The University of Adelaide
Elder Conservatorium of Music
Faculty of Arts

# Memorization techniques for selected piano works between 1911 and 1953: case studies through recorded performances and exegesis

by

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# Abstract

The primary aims of this MPhil performance based research have been to identify the memorization problems presented by selected piano works between 1911 and 1953; to develop practice strategies to overcome these problems; and to test the solutions through live/recorded performances. This study is significant because memorization techniques for post-tonal and non-tonal piano music have not been researched in depth, and this topic is rarely addressed from the perspective of a professional pianist. This exegesis identifies the most salient problems encountered when trying to memorize the selected repertoire, and presents and discusses solutions and practice strategies to overcome them. Two live DVD recordings of the selected repertoire are included, and the success of the strategies is evaluated by a critical assessment of the recorded performances.

# Declarations

## Originality

This work contains no material which has been accepted for the award of any other degree of diploma in any university or other tertiary institution. To the best of my knowledge and belief, this work contains no material previously published or written by another person, except where due reference has been made in the text.

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Macarena Alejandra Zambrano Godoy

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| | |
|---|---|
| 00:00 - 02:48 | I. *Sostenuto Misurato Prestissimo* |
| 02:48 - 06:20 | II. *Mesto, rigido e cerimoniale* |
| 06:20 - 07:31 | III. *Allegro con spirito* |
| 07:31 - 09:46 | IV. *Tempo di valse (poco vivace à l'orgue de Barbarie)* |
| 09:46 - 12:30 | V. *Rubato. Lamentoso* |
| 12:30 - 13:25 | VI. *Allegro molto capriccioso* |
| 13:25 - 16:41 | VII. *Cantabile, molto legato* |
| 16:41 - 17:52 | VIII. *Vivace. Energico* |
| 17:52 - 20:10 | IX. *(Béla Bartók in Memoriam) Adagio-Mesto-Allegro maestoso* |
| 20:10 - 21:45 | X. *Vivace. Capriccioso* |
| 21:45 - 25:42 | XI. *(Omaggio a Girolamo Frescobaldi) Andante misurato e tranquillo* |

**Chapter 2** Igor Stravinsky. Petrouchka (1911)

| | |
|---|---|
| 26:08 - 37:10 | *Première Tableau. Fête populaire de la semaine grasse* |
| 37:10 - 41:05 | *Deuxième Tableau. Chez Pétrouchka* |
| 41:05 - 47:42 | *Troisième Tableau. Chez le Maure* |
| 47:42 - 1:01:31 | *Quatrième Tableau. Fête populaire de la semaine grasse (Vers le soir)* |

# Track listing and times for Recital B, DVD

**Chapter 1** Maurice Ravel. Valses nobles et sentimentales (1911)

| | |
|---|---|
| 00:00 - 02:03 | 1. *Modéré-très franc* |
| 02:03 - 04:30 | 2. *Assez lent - avec une expression intense* |
| 04:30 - 06:02 | 3. *Modéré* |
| 06:02 - 07:20 | 4. *Assez animé* |
| 07:20 - 08:54 | 5. *Presque lent - dans un sentimente intime* |
| 08:54 - 10:20 | 6. *Assez vif* |
| 10:20 - 12:35 | 7. *Moins vif* |
| 12:35 - 18:00 | 8. *Epilogue: lent* |

**Chapter 2** Anton Webern. Piano Variations Op.27 (1936)

| | |
|---|---|
| 18:00 - 20:15 | 1. *Sehr mässig* |
| 20:15 - 21:06 | 2. *Sehr schnell* |
| 21:06 - 25:55 | 3. *Ruhig fliessend* |

**Chapter 3** Claude Debussy. From *Préludes livre II* (1913)

| | |
|---|---|
| 25:55 - 28:45 | 3. *La puerta del vino: Mouvement de Habanera* |
| 28:45 - 31:45 | 6. *Général Lavine - eccentric* |
| 31:45 - 38:12 | 12. *Feux d'artifice: Modérément animeé* |

**Chapter 4** Olivier Messiaen. From *Vingt regards sur l'Enfant-Jésus* (1944)

| | |
|---|---|
| 38:12 - 44:20 | 14. *Regards des Anges* |
| 44:20 - 55:20 | 15. *Le baiser de l'Enfant-Jésus* |

# Chapter 1

# Introduction

## 1.1 Literature Review

Memorization is crucial for any concert pianist. Pianists are expected to play from memory. Despite its importance, memorization is rarely formally taught, and for many pianists a memory lapse is a major concern.

Most of the previous research concerned with memorization focuses on increasing memorization efficiency through memory strategies (Mishra 2004). Many of them discuss the four most common strategies of memorization (muscular, visual, aural, analytical), coming to the general conclusion that combining all of them will result in a more secure memory.

Most of the long-term memory studies do not consider strategy as a variable. One of the studies which does consider strategy as a variable (Mishra 2007) investigates the efficiency and stability of four memory strategies: holistic, segmented, additive and serial. It comes to the conclusion that holistic and additive strategies are more efficient for short, relatively simple pieces, but there were no significant differences in the stability of the performance. Some mental practice studies show that mental practice alone leads to a greater understanding of the piece but a poorer performance than physical practice alone and that combining an intense mental practice with a short physical

practice produce very similar results as using just intense physical practice (Bernardi et al. 2013). The previously mentioned studies focus on very short pieces (the average length of the pieces in these studies is less than 23 bars, according to Mishra (2008)). They are simple pieces and the memory stability is tried just minutes later. This is in stark contrast to a concert pianist's natural environment, which is learning long and complex pieces for performances that can occur many weeks or even months later.

There are several case-studies which have focused on one interpreter and one piece, and the memorization process is observed in a natural environment for a performer (Chaffin et al. 2010, Chaffin and Imreh 2002, Miklaszewski 1989).These case-studies analyse all of the processes of memorization, and reveal the importance of conceptual memory (having a map of the piece) and finding cues in the music to have quick access to any part in this conceptual map which is stored in the long-term memory. The pieces used in these studies are tonal (for example, Bach's Italian Concerto, third movement).

Patricia Holmes (2005) conducts a study with two experienced solo performers (one cellist and one guitarrist) and after analysing the interviews, she concludes that for both participants the use of imagery (auditory, emotional and phisycal) is a crucial part in their learning and memorization processes. The study describes memorization as part of the learning process and highlights that mental practice has a huge role in learning and memorizing.

