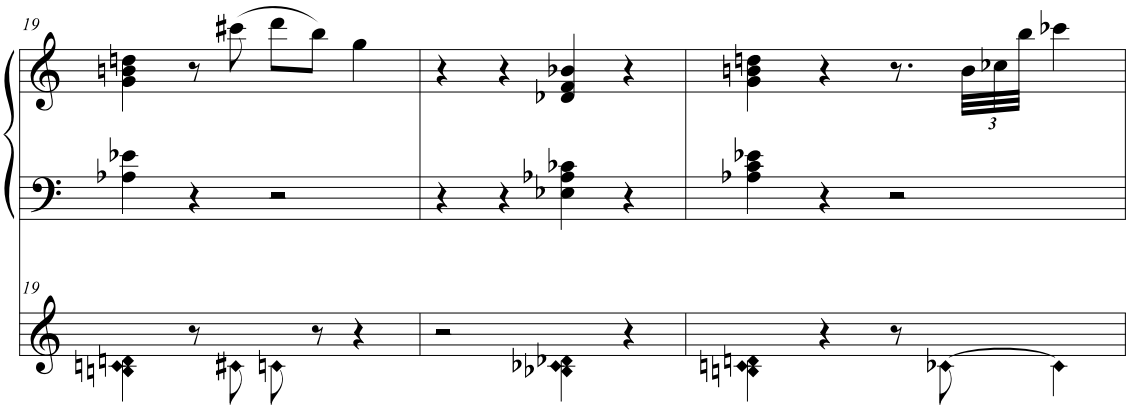
Left alone

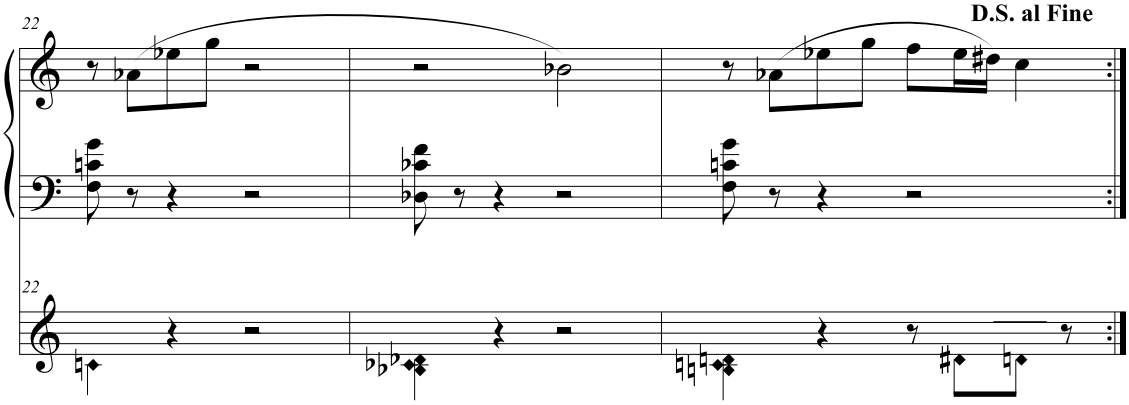
Stickney





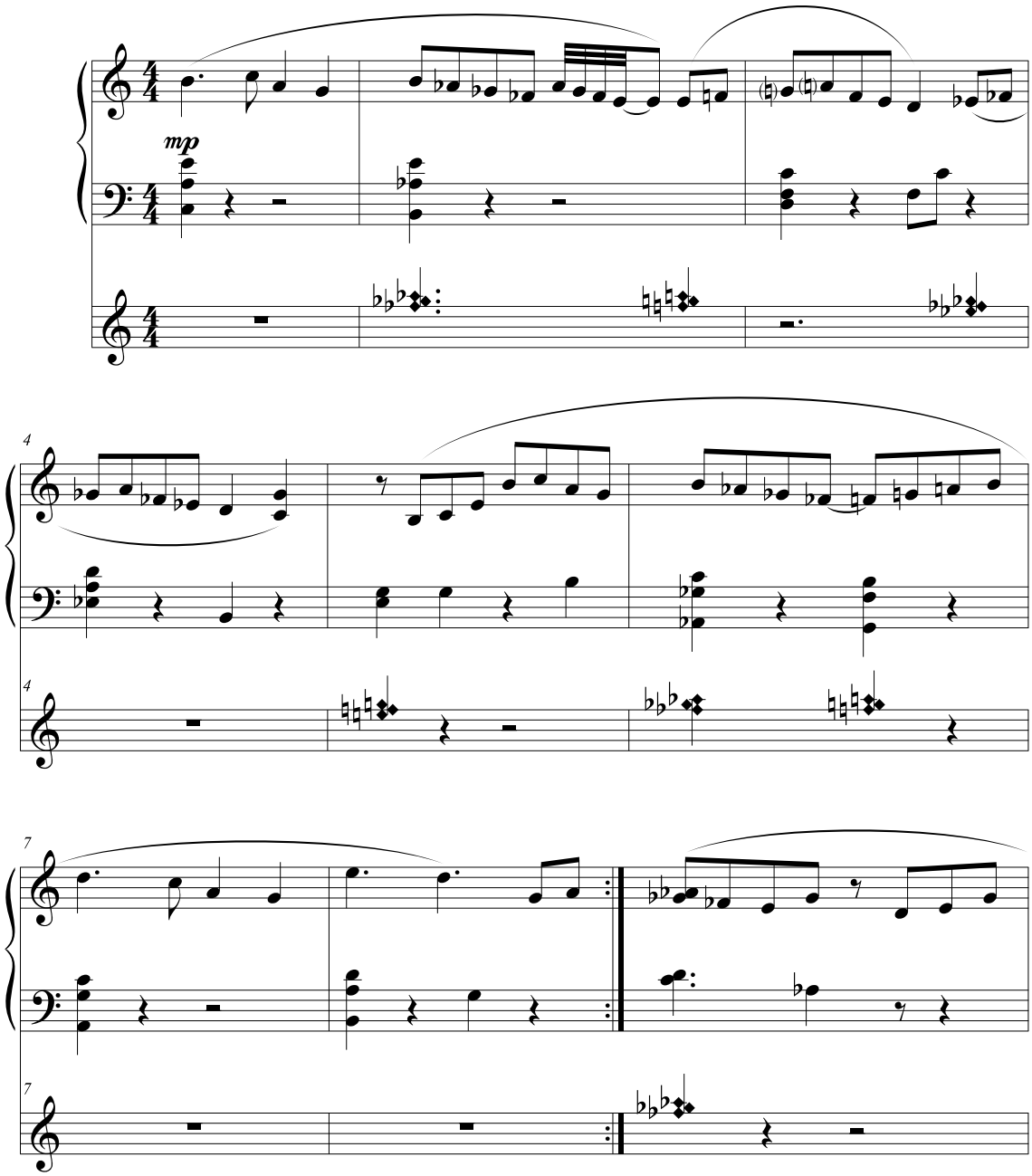

16
16
Fine

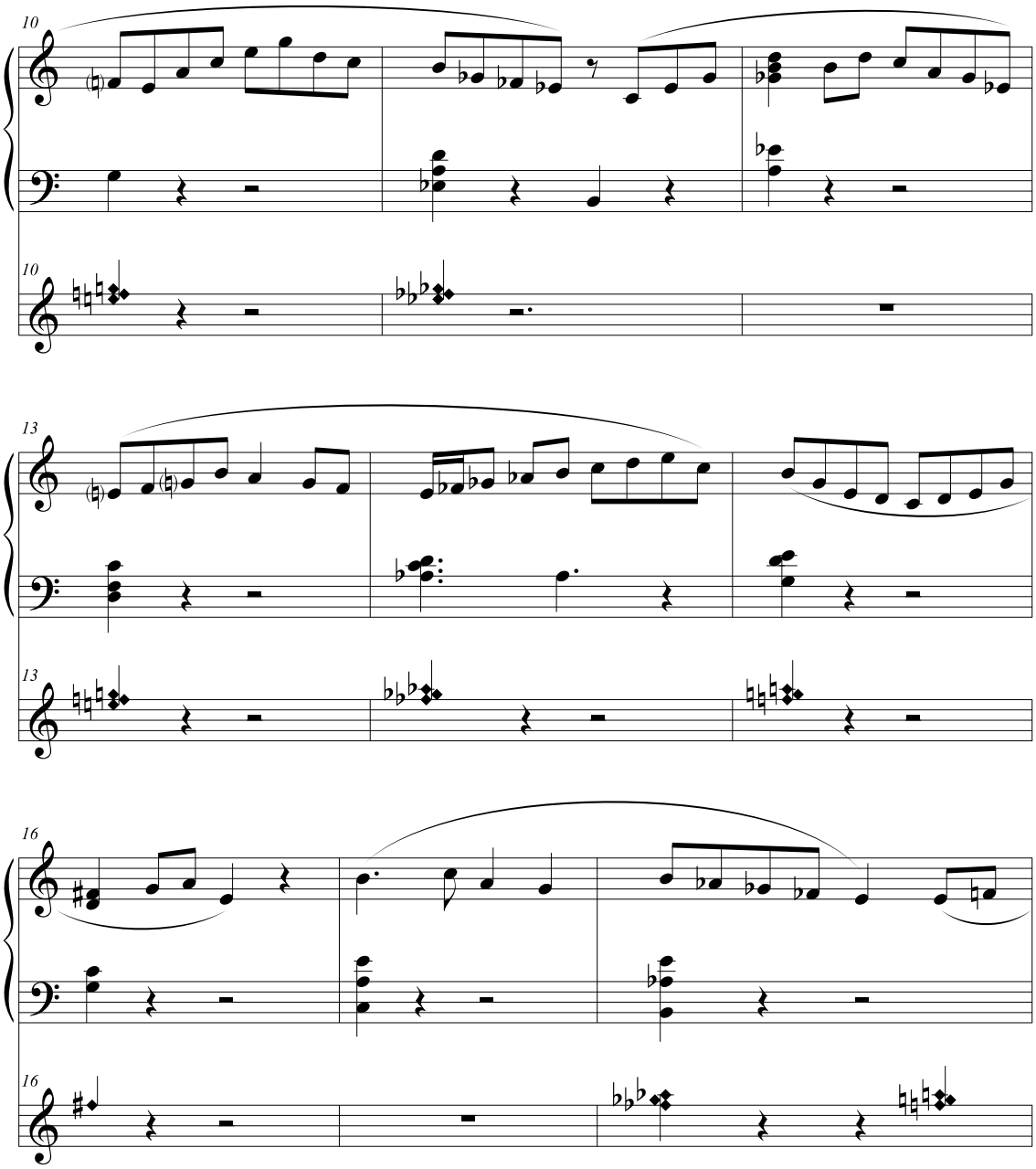

19
19
3


22
22
D.S. al Fine

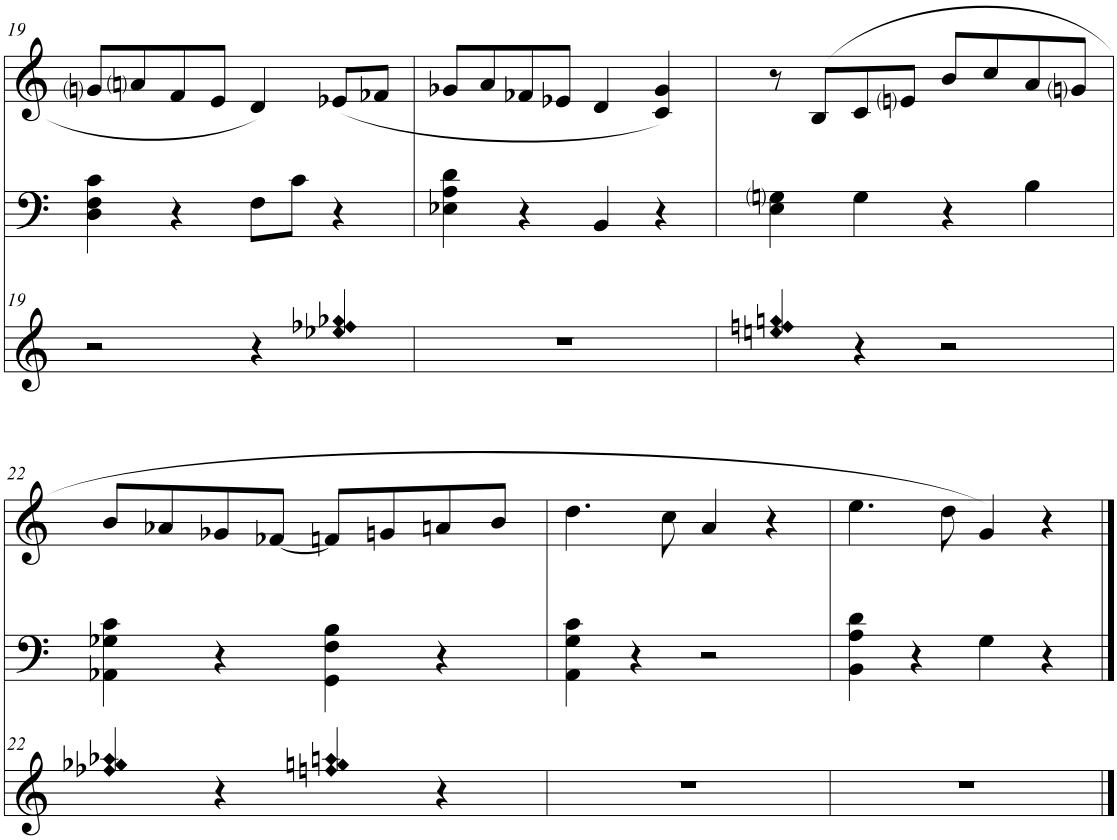
Just Right

Stickney



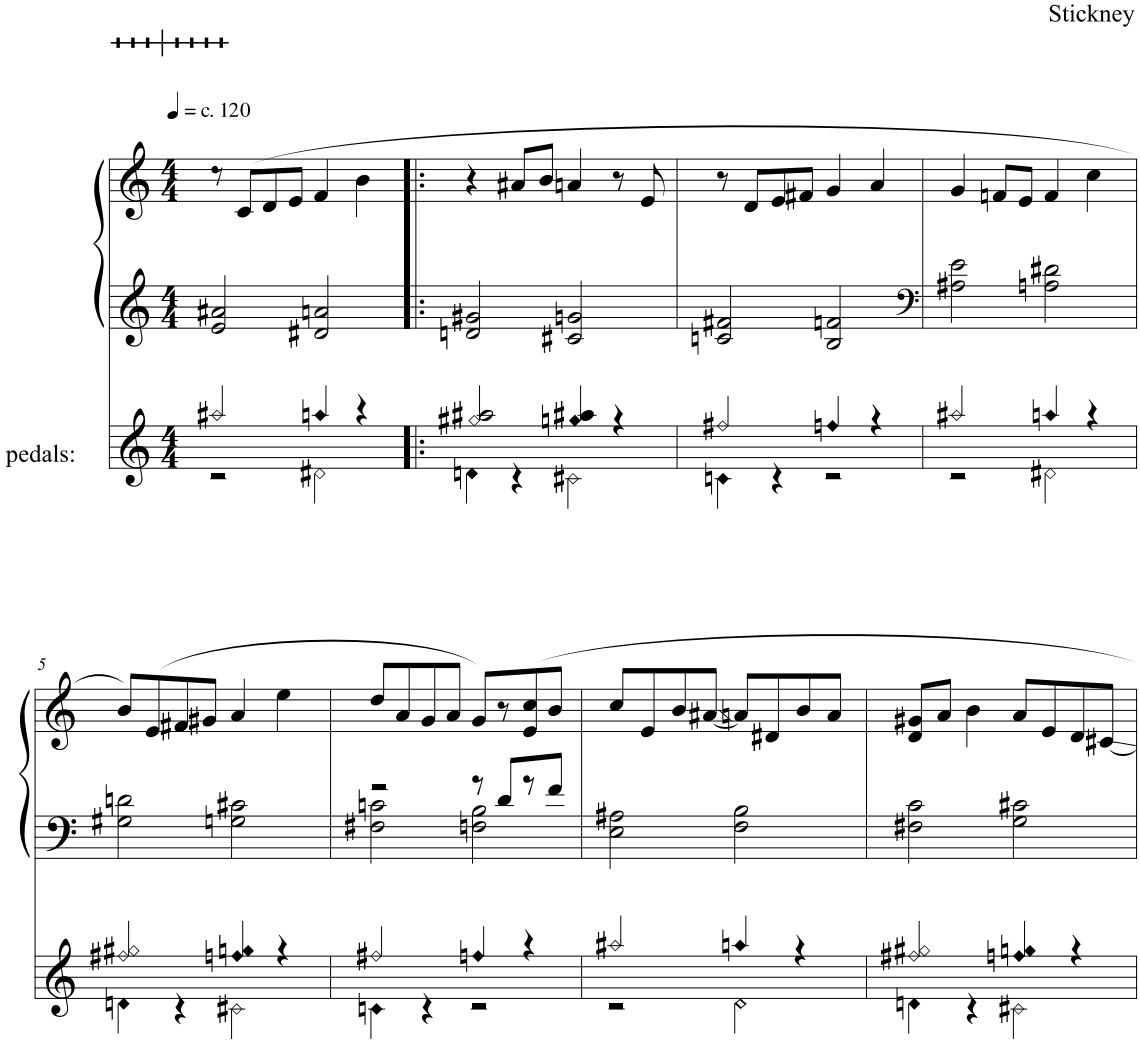

10
10
13
13
16
16

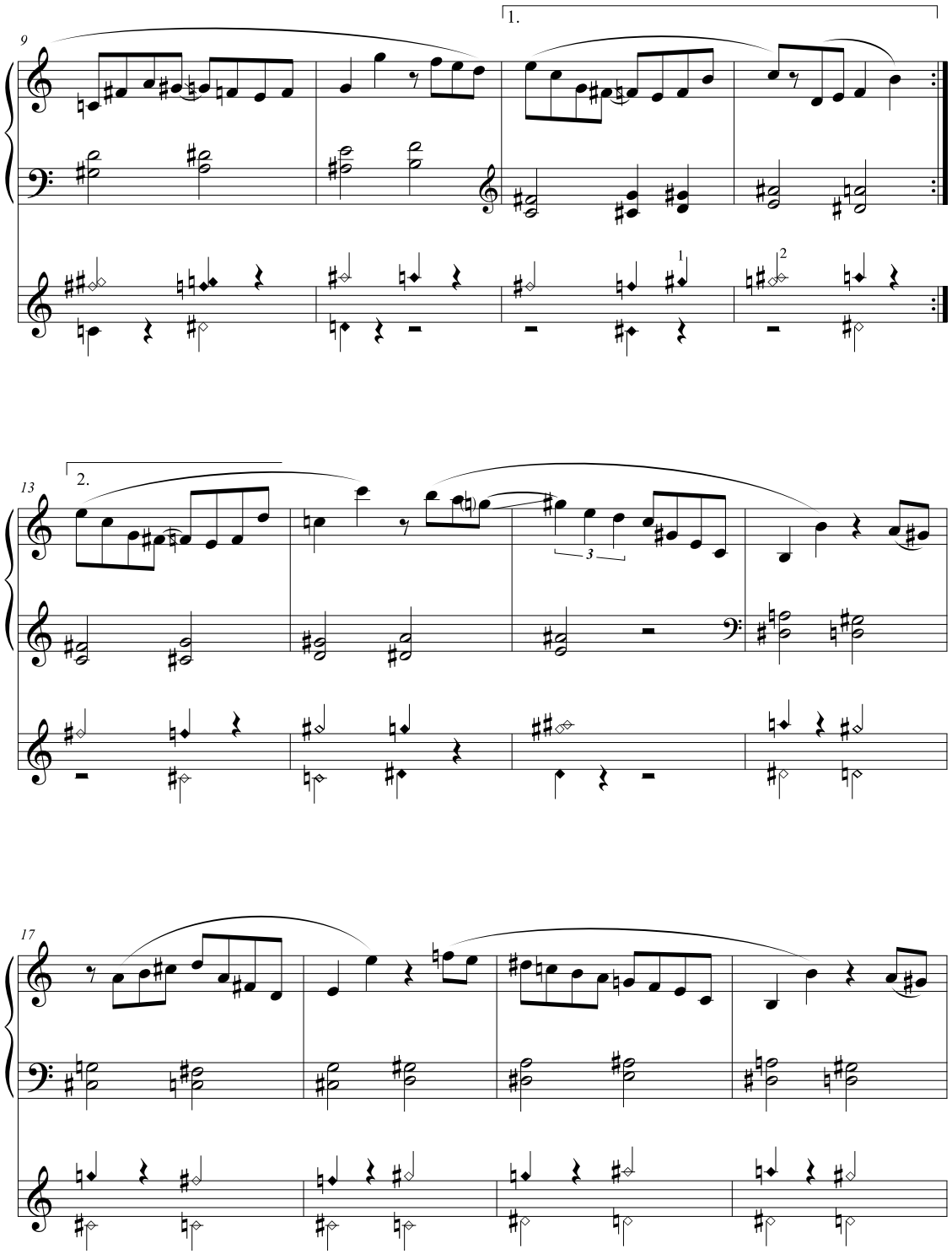
Just Right

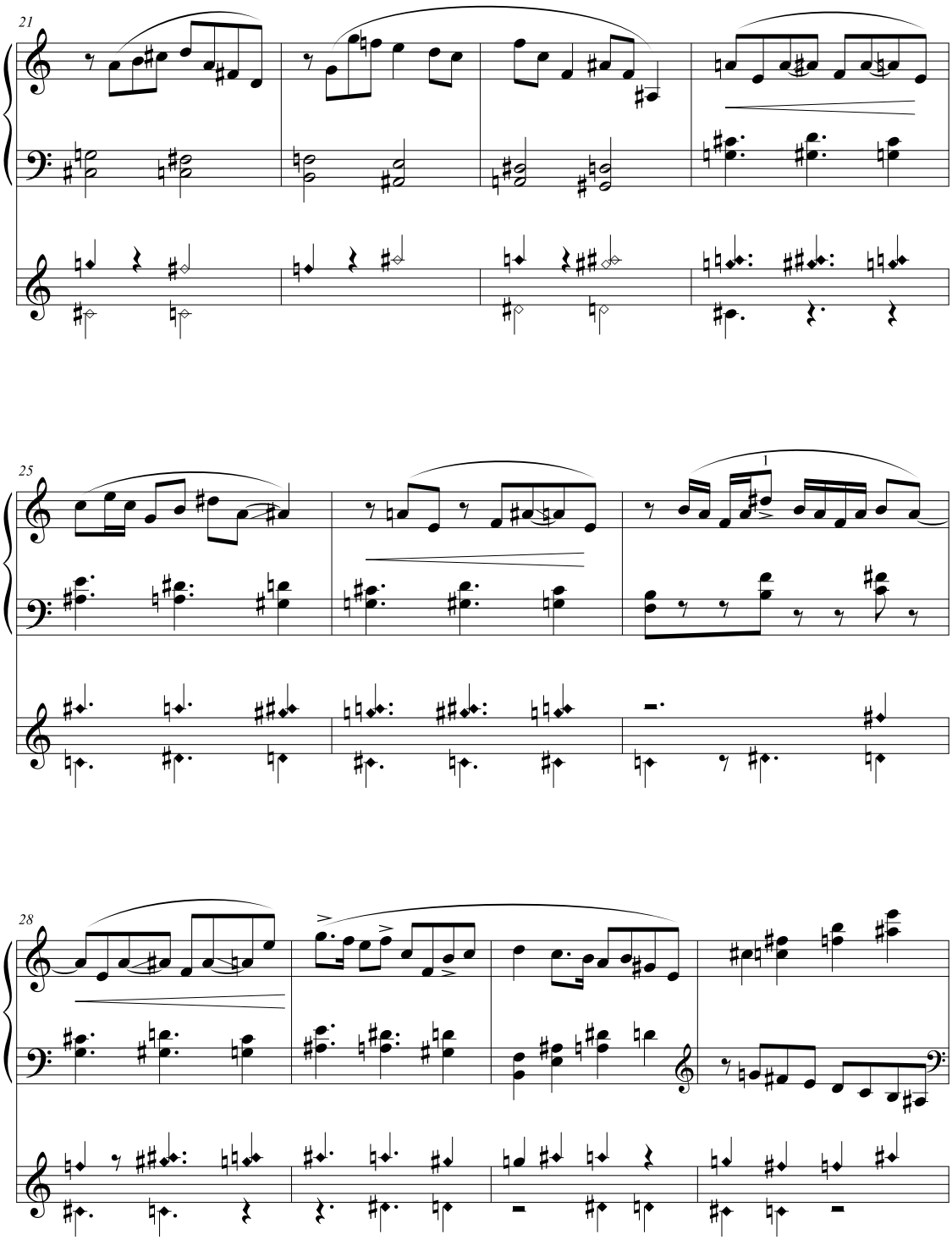


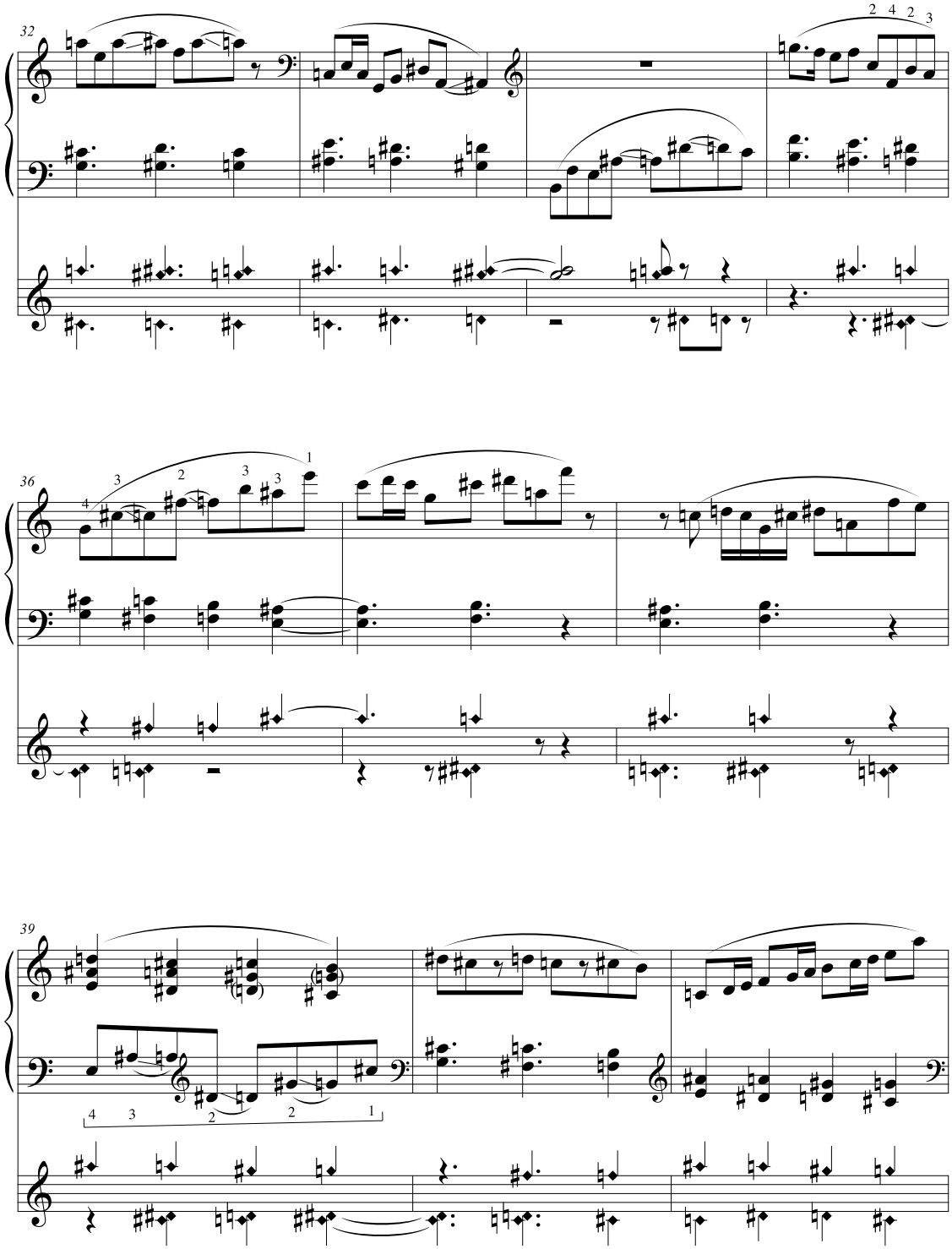
Chromatically Tritonic

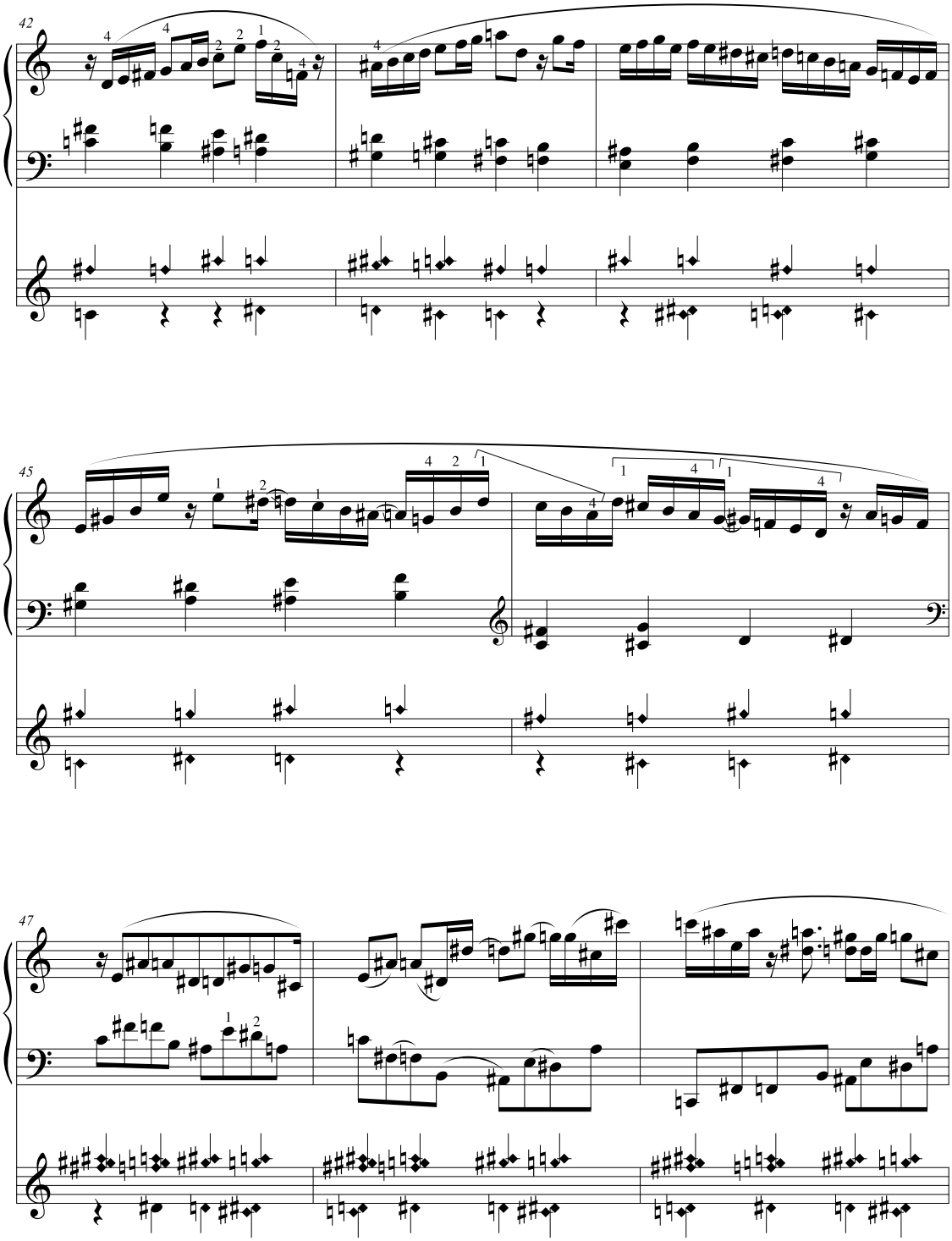
Stickney

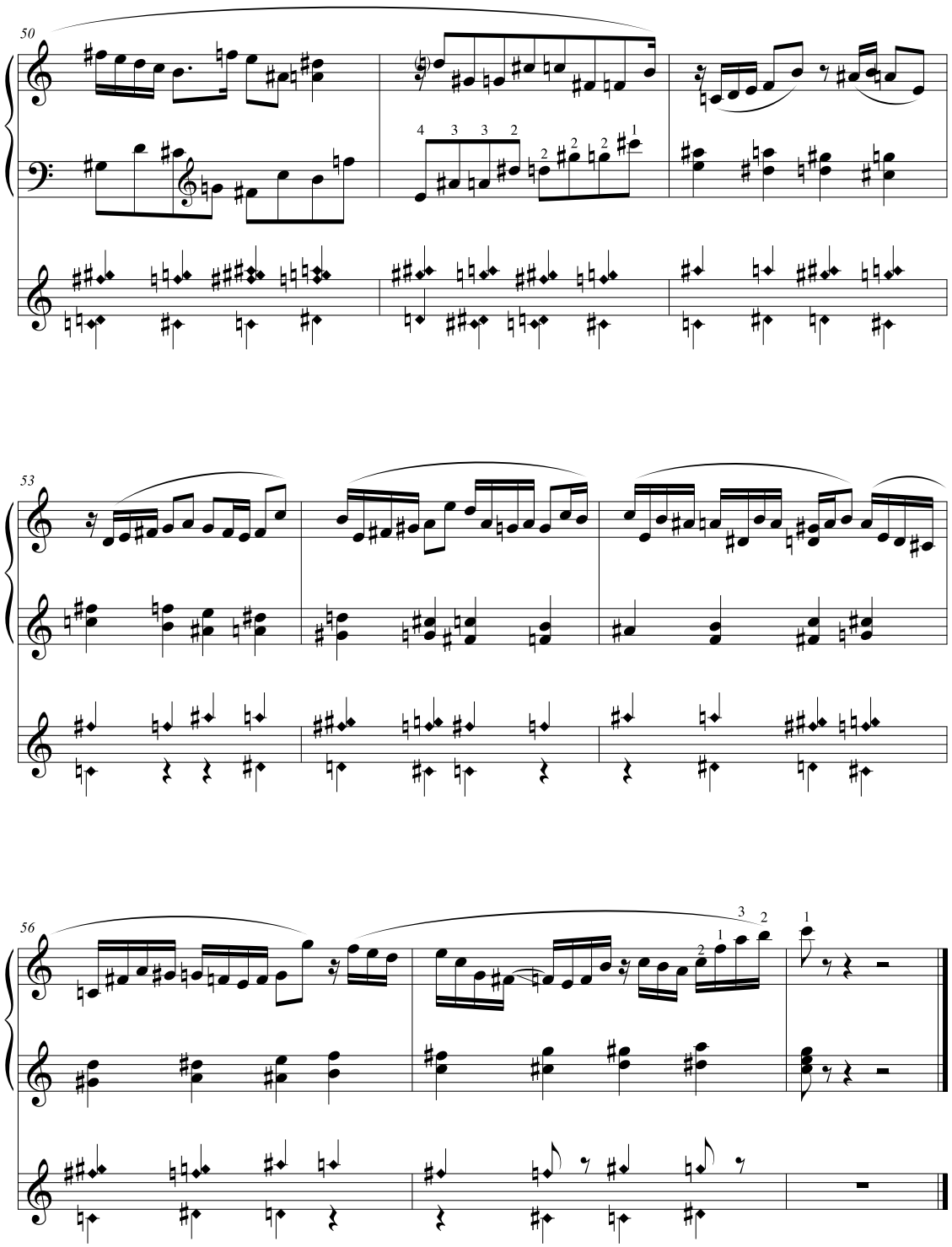



9
1.
1
2
13
2.
3
17


21
25
1
28

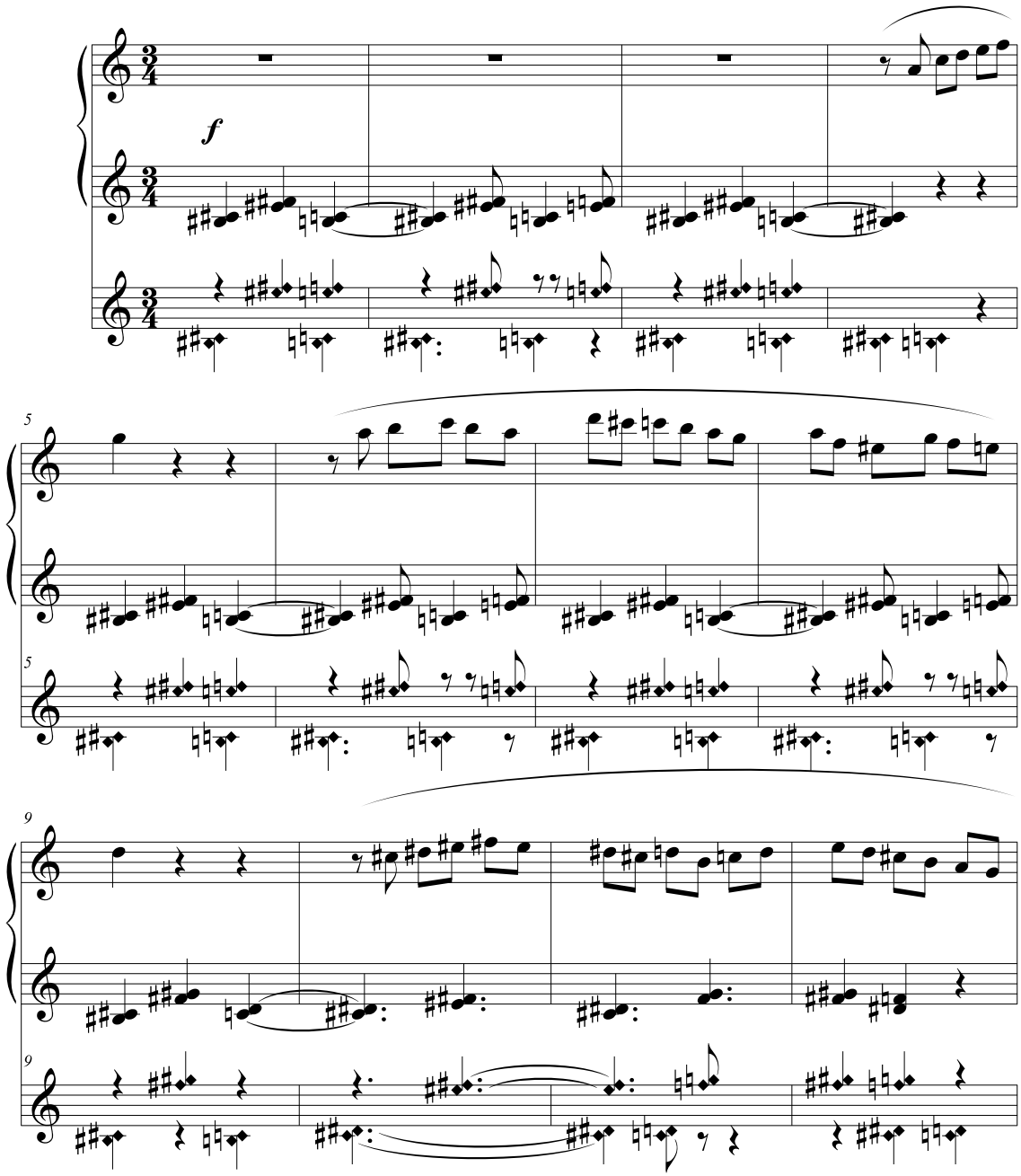

32
2 4 2 3
36
4 3 2 3 3 1
39
4 3 2 2 1

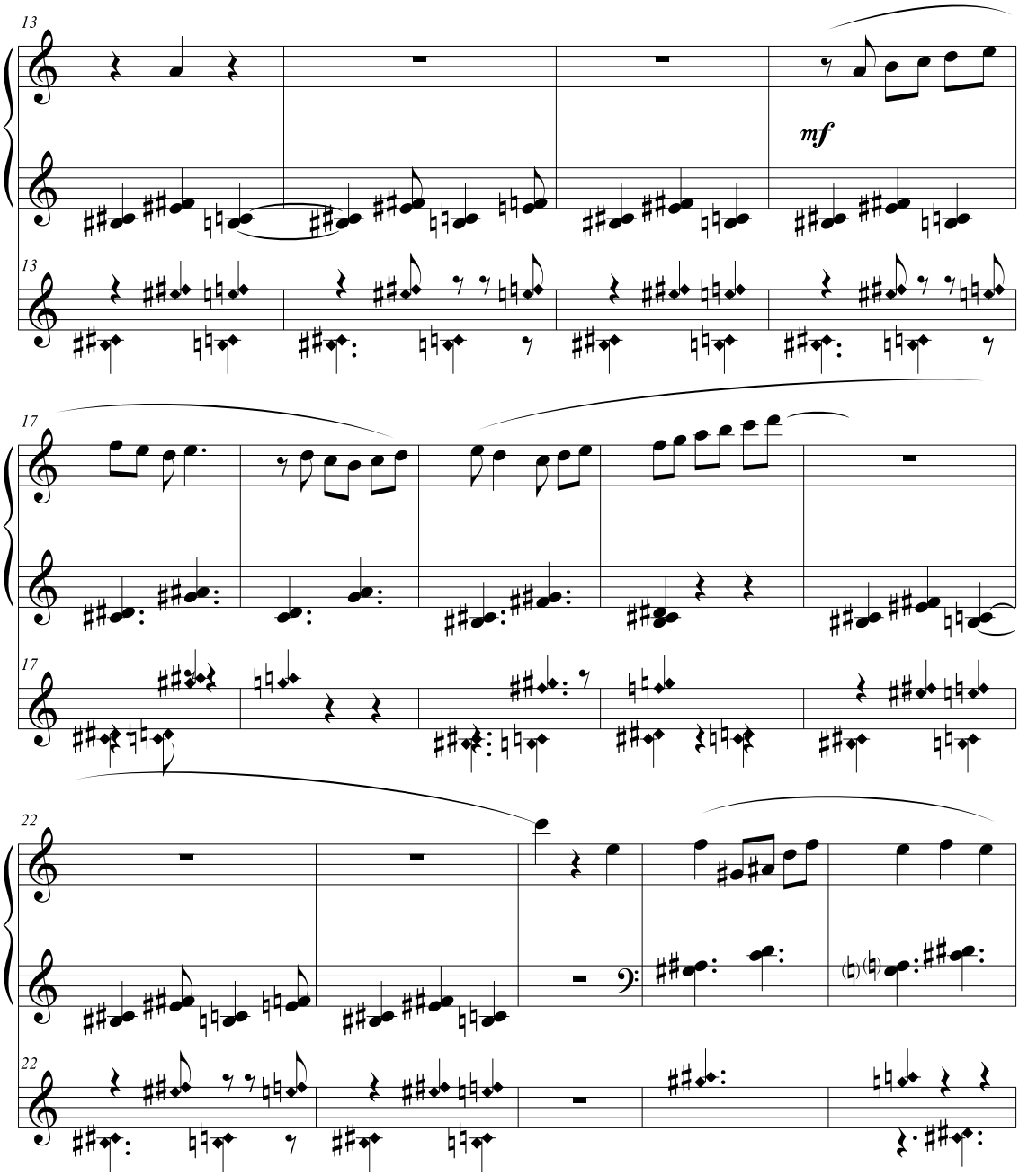


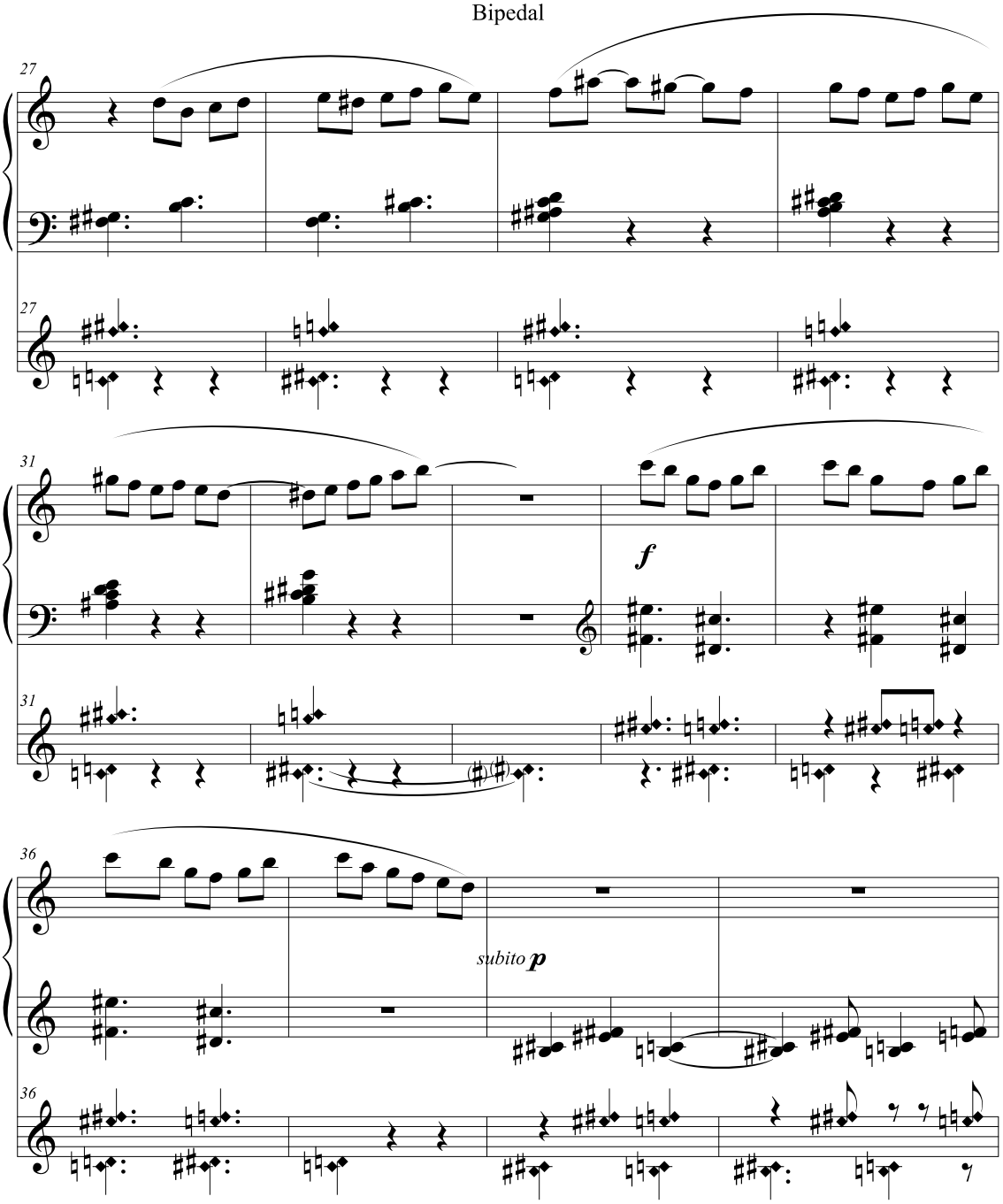

50
53
56

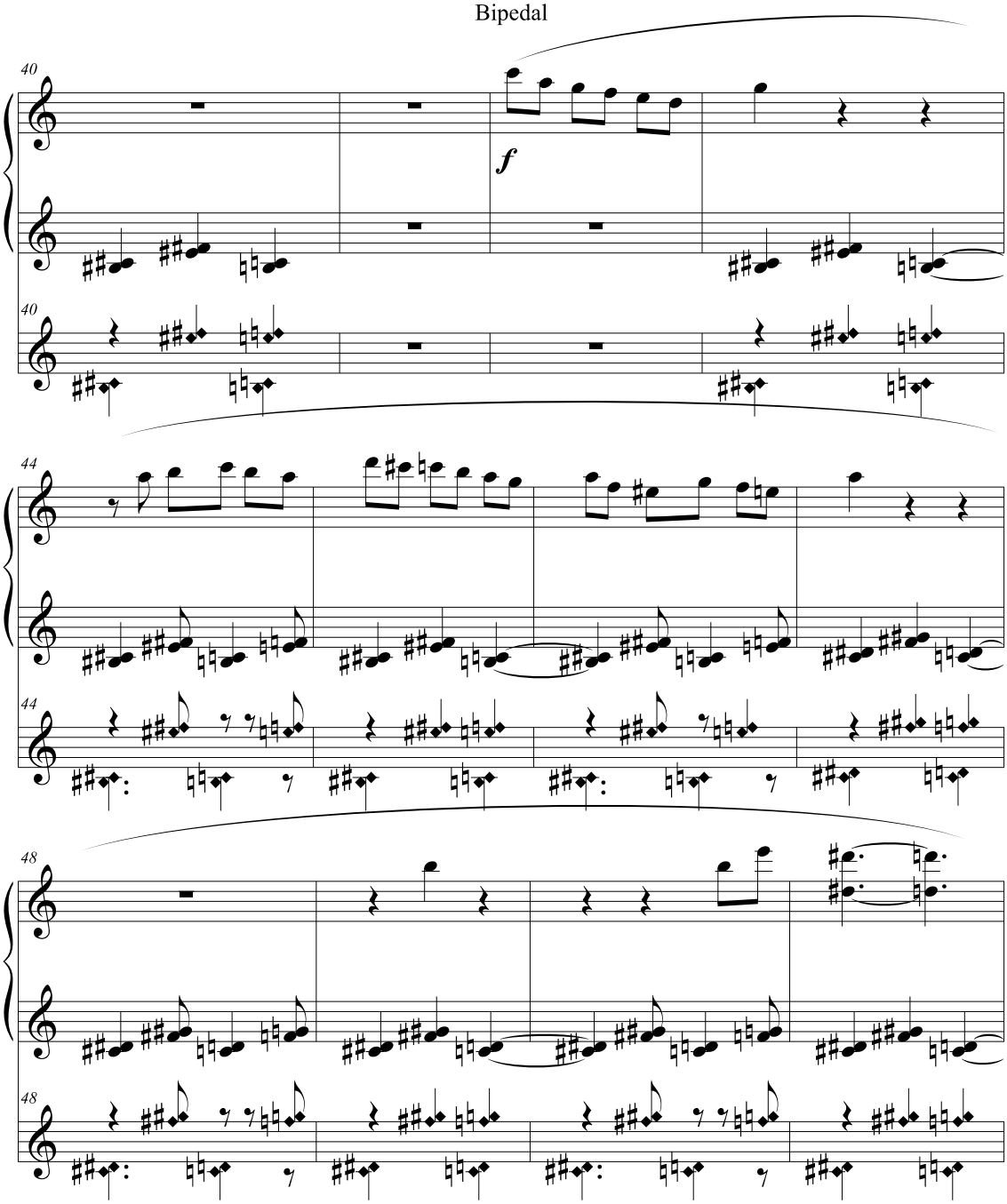