Mishra (2008), after reviewing more than 100 articles related to music memorization since 1900, highlights that not one mentions that compositional style and technique can be variables in memorization efficiency. But compositional characteristics do affect memorization. Melodies are easier to remember than unordered pitches (Halpern and Bower 1982) and tonal music is easier to memorize than atonal music (Sloboda et al. 1985).

Mishra concludes that compositional features do affect the memorization process and that these features can be identified as variables to predict memory efficiency (Mishra 2008). Some of the parameters that are analysed in Mishra's study are length, number of notes or density, tonality, chromatic

tones (tones outside the central key), metre, tempo, repetitions and rhythmical complexity. Her results show that the number of notes (amount of material), number of beats (length) and rhythmical complexity contribute to predict memory efficiency, with the number of notes being the single most influential variable.

Sloboda et al. (1985) ran a study with what they defined as an 'idiot savant', who had an exceptional musical memory; he was able to memorize a large-scale piece after hearing it only three or four times. He was asked to memorize two pieces: one tonal (*Melody*, Op. 47 No. 3 from Grieg's Lyric Pieces) and on modal (*Whole tone scale*, by Bartok, Mikrokosmos 5). After an equal number of sessions with both pieces he could play the Grieg piece almost without errors. He could not memorize the Bartok piece, and the sections he managed to memorize had a significant number of errors. Zielinska and Miklaszewski (1992) did a similar experiment in which 31 subjects, all with musical background, had to memorize two melodies: one tonal and one modal. The melodies were repeated ten times, each in different sessions. From the 31 subjects, 19 could memorize the tonal melody, while only one could memorize the modal melody.

These studies show that atonal music is more difficult to memorize than tonal music. But since the aims of these studies were only to compare, no solutions or practice strategies were suggested. And again, only short moderately easy pieces were used for the experiment.

A concert pianist has to deal with entire recital programmes, often lasting over one hour. When the programme is composed only of post-tonal and atonal music, it poses a greater memorization challenge. Therefore, the present study will focus only on post-tonal and atonal music and will aim to develop practice strategies for memorization problems for this kind of music. The strategies will be tested in live performances, which will be recorded in both audio and video.

## 1.2 Research Questions

- What characteristics are found in piano music of the first half of the twentieth century that might present memorization problems?
- What selection of piano recital repertoire from the first half of the twentieth century can expose a wide range of memorization challenges?
- What practice strategies can be developed to solve the memorization problems that the selected repertoire might present?
- Do the compositional characteristics of a piece (including harmonic language, melodic treatment, rhythm, form and structure) suggest which memorization strategies to use?
- How can these strategies be tested?

## 1.3 Aims and Objectives

The aim of this research is to provide solutions and practice strategies for the different memorization problems presented by selected post-tonal and atonal piano repertoire composed between 1911 and 1953. The solutions will be presented and tested through live recorded performances, and will result from the author's personal perspective and experience with the selected pieces.

The objectives of this study are:

- To identify memorization problems associated with compositional features of post-tonal and atonal piano music.
- To select suitable piano repertoire, showing the memorization problems previously identified.
- To localise the memorization problems in each of the selected pieces.

- To explore and develop practice strategies for each of the memorization problems.
- To test the developed techniques through the author's own performances.
- To evaluate the performance outcomes.

## 1.4 Scope of the project

As this study is not theoretical, but empirical, it did not attempt to find a general solution that can be applied to all post-tonal and atonal piano repertoire, but instead focused on solving memorization problems of specific sections in particular pieces as encountered/experienced by the author. The repertoire was selected by attempting to cover a wide range of styles within the literature of post-tonal and atonal music, and also trying to assemble a well balanced recital program that would result in an interesting performance for both the author and potential audiences. The chosen repertoire has the following limitations:

- Written for Solo or Duo piano.
- Fully notated pieces only.
- Time frame from 1911 to 1953

Based on these limitations and also on the personal preferences of the author, a repertoire was selected. The chosen repertoire is listed in chronological order below.

List of repertoire:

- 1911. Maurice Ravel. *Valses nobles et sentimentales*
- 1911. Igor Stravinsky. *Petrouchka*, version for two pianos
- 1913. Claude Debussy. Prélude from livre 2, *La Puerta del Vino*

- 1913. Claude Debussy. Prélude from livre 2, *General Lavine - eccentric*
- 1913. Claude Debussy.Prélude from livre 2, *Feux d'artifice*
- 1936. Anton Webern. *Variations for piano Op. 27*
- 1944. Olivier Messiaen. From *Vingt Regards sur l'Enfant-Jésus, Regard des Anges*
- 1944. Olivier Messiaen. From *Vingt Regards sur l'Enfant-Jésus, Le baiser de l'Enfant-Jésus*
- 1951-1953. György Ligeti. *Musica Ricercata*

The works in the above repertoire list were grouped and curated as two live recitals, each of approximately one hour in duration.

# Chapter 2

# Methodology

Research on memorization techniques for piano music, and particularly empirical research linked to problem solving in a specific chosen repertoire, is uncommon, and therefore a standard methodology to conduct such an investigation does not exist. The methodology presented below has been developed by the author and is presented here as a sequence of steps that must (in the view of the author) be taken when learning a new piece of music.

## 2.1 Identifying difficulties in memorization of post-tonal and atonal piano music

Even after a century since the emergence of post-tonal and atonal music, most pianists today are much more comfortable playing tonal music, and have spent the majority of their learning time in the tonal world. There are a number of elements that make post-tonal and atonal music different from tonal music when it comes to the process of learning and memorizing the material. The musical language itself appears to have a different grammar, and the vocabulary seems foreign to the pianist who has not been exposed to it, making it a much greater challenge to learn post-tonal and atonal music. There are marked differences between tonal and post-tonal/atonal music,

which can be broadly grouped in the following categories:

- Harmonic language
- Melody and phrasing
- Rhythm
- Form and structure
- Gesture/choreography

The first step in the process of learning a new piece of music should be to analyse each of these features and identify possible problems in each category, with the aim of devising suitable strategies to address them.

### 2.1.1 Harmonic Language

Some harmonic elements of post-tonal and atonal music are also present in tonal music. Elements such as chromaticism, bi-tonality and tonal ambiguity are not rare in Baroque and classical music, albeit they are mostly used as an embellishment or even as a musical joke (Mozart's *A Musical Joke* ends with the horns, violins and viola playing in four discordant keys). It is the extensive use of these elements that leads to the breakdown of the tonal system and to the characteristic sonorities of post-tonal and atonal music. Stravinsky makes extensive use of bi-tonality in *The Rite of Spring*, and also in *Petrouchka*. An example is provided in Figure 2.1, taken from Petrouchka. Here the tonalities of C Major and F sharp Major are used simultaneously. In many cases, including this one, the polarization of chords/keys by Stravinsky has both visual and tactile associations with the piano keyboard (for example, white keys against black keys).