Bipedal

Park Stickney

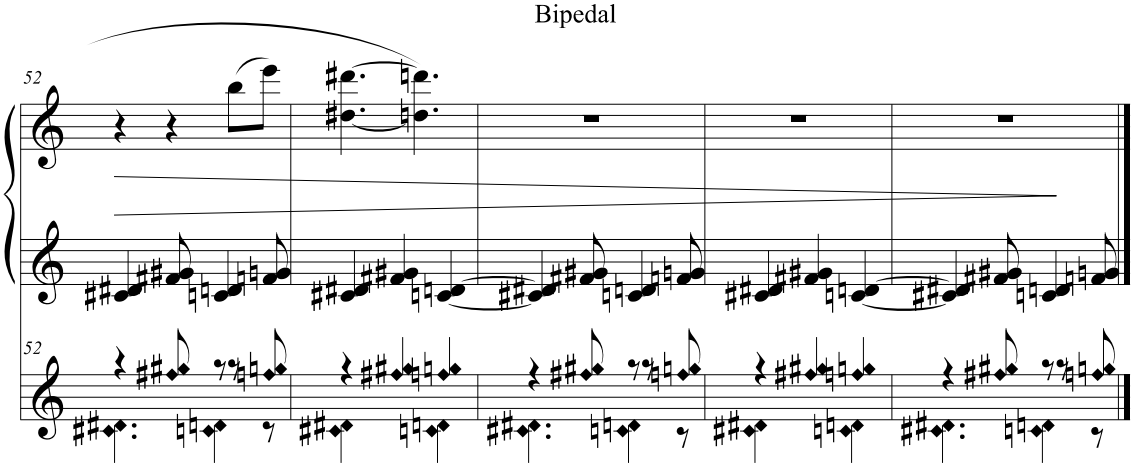



13
mf
13
17
17
22
22


27
27
31
f
31
36
subito p
36

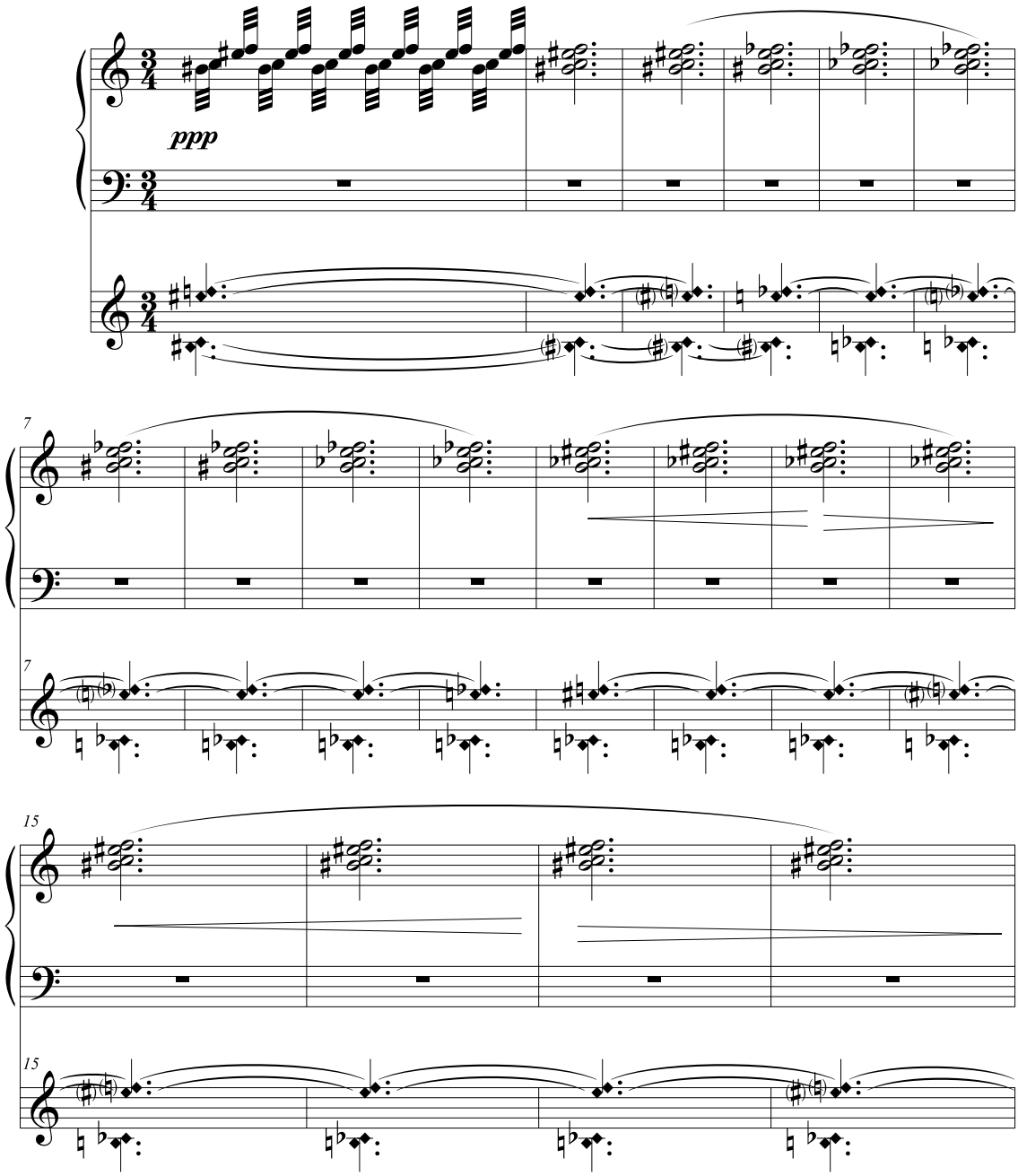

40
f
40
44
44
48
48

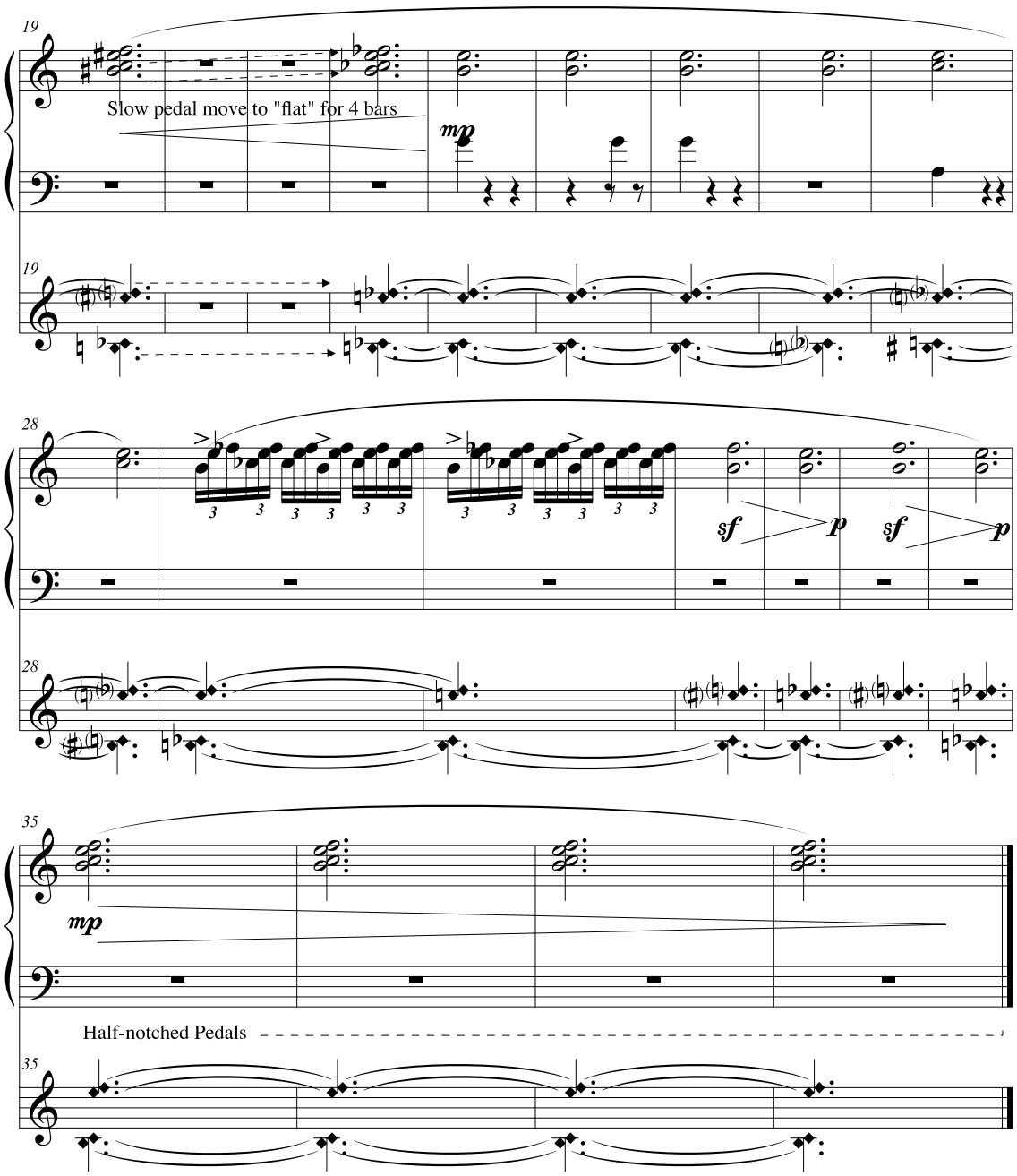
Bipedal



Schrodinger

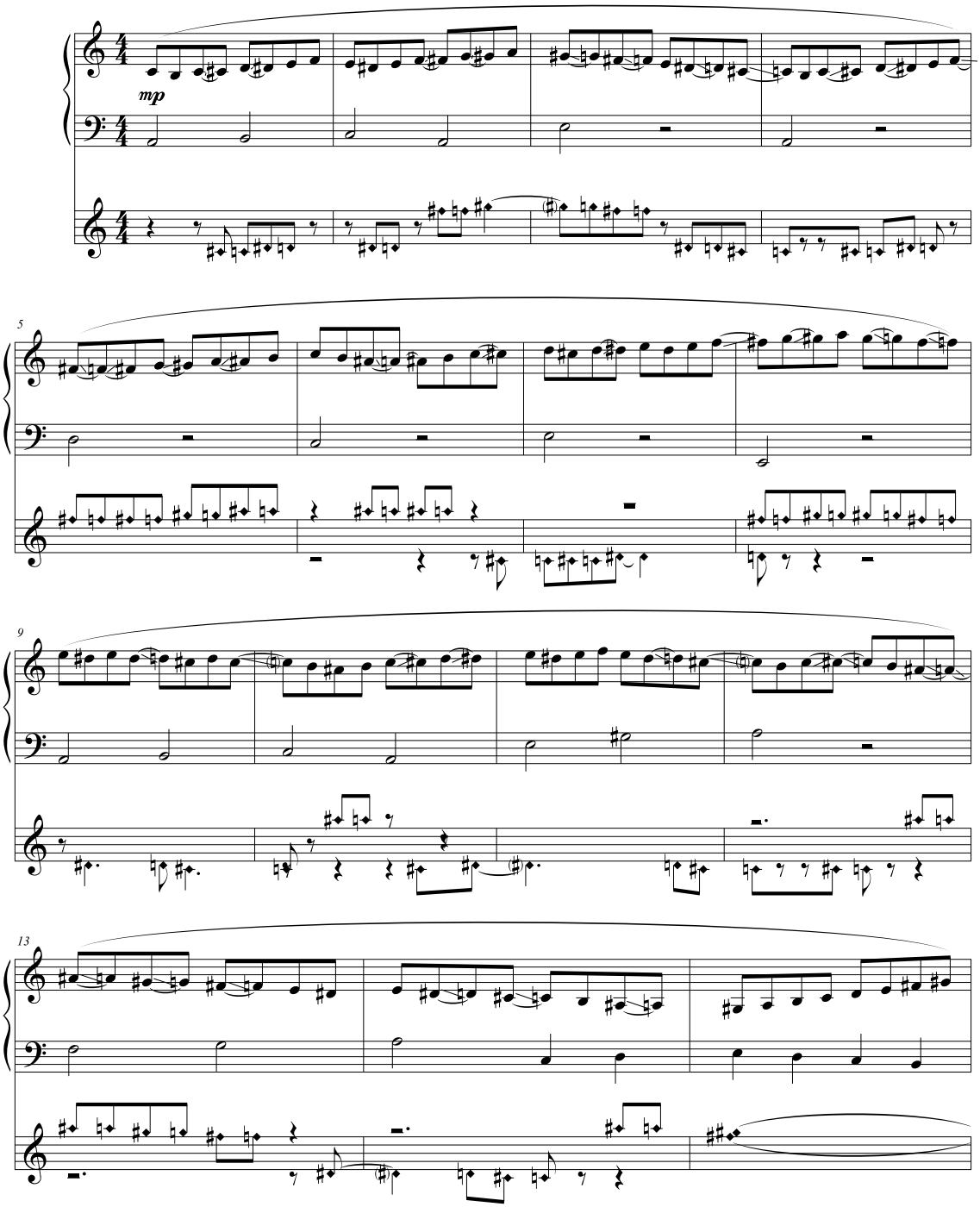
Stickney

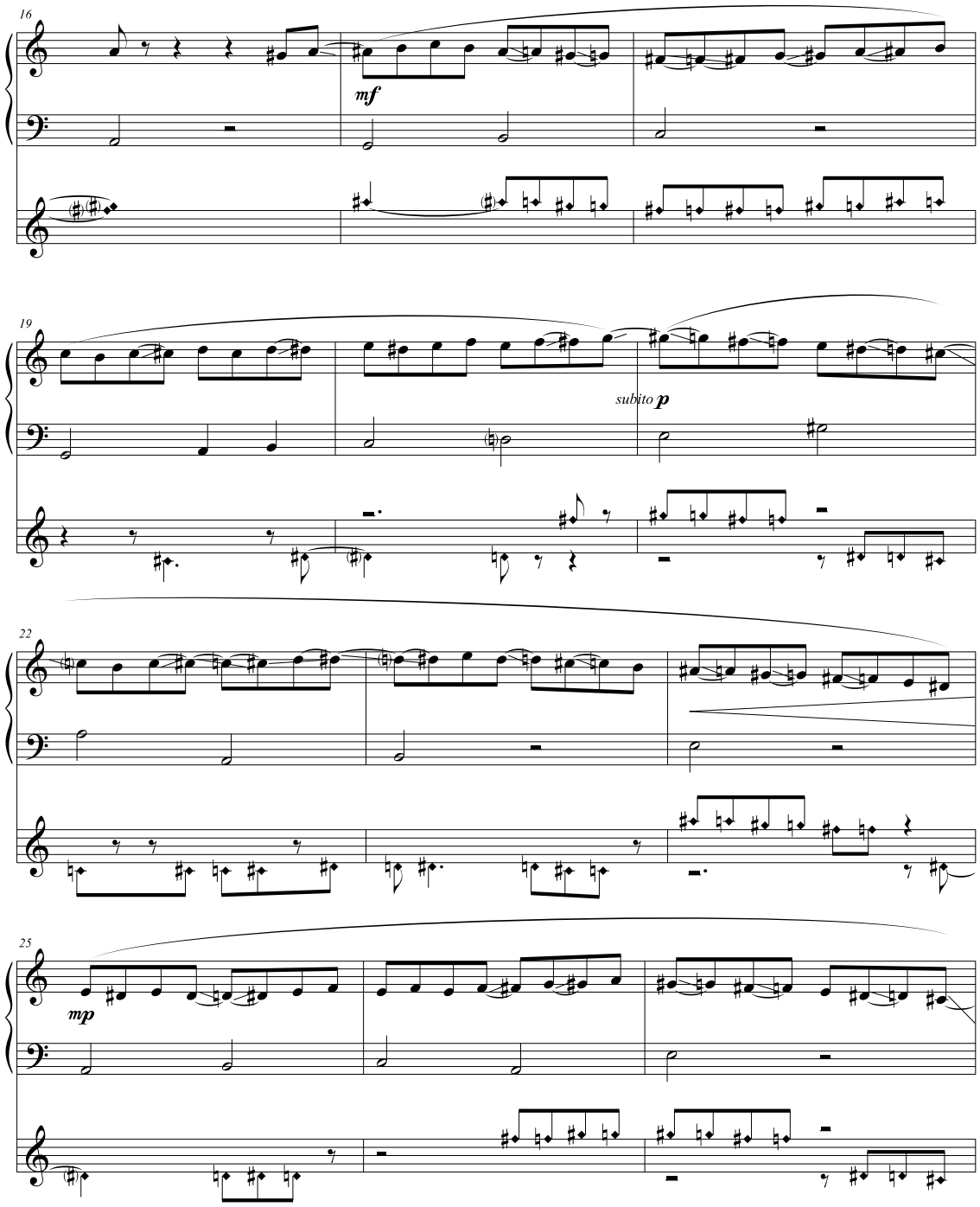


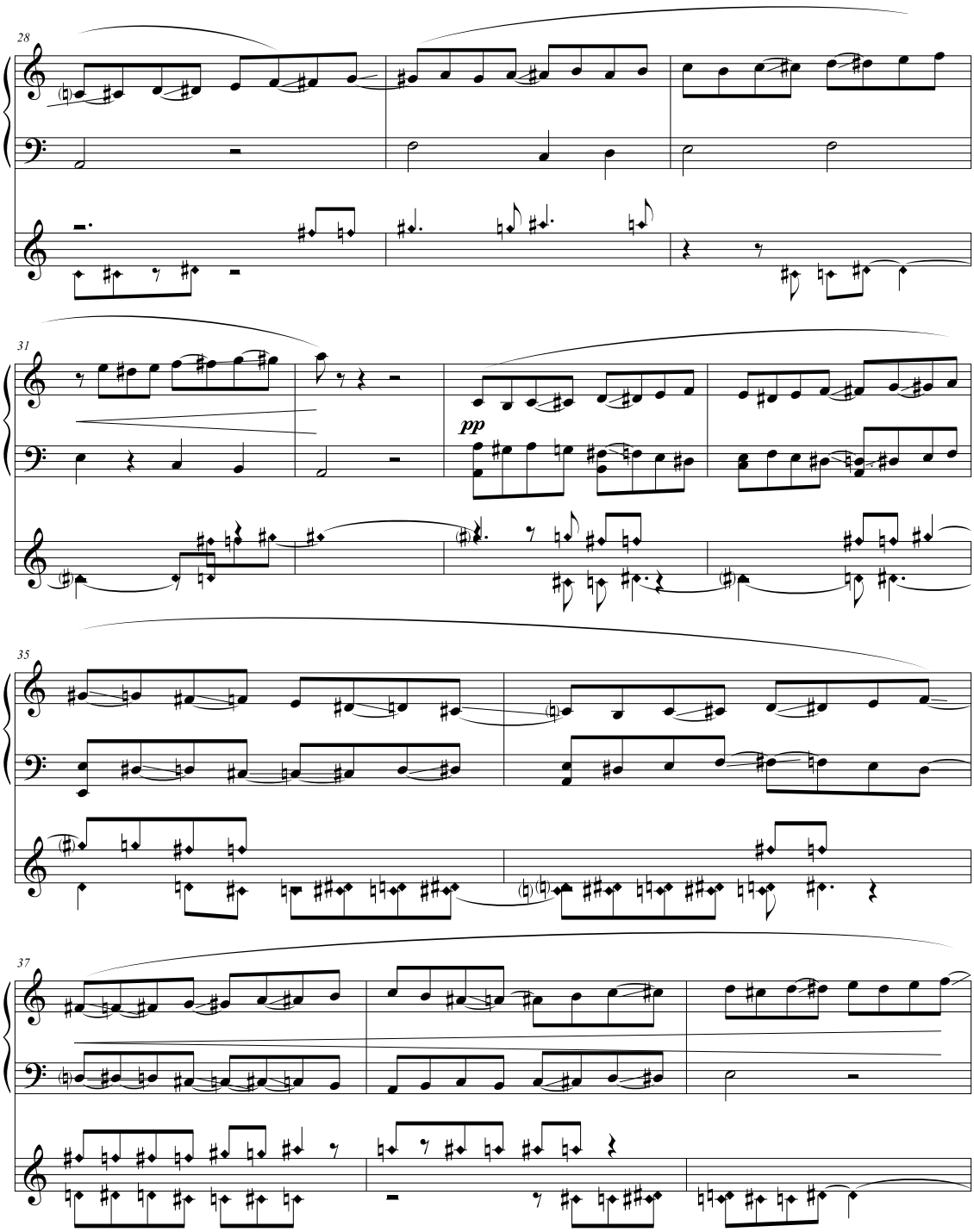

19
Slow pedal move to "flat" for 4 bars
mp
19
28
sf
p
sf
p
28
35
mp
Half-notched Pedals
35

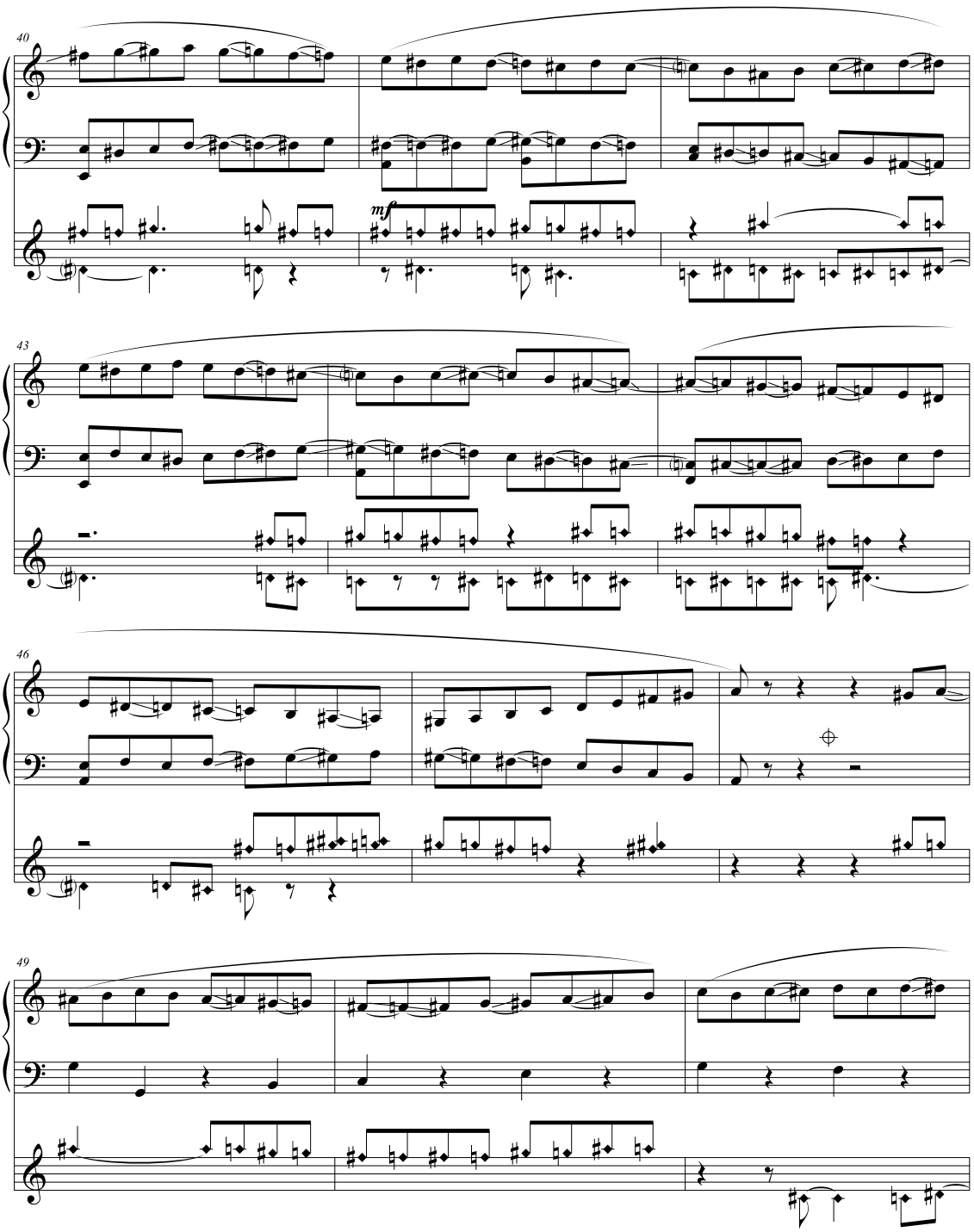
Chromatica

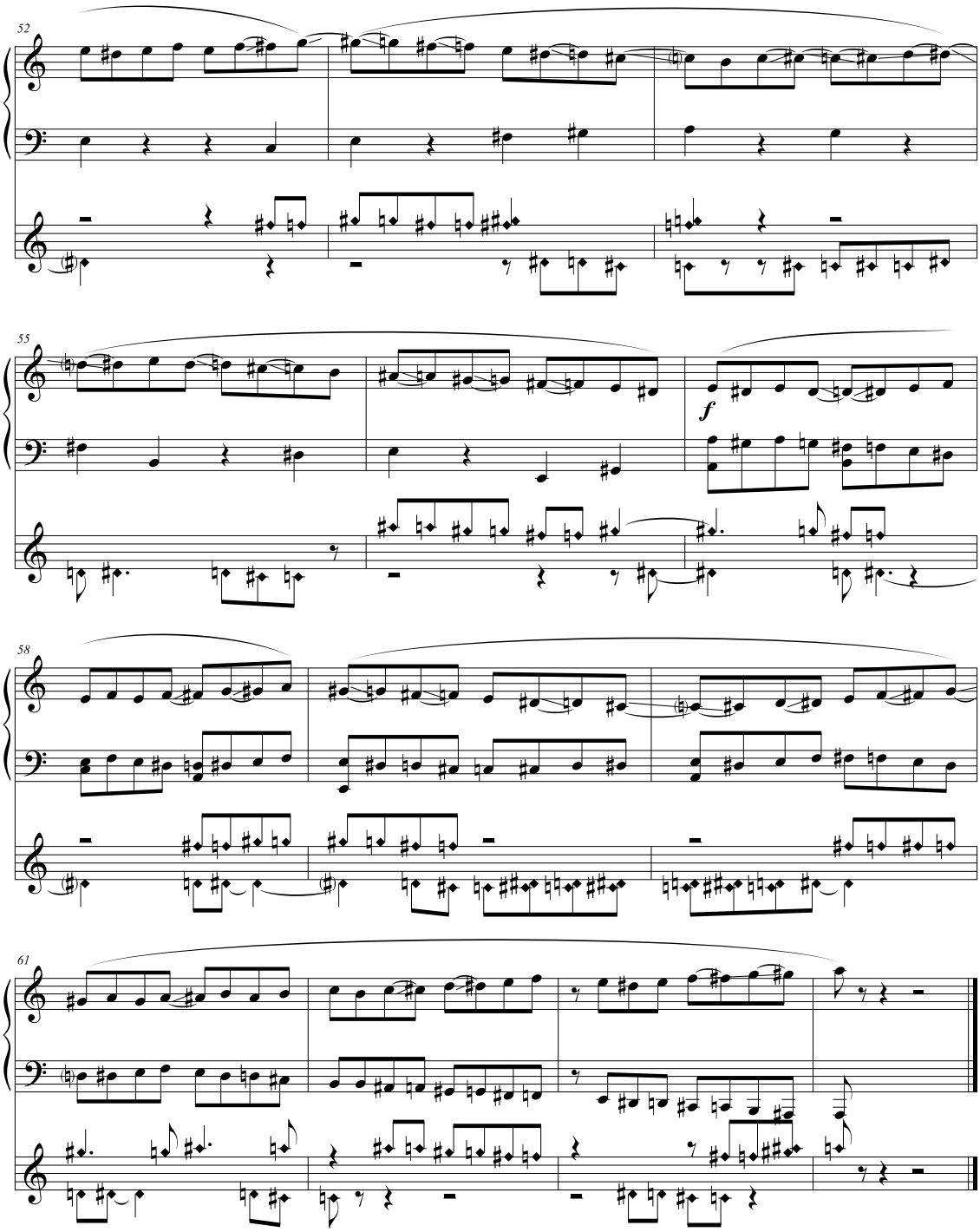
Stickney




16
mf
19
subito p
22
25
mp


28
31
pp
35
37

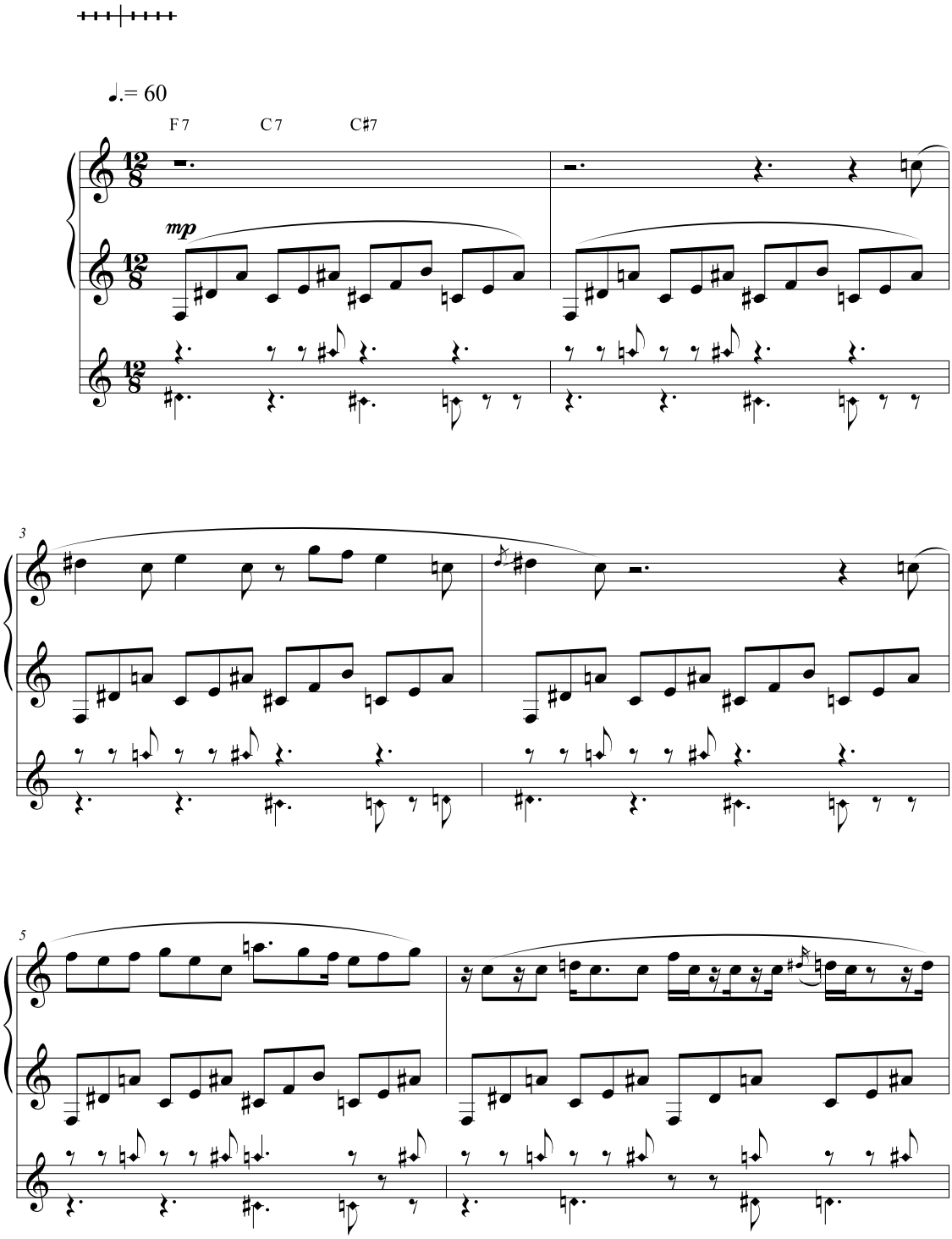

40
mf
43
46
49

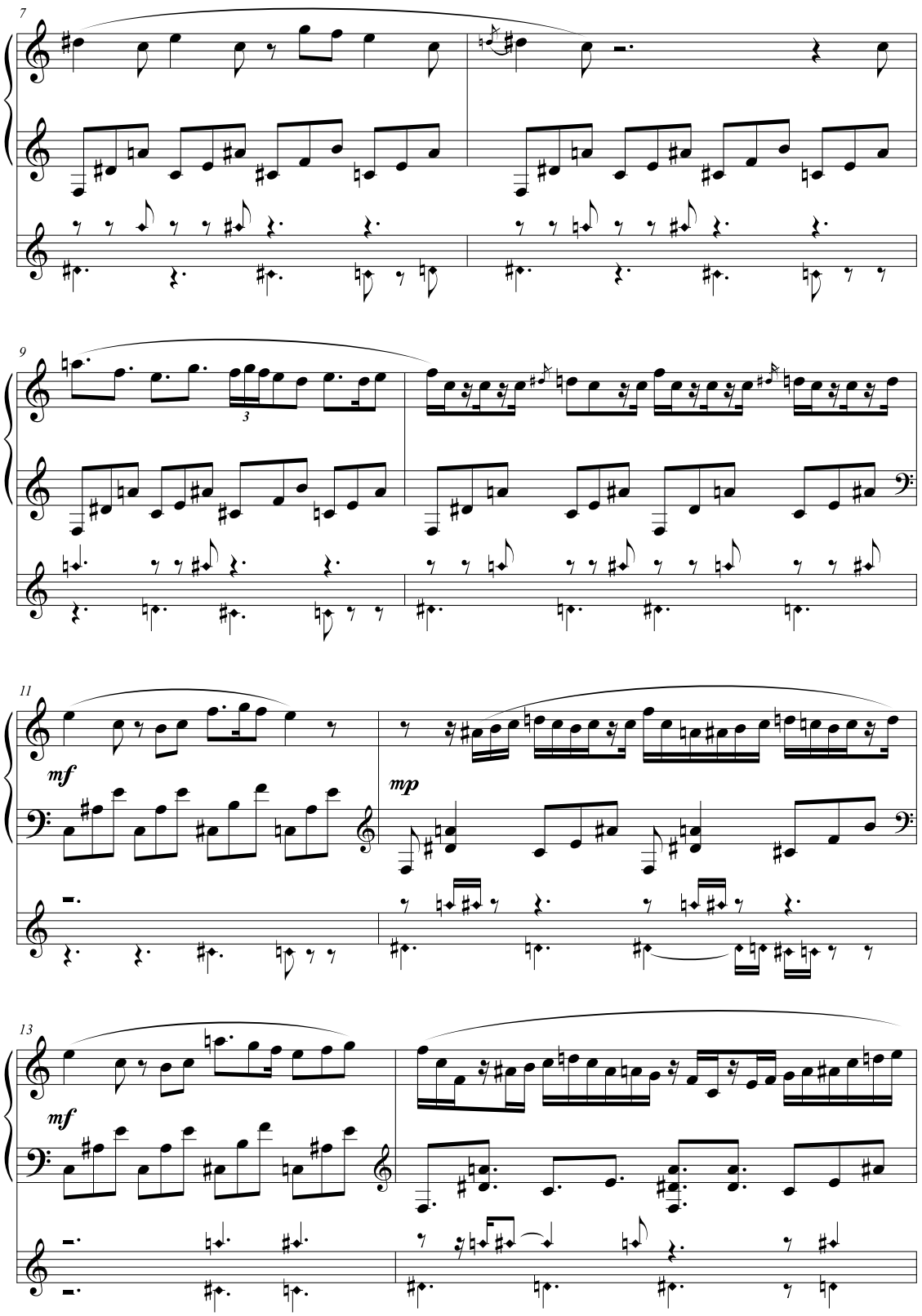

52
55
f
58
61

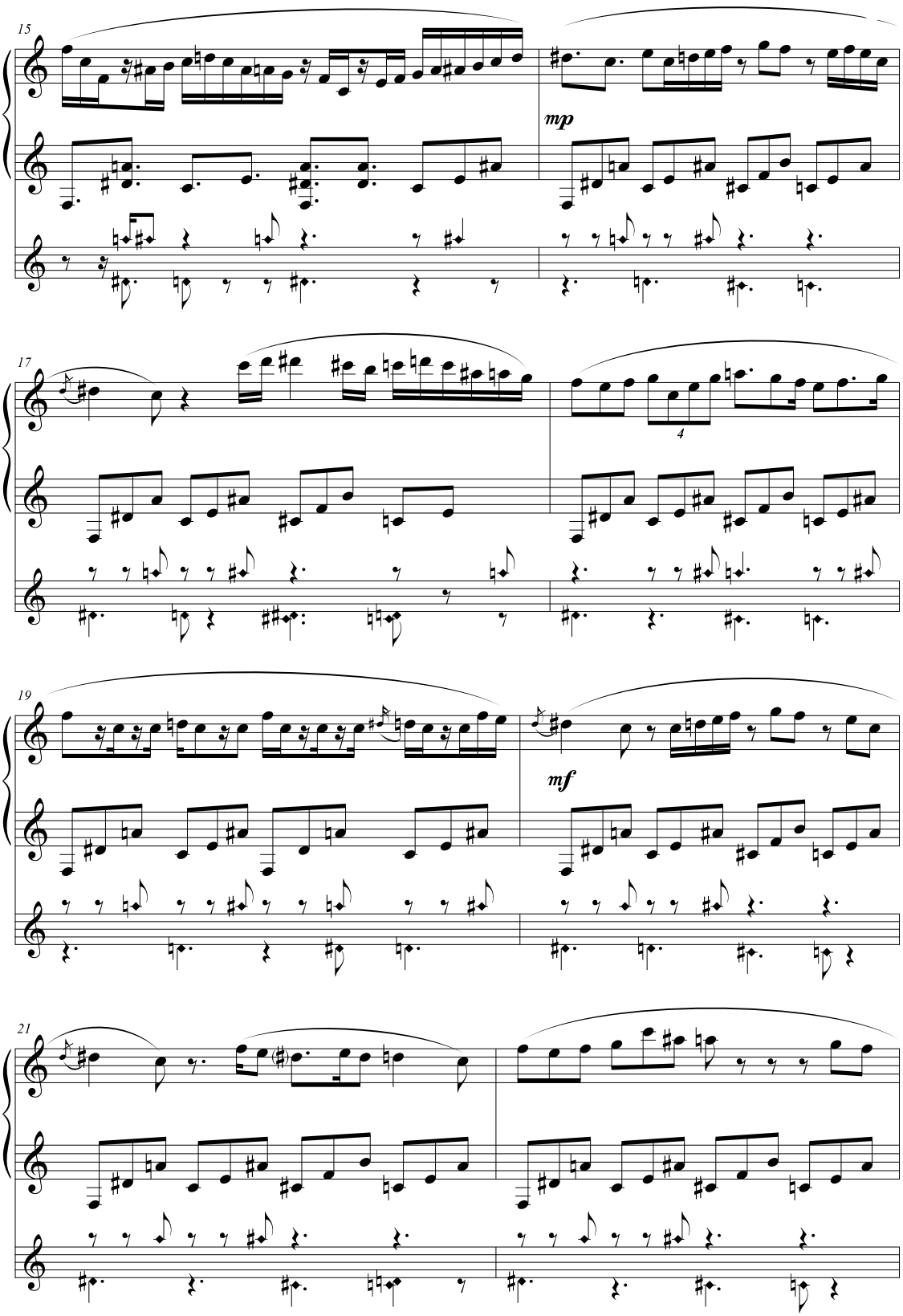
Three Chord Wander

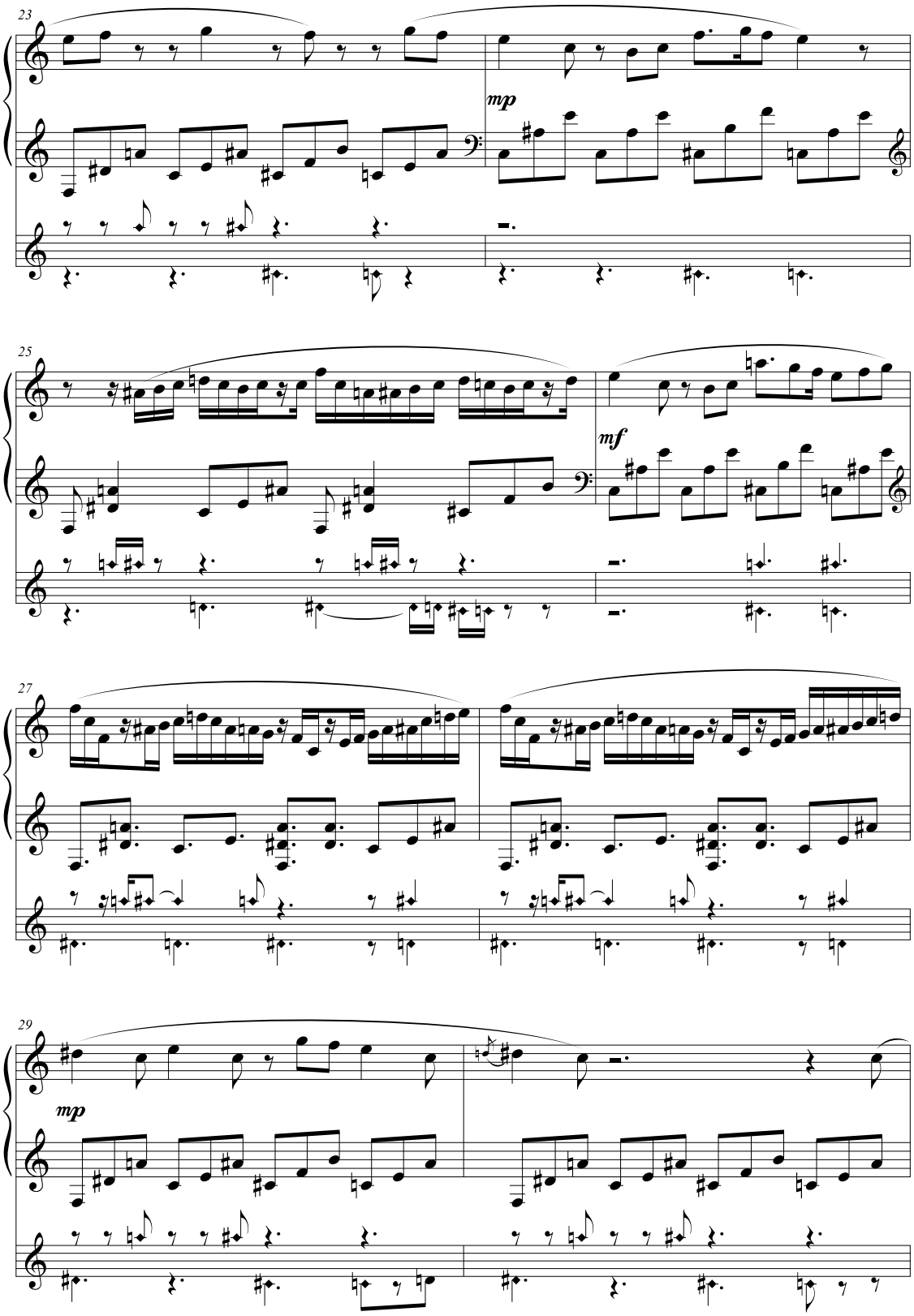
(F7, C7, C#7)