The inclusion of ninth, eleventh and thirteenth chords can also lead to a sense of tonal ambiguity, as these chords can be part of more than one tonality. The use of these chords is common in the music of Ravel and Debussy. An example of this is shown in Figure 2.2. This creates an added layer of complexity that

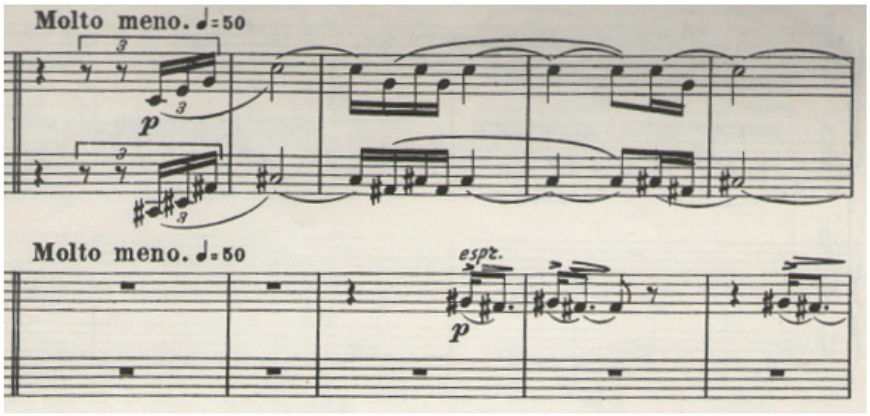


Figure 2.1: Example of bi-tonality. Igor Stravinsky, Petrouchka, Bars 95-98, Boosey & Hawkes.

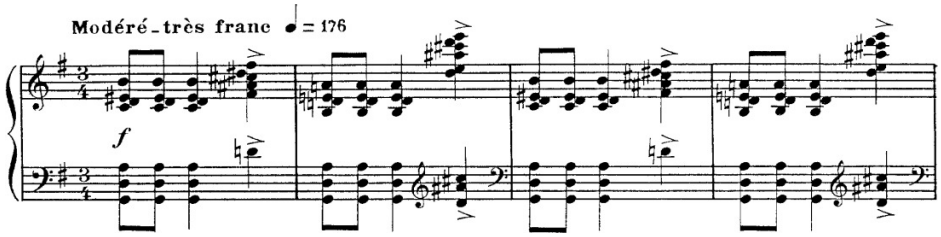


Figure 2.2: Example of tonal ambiguity. Maurice Ravel, *Valses nobles et sentimentales*, Bars 1-4, Durand.

taxes the memory of the pianist, as the relations between keys and harmonic functions become more complex and take more unexpected turns.

The concept of tonal centre is usually avoided in atonal music, with works like Ligeti's *Musica Ricercata* and Webern's *Piano Variations Op. 27*. This creates the added challenge of not having a tonal compass, and the pianist must find other tools to navigate, understand, learn and memorize the score, as harmonic functions, modulations and key signatures lose all meaning. See, for example, the unusual key signature used by Ligeti, shown in Figure 2.3, which mixes flats and sharps.

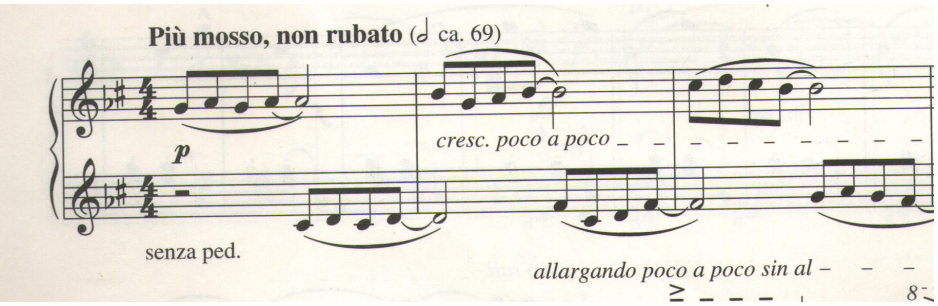


Figure 2.3: Example atonality. György Ligeti, *Musica Ricercata* V, Bars 12-14, Schott.

### 2.1.2 Melody and phrasing

Irregular melodic phrasing, lack of balance in phrase structure, unrecognizable melodies or complete absence of melody are common features in post-tonal and atonal music. These features make it difficult to sing or recall fragments of the music, which in turn poses an added level of difficulty in the memorization process. A good example of these features is Anton Webern's *Piano Variations Op.27.*

### 2.1.3 Rhythm

Change of metre, change of rhythmical patterns, irregular rhythms, rhythmical counterpoint, rhythmical displacement and polyrhythms are also commonly found in post-tonal and atonal music. These create an additional challenge to the memory, as they introduce more elements that need to be remembered.

### 2.1.4 Form and Structure

This is the aspect where there are more similarities between tonal and post-tonal/atonal music, as twentieth century composers often used old forms (sonata, variations, waltzes, suites, fugues, etc) as vehicles for their new compositional language. All of the pieces selected in this research make use

of traditional forms, albeit in very innovative ways. An example that stands out is *Musica Ricercata*, where the whole piece is structured as a suite, in which harmonic material gradually gains complexity from using only two tones in the first piece, to using the full twelve tones in a four-part fugue in the last piece of the suite. A more detailed discussion on the structure of each piece is given in Chapter 3.

### 2.1.5 Gesture

Post-tonal and atonal music make use of unusual (in a tonal sense) chords, resulting in visual and tactile confusion, as the pianist cannot immediately recognize the symbols and patterns on the score, and the resulting hand configurations (fingerings) do not match the typical patterns arising from tonal chords and their inversions. Additionally, a common feature of post-tonal and atonal music is playing with both hands in the same register, as shown in Figure 2.4, causing the hands to interfere with each other, which forces the pianist to assume awkward hand positions. Also common is the crossing of the hands over large intervals (Webern), which can also cause awkward hand positions and wrist angles.

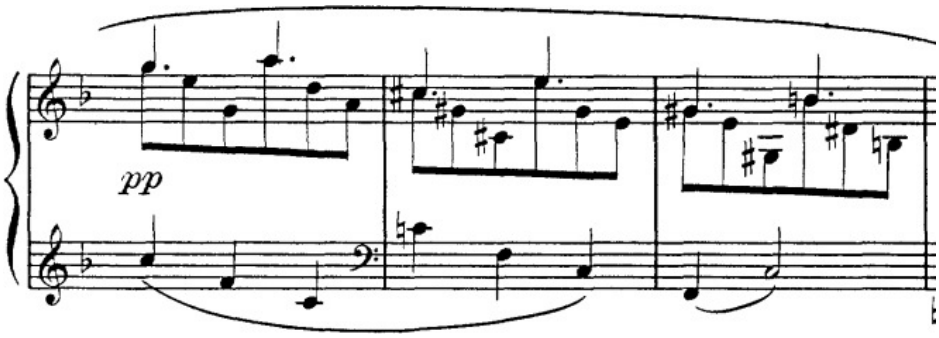


Figure 2.4: Example of hands crossing over the same register. Maurice Ravel, *Valses nobles et sentimentales* VII, Bars 67-68, Durand.

## 2.2 Development of memorization practice strategies

Once the potential memorization problems were identified, different practice strategies were explored and developed to address them. These included:

- Harmonic analysis. Searching for the presence of uncommon scales and/or modes. Looking for modulations if they exist.
- Search for patterns or sequences, including melodic, harmonic and rhythmical.
- Analysis of the form of the piece, identifying repeats, recurring themes and sections, etc.
- Learning individual voices if polyphony is present, then integrating the individual voices in different combinations. Deconstructing the piece into layers to determine what each layer does individually and how they interact with each other.
- Searching for symmetry in phrasing and fingerings.
- Grouping seemingly incoherent notes into meaningful gestures and incorporate them into a choreography.

  Each piece in the selected repertoire is unique in its challenges, and therefore these general strategies would have to be tailored to each case. More detailed discussion on the use of these strategies and their application to specific pieces can be found in Chapter 3.

## 2.3 Testing through performance

The strategies were tested regularly through small performances and the final recitals. Both final recitals and small performances were public and audio

recorded; however, only final recitals were video recorded. The amount of repertoire included in each of the tests varied significantly, depending on the preparation process of the pieces, but they were organised in a manner that all the pieces were tested a similar number of times, and there were several whole programme tests (not all of which were recorded) before each of the final recorded recitals.

## 2.4 Evaluation of performance outcomes

An analysis and evaluation of the performances and the recordings was conducted by the author to determine if the memorization strategies were effective, and in the case of being ineffective, to determine the reasons.

Small performances provided an opportunity to assess the memory stability of the pieces, highlighting points were memory lapses occurred, or points where the performer experienced hesitation, anxiety or the feeling of an impending memory lapse, even though the memory lapse did not eventuate or a mistake did not occur. The identified weak points were then targeted with a battery of memorization and practice strategies (see section 2.2) to improve retention and stability, as well as overall performance proficiency.

The evaluation of performance was done several days after the performance, and was based only on a critical assessment of the recording. The evaluation focused on finding memory lapses if present, assessing the severity of the lapse and possible subsequent effects on the quality of the performance. Such effects include (but are not limited to) the following:

- Decrease in the level of concentration.
- Change in the quality of the sound, particularly a decrease in projection.
- Disturbance in the rhythm and natural flow of the piece.
- Noticeable changes in the performer's demeanor and body language.

A flawless performance is a very rare occurrence, and even the most seasoned professional musicians experience memory lapses and minor drops in the level of concentration. It is therefore unrealistic to judge the practice and memorization strategies as failed because of the occurrence of minor memory lapses. If the memory lapses did not deter the performer from a fluid and artistically satisfying performance (in the judgment of the performer herself), then the strategies were classified as successful.

# Chapter 3

# Specific memory problems in chosen repertoire and practice strategies

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## 3.1 György Ligeti. *Musica Ricercata*

Ligeti wrote *Musica Ricercata* between 1951 and 1953, at a time when he was increasingly dissatisfied with his own creations. So he decided to build a new compositional style: he would restrict himself to only certain pitches. The first movement of *Musica Ricercata* contains only two pitches, and in each successive section Ligeti adds one more  until finally, in the eleventh, he uses all twelve tones of the chromatic scale.

Most of the memorization challenges that this piece presented were associated with harmonic language and rhythm. The majority of the movements do not have a tonal centre. Some of them have very unusual key signatures; for example, the second movement has an E sharp and F sharp, and the fourth movement has F sharp and A flat. Not having any tonal gravity is not too

great a problem at the start of the set, as the pieces do not contain many notes, but as the set progresses the pieces become much more complex, with the last piece being the most difficult to memorize.

### 3.1.1 Harmonic Language

XI. *(Omaggio a Girolamo Frescobaldi) Andante misurato e tranquillo*, the last movement of the set, is a fugue. Fugues are difficult to memorize due to their polyphonic nature. This piece, therefore, not only has the problems of chromaticism, tonal ambiguity and not having a tonal center, but it also presents all the memorization challenges associated with fugues.

The main theme introduces the twelve tones arranged in a semi-chromatic melody. The counterpoint is a descending chromatic scale. The theme is first presented starting on E and it is then introduced by the next voice a fifth higher, and this process is repeated sequentially until it completes the circle of fifths. It then starts all over again , but this time adding other common fugue treatments, such as stretto, augmentation, diminution, etc.

The first section of this movement was addressed as normal fugue: first memorizing the theme, then the counterpoint. The reappearance of the theme each time a fifth higher gave the feeling of constant wandering without a sense of direction, due to the lack of harmonic resolution, so focusing on the other parts was a good strategy to keep the piece together.

A greater challenge was present in the last two pages of the piece (see Appendix A). This section is written over 3 staves, in a very complex stretto, where the main theme interacts with itself, in both augmented and diminished form. To add difficulty to the section, the right hand had to take most of the time the two upper staves, which meant that it was forced to perform large stretches and assume uncomfortable hand positions.

Particularly challenging was memorizing bars 54 - 57 (see Figure 3.1) due to the number of voices interacting at the same time and the complexity of the writing, which is done over four staves. The memorization approach chosen to

address this section consisted in separating the layers and practising various combinations with the different voices.