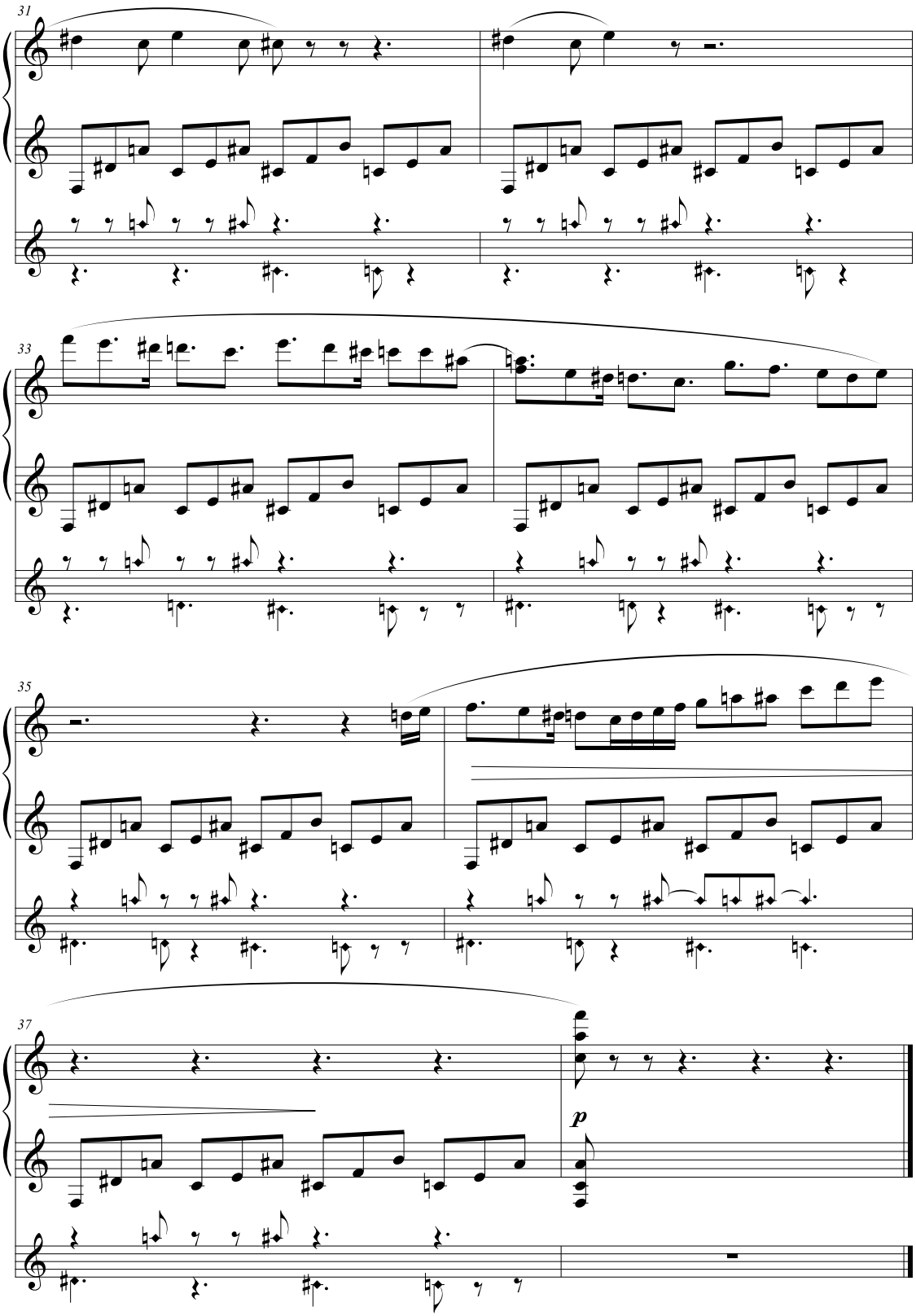
Stickney



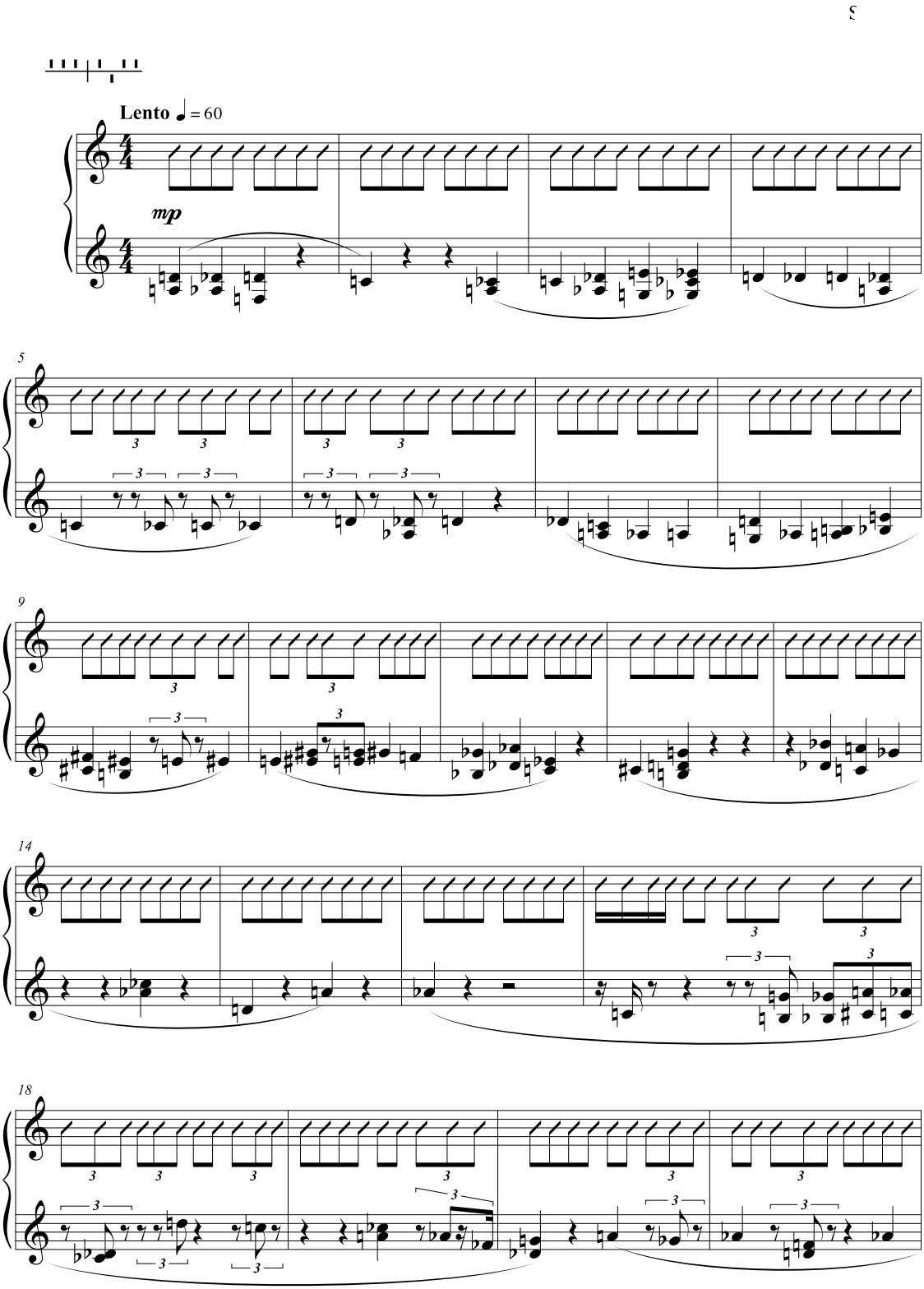

7
9
3
11
mf
mp
13
mf


15
mp
17
4
19
mf
21

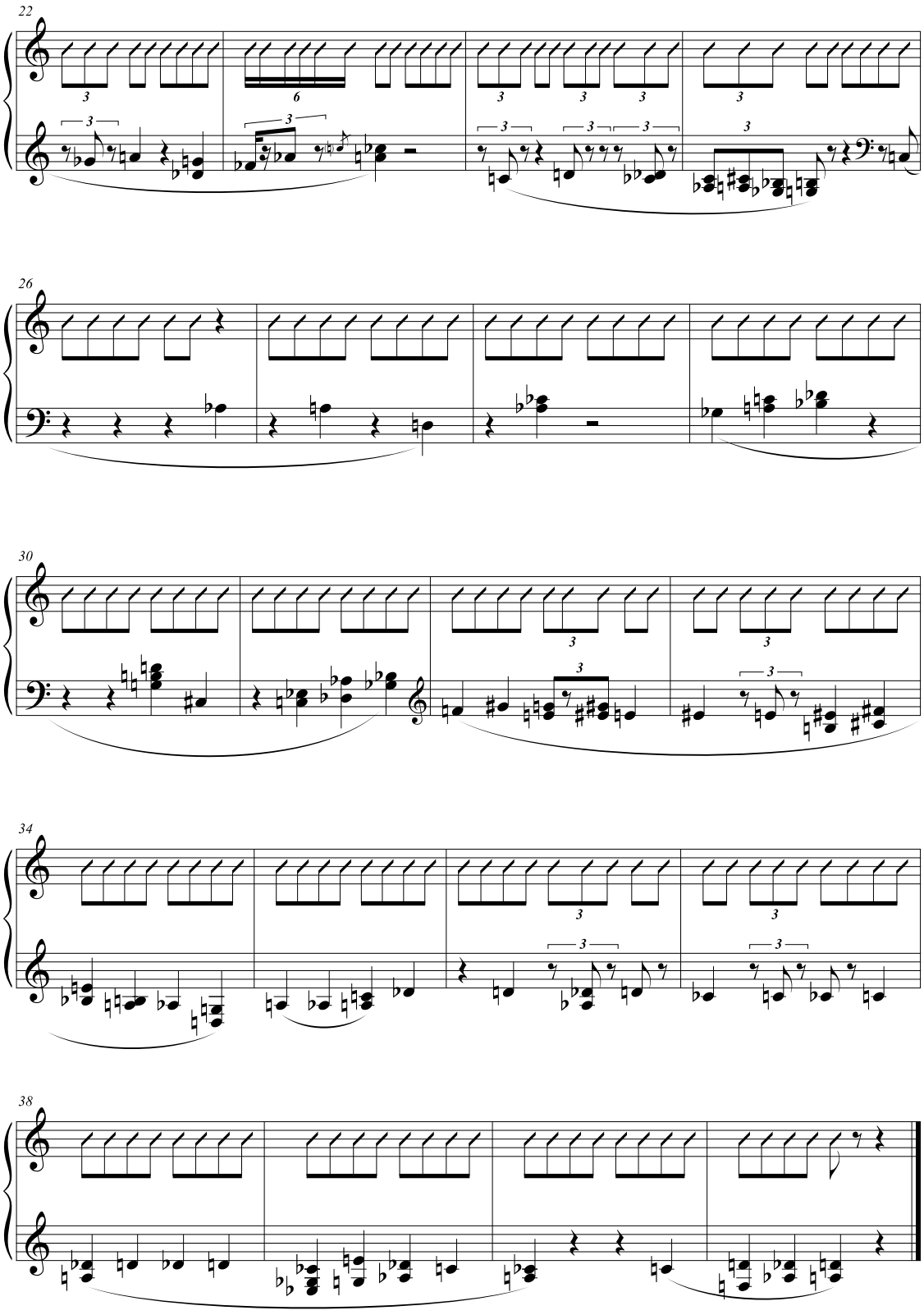

23
mp
25
mf
27
29
mp


31
33
35
37
p

Leprechaun Footsteps Revealed

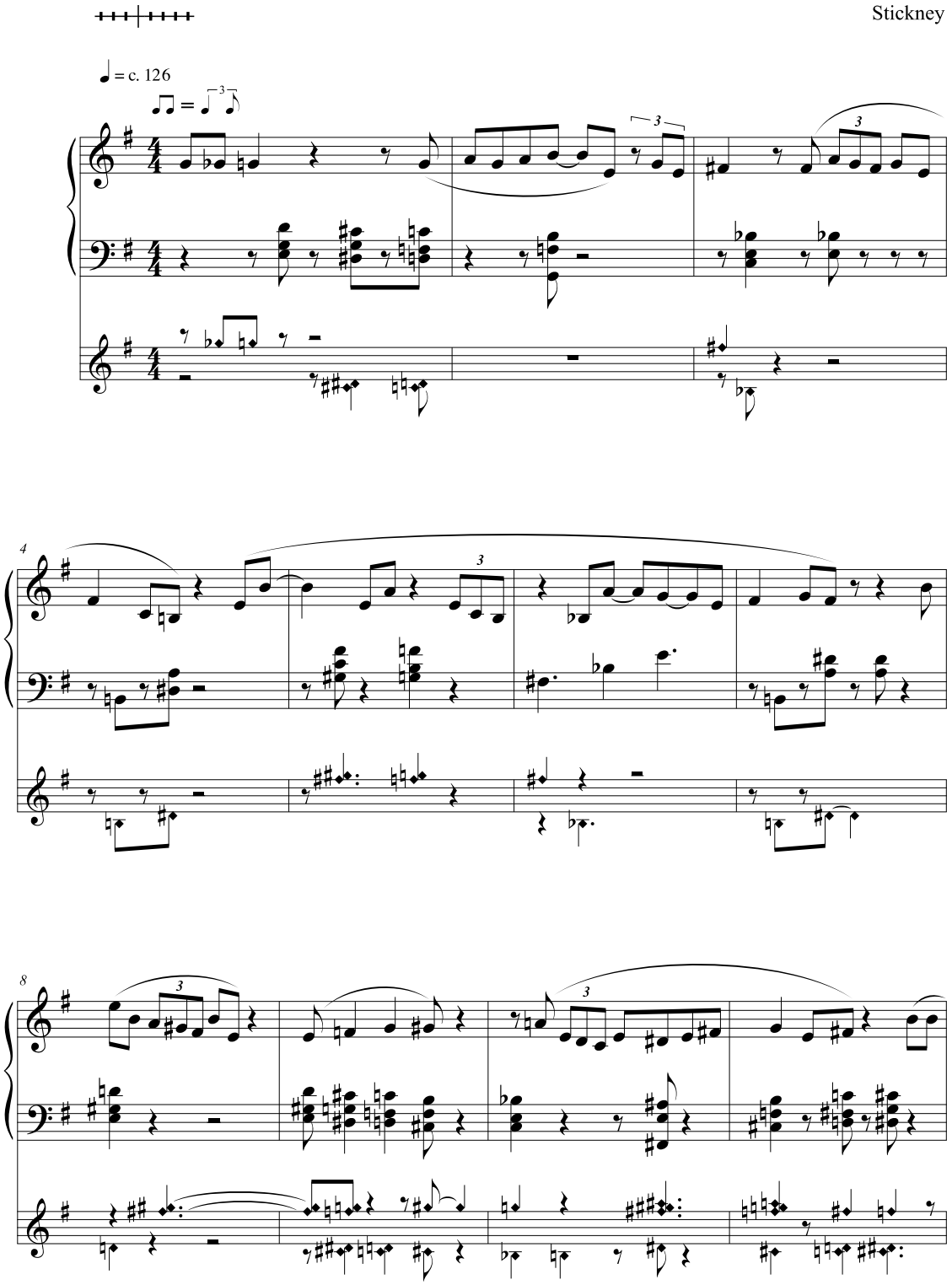


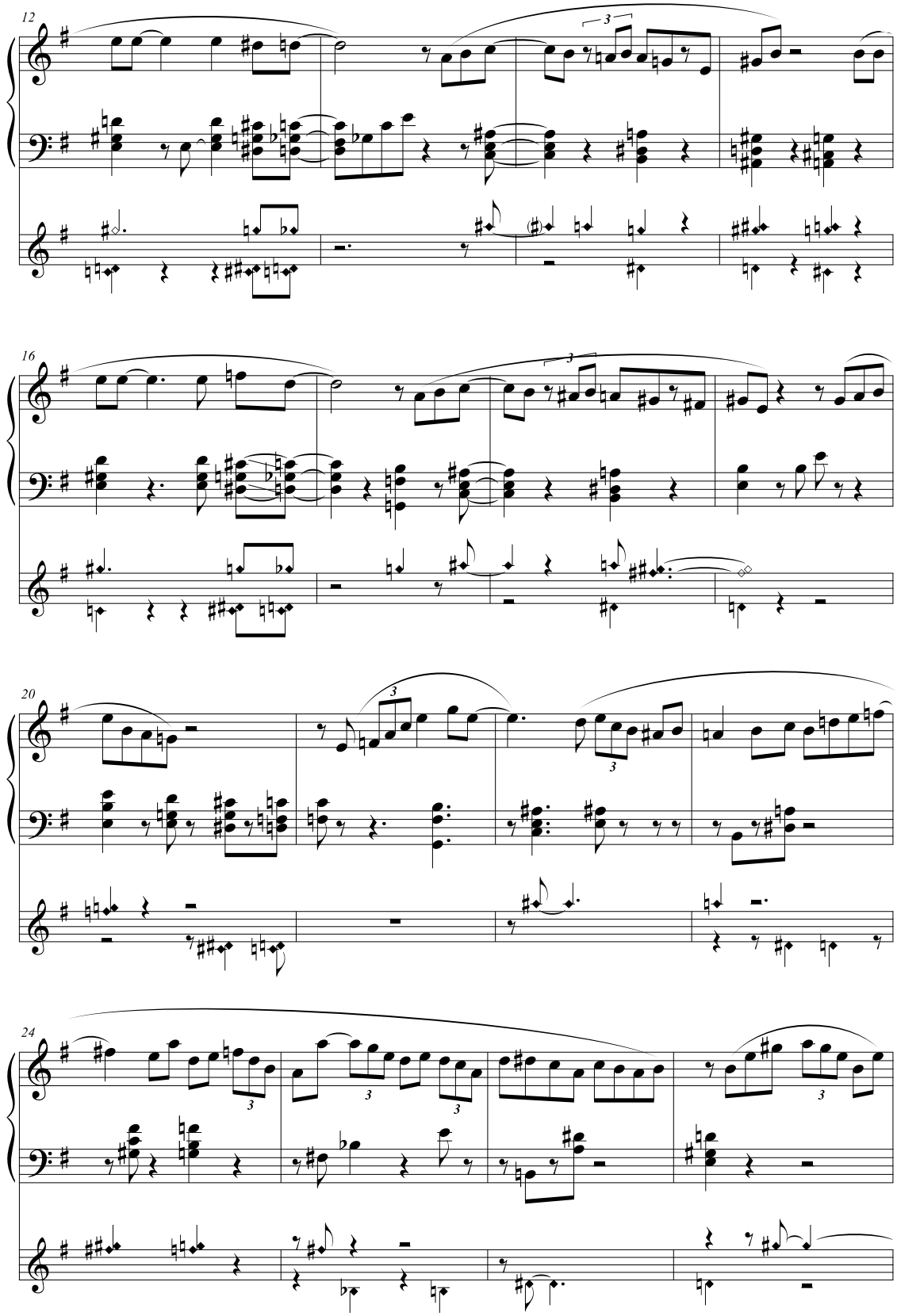
Note: Optional improvised RH, any notes, with or without the suggested rhythm

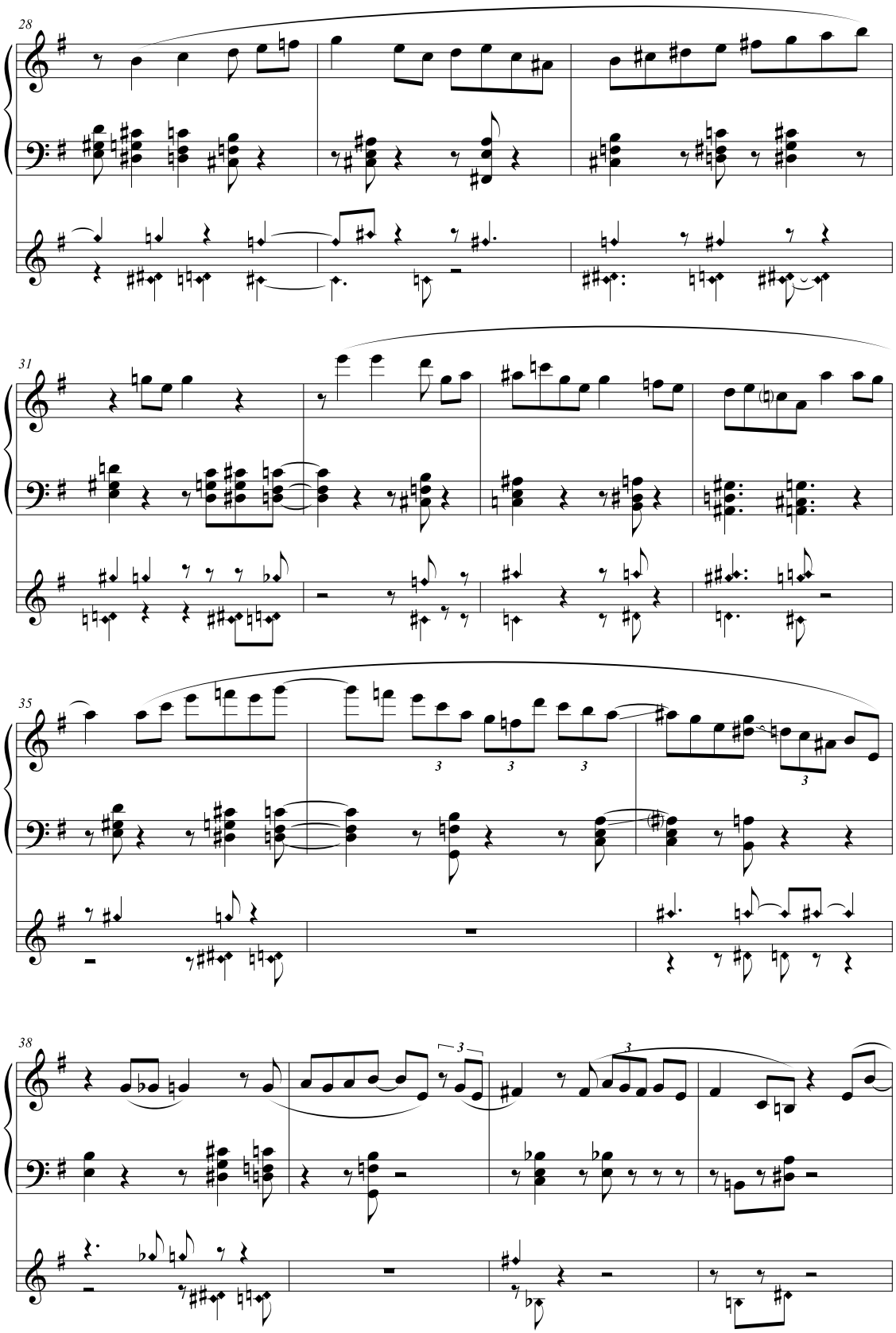

22
26
30
34
38

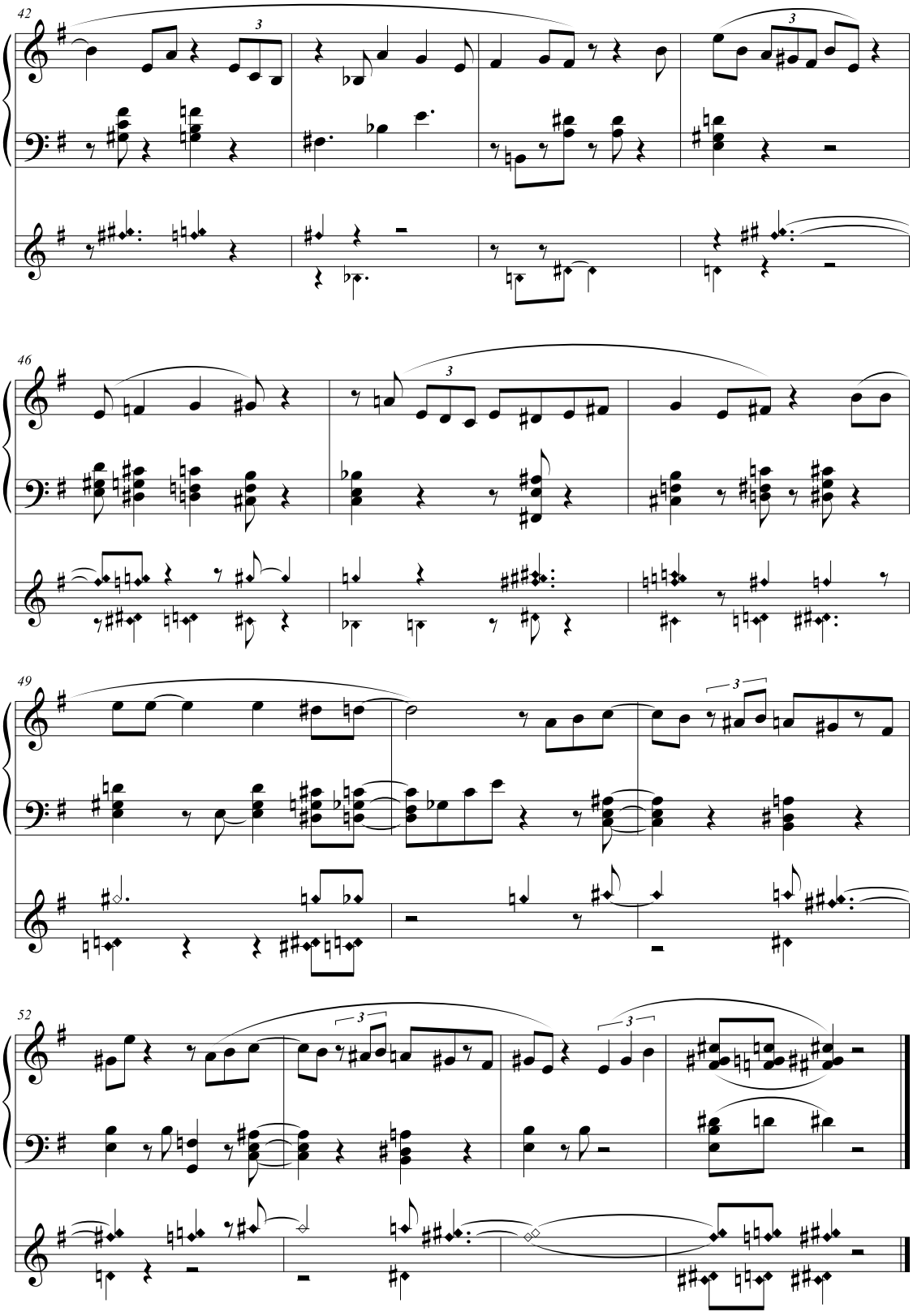
Haseman

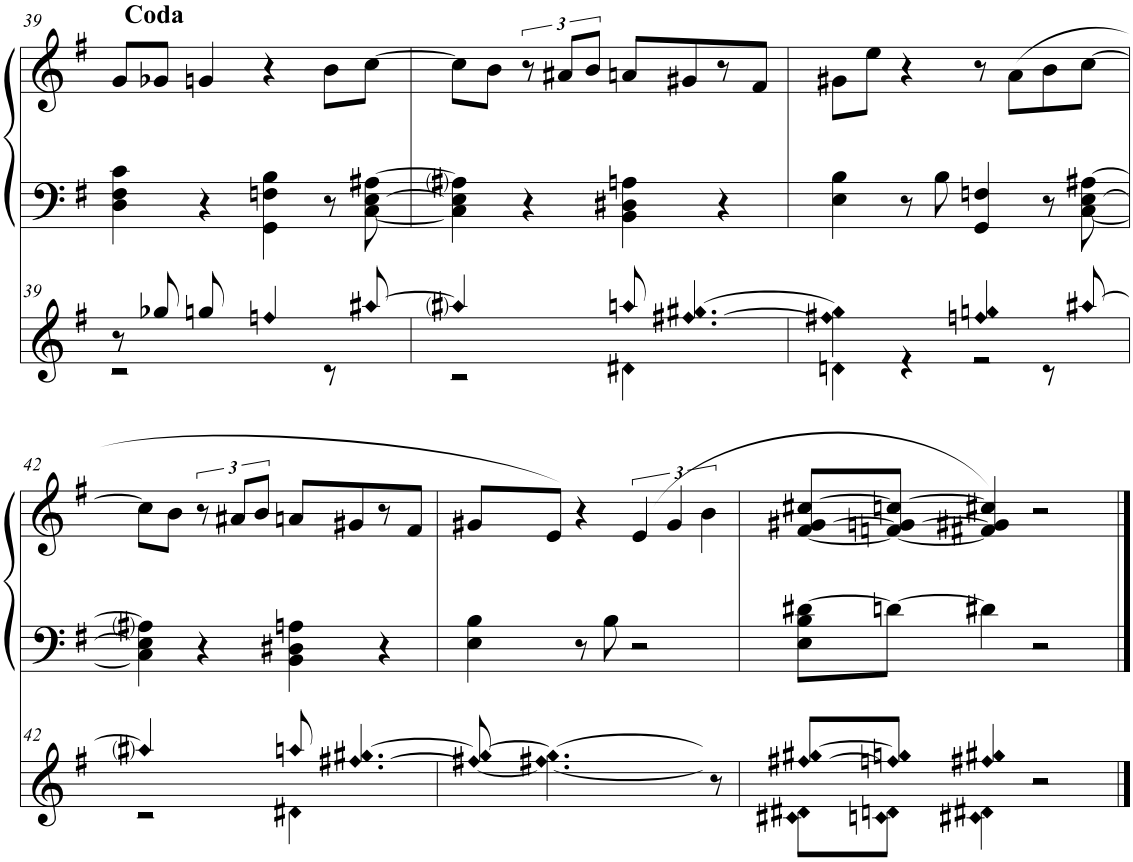
Stickney




12
16
20
24

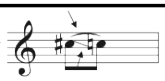

28
31
35
38


42
3
3
46
3
49
3
52
3
3

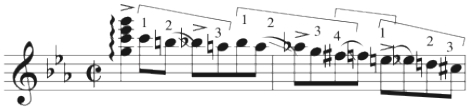

39
Coda
3
39
42
3
3
42

Welcome to "Lever Mania"! This piece is designed to impress your friends/parents/partner/neighbors (and/or drive them crazy), using simple household non-stop chromatic mayhem.

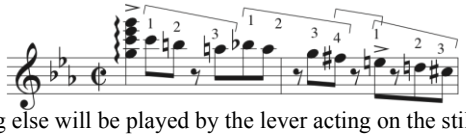
To achieve **Maximum Lever Mayhem (MLM)**, the following notes may be useful:

Lever Slides: This sign  means that you should use play the second note with a lever slide.

In mm.1-2, this means that, in order to play these notes:

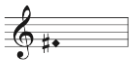


your RH fingers will play these strings:



And everything else will be played by the lever acting on the still-vibrating string.
(Don't muffle before moving the lever, or it won't work!)

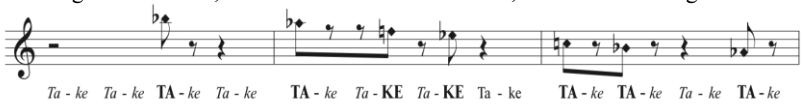
The Lever Staff: I've marked the levers on a third staff, borrowing a technique I've developed for pedal harp. Writing the lever changes like this takes up less space (as there are, well...a LOT of lever changes in this piece), and has the useful advantage of showing *exactly* when the levers should be moved.)

In measures 32, 83 and 93 there are signs like this: 

These show the **Global Lever Situation (GLS)** at that moment, to aid in practice. In the example above, all levers would be down except for that lone F# (directly above middle C)

Practice Hints: The rhythm of the lever changes is always important, but *especially* in measures 84-85. This is the only time in the piece where there are preset levers (levers moved before they're needed), and it might be useful to give this section extra practice.

You might also try practicing all the lever changes alone (perhaps with a metronome), being aware of the rhythmic patterns formed by the levers, and whether these movements are on the beat or in between. Try saying "Ta" for changes on the beat, and "ke" for those off the beat, while also moving the levers.

For example: 

Also: 1) The "improv" section in measures 31-64 is a suggestion only. Feel free to create your own!

2) The accent on bar 1 of m. 31 is not a typo. I wanted to remind both of us that it's always important to feel the pulse, even if our fingers aren't actively doing anything.

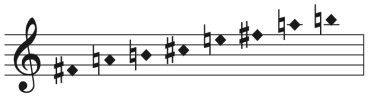
I wish you lots of fun (and mania) with this piece!

Park Stickney

Valeyres-sous-Ursins
2019

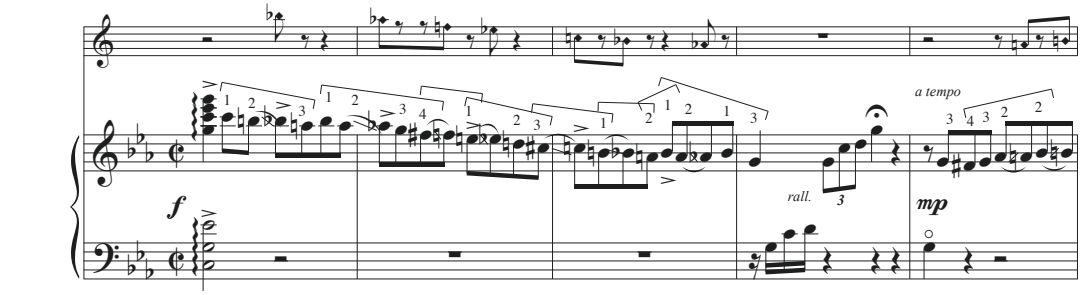
2

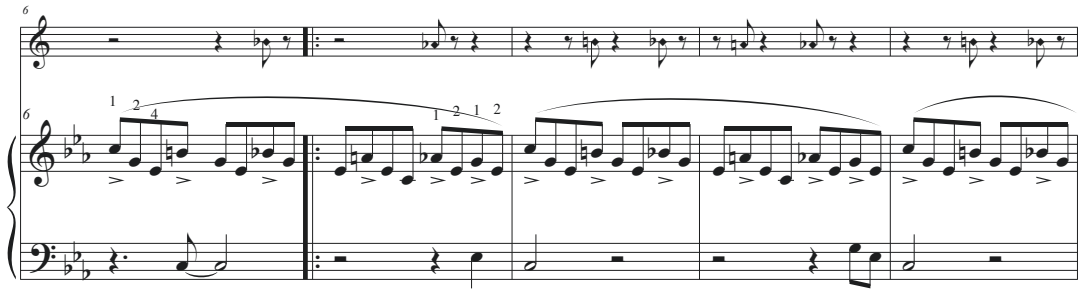
Lever settings: Set the harp in E♭ major with the following alterations.