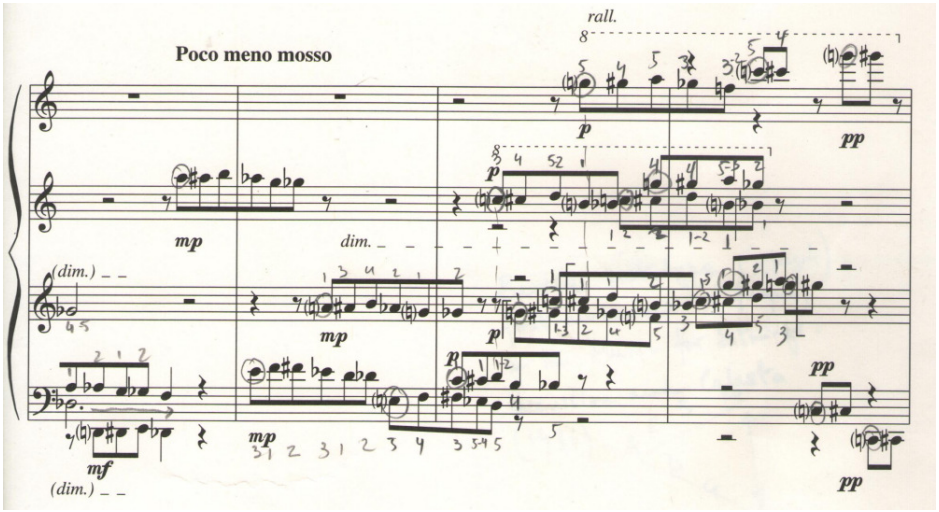


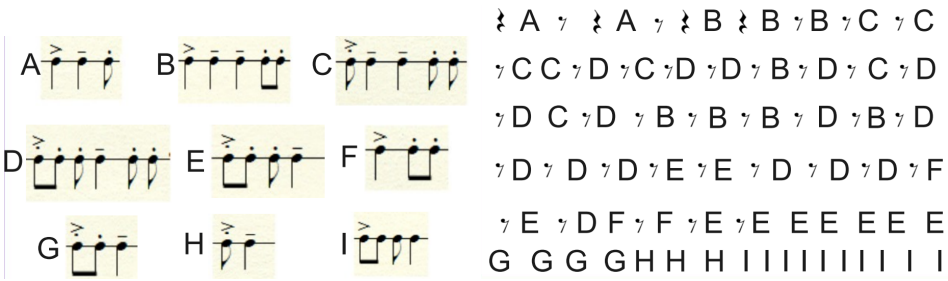

Figure 3.1: Ligeti, Musica ricercata, XI . *Omaggio a Girolamo Frescobaldi*, Bars 54-57, Schott.

### 3.1.2 Rhythm

I. *Sostenuto-Misurato-Prestissimo*, the first movement of *Musica Ricercata* is the simplest of the set. It uses almost exclusively the note A, arranged in different octaves with different rhythm patterns, and only at the very end of the piece, the note D is introduced. Therefore, it presents memory problems associated exclusively with rhythm, most specifically, change of rhythmical patterns and rhythmical displacement. The feeling of 4/4 lasts only for the first few lines, being quickly replaced by rhythmical patterns, which change continuously, and which are separated by rests of varying length throughout the movement. All of this happens in the right hand, while the left hand has a steady ostinato for most of the movement.

The first strategy was to identify all the rhythmical patterns. I identified eight in total, some of them being notoriously different and some being just a fraction of another pattern.

Once the patterns were identified, a letter was assigned to each pattern, as shown in Figure 3.2(a). Then the entire movement was rewritten with this coding system, alternating each letter with the rest that separates each rhythmical pattern, as shown in Figure 3.2(b). With this system I could practise the rhythmical patterns away from the piano by tapping the rhythms with the right hand while the left hand kept tapping a steady beat.




(a) (b)

Figure 3.2: Ligeti, Musica ricercata, I . *Sostenuto-Misurato-Prestissimo*.3.2(a) Rhythmical patterns. 3.2(b) Musica ricercata I, encoded in terms of rhythmical patterns and rests.

### 3.1.3 Gesture

The unusual patterns or sequences of notes often result in unsual gestures or hand shapes, and the resulting forced hand gestures are foreign and difficult to commit to muscle memory.

X. *Vivace. Capriccioso* shows a clear example of this. In bars 93 - 101 (Figure 3.3) there are repeated sequences of chromatic seconds in both hands, both ascending and descending, presented in a kind of stretto. Chromatic seconds are very unusual; much more common (and comfortable for the hand) are chromatic minor thirds. The fingering needed for the chromatic seconds, which were also marked legato, puts the hands in a very uncomfortable position (one has to squeeze the hand in an unusually small shape), which makes it very easy to slip a finger and lose the position.

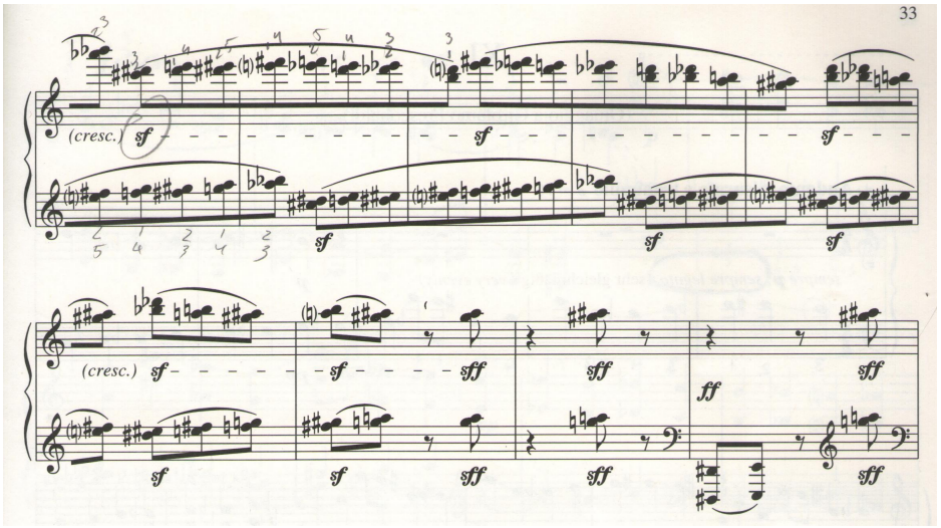



Figure 3.3: Ligeti, Musica Ricercata, X. *Vivace. Capriccioso*, bars 95-103, Schott.

## 3.2 Igor Stravinsky. *Petrouchka*

Of all the selected repertoire, *Petrouchka* was the most interesting to perform by memory, as there is another piano/pianist involved and therefore one part is dependent from the other. It seemed clear to me that a big portion of my memorization process was going to happen during the rehearsals with my music partner rather than in my own practice. This was particularly evident in sections where my part (piano 1) had a series of repeated chords, which by themselves did not have much meaning, and where I needed the musical cue from my partner's part to trigger the retrieval of the next section of music from my memory.