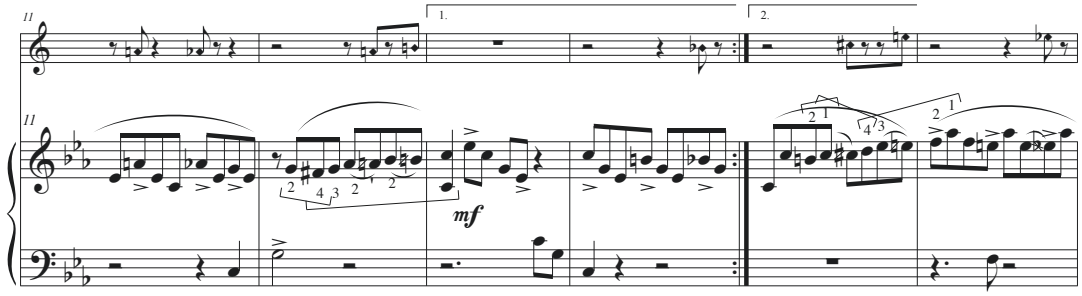


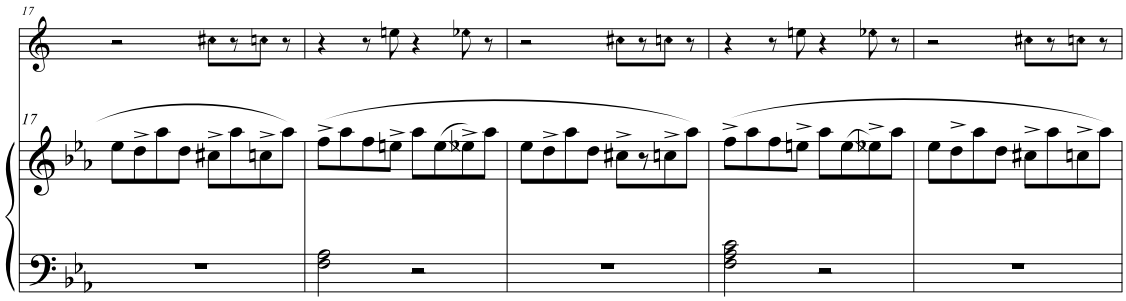
Lever Mania

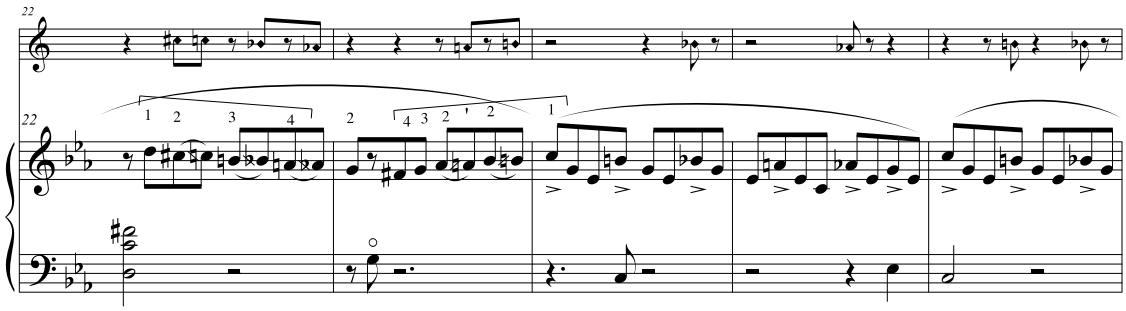
Park Stickney

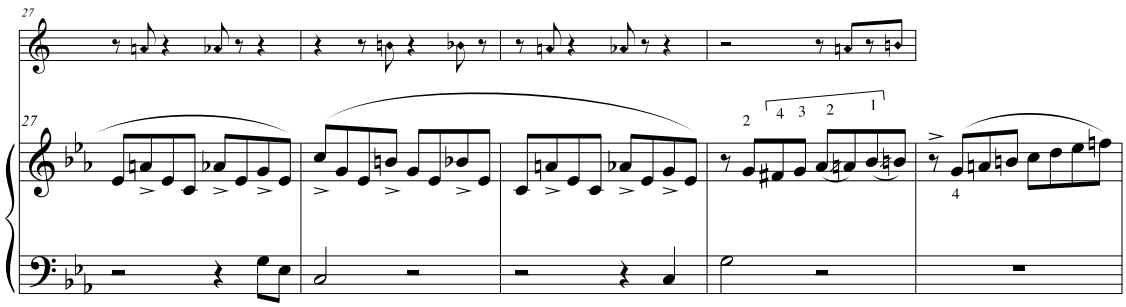


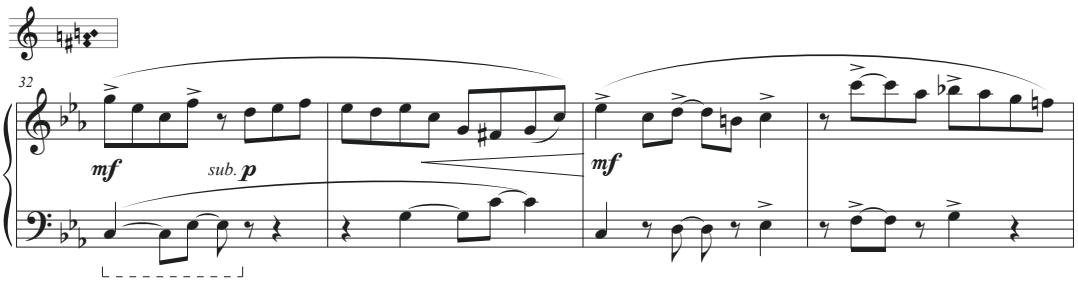




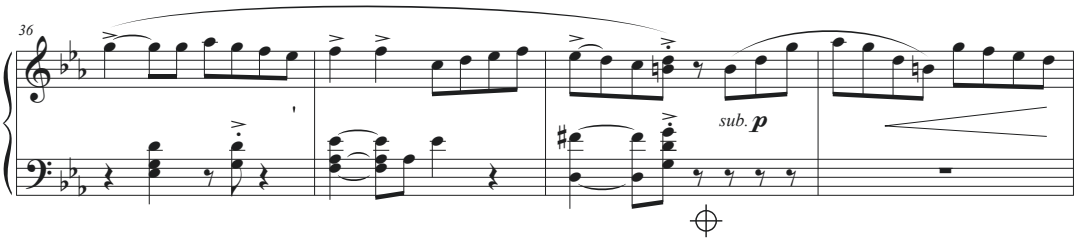


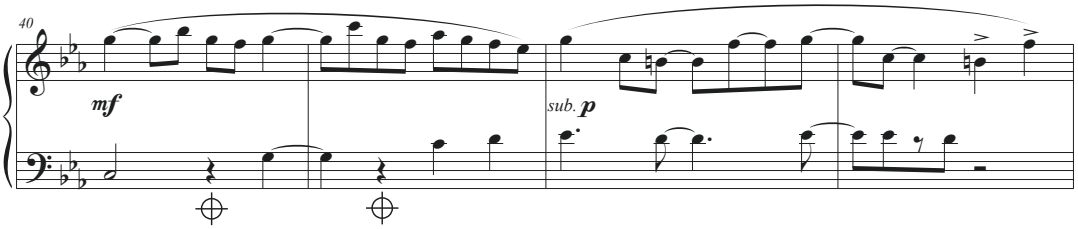


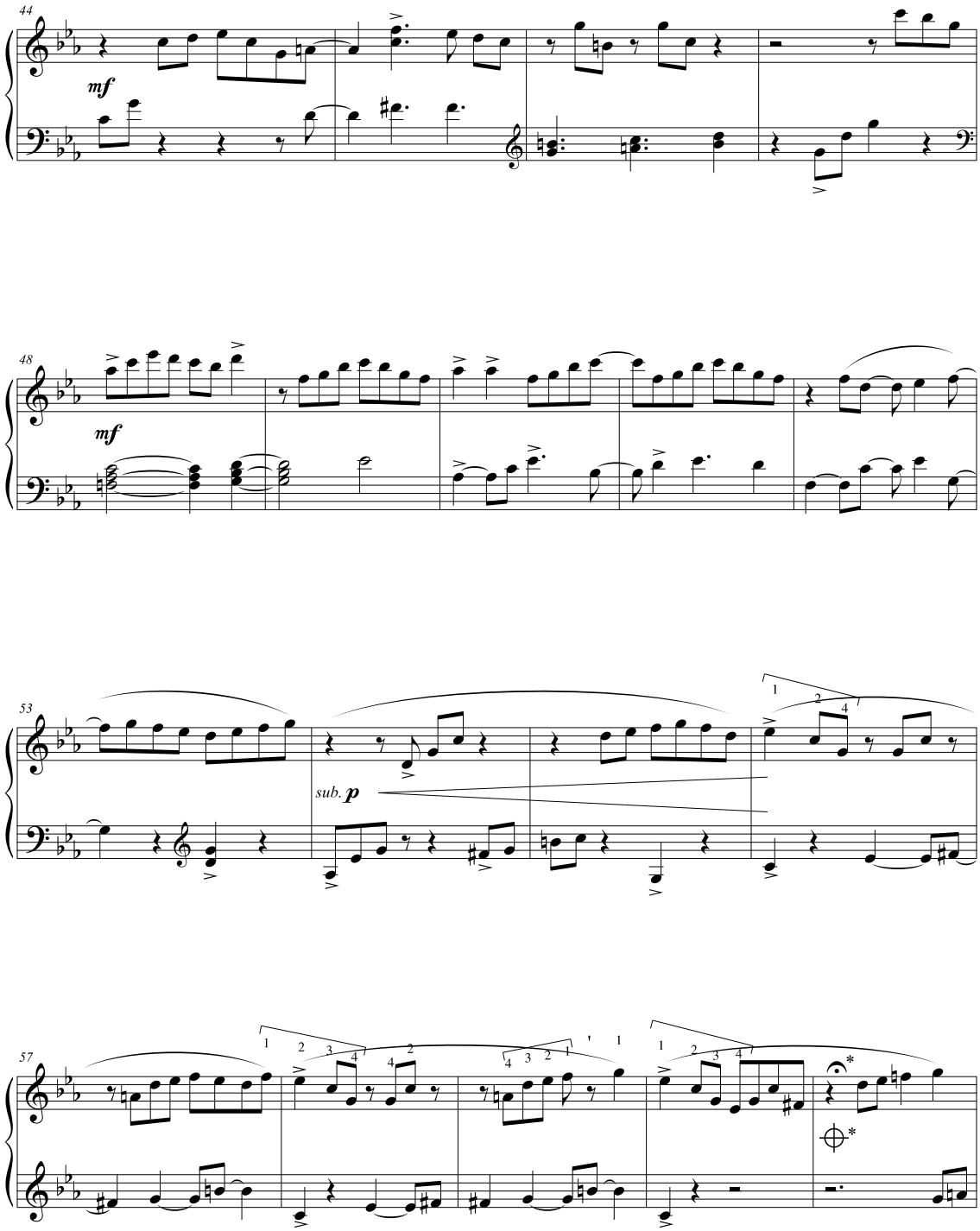




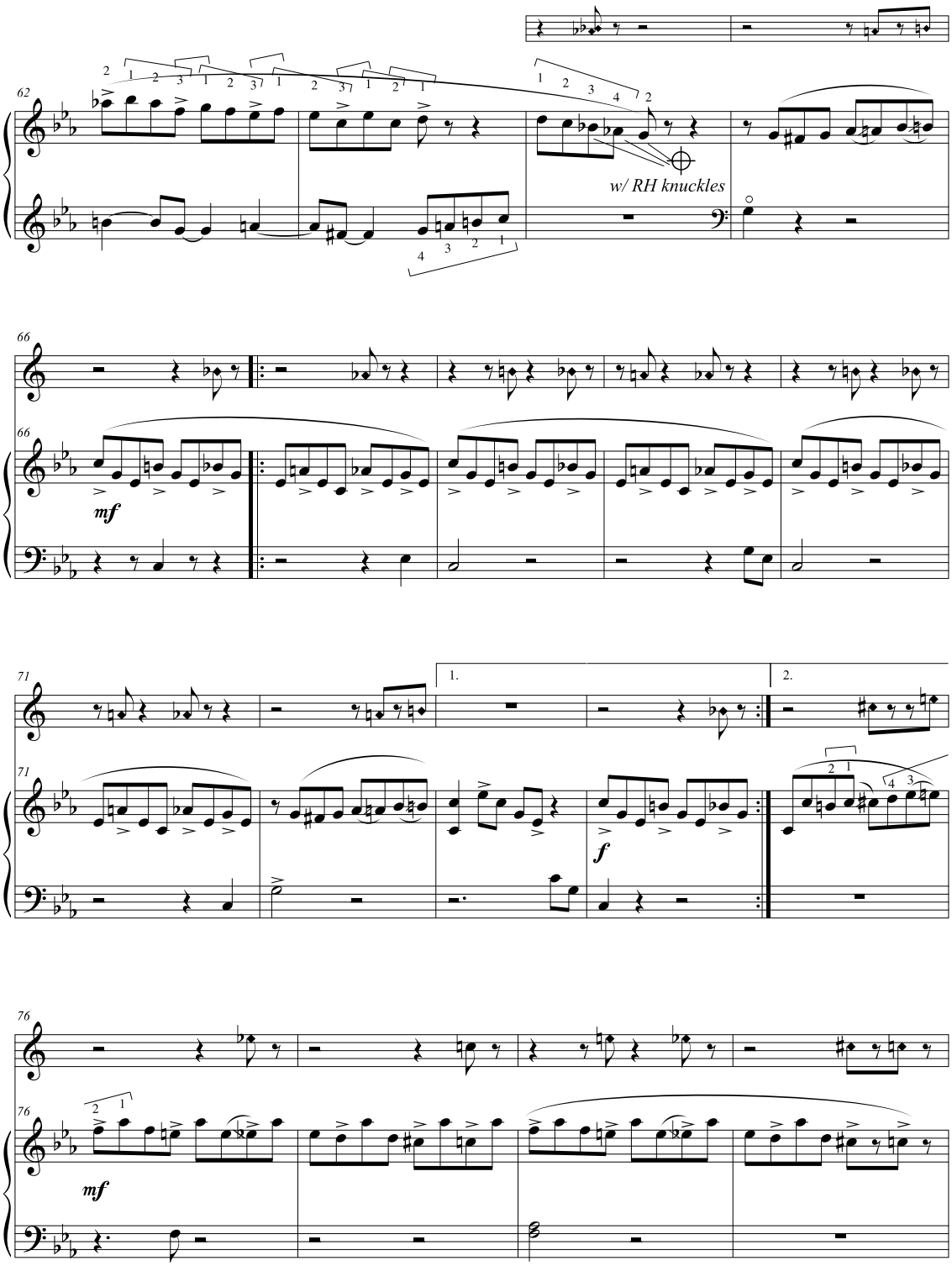
Can be omitted for page turn

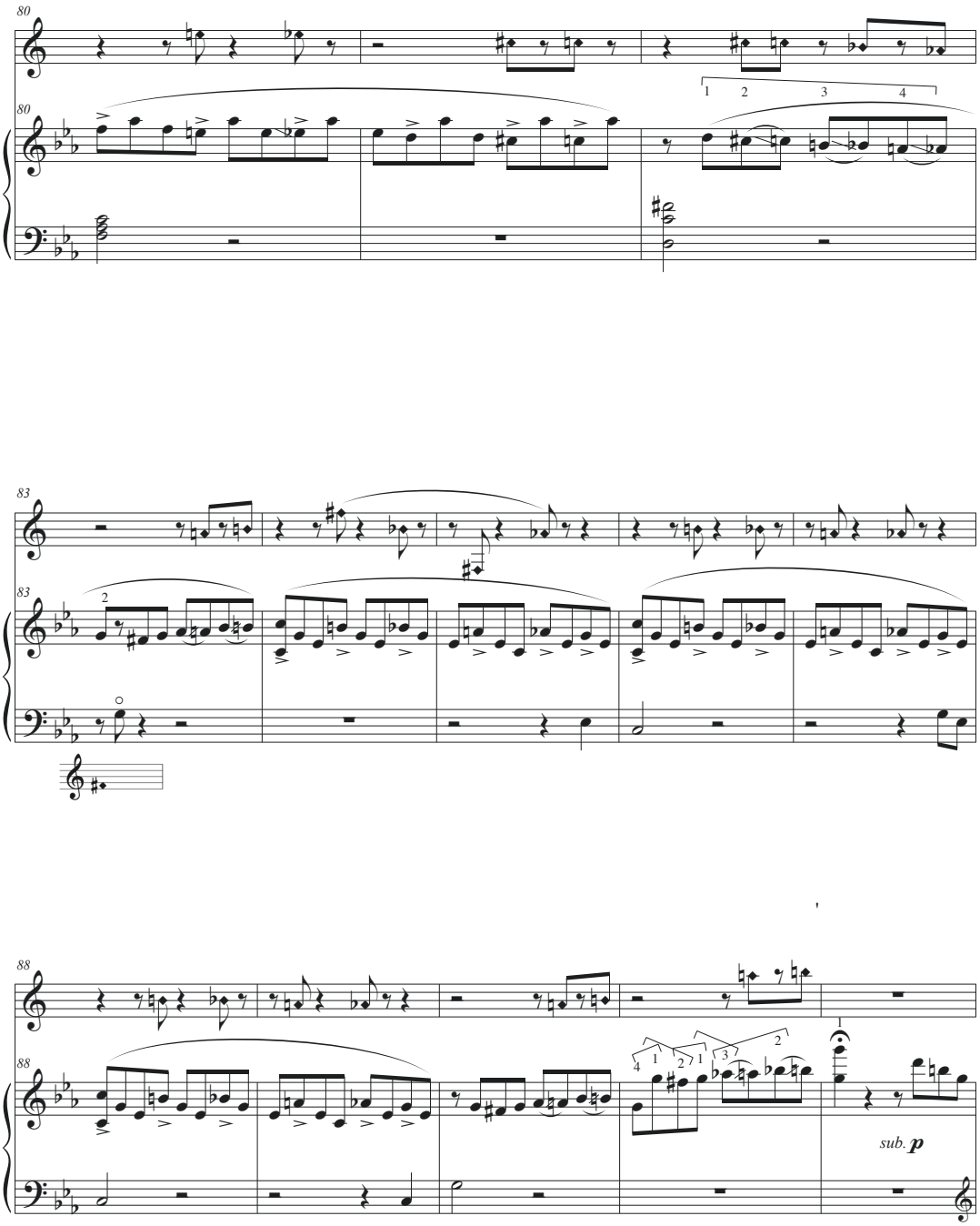


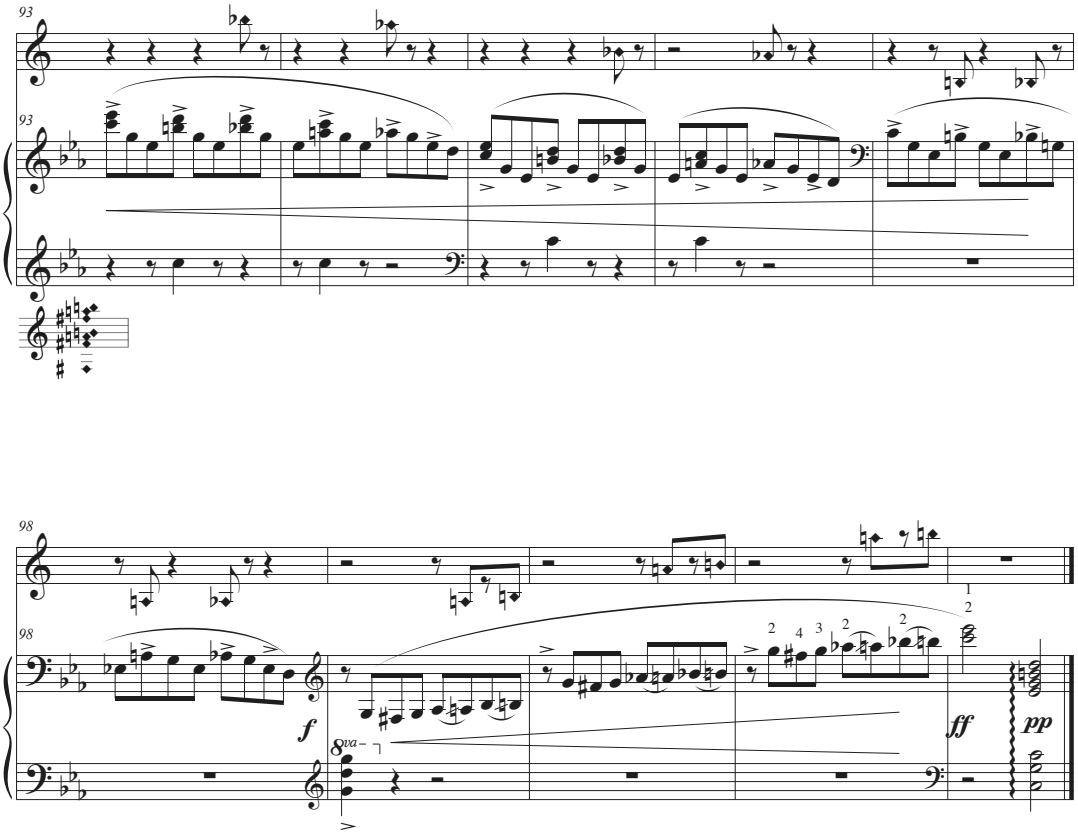




*optional pause/muffle
for page turn/dramatic effect


62
w/ RH knuckles
66
66
mf
71
71
1.
2.
f
76
76
mf

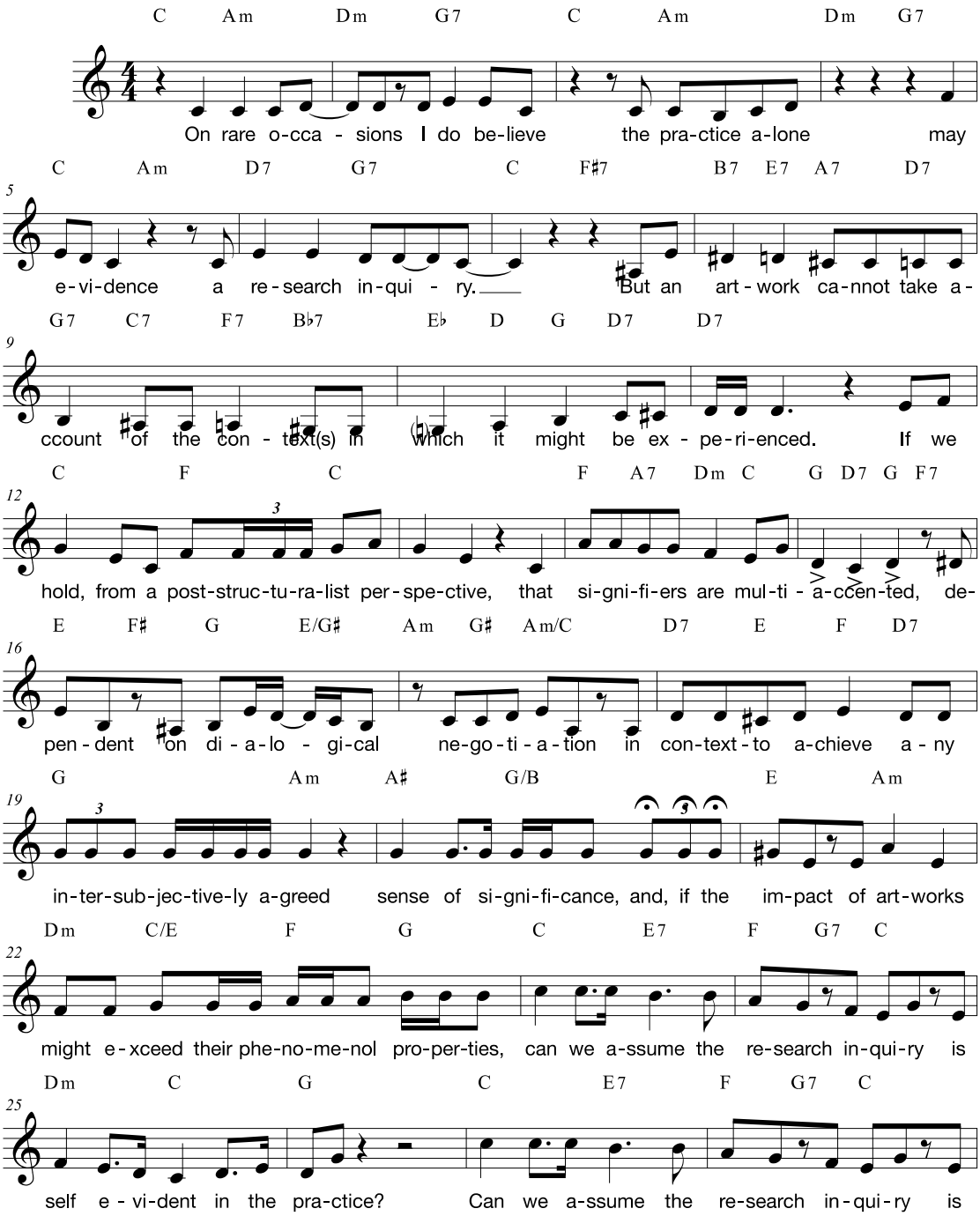

80
80
1 2 3 4
83
83
2
88
88
4 1 2 1 3 2
sub. p

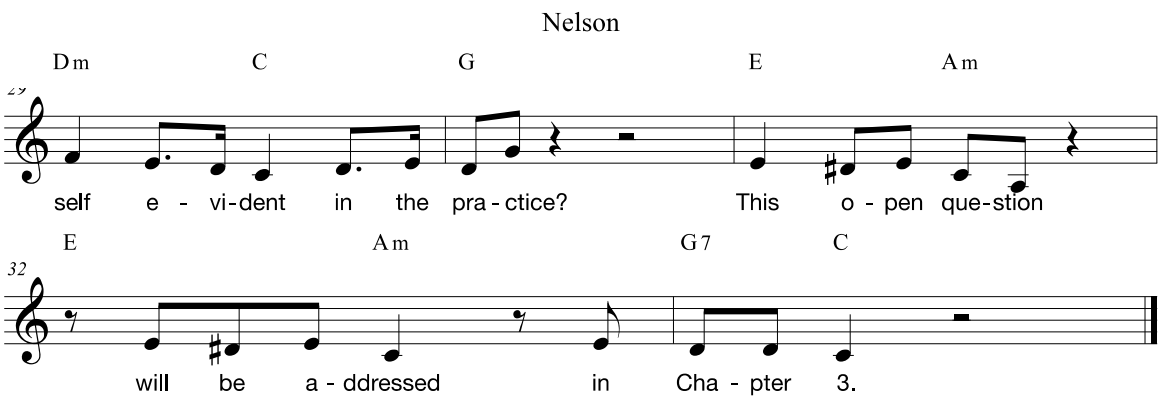

93
93
98
98
f
8va
ff
pp

Nelson

Lyrics by Robin Nelson

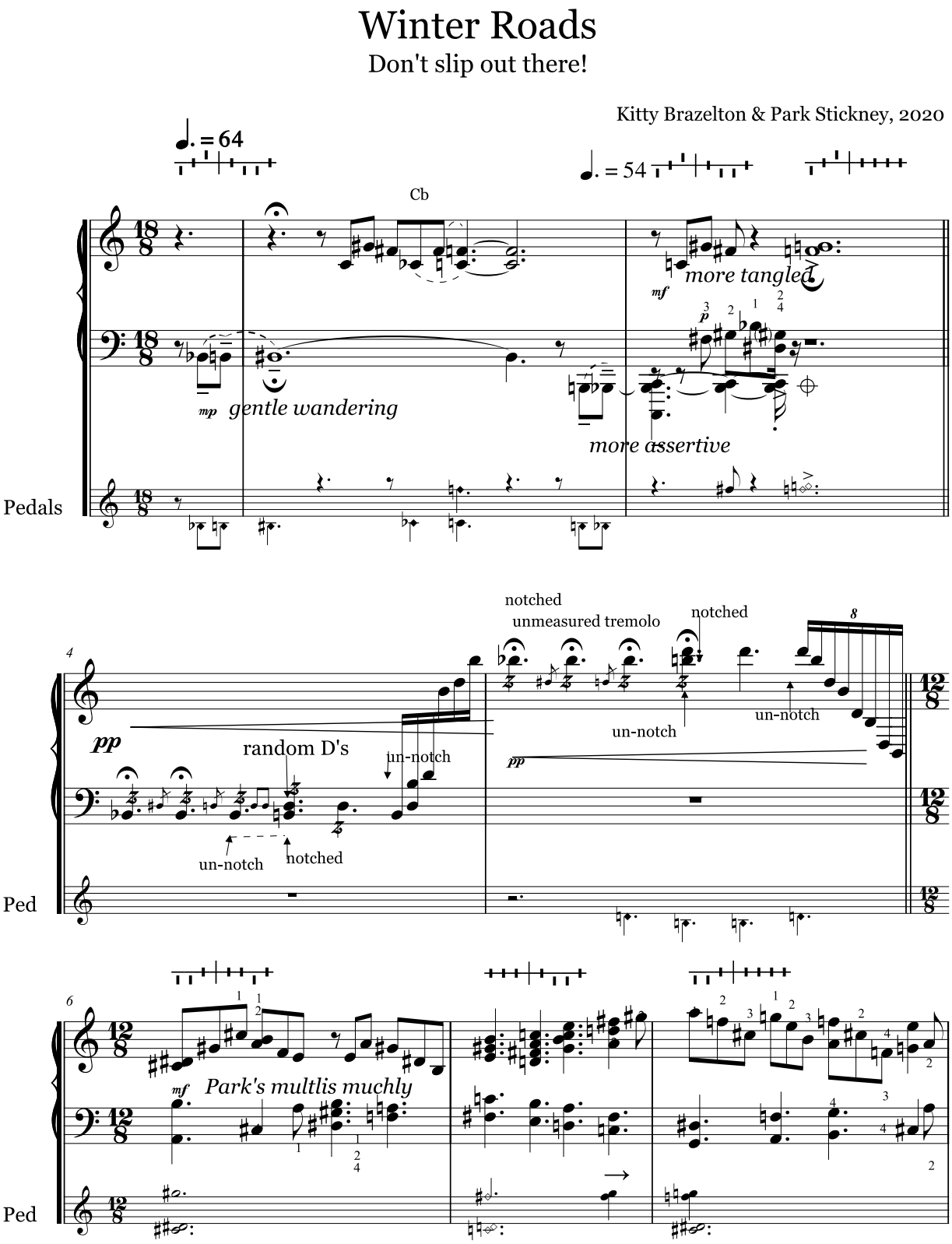
Music by Park Stickney

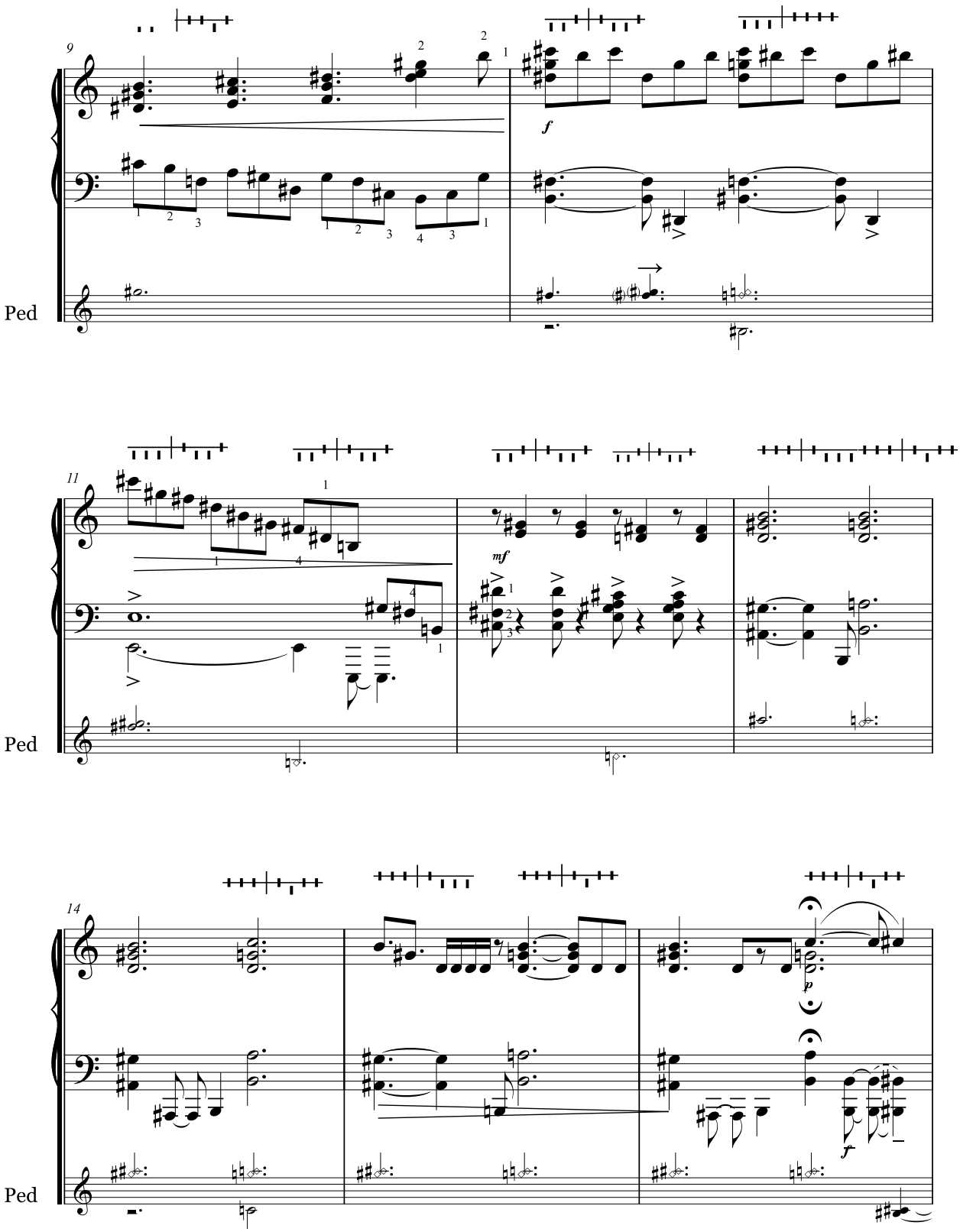


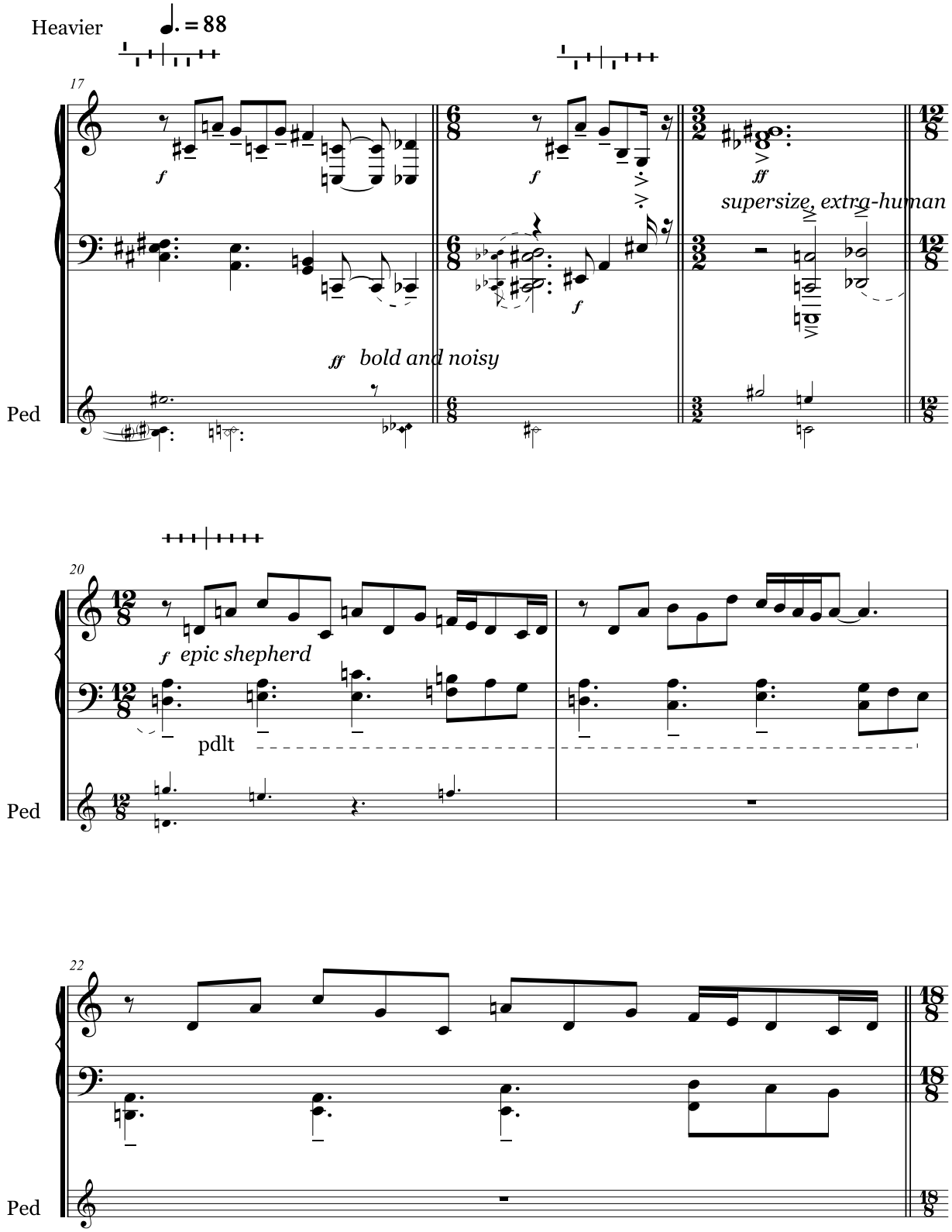

Nelson
Dm C G E Am
self e - vi-dent in the pra - ctice? This o - pen que-stion
E Am G7 C
will be a - ddressed in Cha - pter 3.

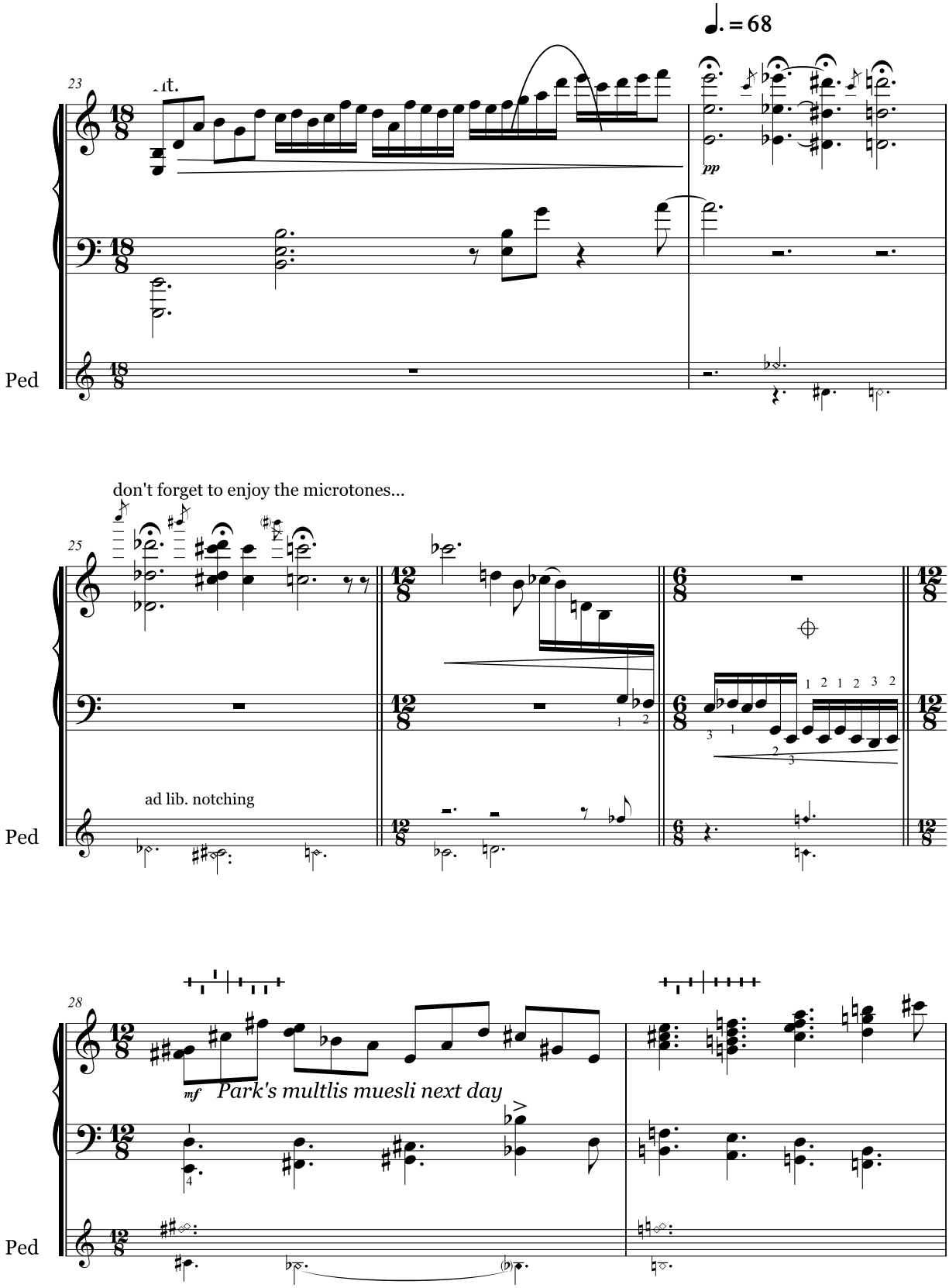
Appendix E: Working with Other Composers

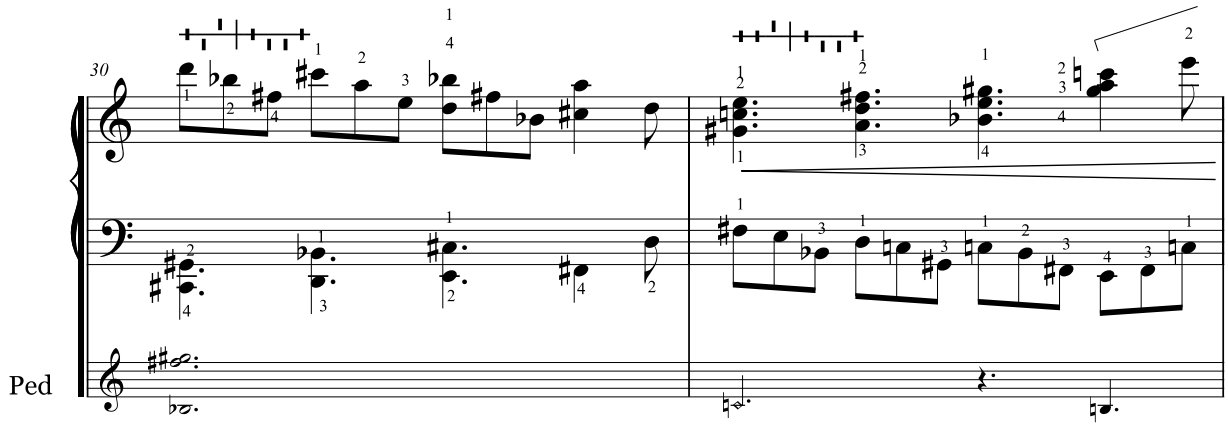
E1. Kitty Brazelton, *Winter Roads*

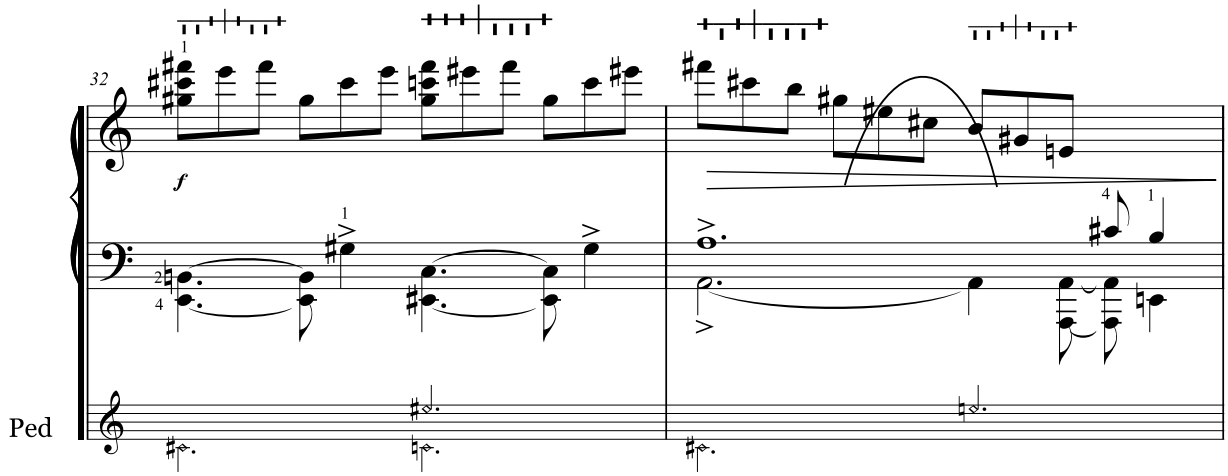


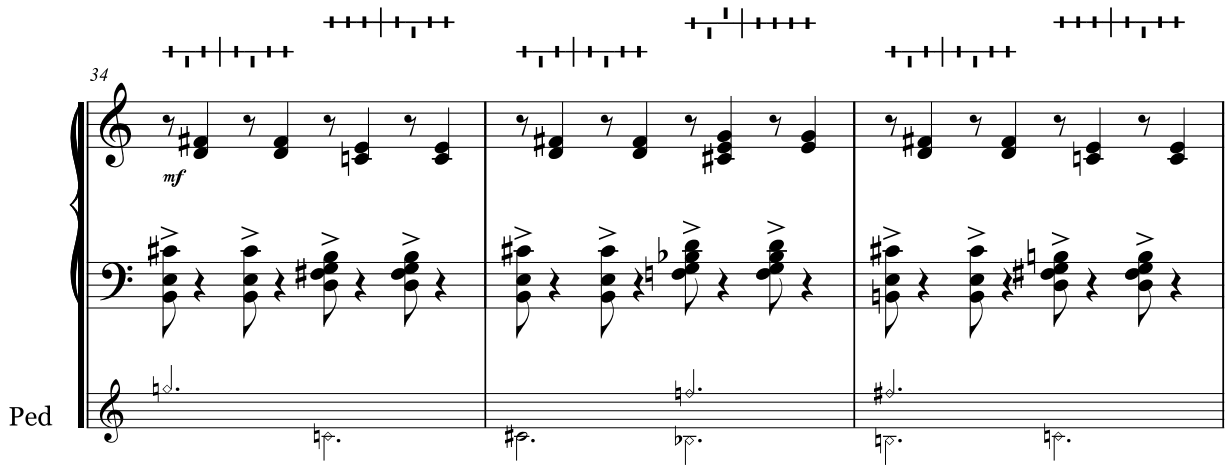

9
f
Ped
11
mf
Ped
14
p
f
Ped

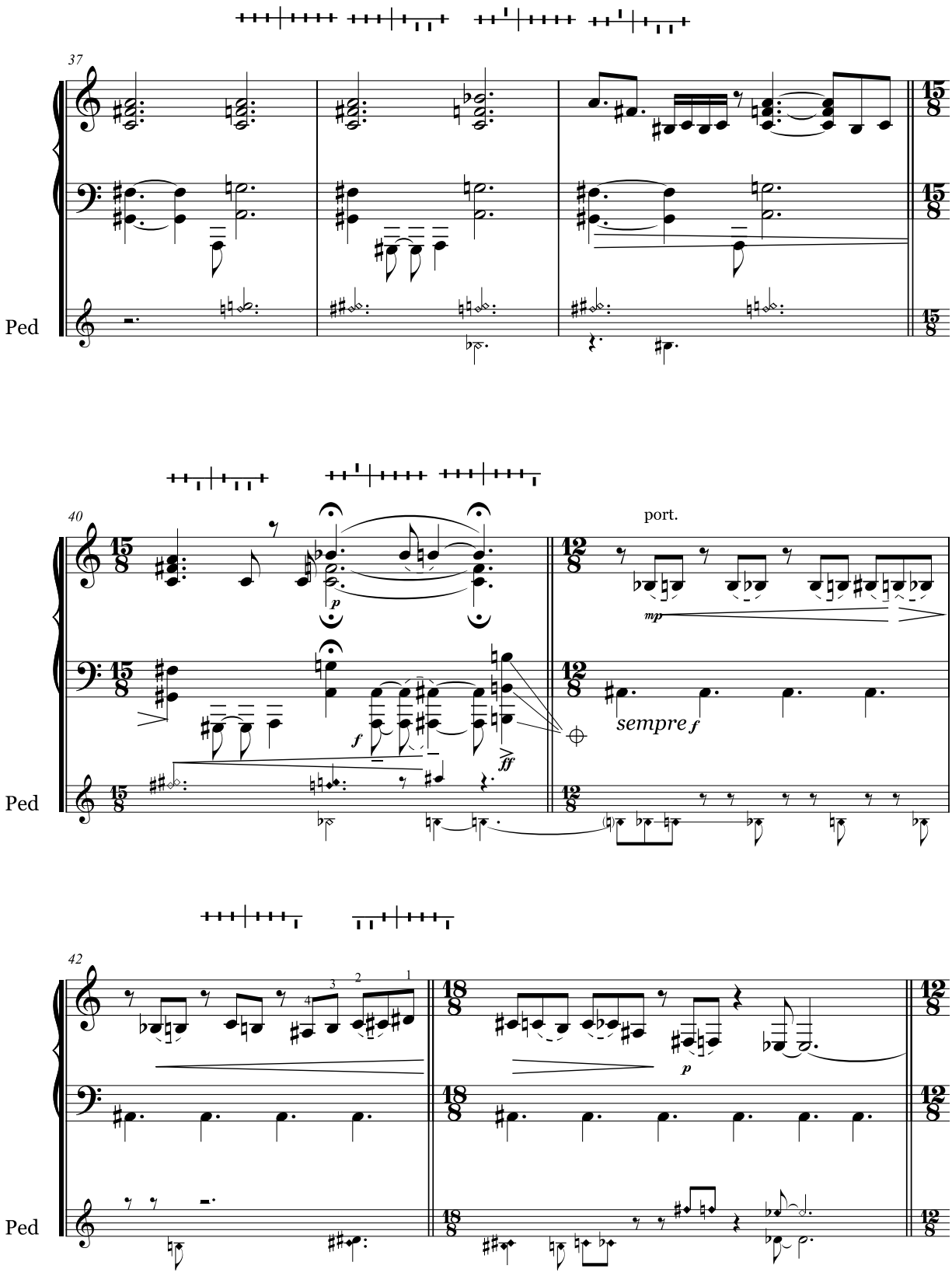

Heavier
♩. = 88
17
f
f
ff
supersize, extra-human
ff bold and noisy
Ped
20
f epic shepherd
pdlt
Ped
22
Ped

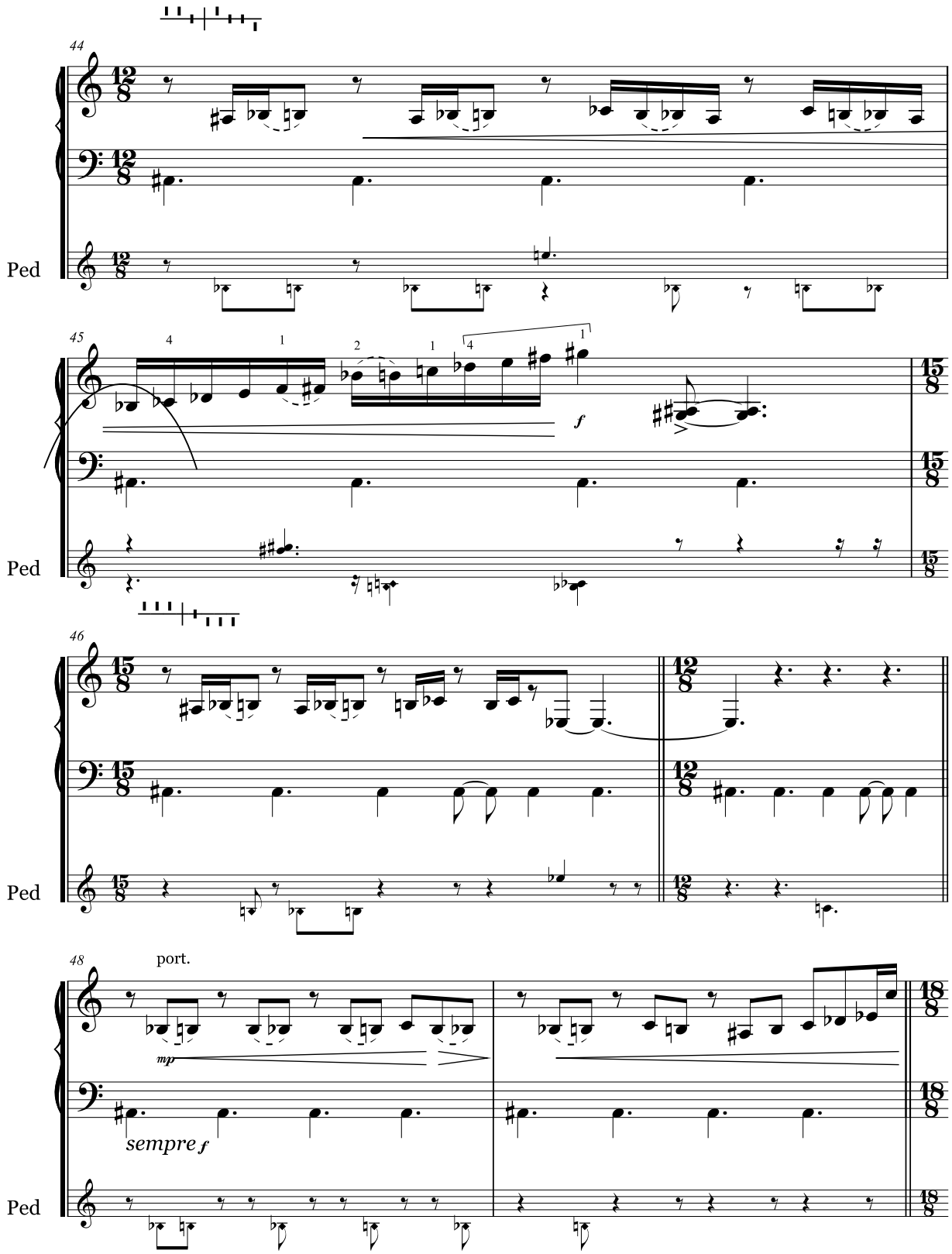

♩. = 68
23
rit.
pp
Ped
don't forget to enjoy the microtones...
25
ad lib. notching
Ped
28
mf Park's multlis muesli next day
Ped

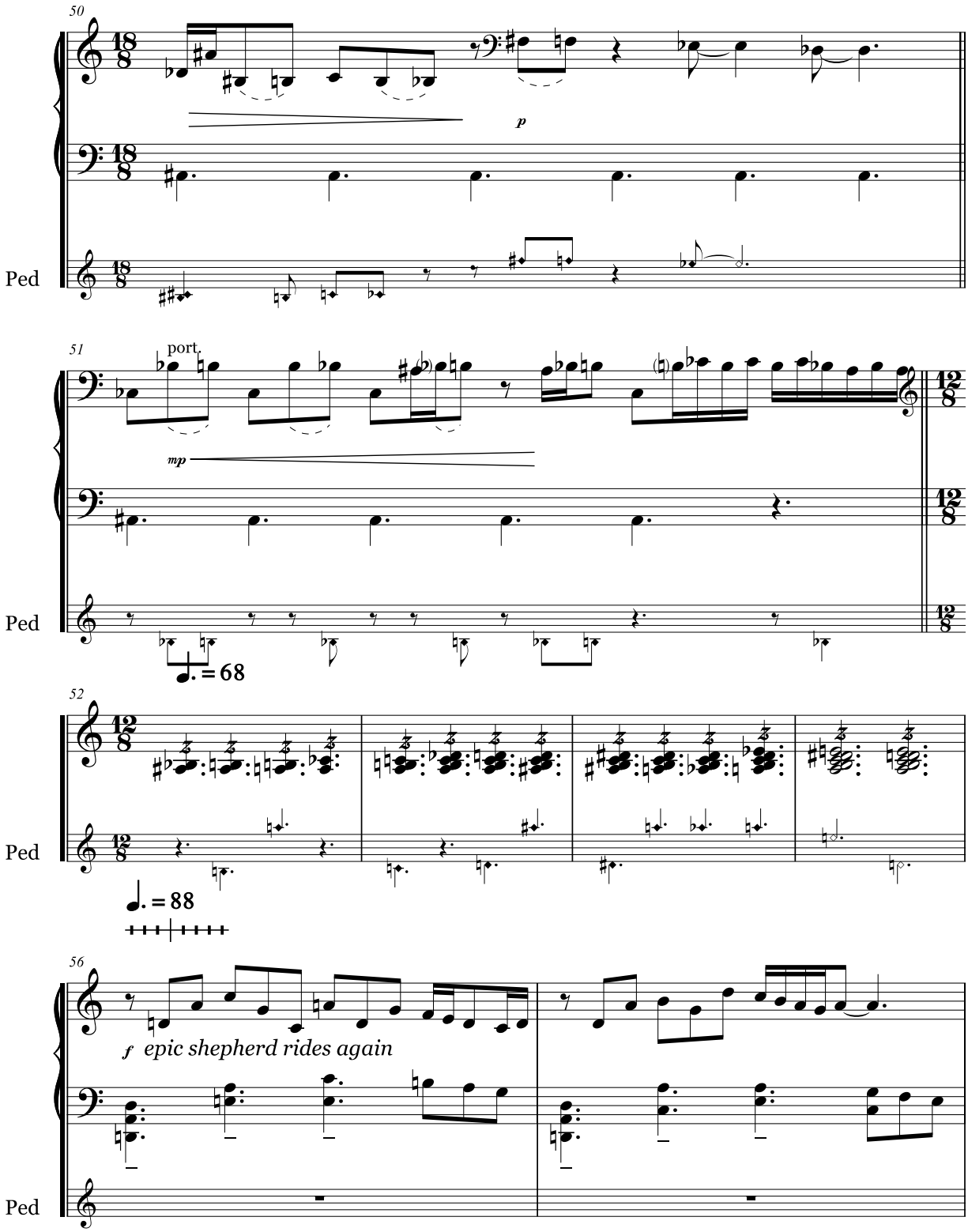

30
Ped

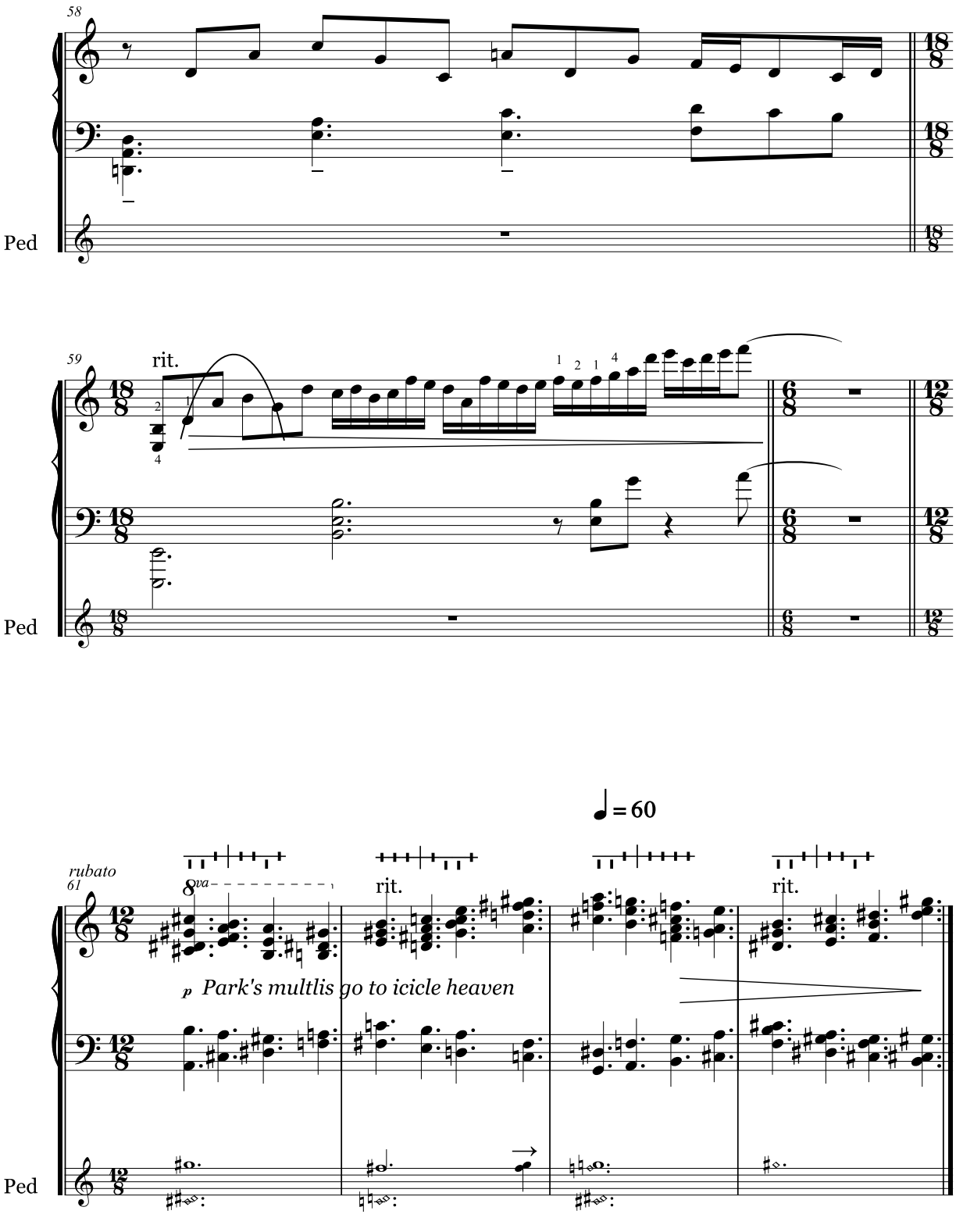

32
f
Ped


34
mf
Ped


37
Ped
40
port.
mp
sempre f
f
ff
Ped
42
p
Ped

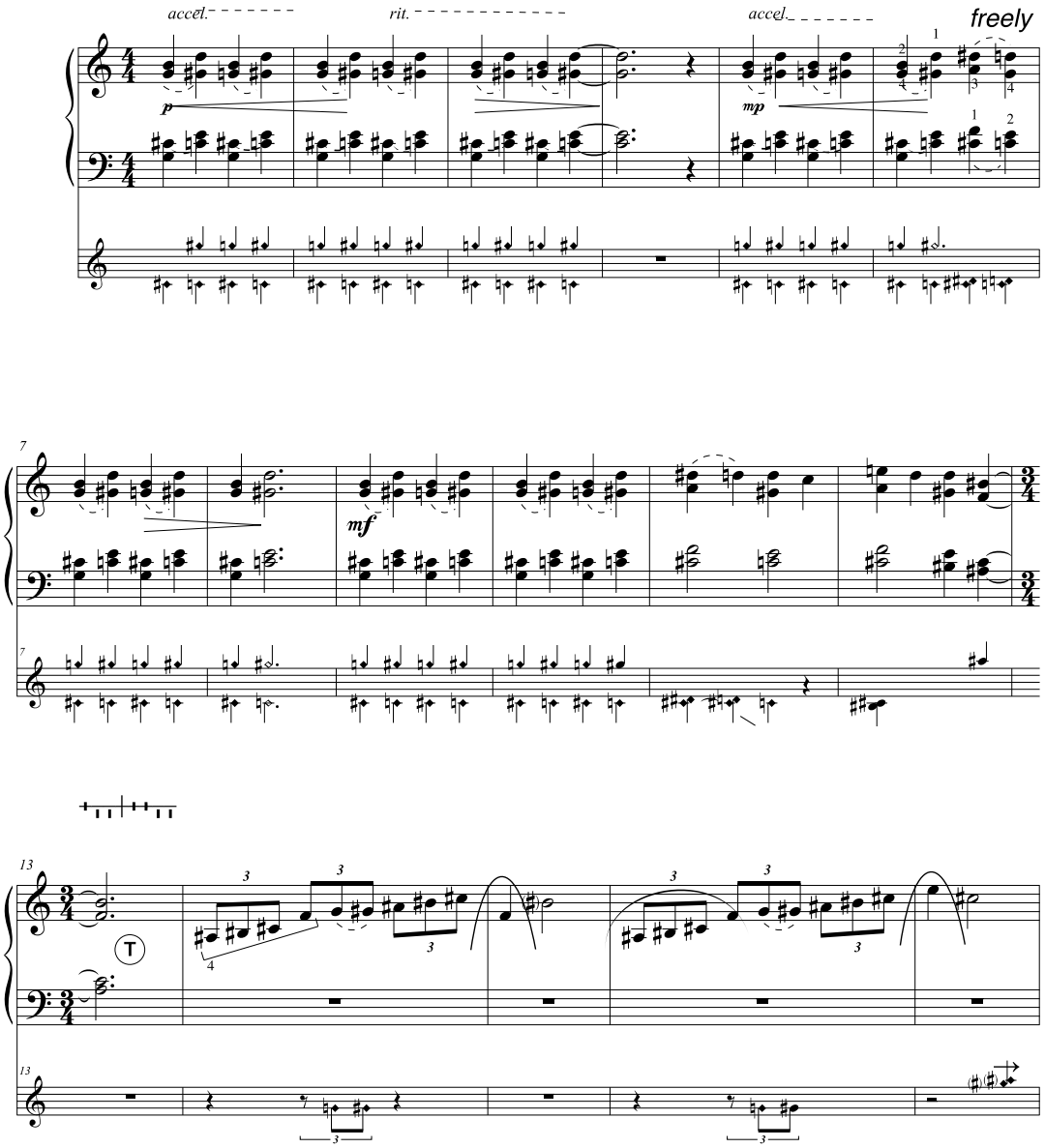

44
Ped
45
f
Ped
46
Ped
48
port.
mp
sempre f
Ped

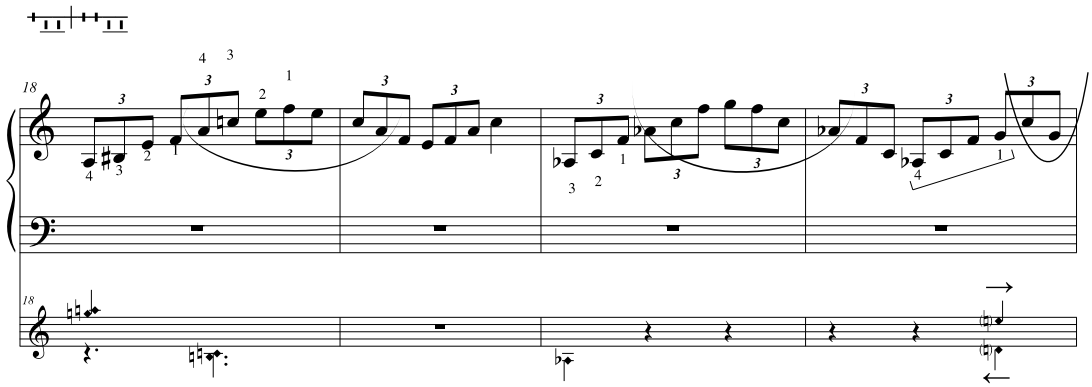

50
18/8
p
Ped
51
port.
mp
12/8
Ped
♩. = 68
52
12/8
Ped
♩. = 88
56
f epic shepherd rides again
Ped

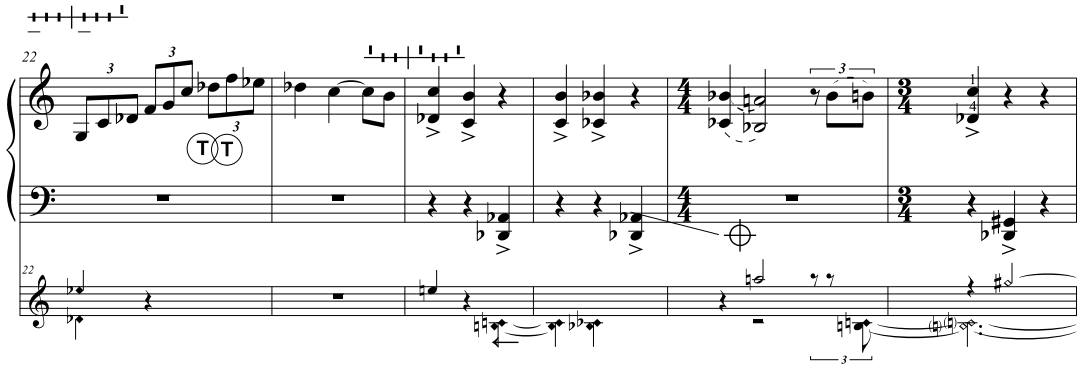

58
Ped
59
rit.
Ped
rubato
61
8va
rit.
rit.
♩ = 60
p Park's multlis go to icicle heaven
Ped

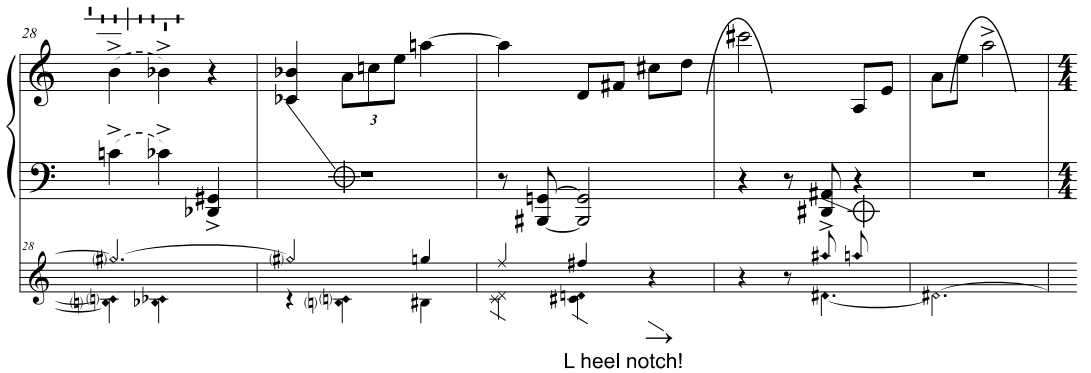
The Carnival

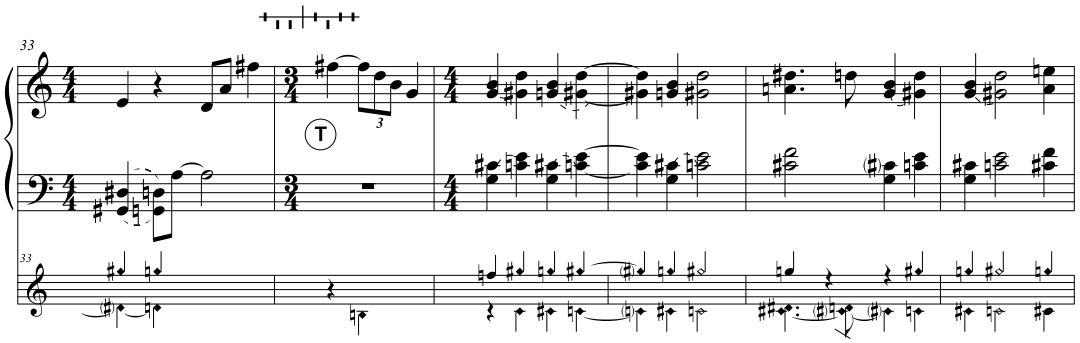
SEAN CALLERY

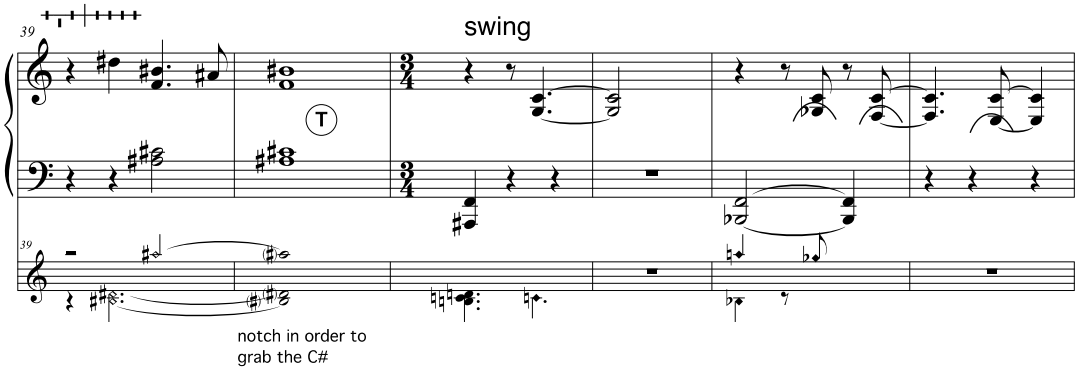


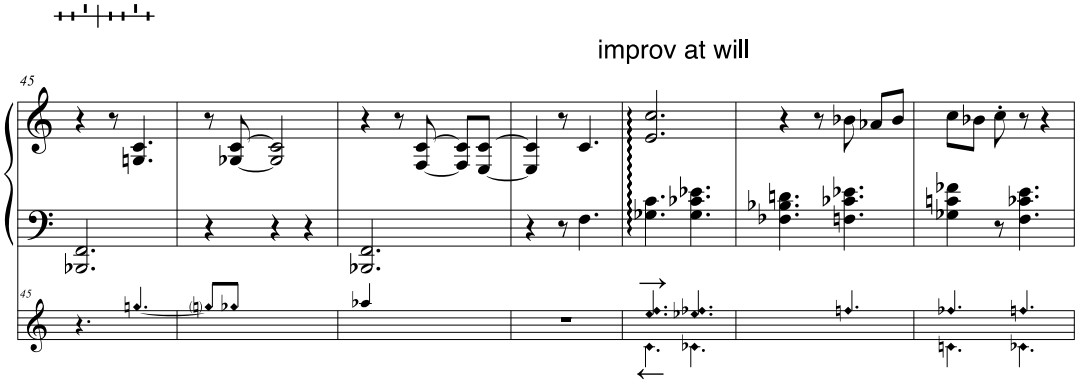


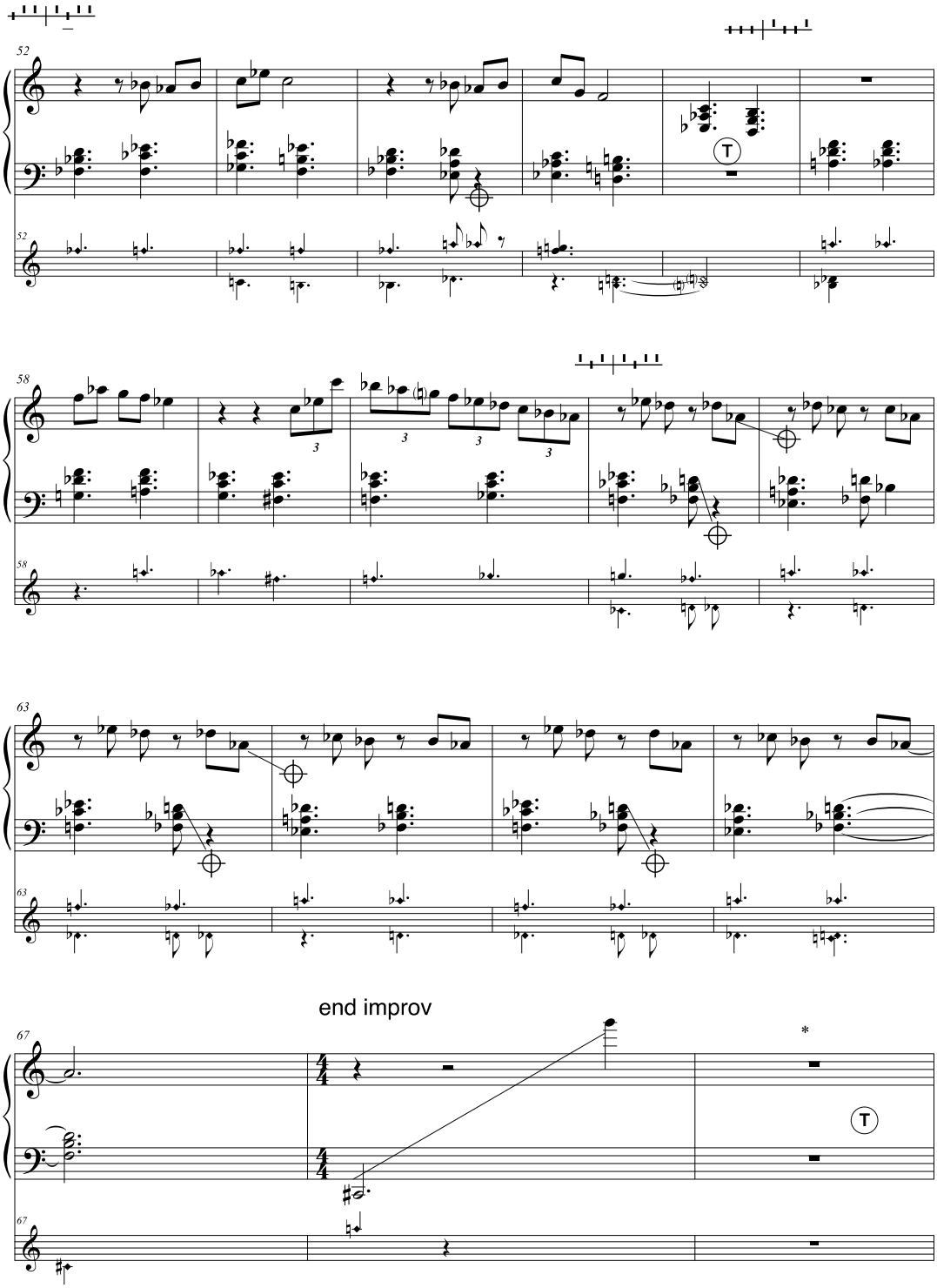


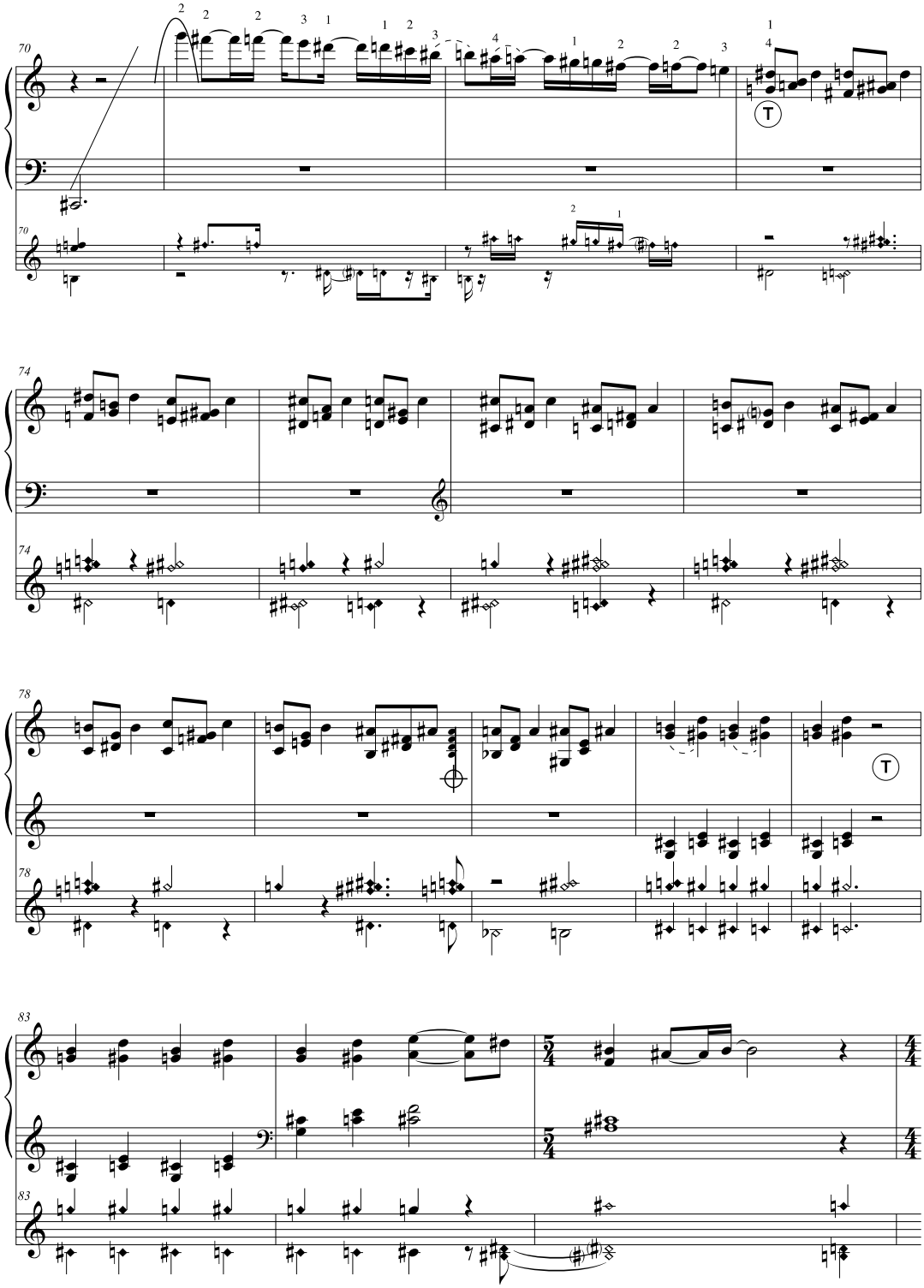

L heel notch!

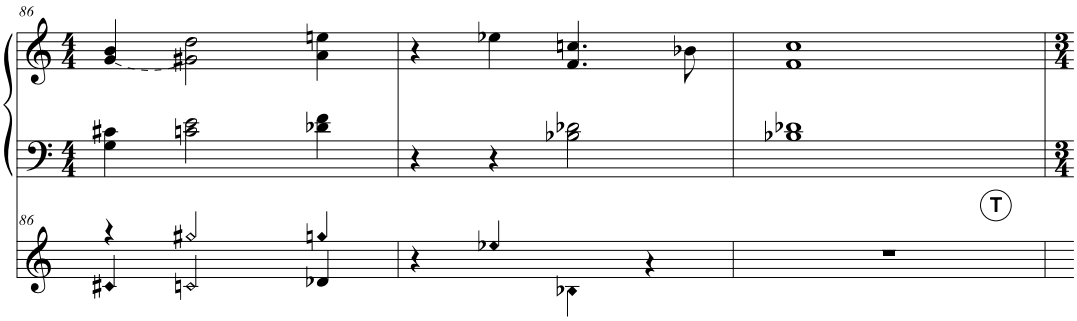

33
T
3
33

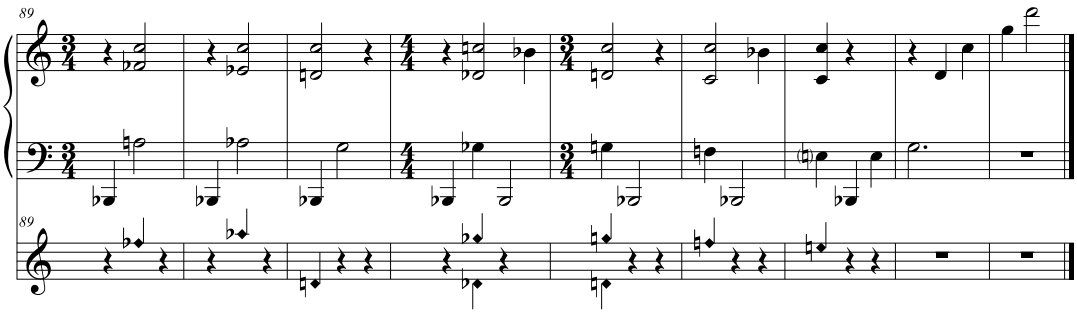

39
swing
T
39
notch in order to
grab the C#


improv at will
45
45


52
T
58
3
3
3
63
end improv
67
*
T

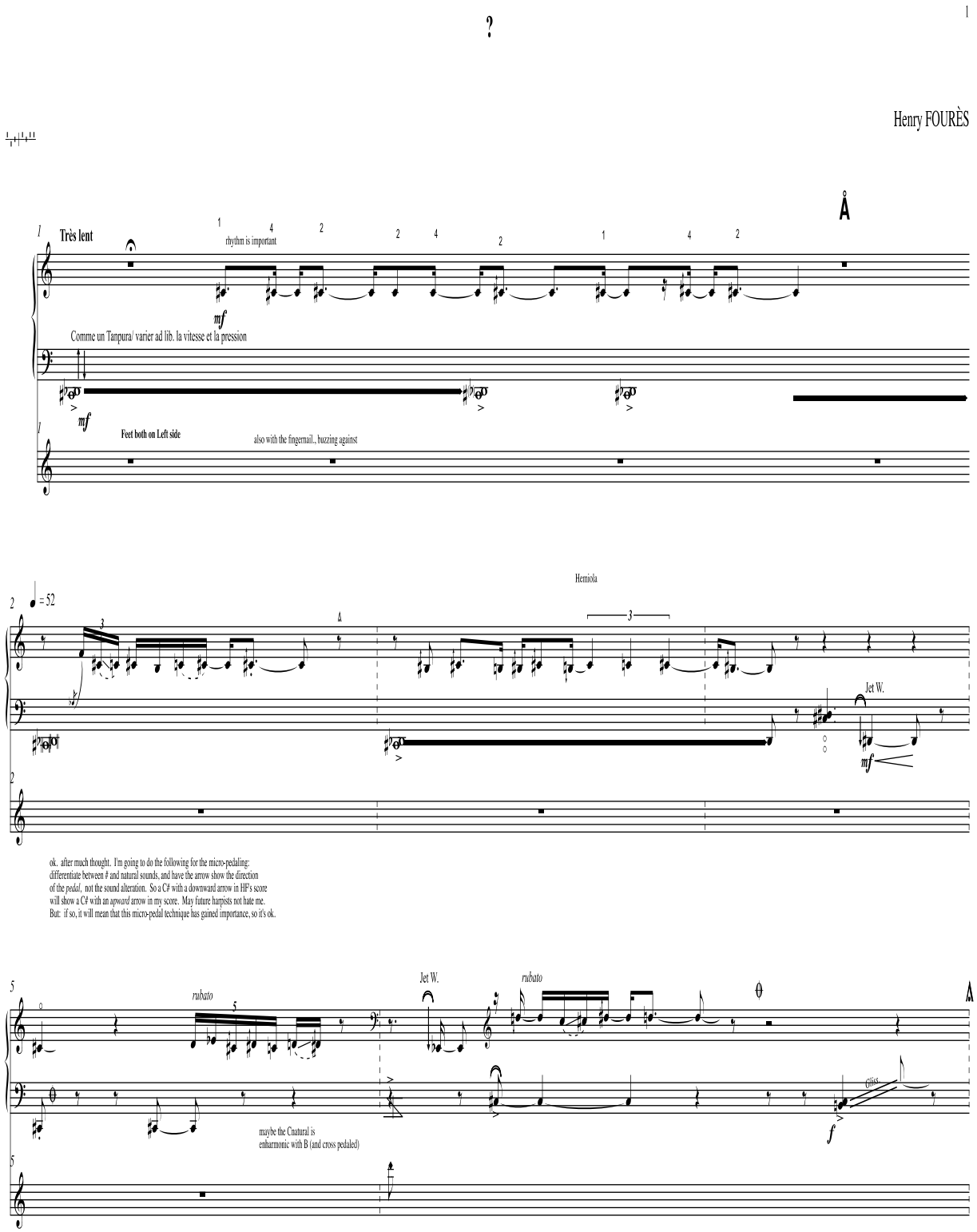



86
86
T


89
89

E3. Henry Fourès, *Pièce pour Harpe*

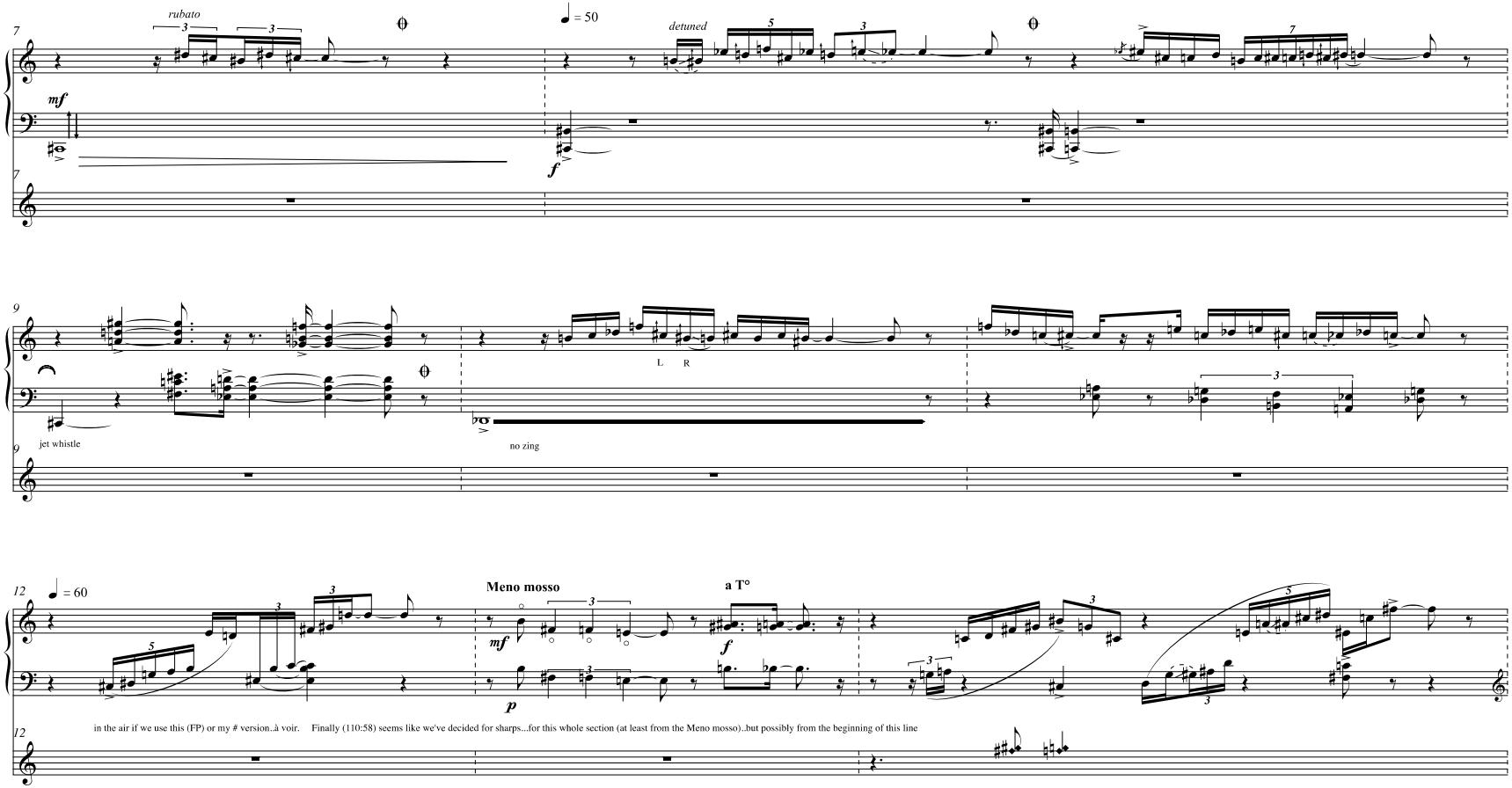
E3a. June 2021 Version



2

Not sure for ms. 7. How to zing the C# (or the Db) and play the RH.. maybe the RH should be Eb after all?