This is also notorious in sections where the material is passed from one part to the other as a wave. For example in the section *La querelle du Maure avec Pétrouchka. La ballerine s'évanouit*, shown in Figure 3.4

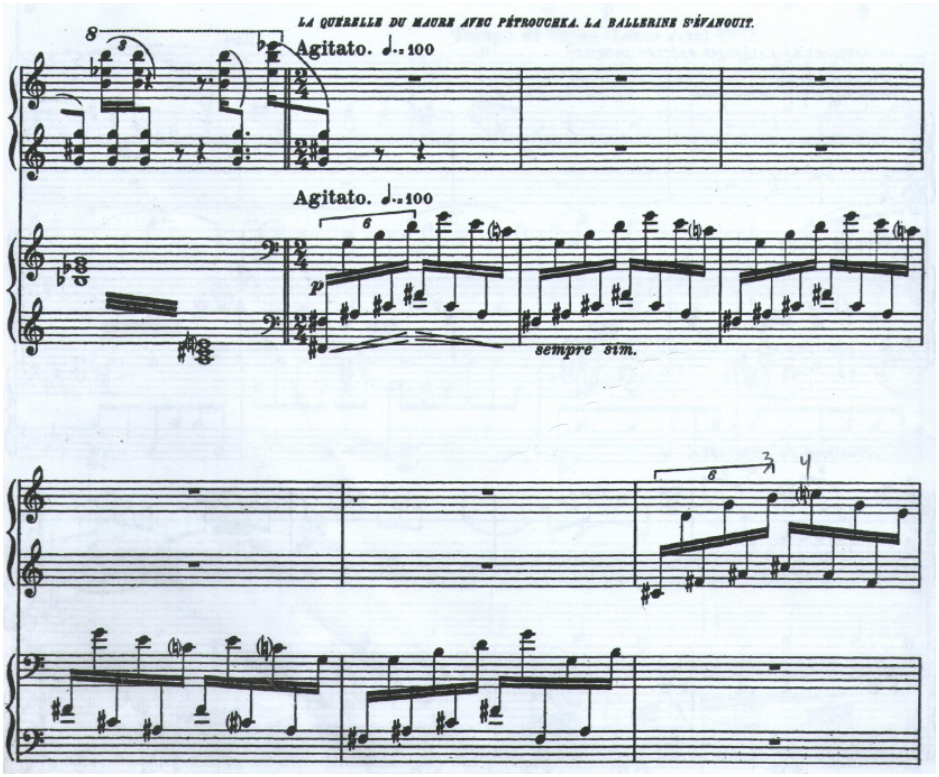



Figure 3.4: Stravinsky, Petrouchka, XI. *La querelle du Maure avec Pétrouchka. La ballerine s'évanouit*, Kalmus.

### 3.2.1 Harmonic Language

*Petrouchka* presents many challenges in terms of harmonic language. The presence of bi-tonality is clear in the second *Tableau*, where Stravinsky juxtaposes C Major and F sharp Major for long passages (see Figure 3.5).

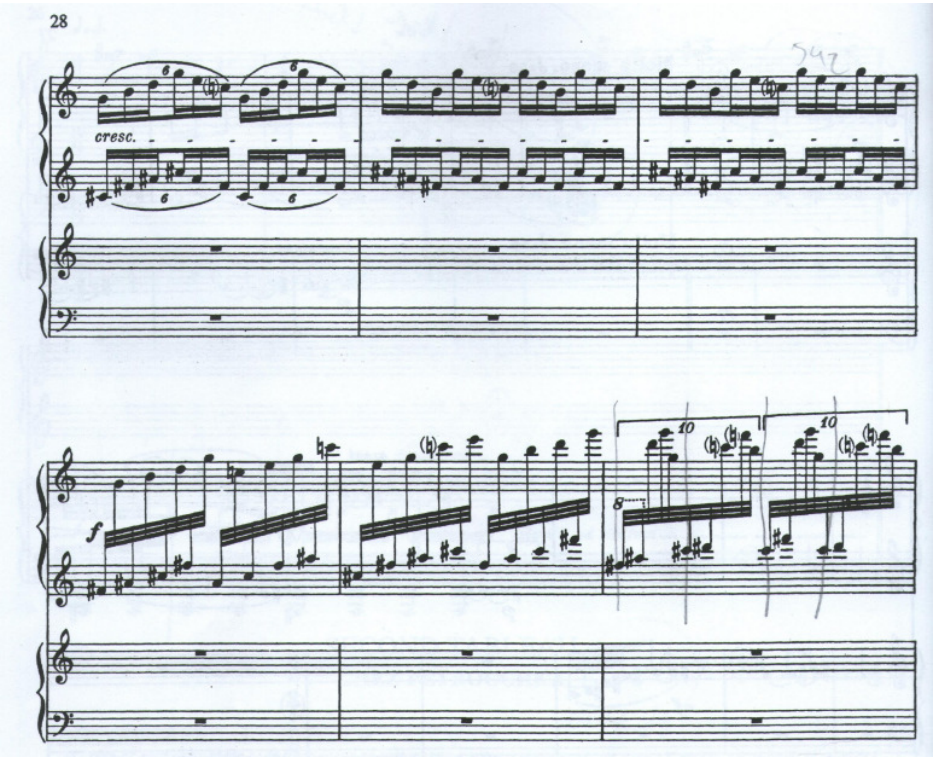



Figure 3.5: Stravinsky, Petrouchka, *Deuxième Tableau*, Kalmus.

Some gestural memory is implied here, as both hands are moving in similar motion most of the time, the left hand slightly higher, playing on the black keys. Once the patterns are found and the hand gestures organised, it becomes much easier to memorize, as one is not memorizing notes, but entire positions.

A slightly more complex version of these patterns occurs again in the third *Tableau*, this time the hands alternate in similar and contrary motion, with the right hand playing on the black keys and the left hand playing the white keys (see Figure 3.6).

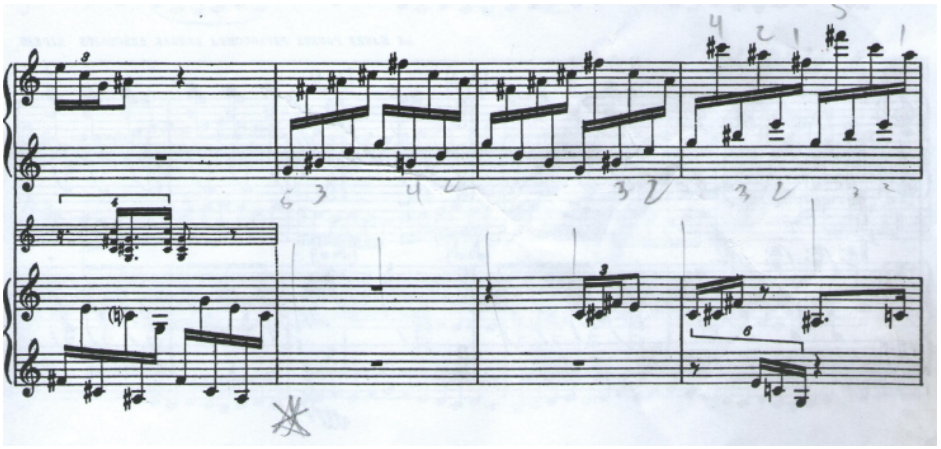


Figure 3.6: Stravinsky, Petrouchka, *Troisème Tableau*, Kalmus.

### 3.2.2 Melody and Phrasing

The melodic motif at the beginning of the first *Tableau*, shown in Figure 3.7, can be difficult to memorize, as it reappears with slight variations another five times in the *Tableau*. This melodic material does not have any sense of direction or resolution, but instead it keeps cycling using repetitive figurations. Once more, the cues given by the other piano part were crucial in order to keep track of the number of repetitions. In a melody that only changes slightly, it is also important to identify which part of the melody changes and which part remains unchanged. In this case, the figuration going up and down remained the same, whereas the small portion of the melody at the beginning (A-D) was changing in number of repetitions each time.

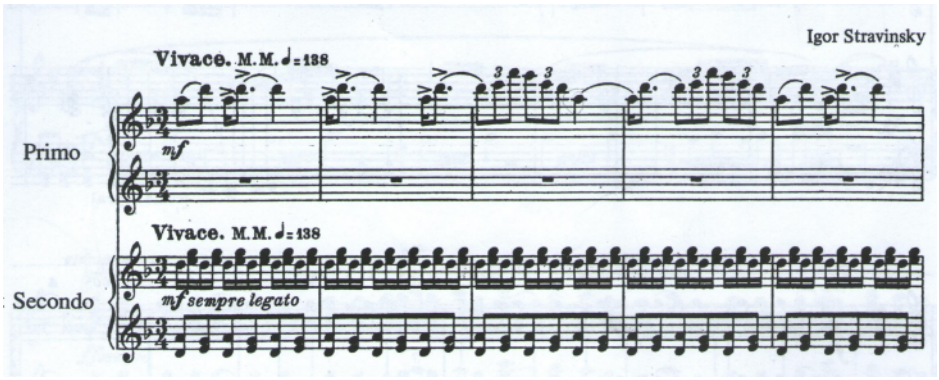



Figure 3.7: Stravinsky, Petrouchka, *Première Tableau*, Kalmus.

### 3.2.3 Rhythm

In the first *Tableau*, there are multiple sections with many changes in the time signature. In Figure 3.8, for instance, the time signature for piano 1 is 7/8 while in piano 2 is 3/4. Once again, the strong baseline on part 2 gives the whole section a feeling of the bar, which provides a significant cue for piano 1. This changes, however, in the next few bars, where piano 2 has a tremolo and piano 1 is left alone to remember all of these many rhythm changes. I approached the next section by forgetting about the time signatures and incorporating the notes into small musical phrases instead. Having to count, especially detailed counting, is generally unreliable during a performance.

Something very similar happens a few bars later, as shown in Figure 3.9. This was addressed in a similar way, namely, by grouping the material into small phrases.

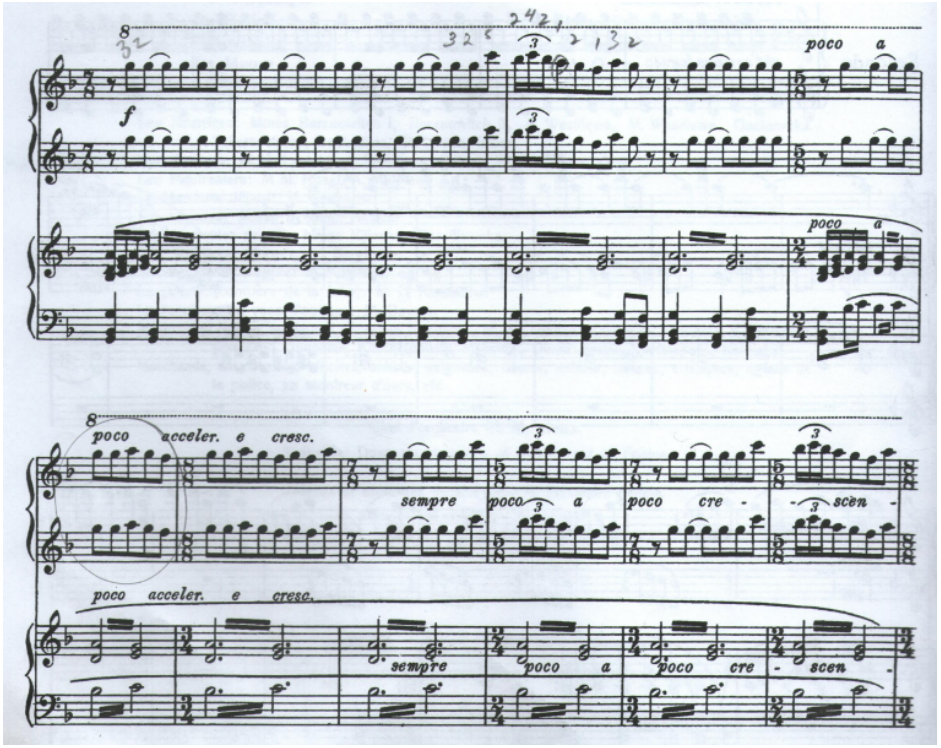



Figure 3.8: Example of complex rhythms and polymetric music. Stravinsky, Petrouchka, XI. *Première Tableau*, Page 4, Kalmus.

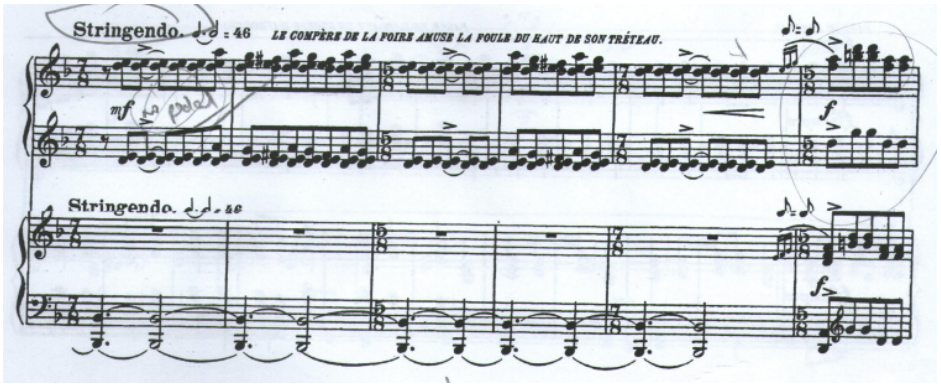



Figure 3.9: Example of complex rhythms. Stravinsky, Petrouchka, XI. *Première Tableau*, Page 6, Kalmus.