or maybe the first 2 notes are D# to Db, B# crainté



Note: layer 2 is 16th notes, layer 1 is "melody"

"K" indicates a knuckle muffle between the top written note and the next string up (for ex. F + G)

15

mf

f

17

mf

f

♪ = 144

20

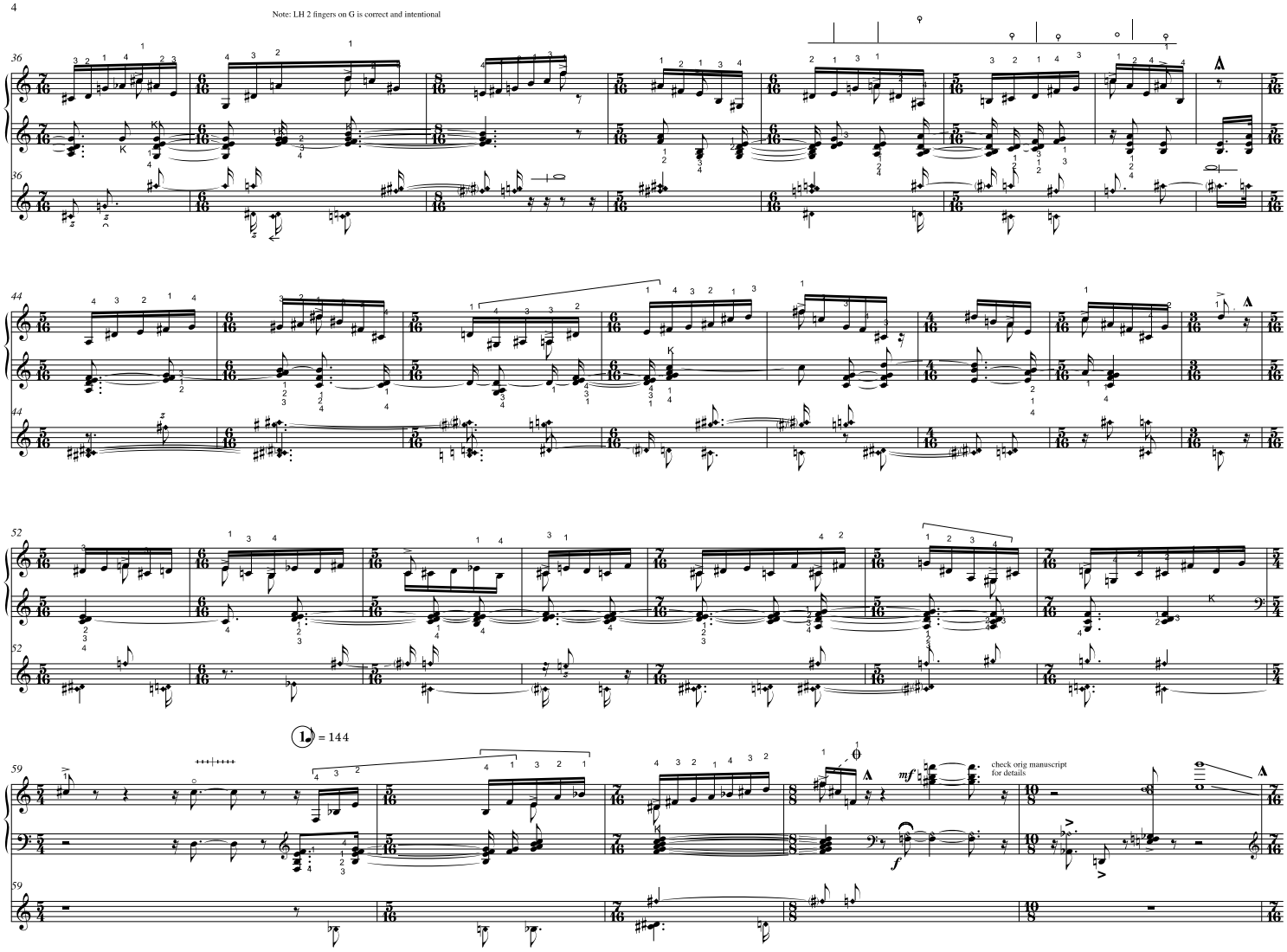
Frotté ad lib

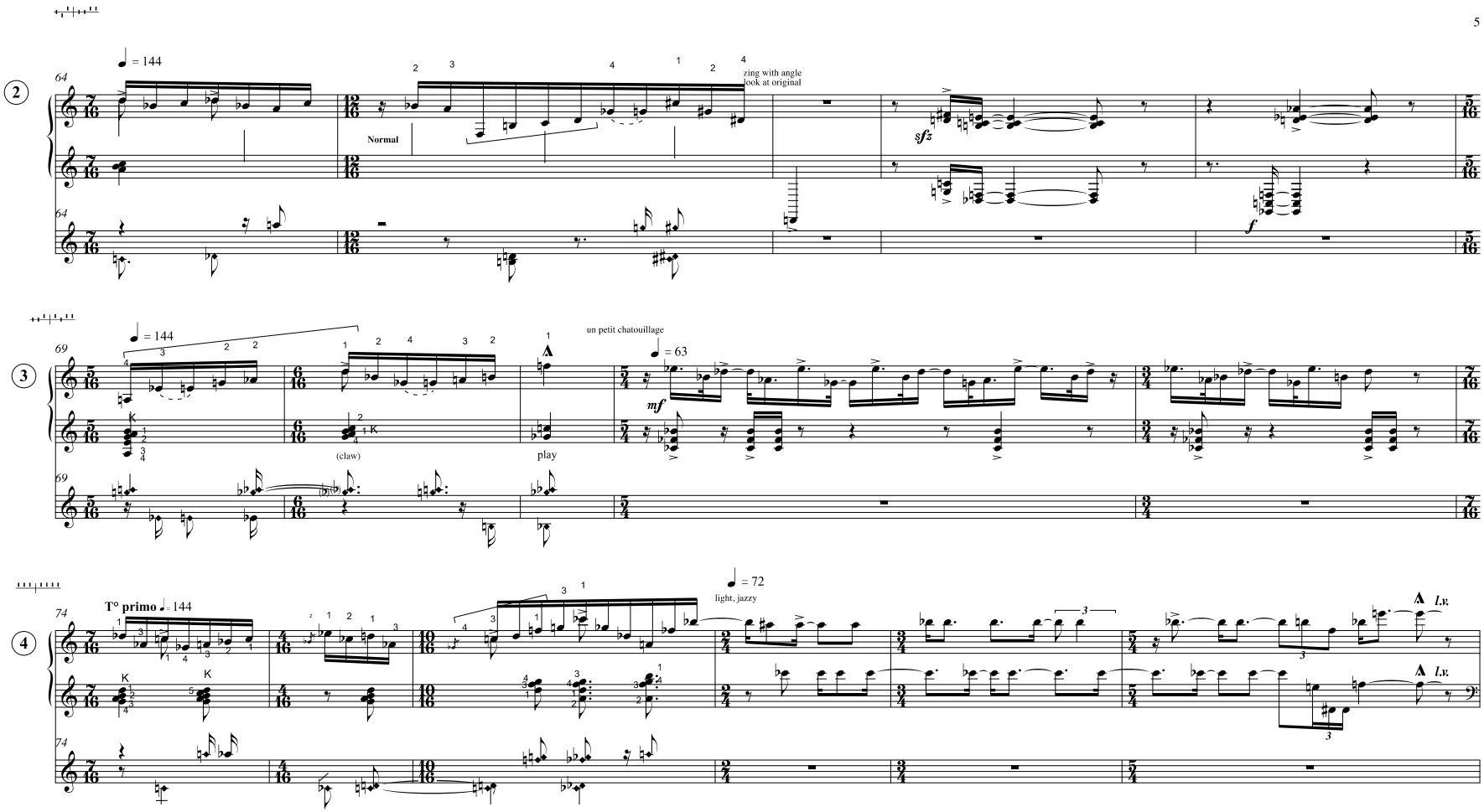
1

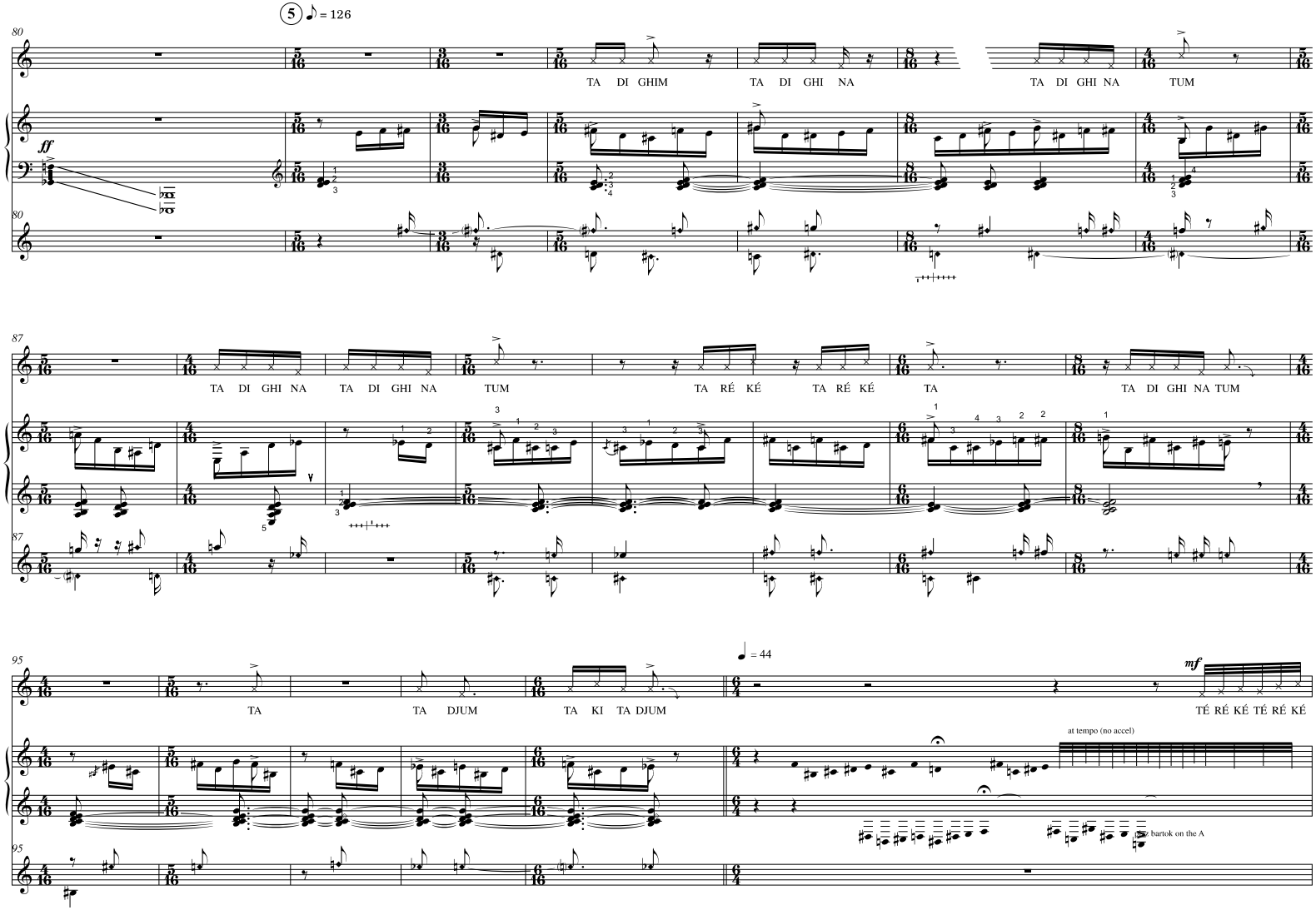
28

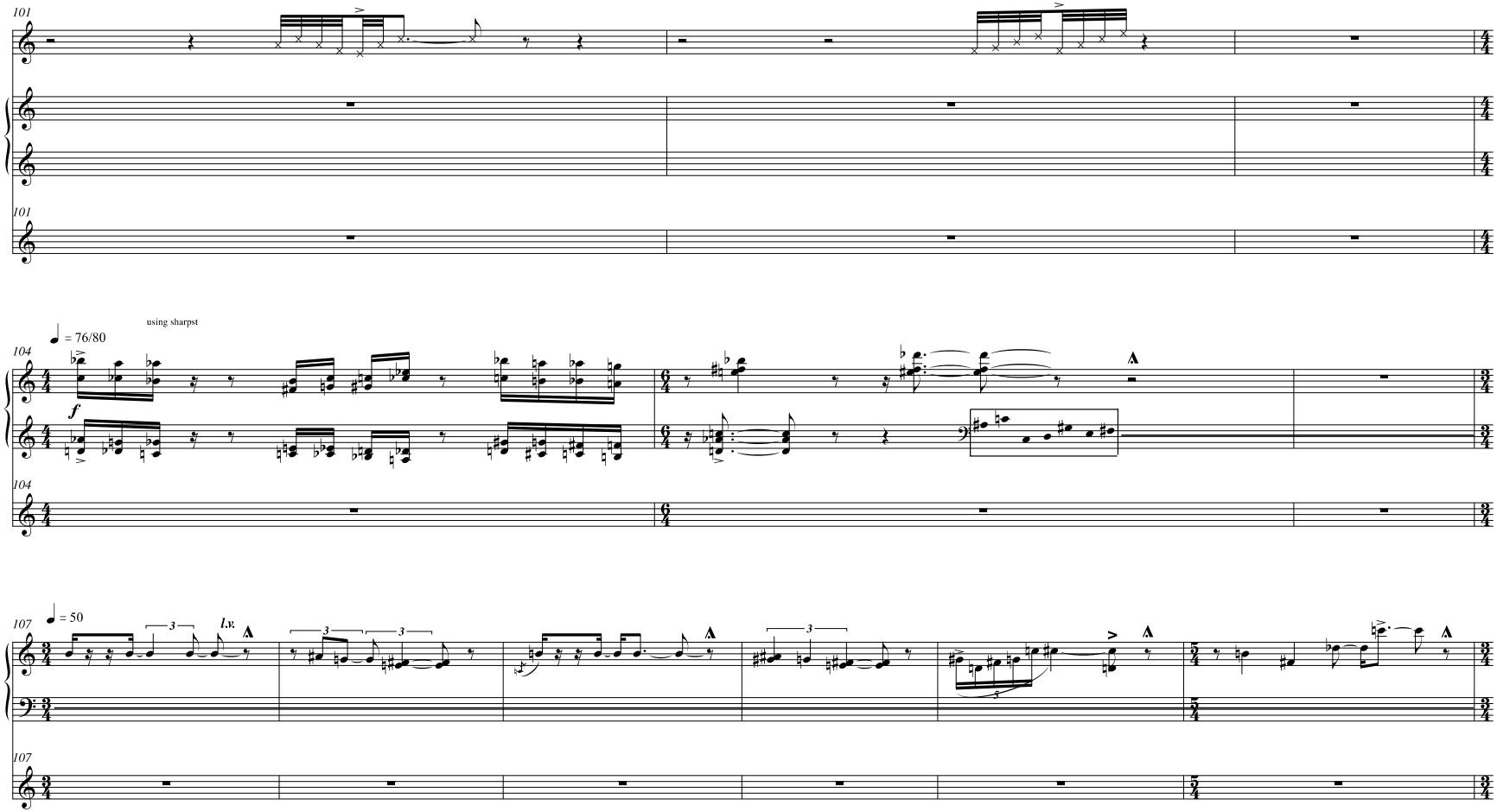
2

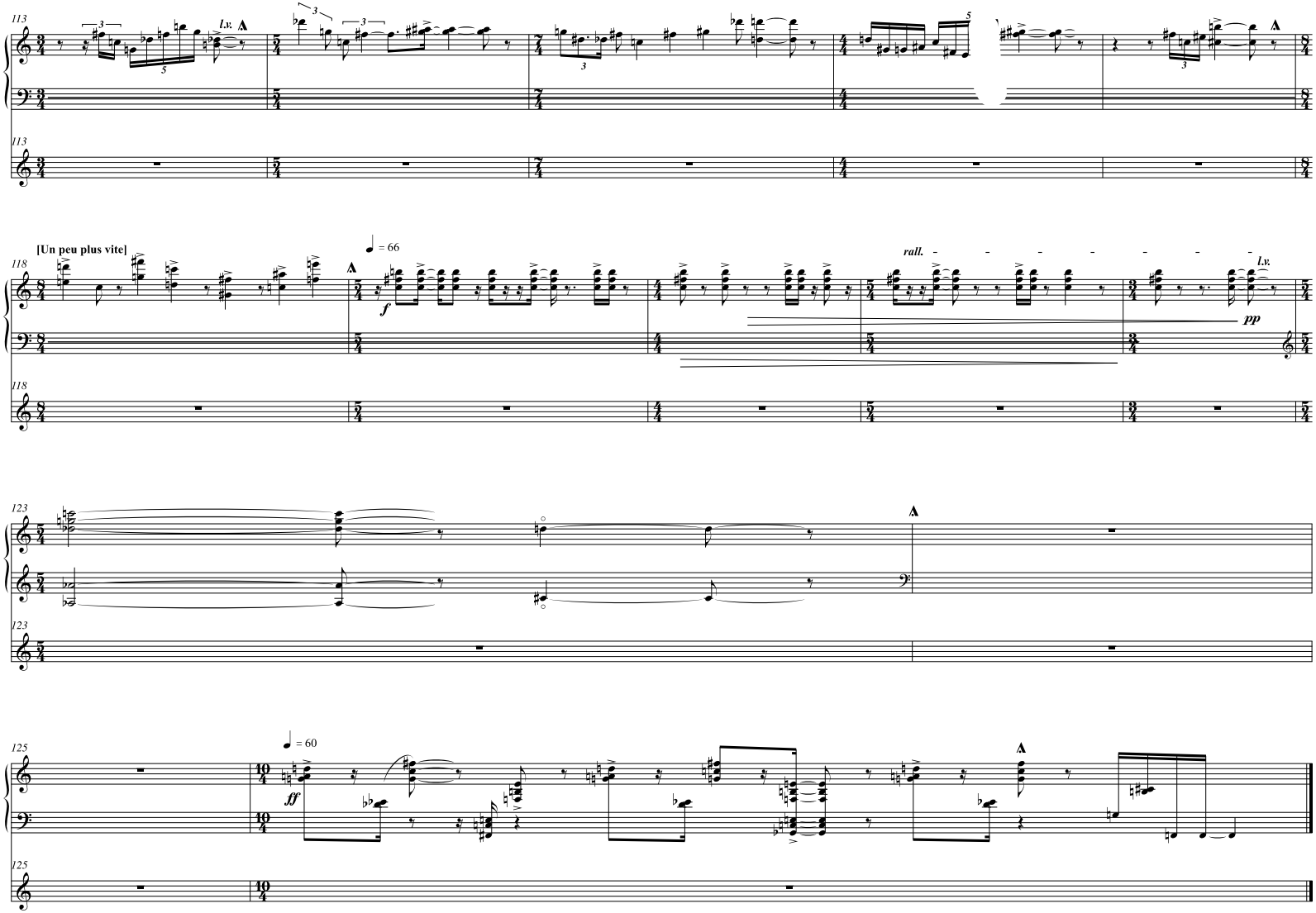
Note: LH 2 fingers on G is correct and intentional



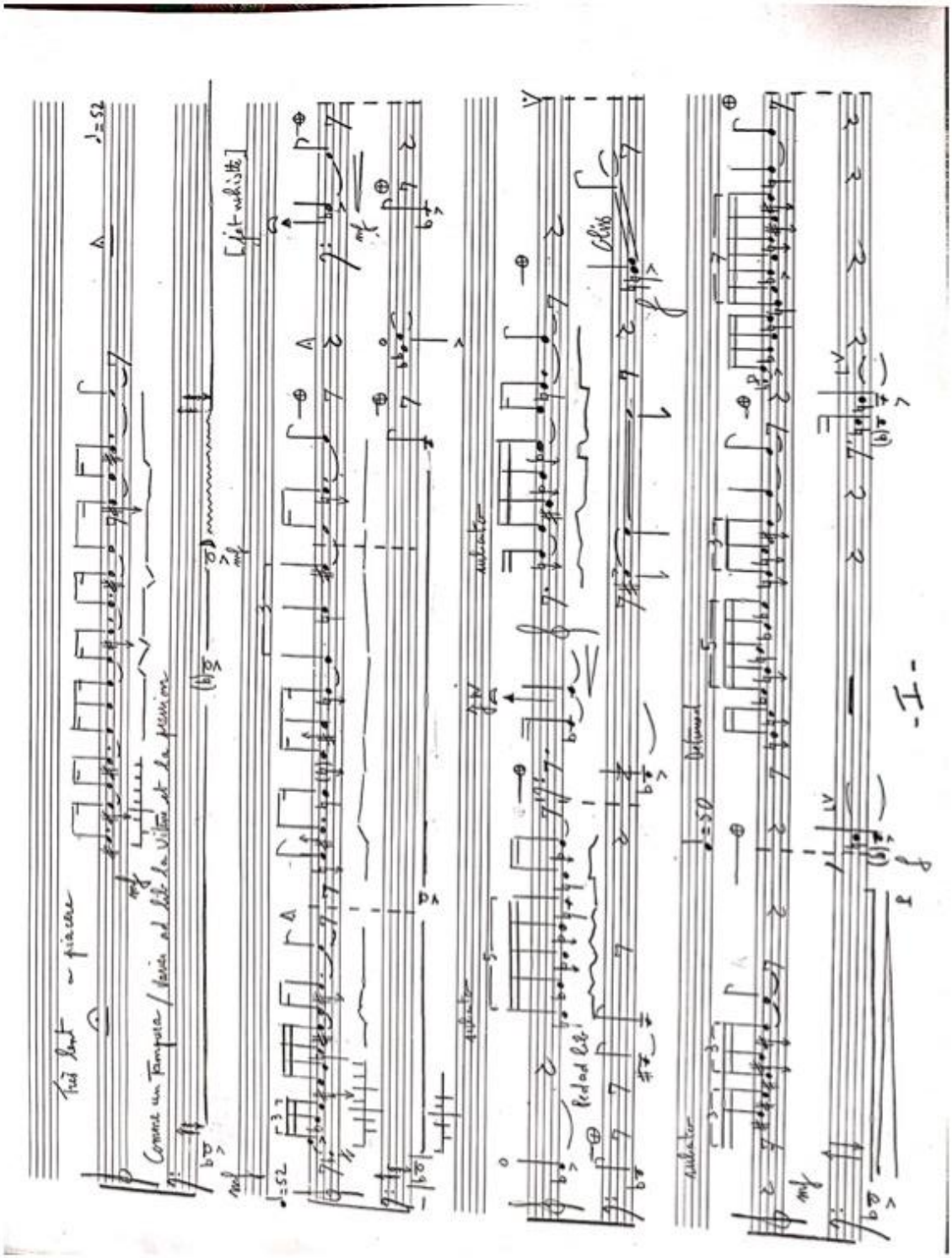

2
64
= 144
Normal
zing with angle
look at original
sfz
f
3
69
= 144
(claw)
play
un petit chatouillage
= 63
mf
4
74
T° primo = 144
= 72
light, jazzy
l.v.
l.v.

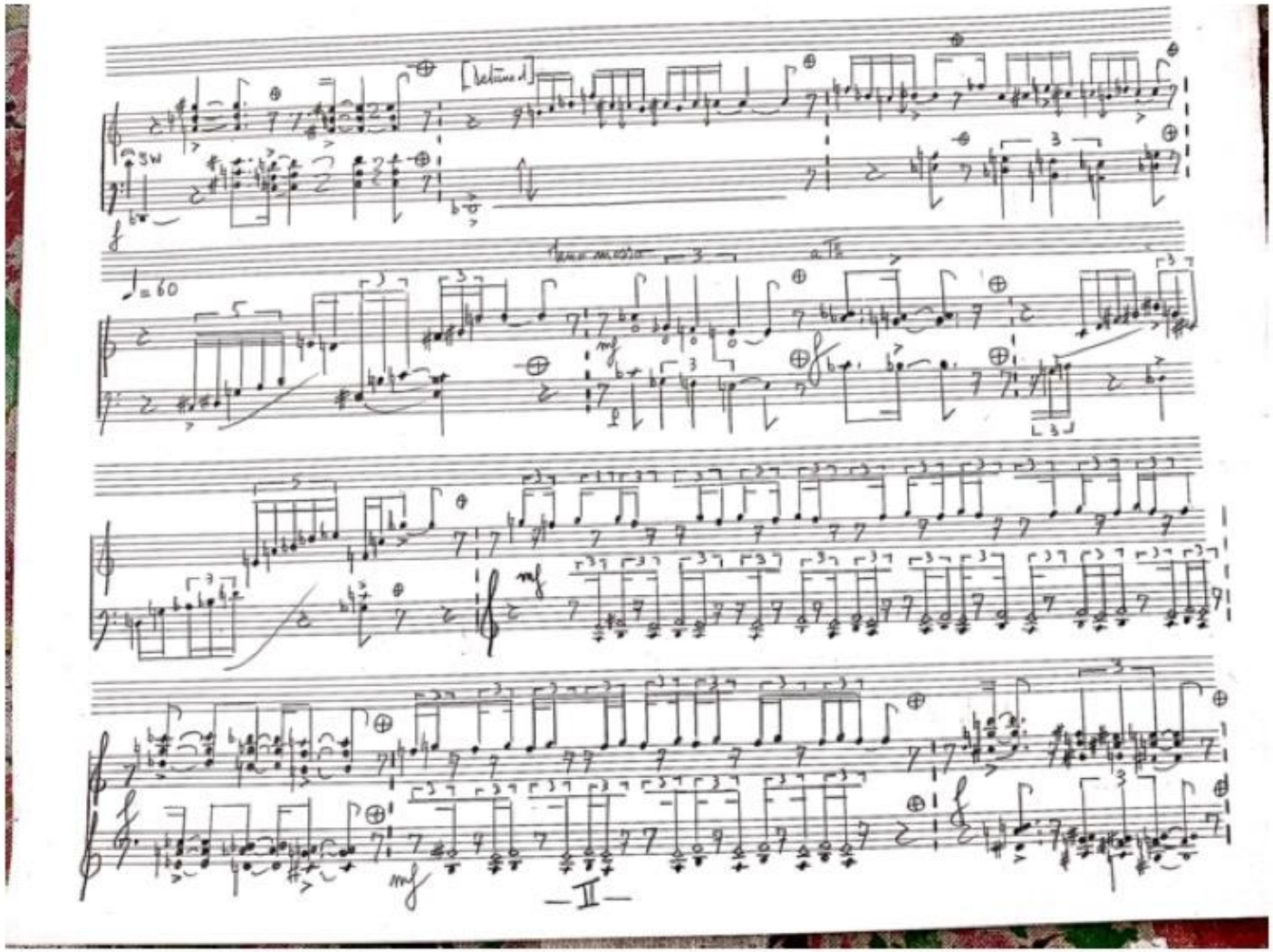

5 ♪ = 126
80
TA DI GHIM
TA DI GHI NA
TA DI GHI NA
TUM
ff
87
TA DI GHI NA
TA DI GHI NA
TUM
TA RÉ KÉ
TA RÉ KÉ
TA
TA DI GHI NA TUM
95
TA
TA DJUM
TA KI TA DJUM
♩ = 44
mf
TÉ RÉ KÉ TÉ RÉ KÉ
at tempo (no accel)
(8) bartok on the A

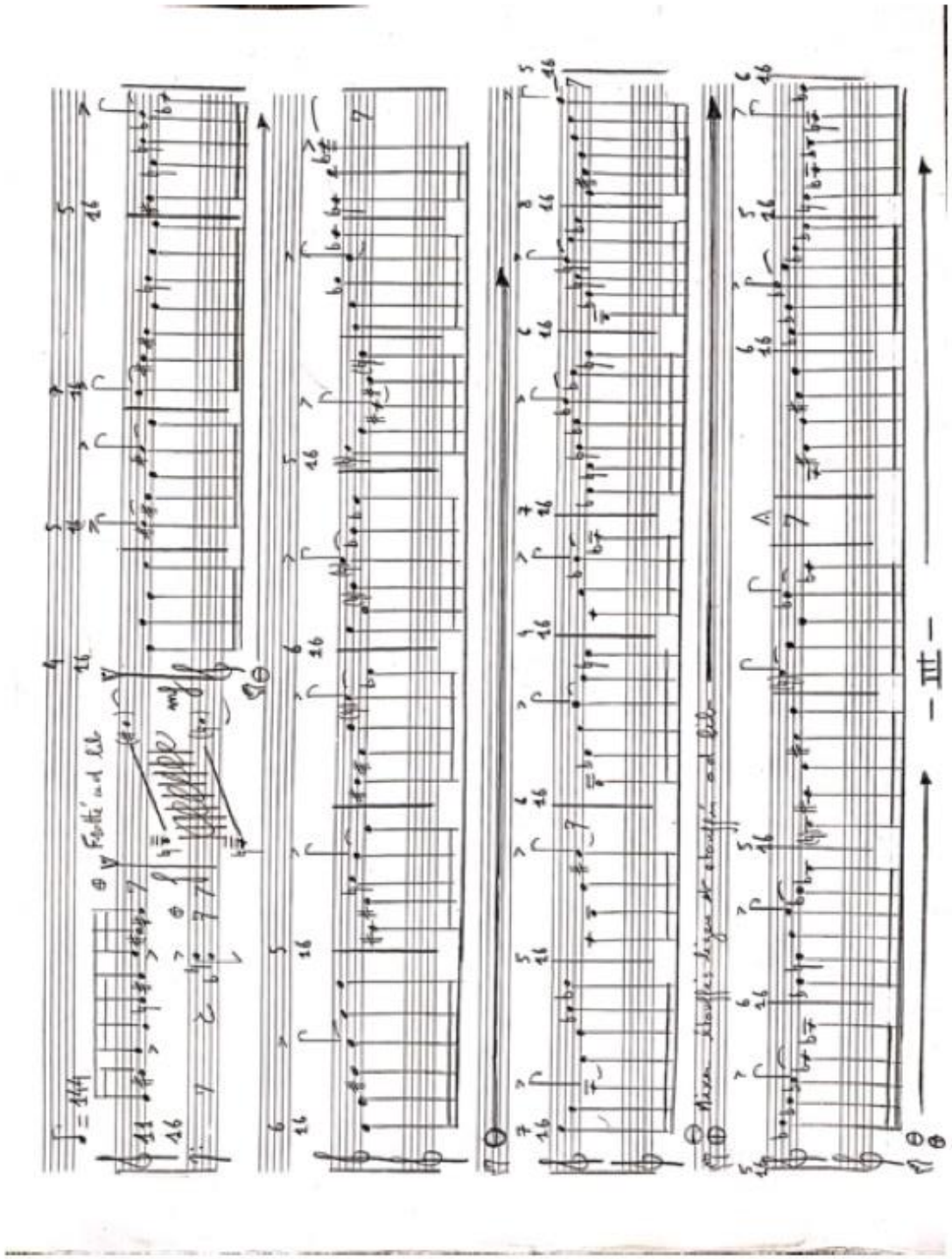

101
101
using sharpst
= 76/80
104
f
104
= 50
107
3
l.v.
107

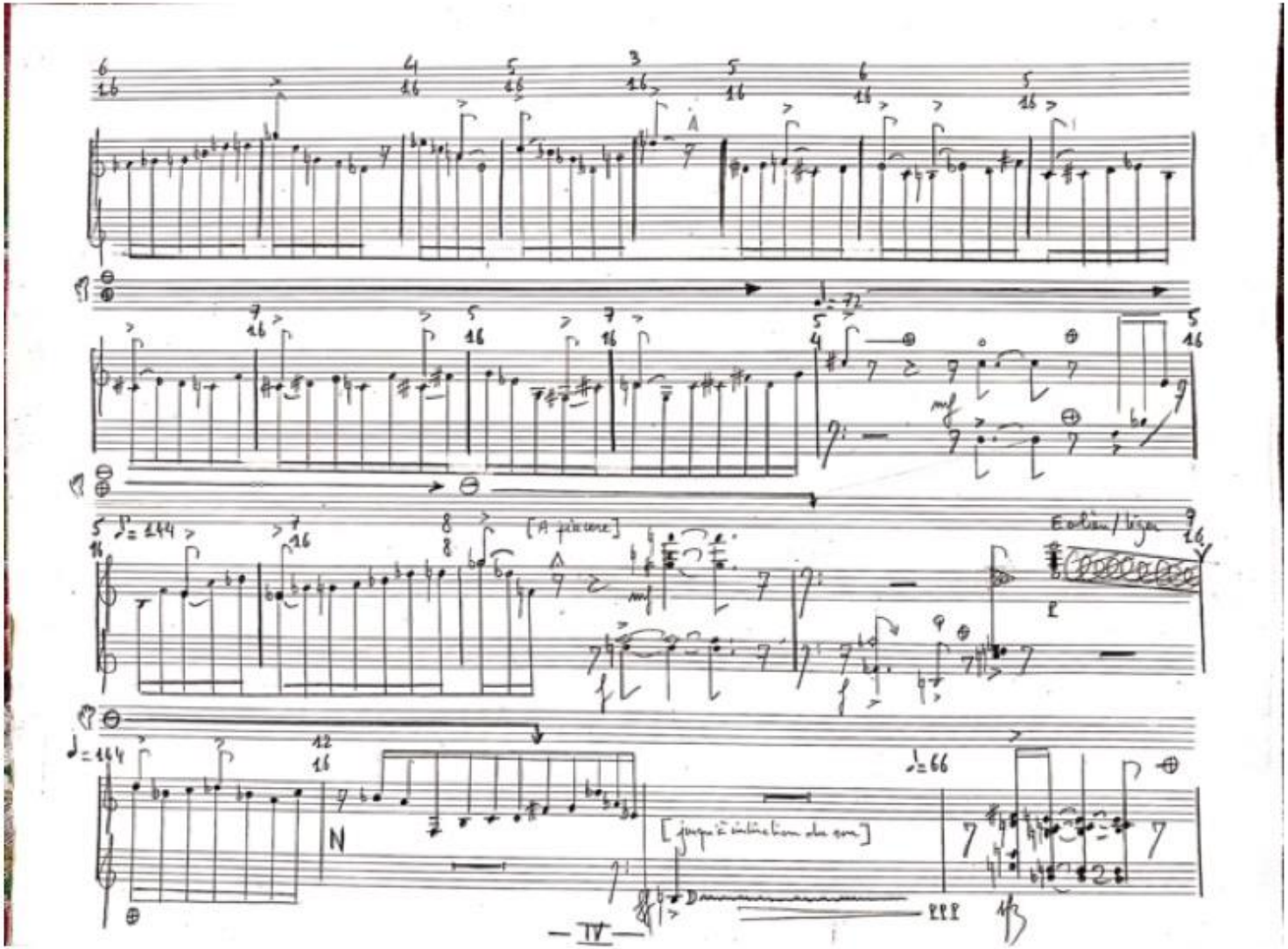

113
l.v.
113
[Un peu plus vite]
118
= 66
f
rall.
l.v.
pp
118
123
123
125
= 60
ff
125

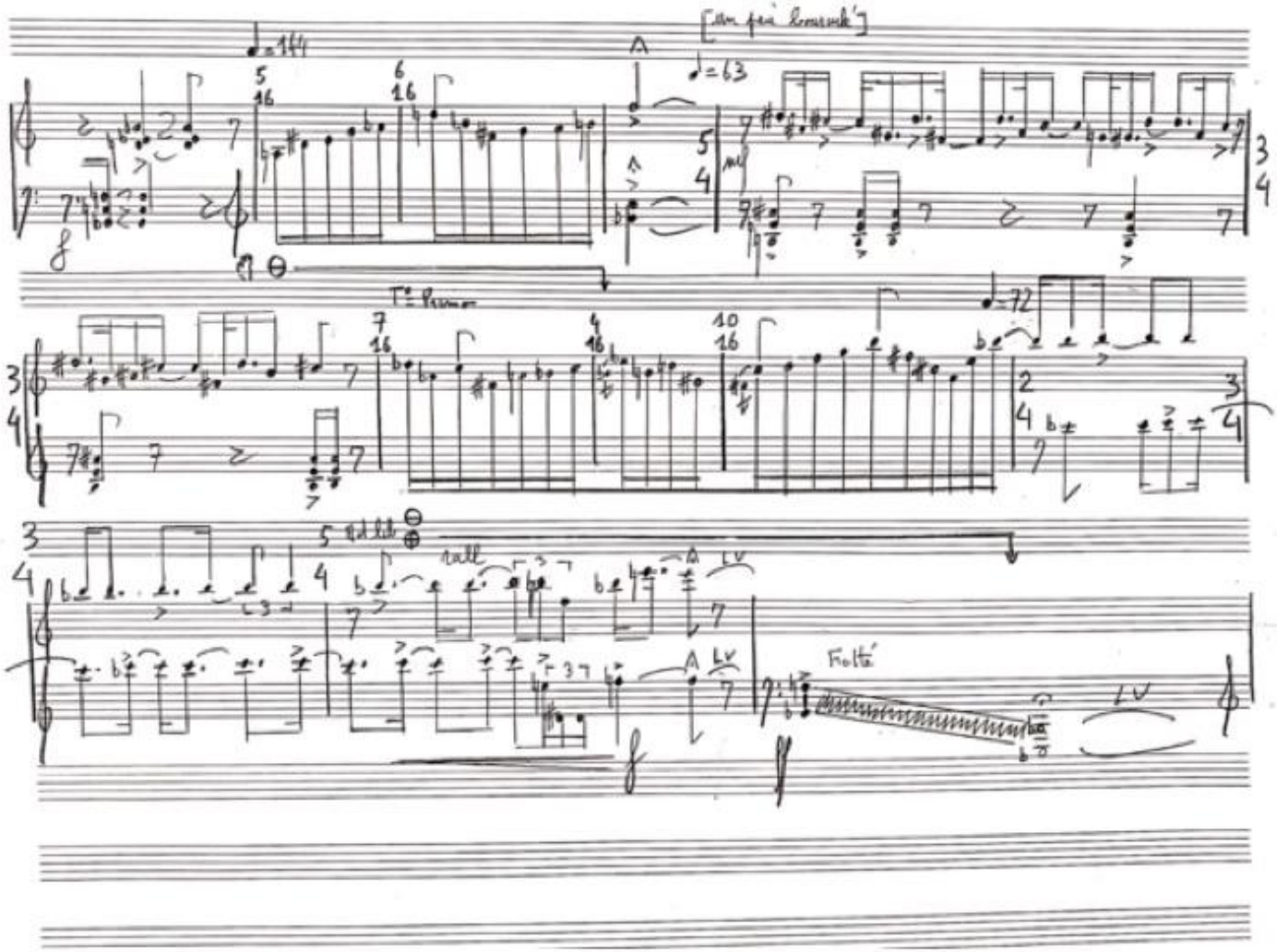
E3b. Original Manuscript

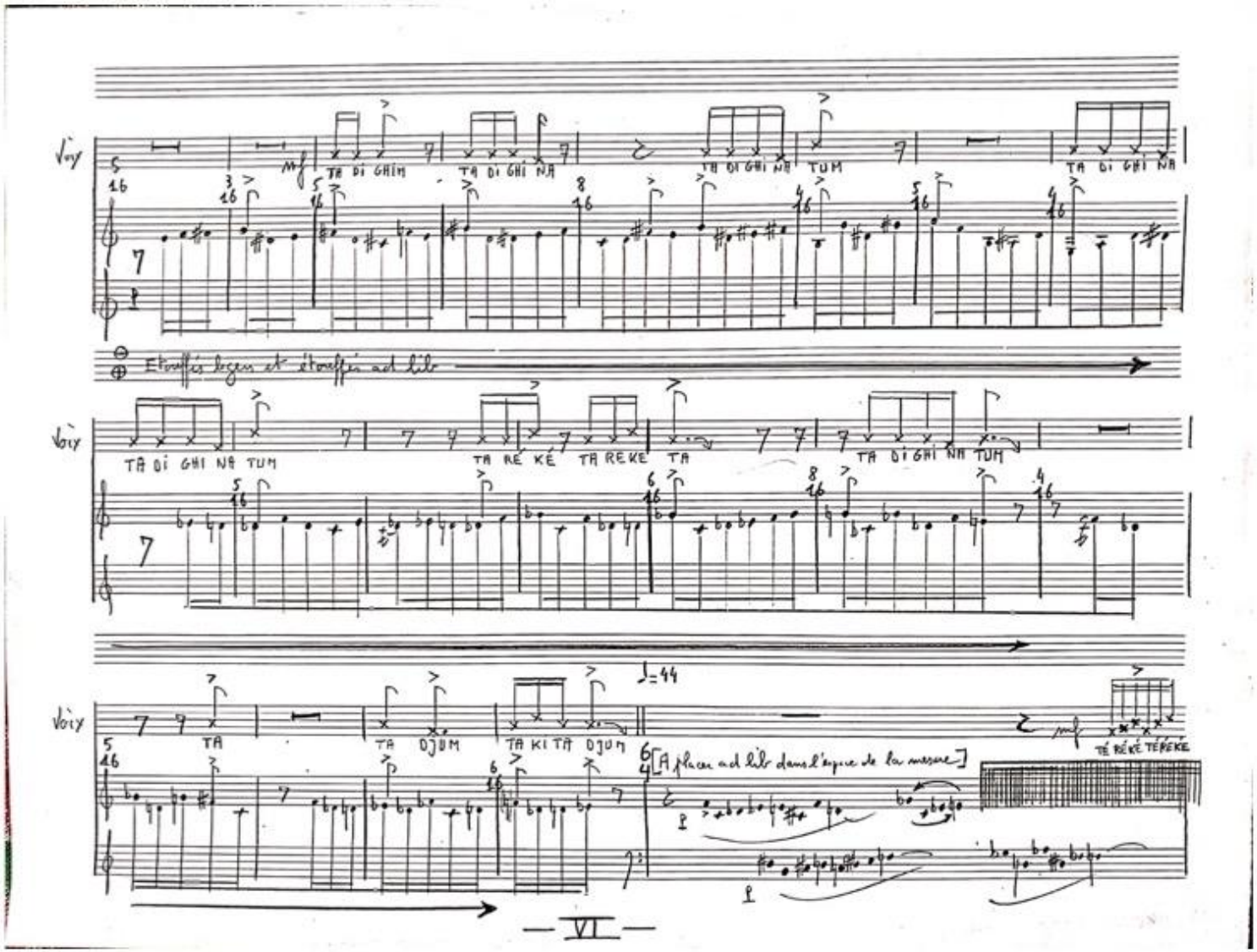


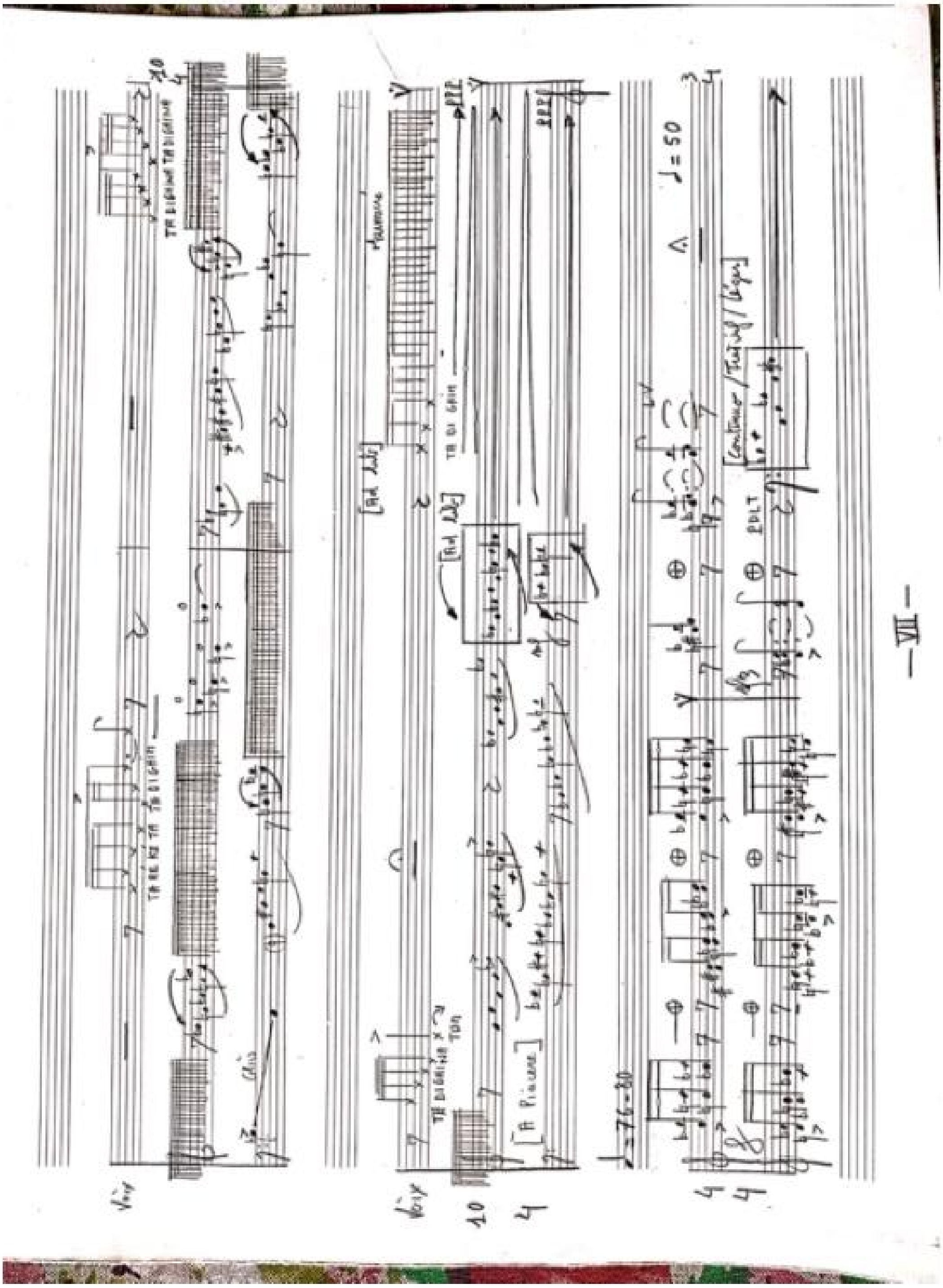

[delicato]
3W
♩=60
mf
mf
—II—

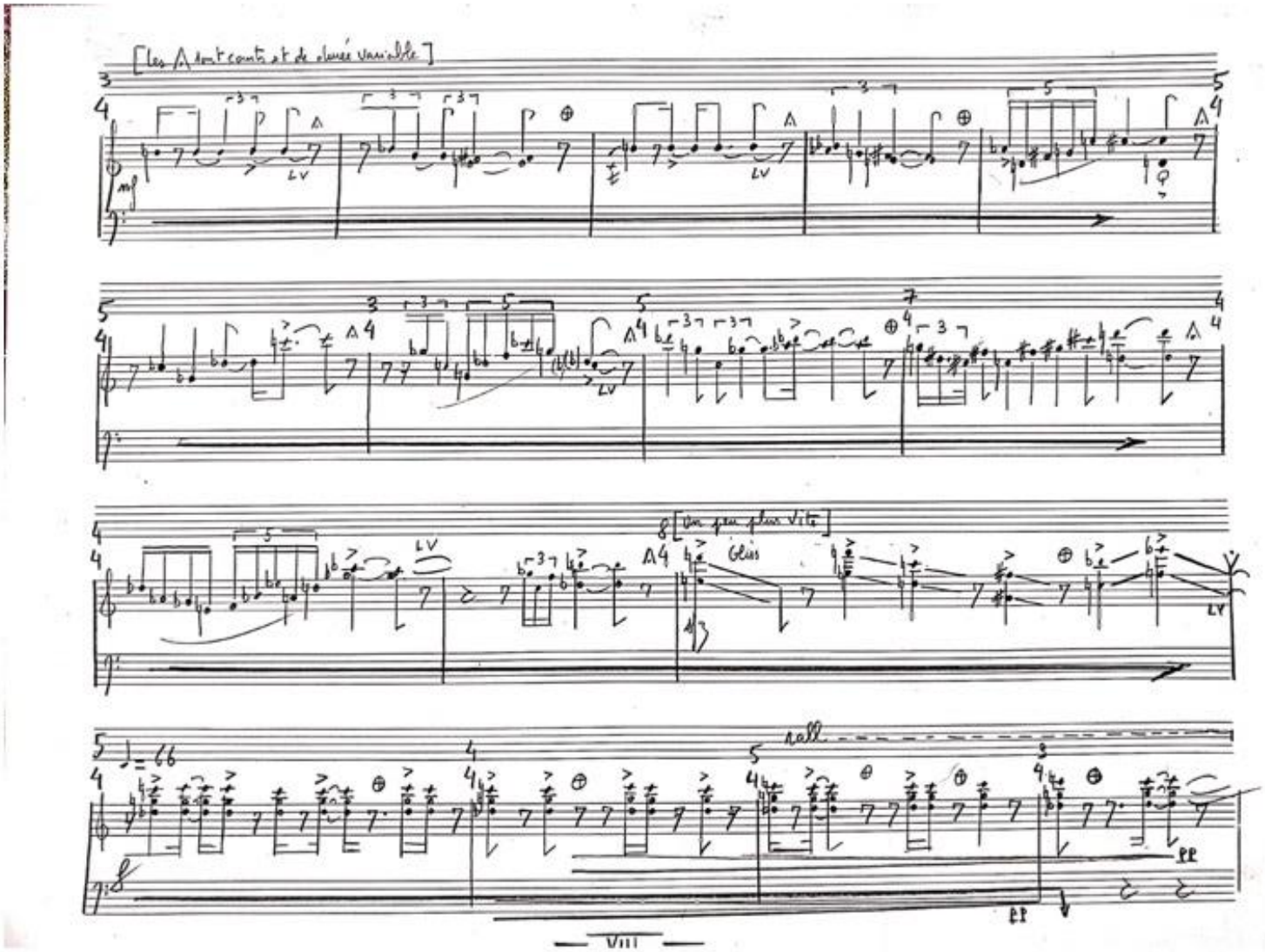


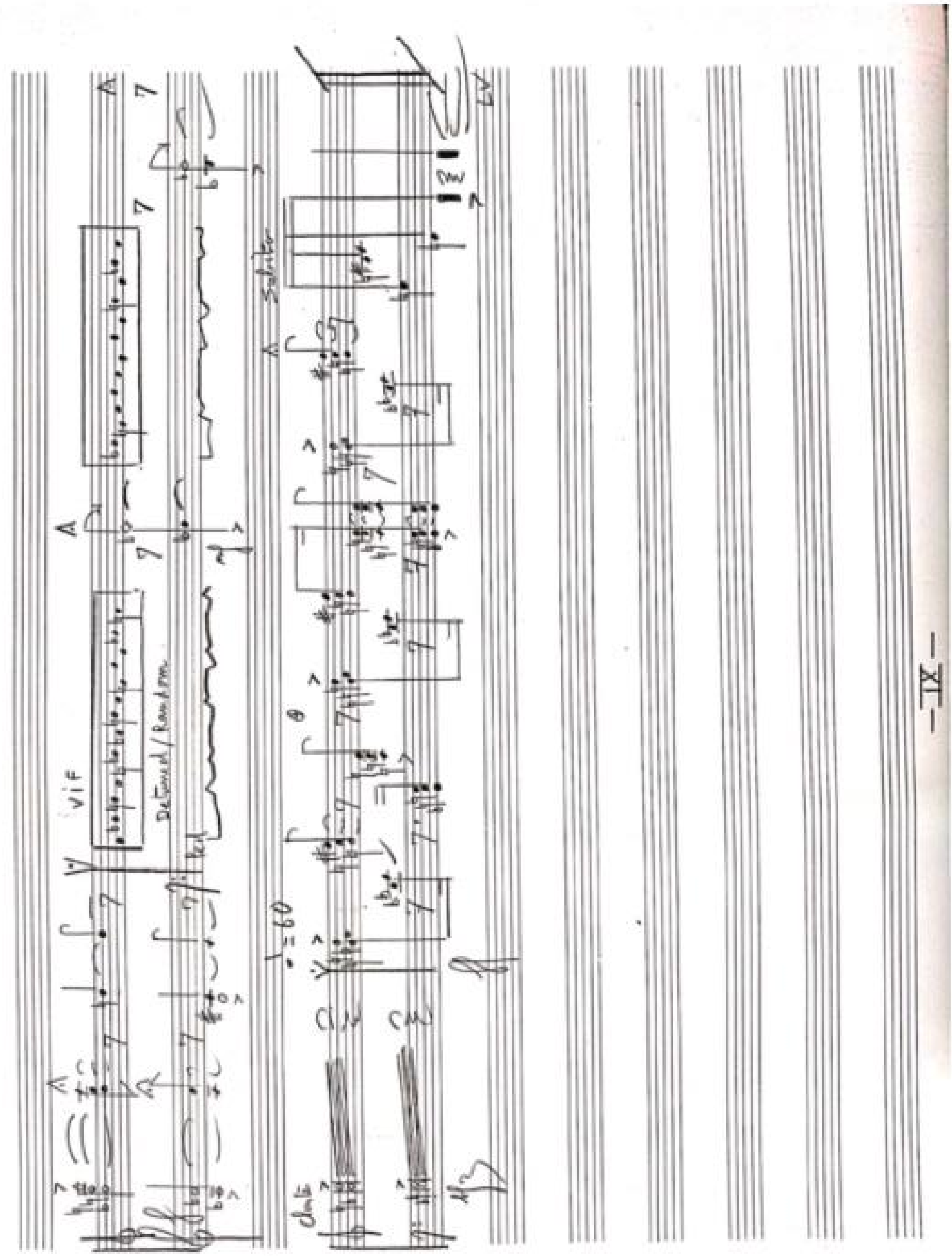

A
[A pleine]
N
[jusqu'à intinction du son]
— IV —


[am frei bewegt]
Folié


Voix
TA DI GHIM
TA DI GHI NA
TA DI GHI NA
TUM
TA DI GHI NA
Etouffés legers et étouffés ad lib
Voix
TA DI GHI NA TUM
TA RE KE
TA REKE
TA
TA DI GHI NA TUM
Voix
TA
TA DJOM
TA KI TA DJUM
♩=44
TE REKE TEREKE
[A placer ad lib dans l'espace de la mesure]
— VI —

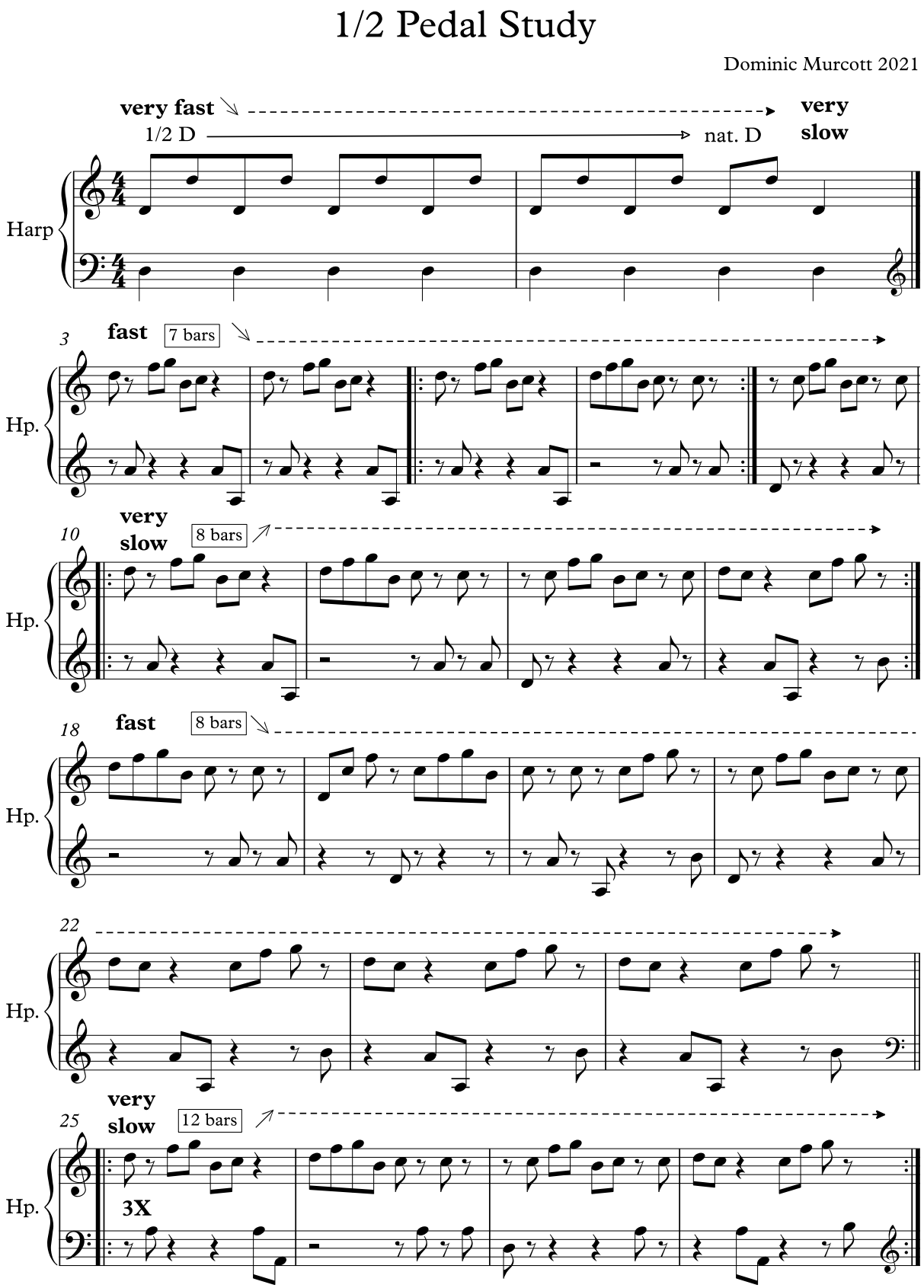


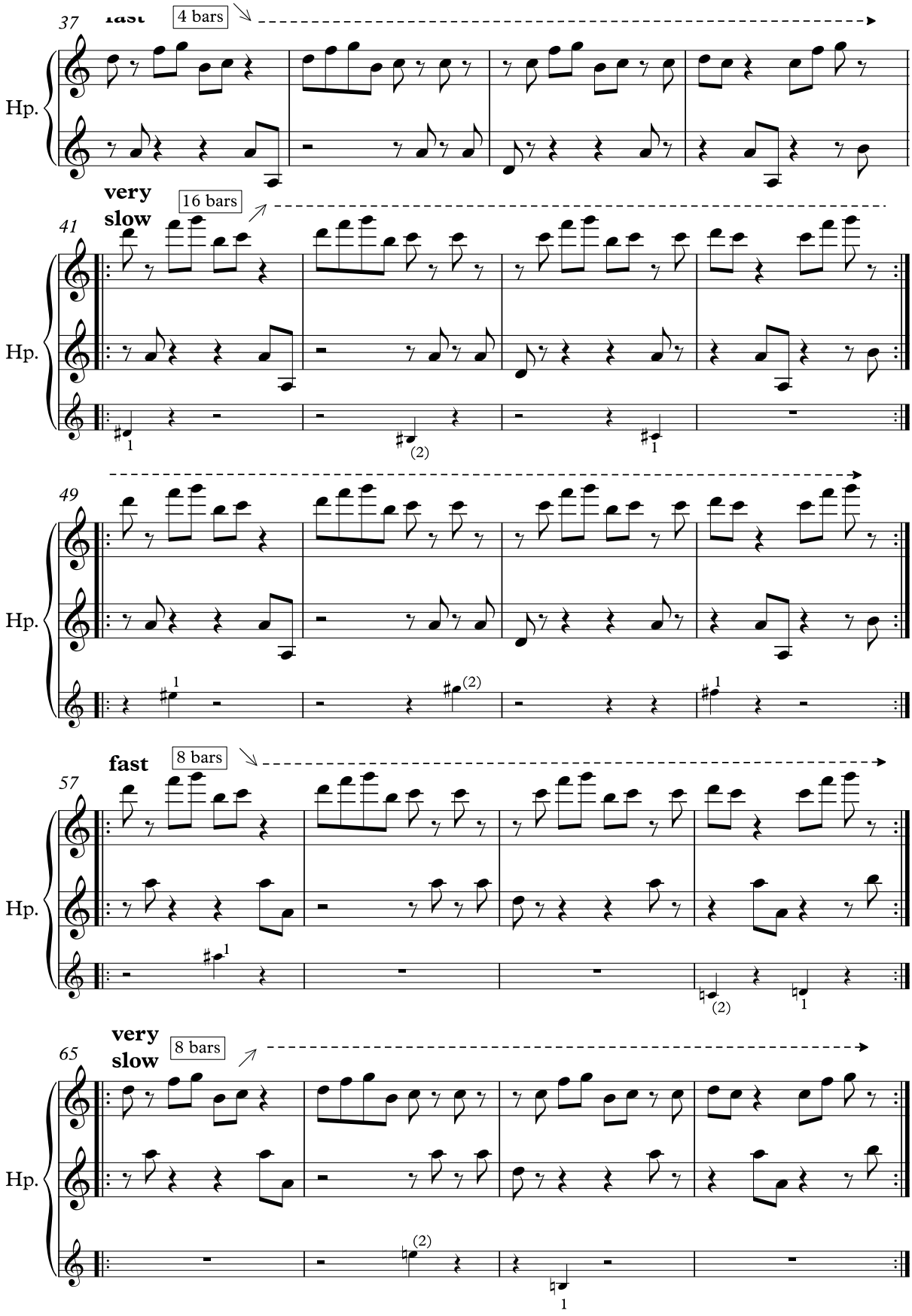

[les Δ dans le cours et de durée variable]
mf
LV
[un peu plus vite]
Glis
rall.
pp
VIII

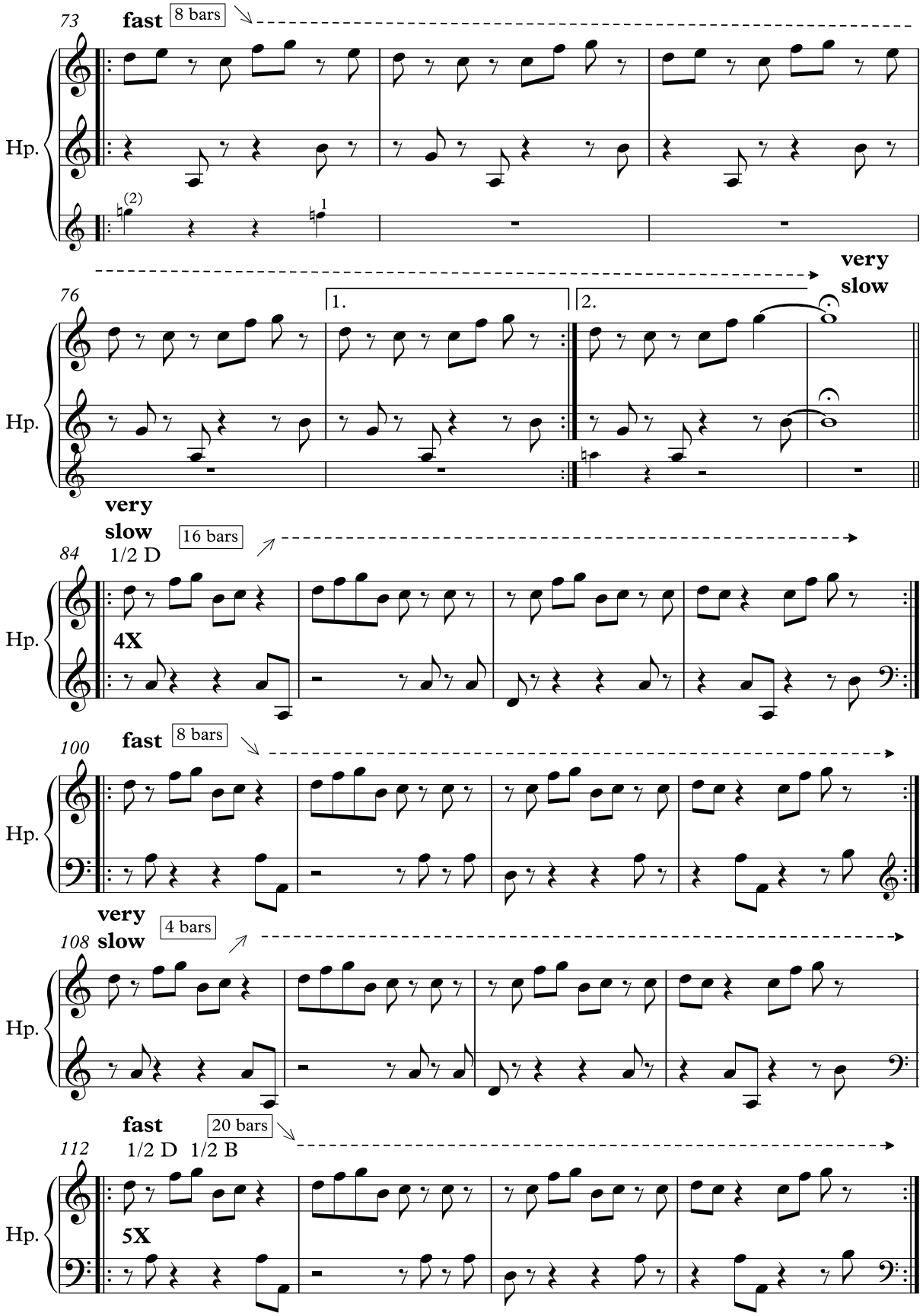

Vif
Detached / Random
— IX —

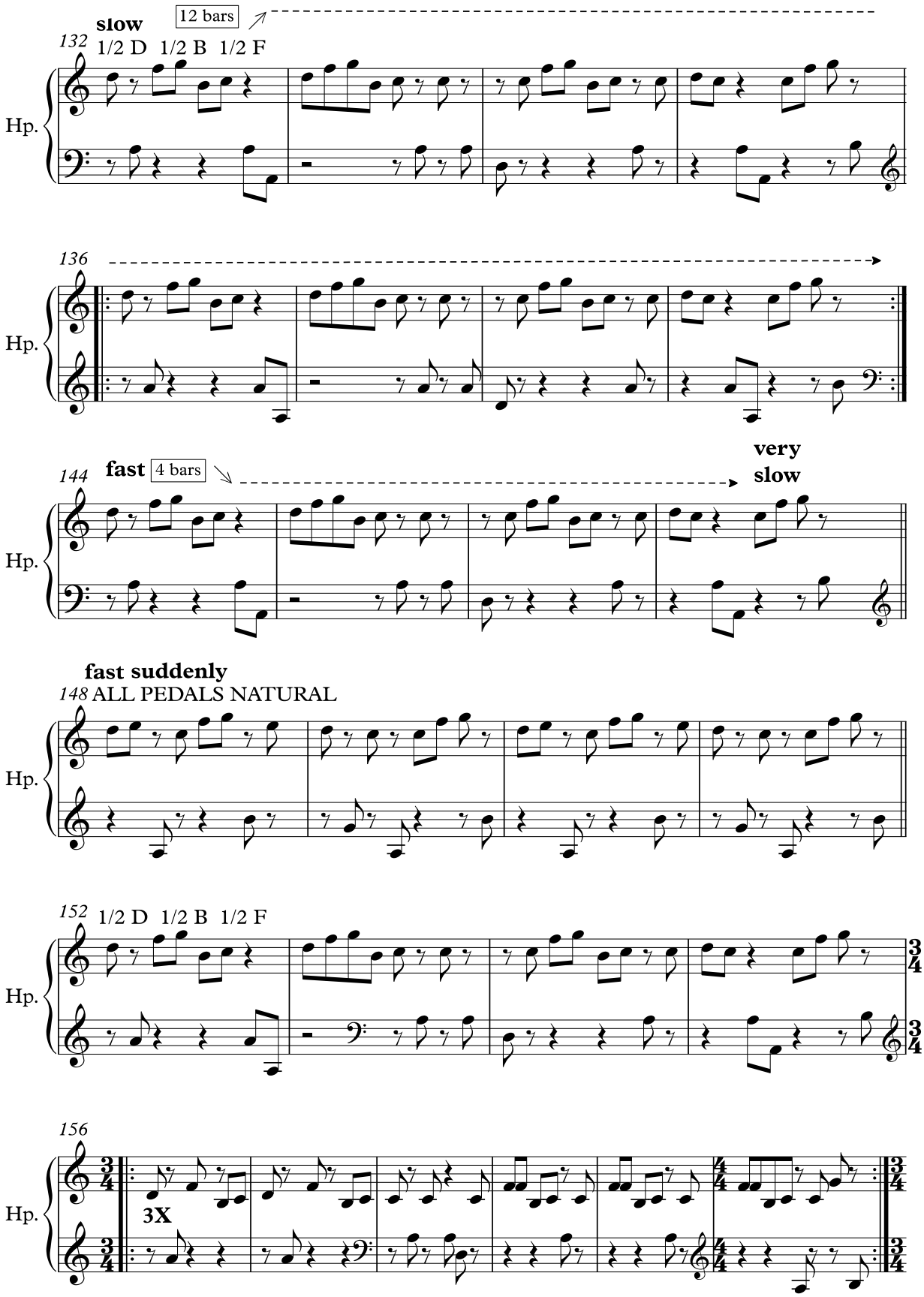
E4. Dominic Murcott: *Half Pedal Study*

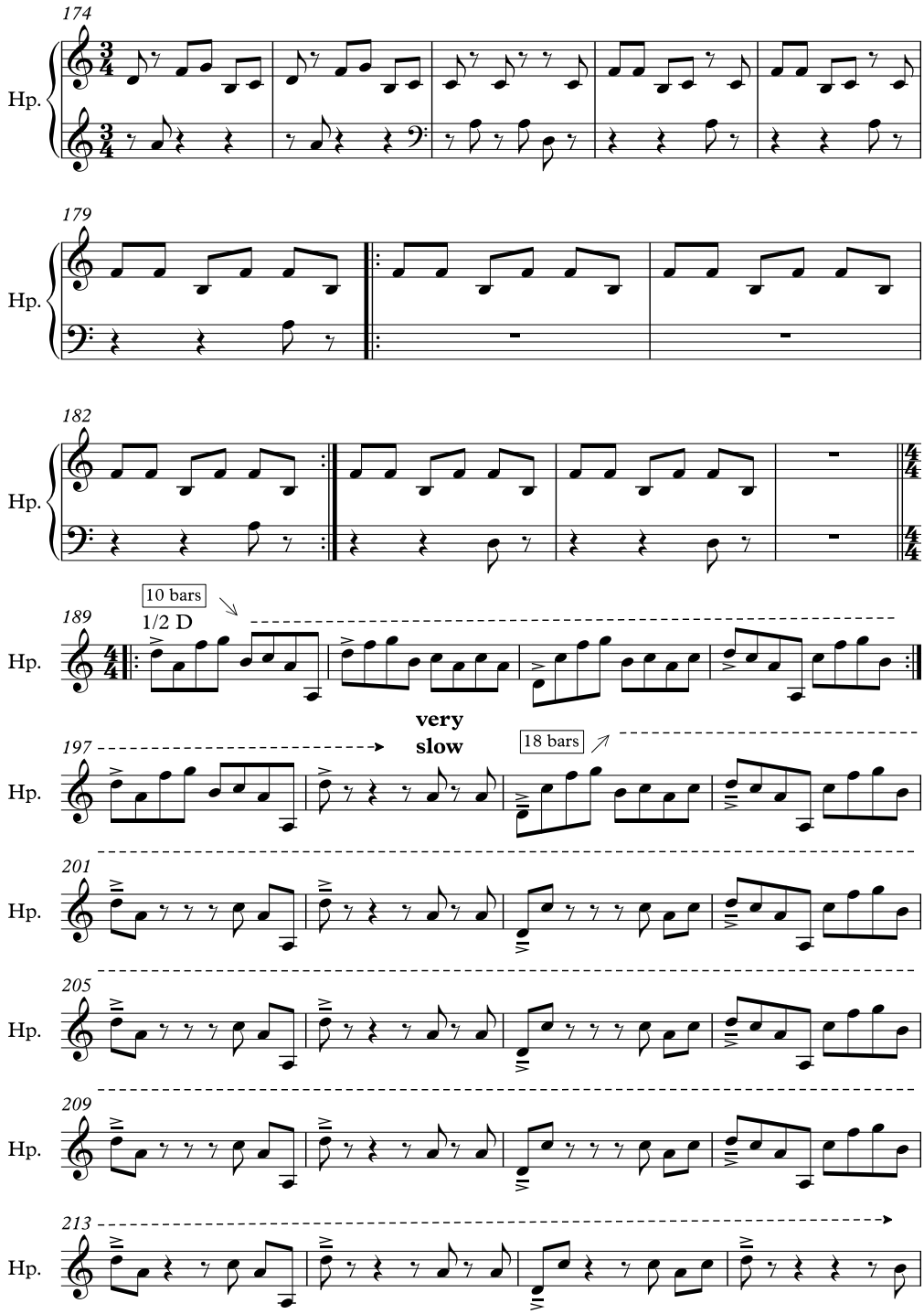
E4a. Practice Version

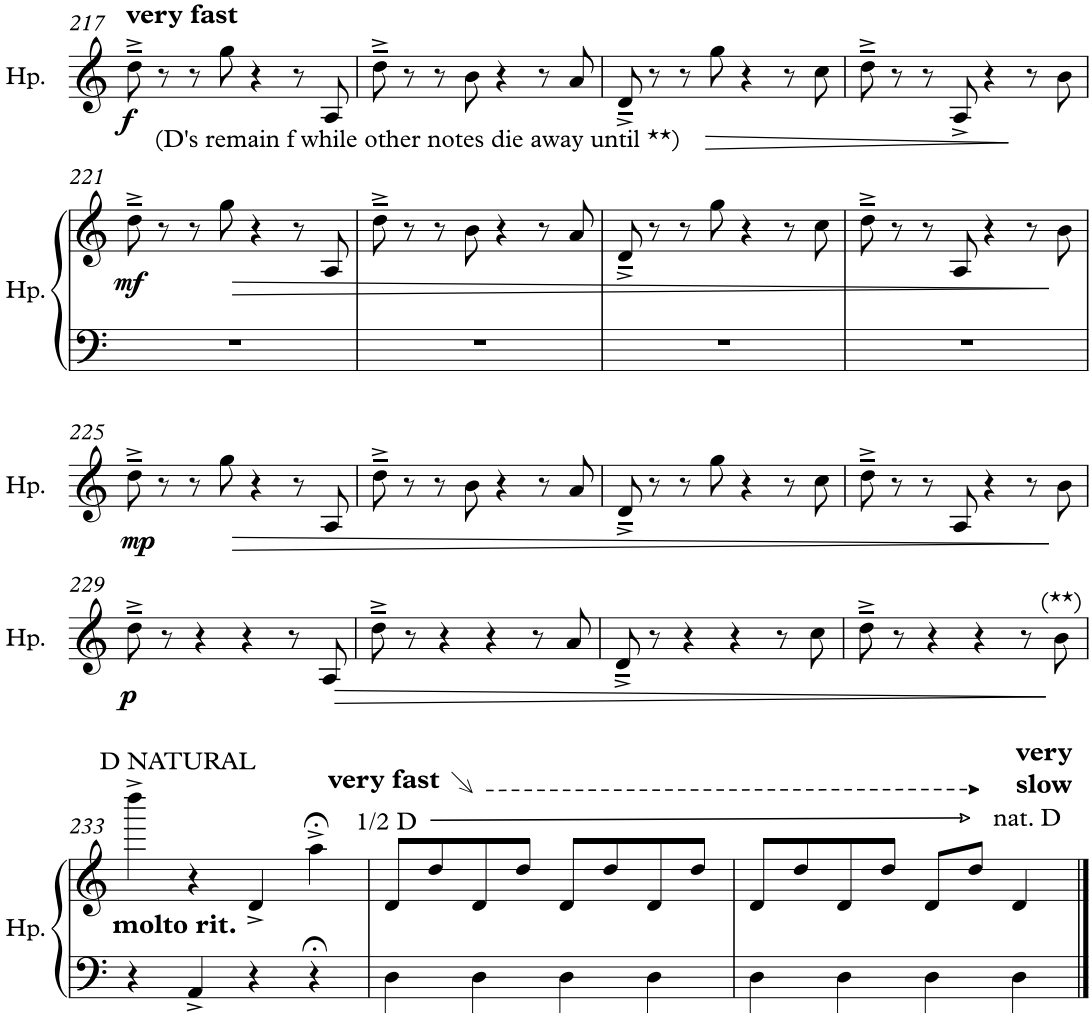



37
fast
4 bars
Hp.
very
slow
16 bars
41
Hp.
49
Hp.
fast
8 bars
57
Hp.
very
slow
8 bars
65
Hp.


73
fast
8 bars
Hp.
(2)
1
76
very
slow
1.
2.
Hp.
very
slow
84
1/2 D
16 bars
Hp.
4X
100
fast
8 bars
Hp.
very
slow
108
4 bars
Hp.
fast
20 bars
112
1/2 D 1/2 B
Hp.
5X

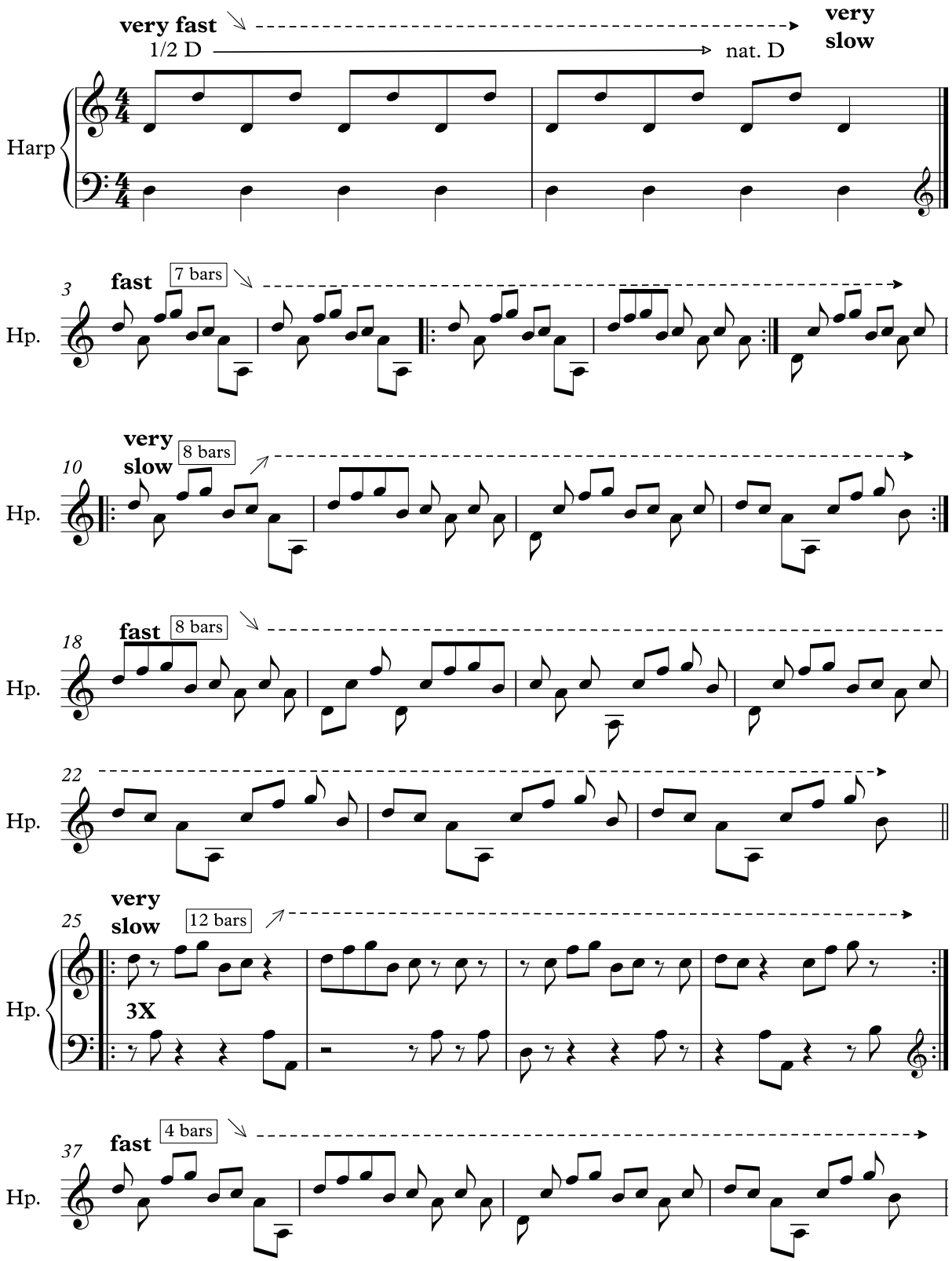

slow
12 bars
132
1/2 D 1/2 B 1/2 F
Hp.
136
Hp.
144
fast
4 bars
very
slow
Hp.
fast suddenly
148 ALL PEDALS NATURAL
Hp.
152
1/2 D 1/2 B 1/2 F
Hp.
156
3X
Hp.

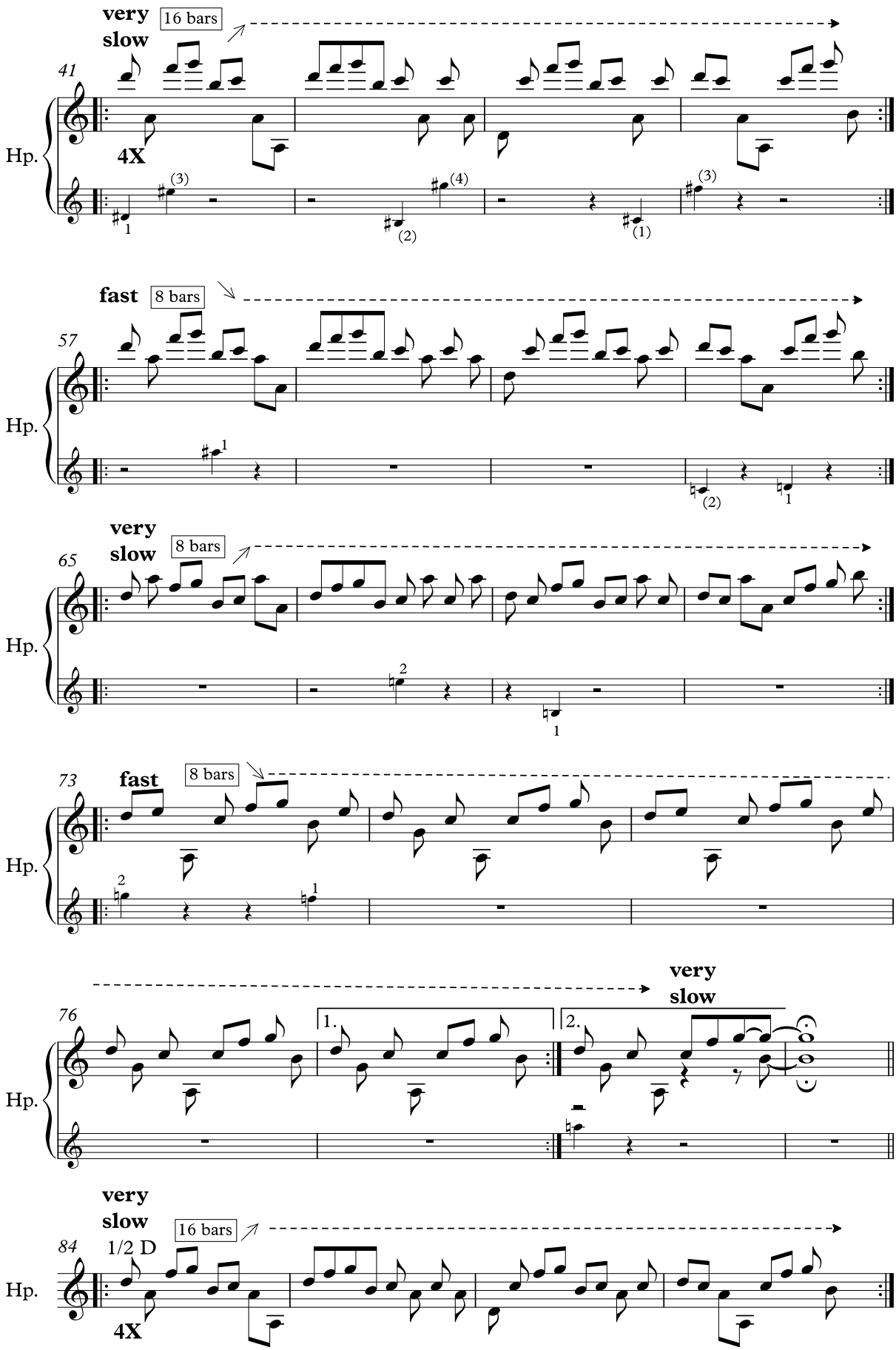

174
Hp.
179
Hp.
182
Hp.
10 bars
1/2 D
189
Hp.
very
slow
18 bars
197
Hp.
201
Hp.
205
Hp.
209
Hp.
213
Hp.

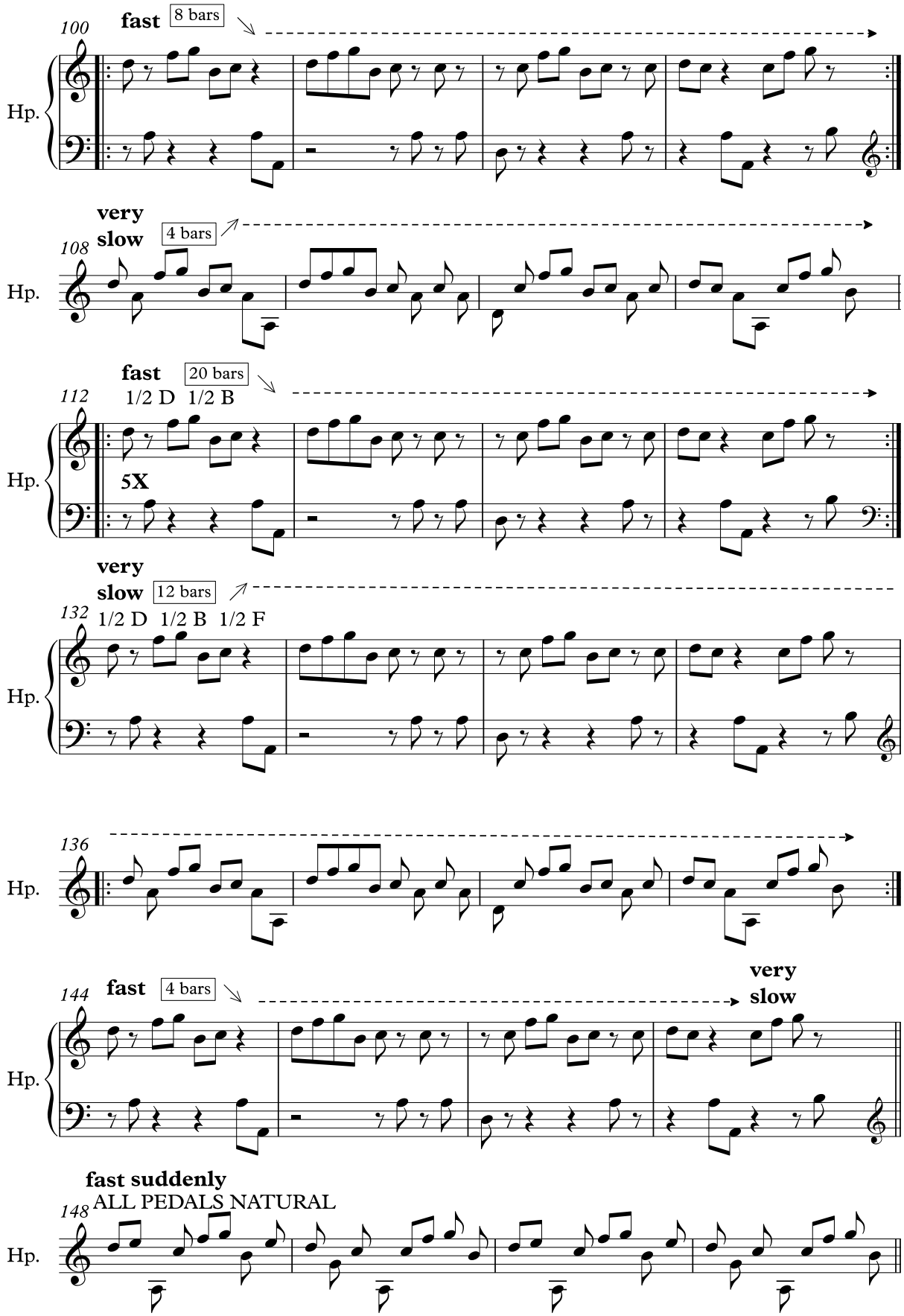

217
very fast
Hp.
f
(D's remain f while other notes die away until **)
221
Hp.
mf
225
Hp.
mp
229
Hp.
p
(**)
D NATURAL
very fast
very
slow
233
1/2 D
nat. D
Hp.
molto rit.

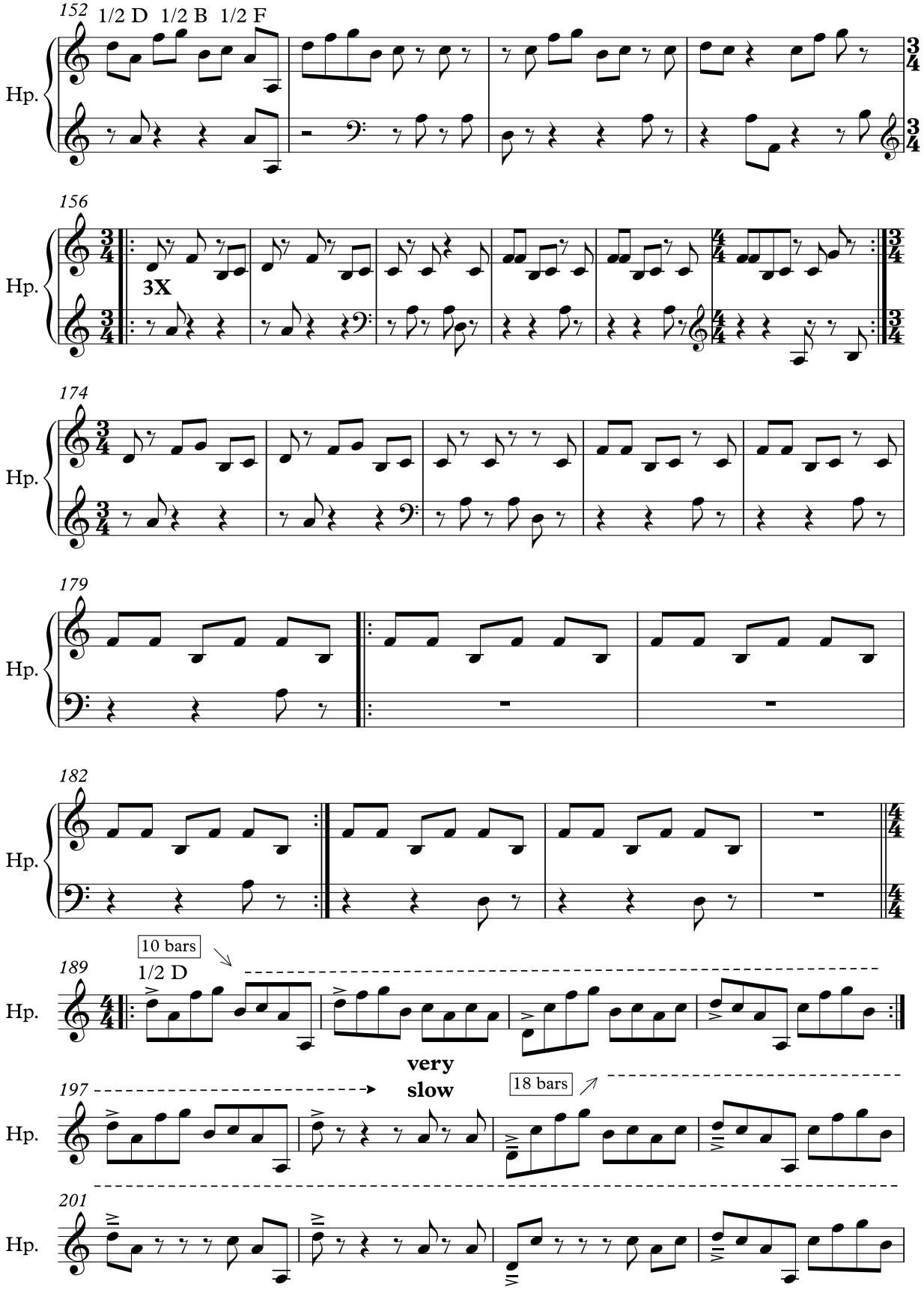
1/2 Pedal Study

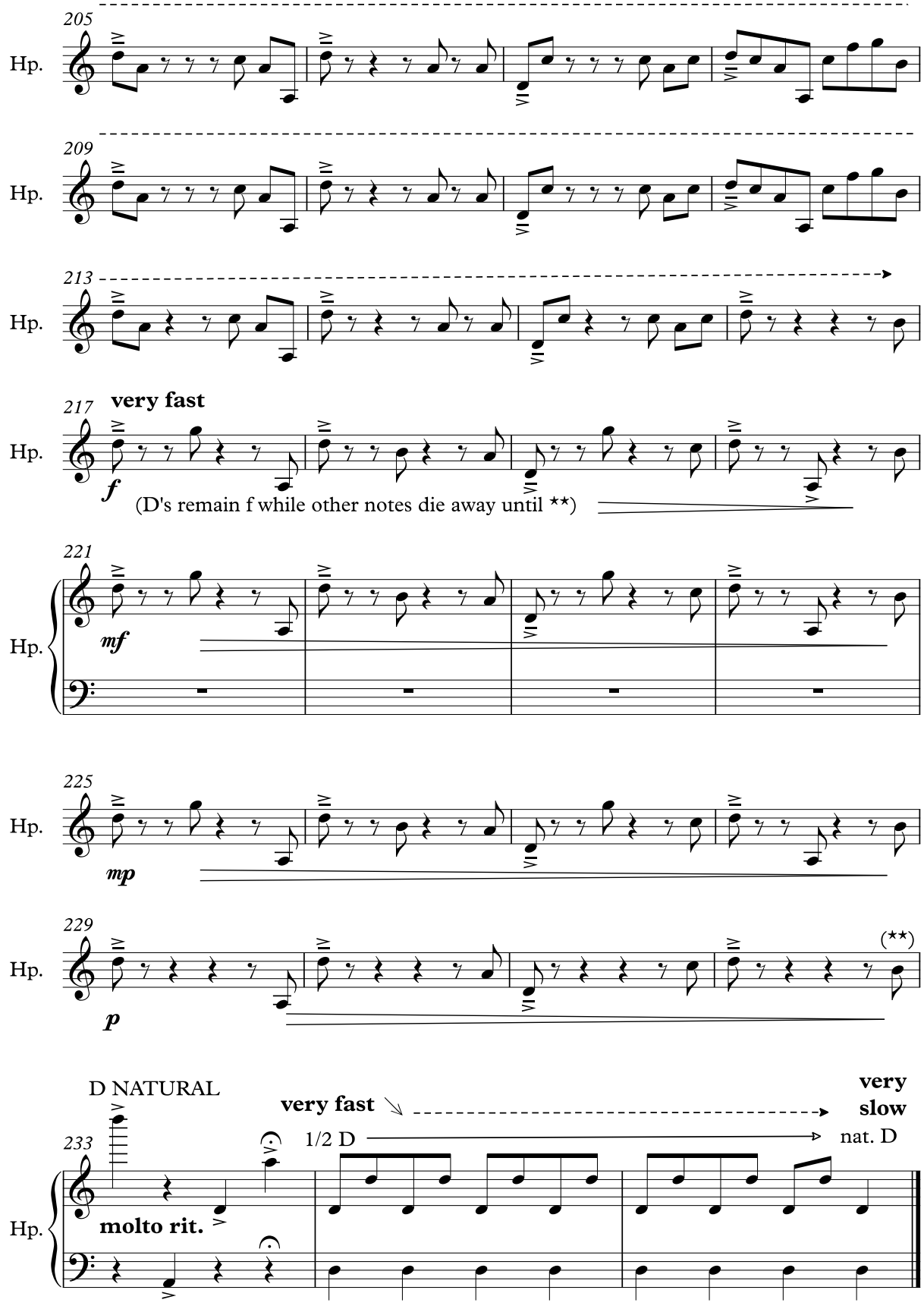
Dominic Murcott 2021




very
slow
16 bars
41
Hp.
4X
fast
8 bars
57
Hp.
very
slow
8 bars
65
Hp.
73
fast
8 bars
Hp.
very
slow
76
1.
2.
Hp.
very
slow
16 bars
84
1/2 D
Hp.
4X

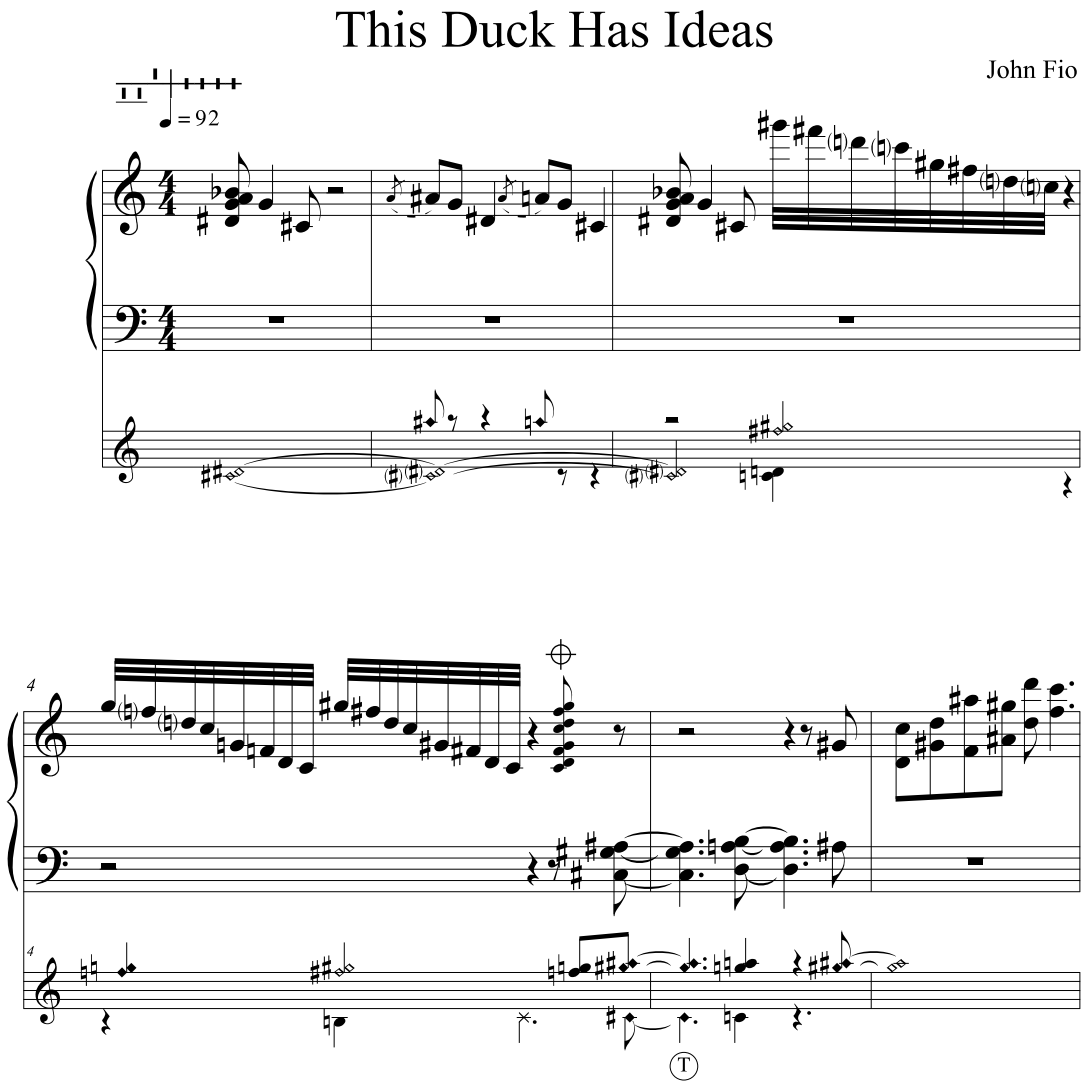

100
fast
8 bars
Hp.
very
slow
4 bars
108
Hp.
fast
20 bars
1/2 D 1/2 B
112
Hp.
5X
very
slow
12 bars
1/2 D 1/2 B 1/2 F
132
Hp.
136
Hp.
144
fast
4 bars
very
slow
Hp.
fast suddenly
ALL PEDALS NATURAL
148
Hp.


152
1/2 D 1/2 B 1/2 F
Hp.
156
3X
174
179
182
189
10 bars
1/2 D
very
slow
197
18 bars
201


205
Hp.
209
Hp.
213
Hp.
217
very fast
Hp.
f
(D's remain f while other notes die away until **)
221
Hp.
mf
225
Hp.
mp
229
Hp.
(**)
p
D NATURAL
very fast
very
slow
233
1/2 D
nat. D
Hp.
molto rit.

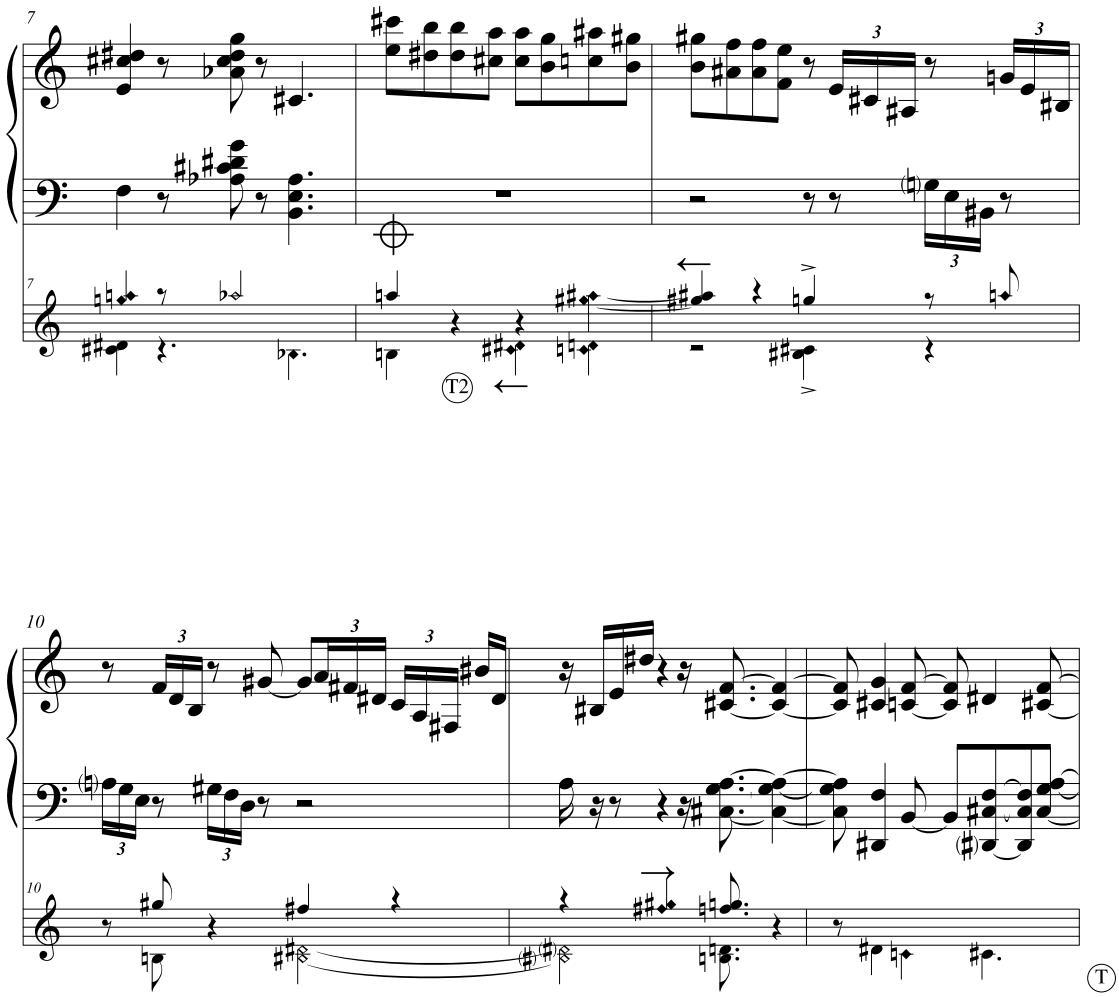
E5. Darren Solomon, *PedaLogic*

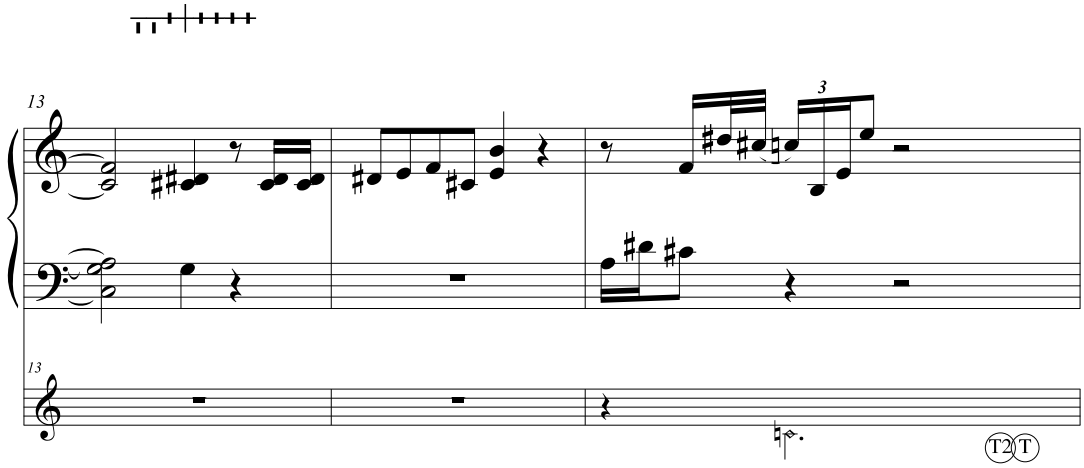
E5a. John Fio, This Duck has Ideas

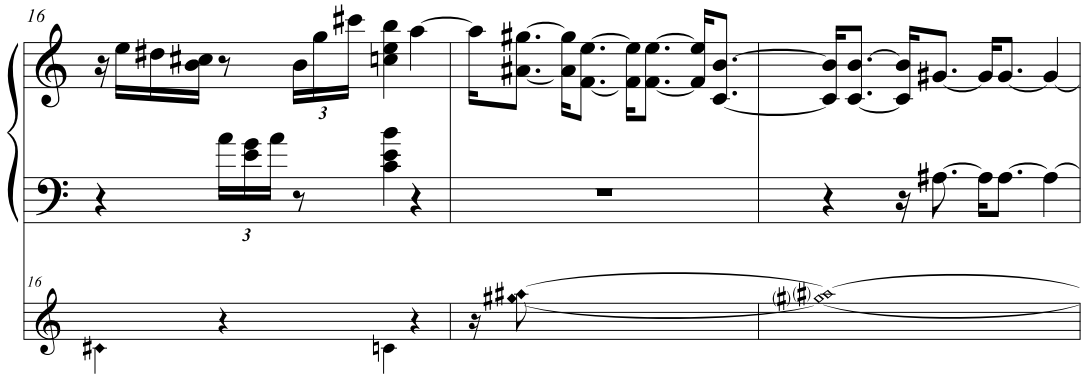


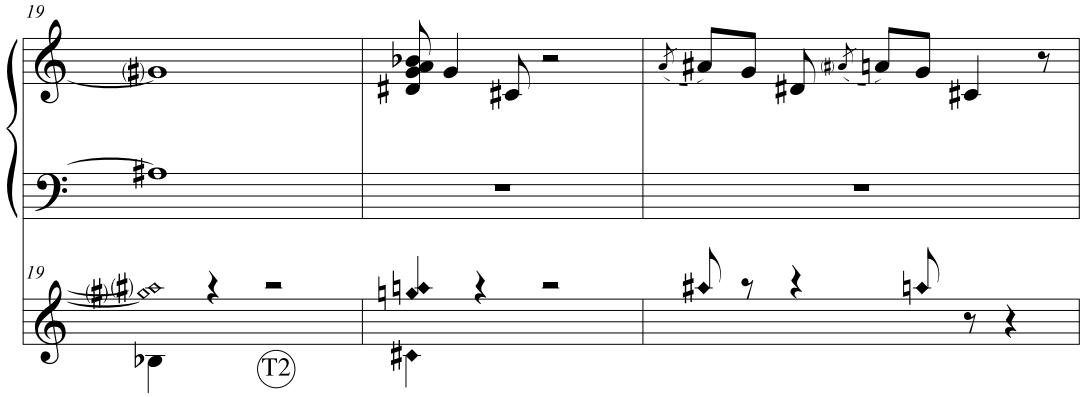
Note: The circled T (Ⓣ) refers to page turns on a tablet. One Ⓣ indicates to tap the screen at that moment to turn the page, Two T's (ⓉⓉ) or Ⓣ2 indicates to tap twice to turn two pages

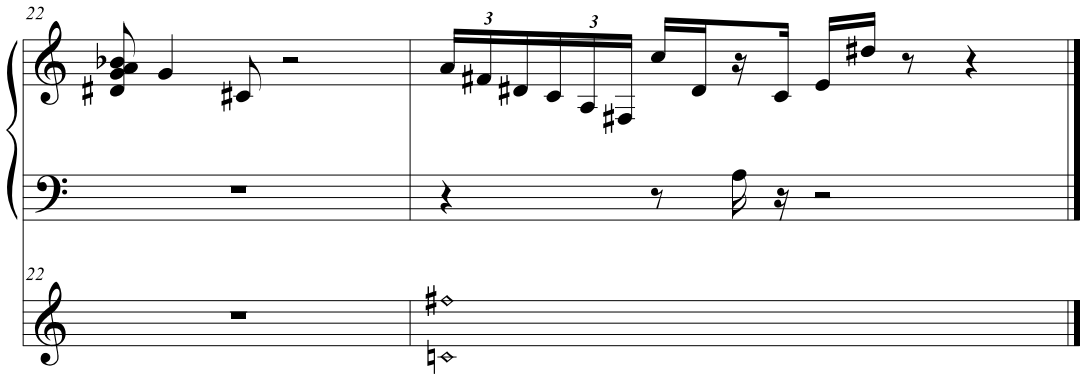
This Duck Has Ideas



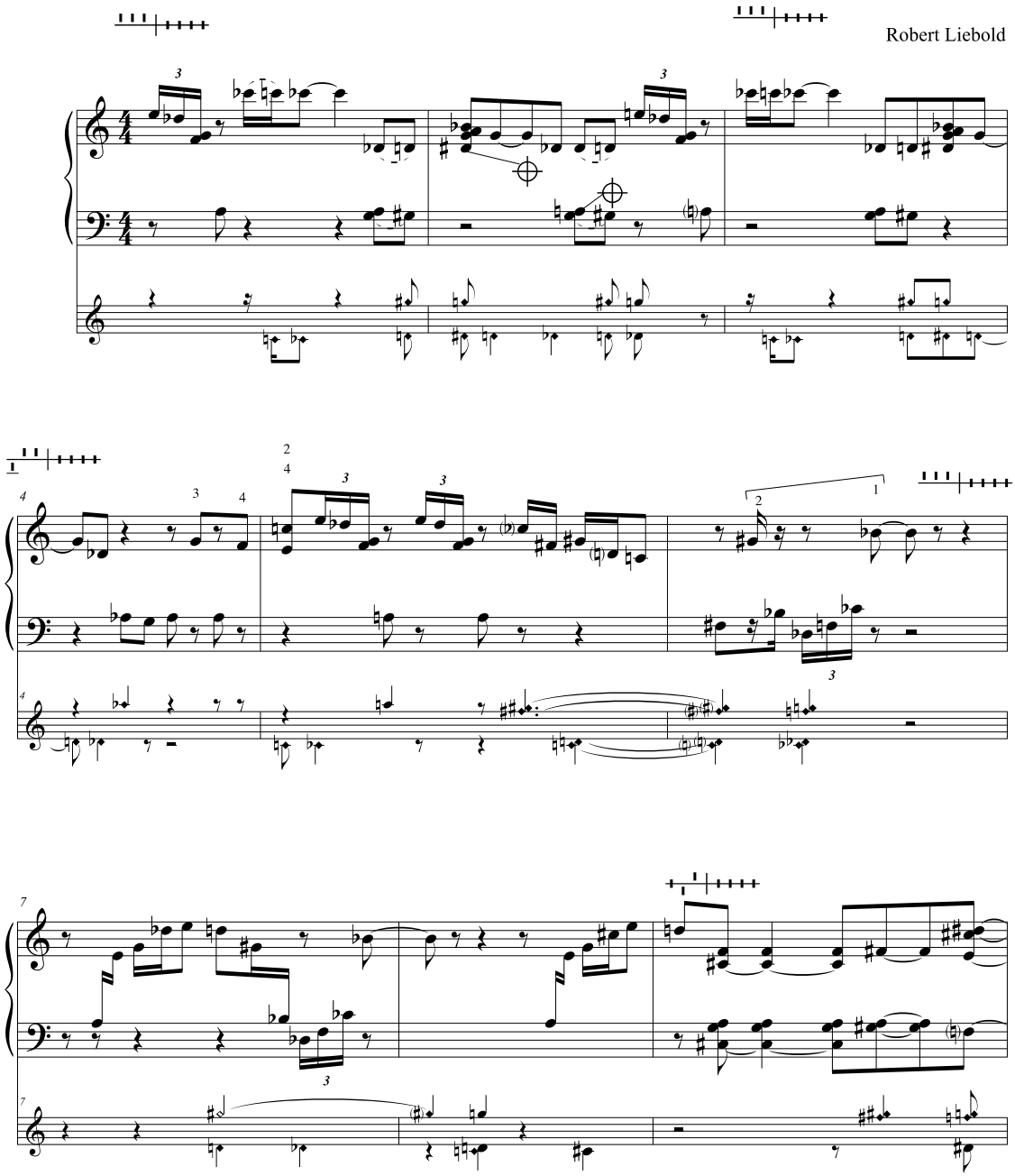

13
3
13
T2
T

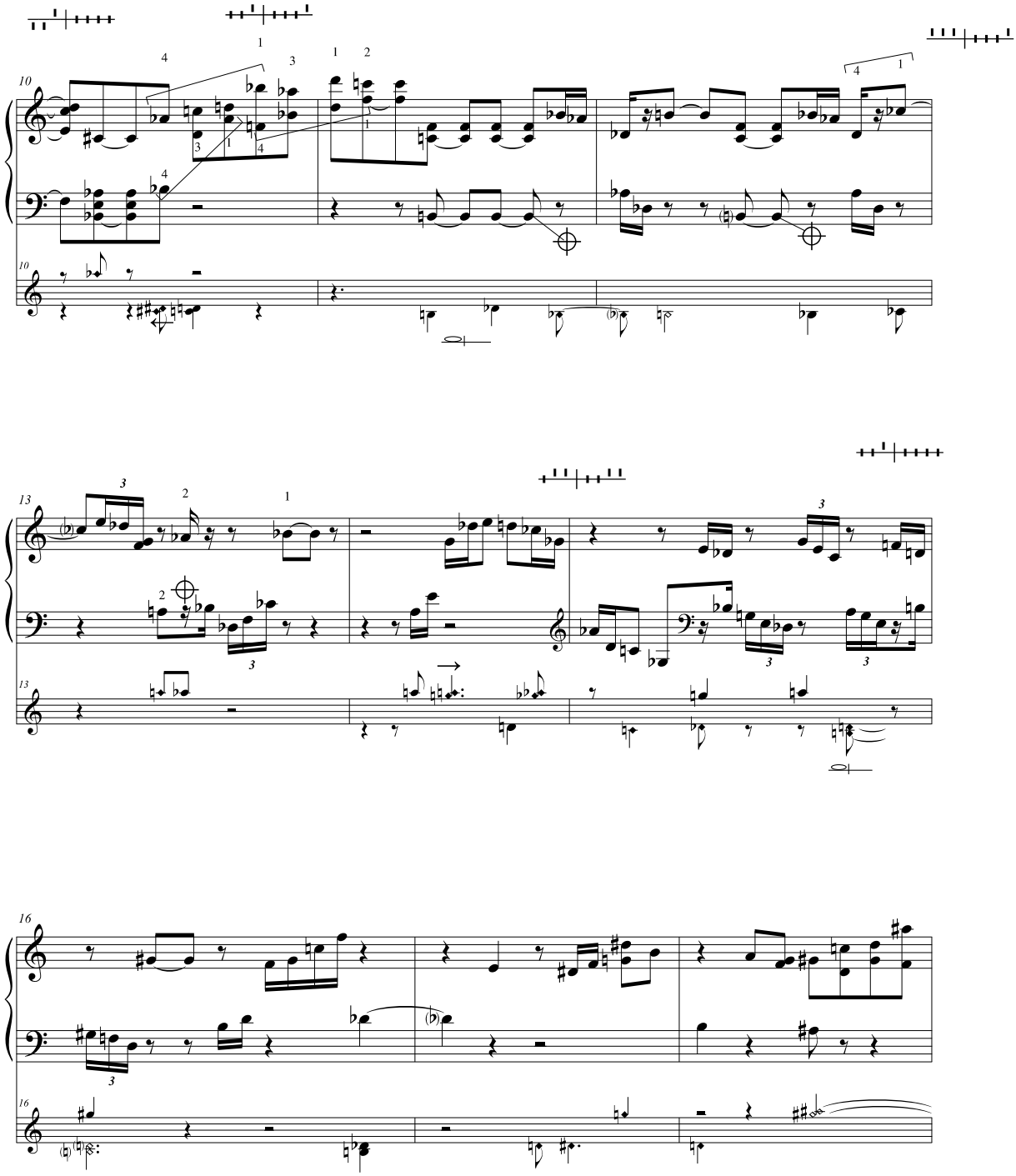

16
3
3
16

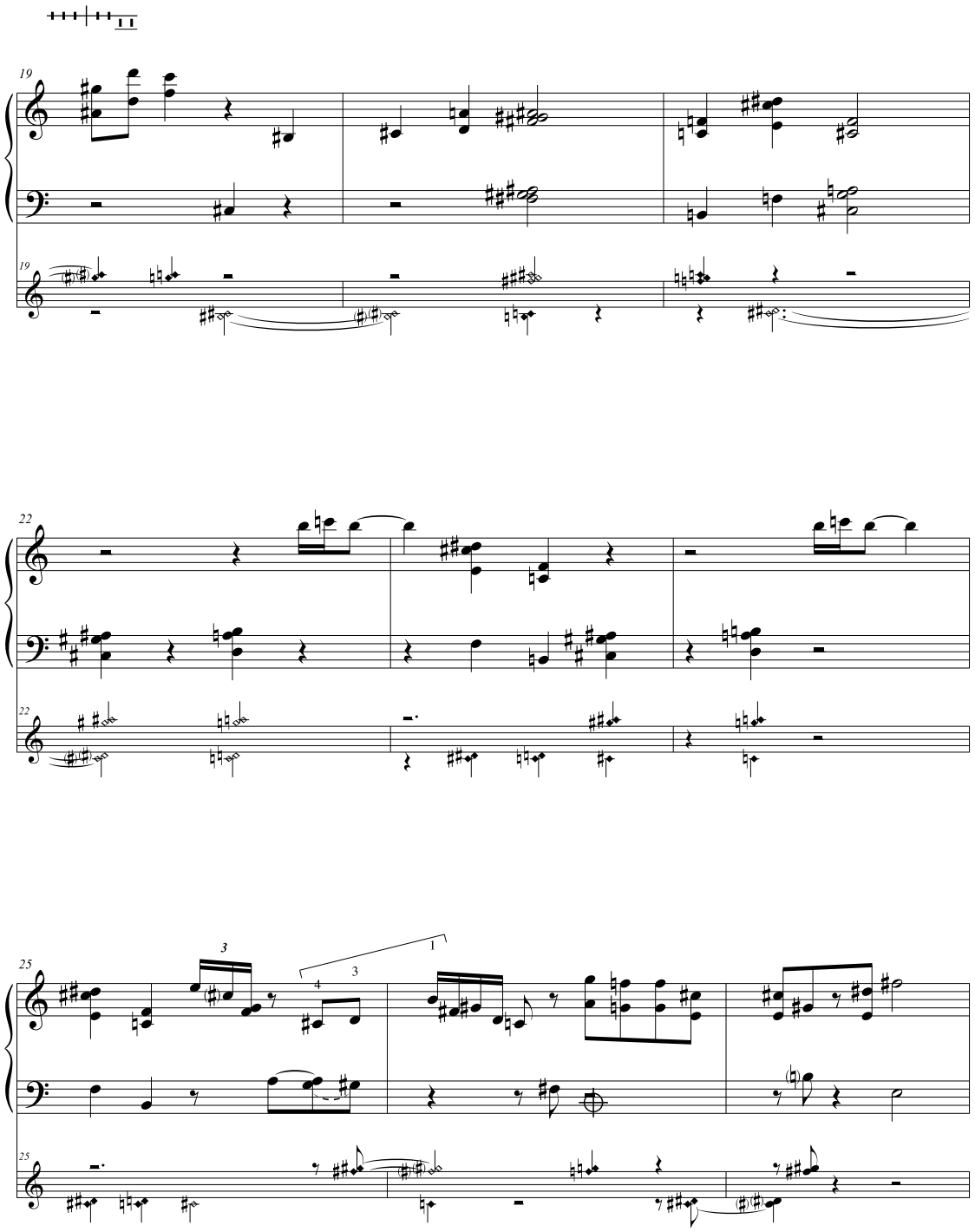

19
19
T2

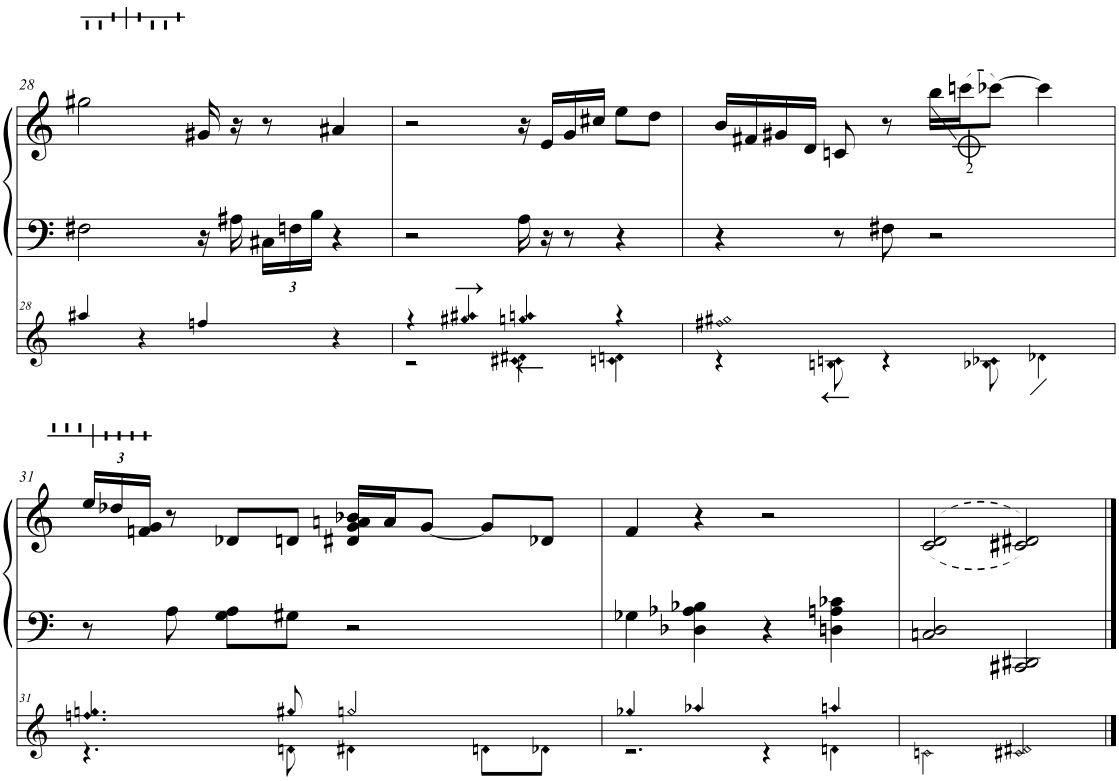

22
3
3
22

Waltz for Lucidity



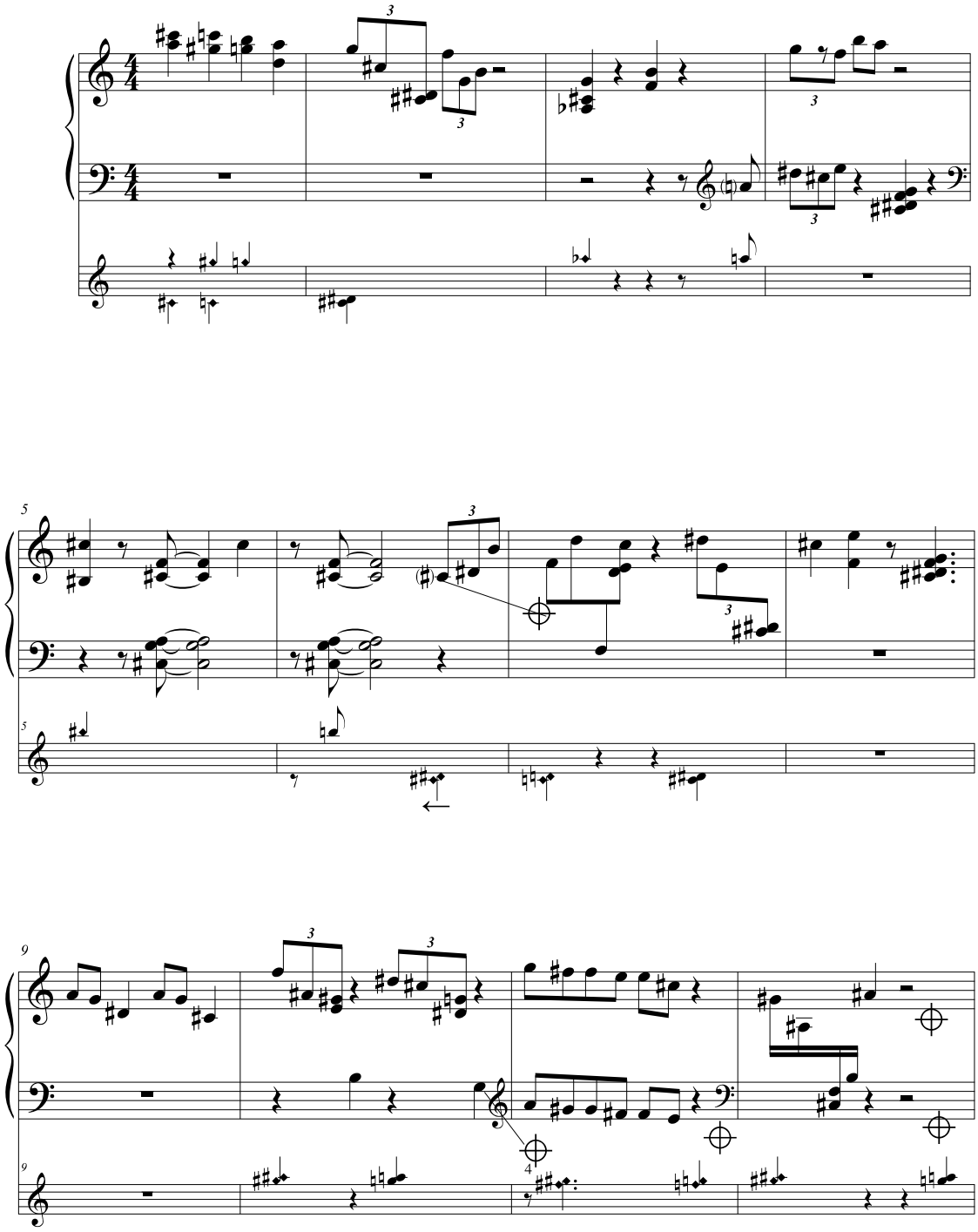


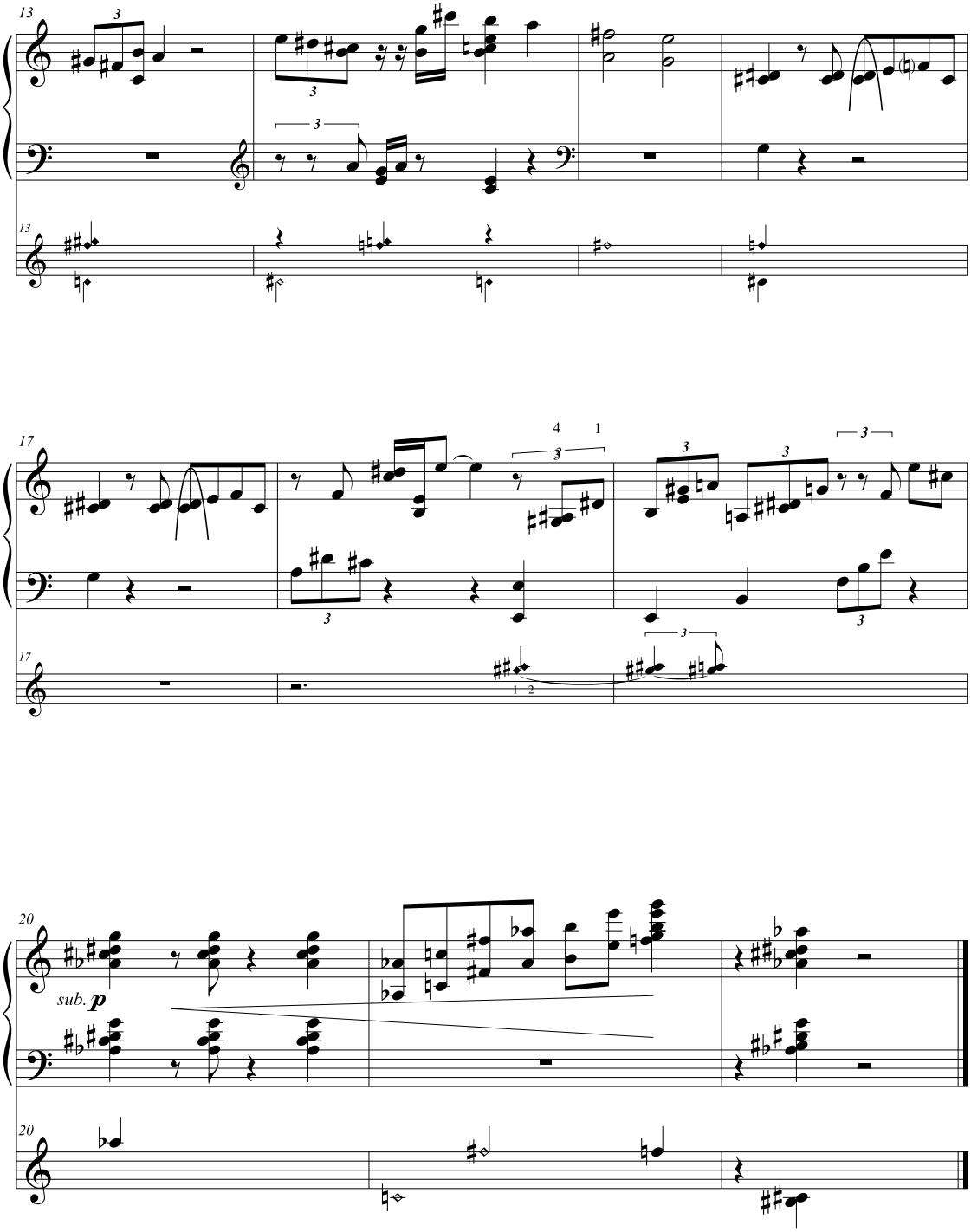




Drizzle

Kari Steinert




13
17
20
sub. p