## 3.3 Maurice Ravel. *Valses nobles et sentimentales*

*Valses nobles et sentimentales* is a suite of waltzes for piano written in 1911. An orchestral version was published later in 1912. It is widely known that Ravel intended the title of the suite to be an homage to Franz Schubert, as he was inspired by Schubert's *Valses nobles* and *Valses sentimentales*, published in 1823.

There are a few features that Ravel appreciated in Schubert's waltzes, and that can be easily observed in his own work: the distinctive Viennese rhythm, the use of rubato, balanced phrases, straightforward form, gliding middle voices, melodic suspensions, and unexpected harmonic subtleties.

In terms of memorization, this work was probably one of the pieces of the selected repertoire that presented the fewest memory challenges.

### 3.3.1 Harmonic Language

Most of the memorization challenges in this set of waltzes have to do with harmonic language. The presence of post-tonal features is quite evident throughout the entire work. The first waltz, even though it is supposed to be in G Major, surprises us from the beginning with those unnerving dissonant chords, before settling down in G Major. This is later expanded in the middle section, between bars 53 and 60, in a sequence of chords that can be difficult to remember during a performance (see Figure 3.10).

There is a strong chromatic leading in both the top and middle voices that one can use as a guide. Especially from bar 57 to 60, the top and bottom notes of the chords in the right hand have chromatic lines in opposite directions.

Chromaticism is in fact a very important element, often found in the inner layers, for example in bars 41 to 44, shown in Figure 3.11, and can provide a strong reference for the memory. Following the inner layers, rather than

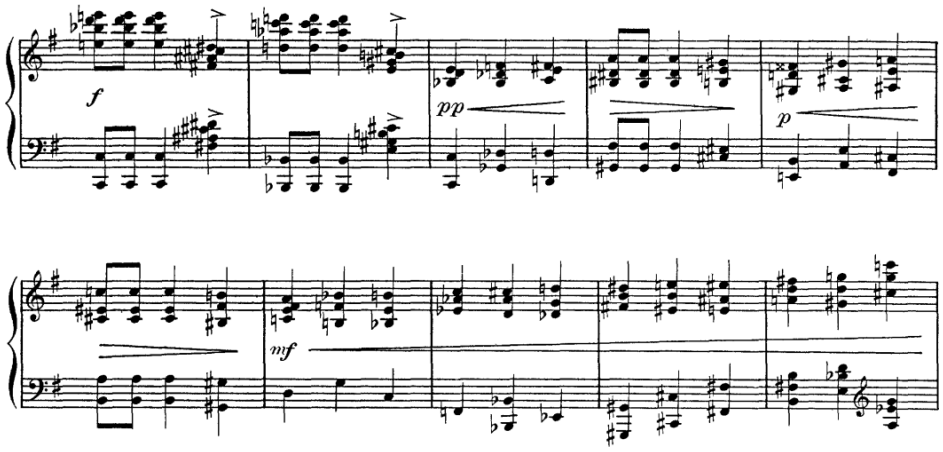



Figure 3.10: Example of complex harmonic language. Ravel, *Valses nobles et sentimentales*, bars 51-60, Durand.

the obvious melody and bass line, helps to make a piece stick together. In a sense, the inner chromatic layers are used as a glue, that gives consistence to the other parts.

## 3.4 Anton Webern. *Variations for Piano Op. 27*

*Variations for Piano Op. 27* is a twelve-tone piece written in 1936. It consists of three movements, however, until now and despite some theories,

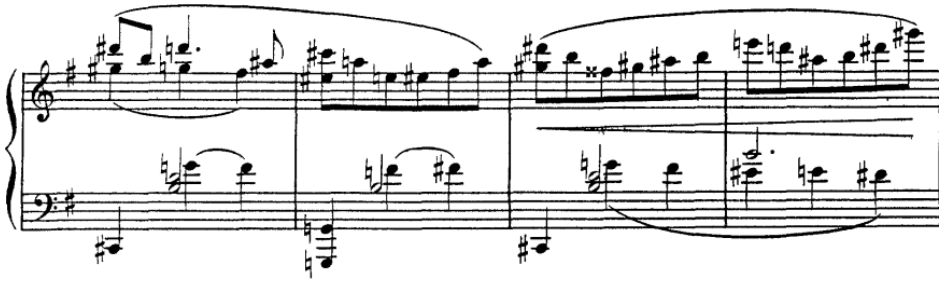


Figure 3.11: Example of chromaticism. Ravel, *Valses nobles et sentimentales*, bars 41-44, Durand.

it remains unclear why this set is titled Variations. It was a very interesting experience to memorize this work. Even though the piece is short (an average performance would last about 6-7 minutes), it is probably one of the most difficult pieces to memorize. It has most of the memory challenges discussed in this study: no melodies, no tonal centre and awkward gestures. Even though there are time signatures and the music is written in regular bars (unlike Messiaen for instance), most of the time there is no sense of a regular pulse.

### 3.4.1 Melody and Phrasing

The absence of a recognisable melody is one of the features that make this work so difficult to learn and memorize. At the very early stage of learning this piece, I tried to compensate the non-existent melody with an almost mathematical analysis. It soon became apparent that this was not the solution; even though I knew exactly what was happening, the piece would not stick in my memory. I then approached it in a completely different way: I looked for phrases, for some musical meaning. In the first movement, for instance, in bars 19 to 29, there are many very detailed indications of dynamics, articulation, and changes in tempo (see Figure 3.12). It is clear that Webern intended this piece to be very expressive. Even though there are no easily recognisable melodies, there are three clear musical phrases, each with more intensity than the previous one.

Similarly in the third movement, in bars 33 to 41 (see Figure 3.13), musical phrases are evident, this time with the added help of the symmetry in the material. However, it is important to note that phrases and the symmetrical construction of the section do not coincide.

### 3.4.2 Gesture

This set of variations is almost entirely a gestural problem. There are very few places where the hands do not disturb each other, or where the composer does

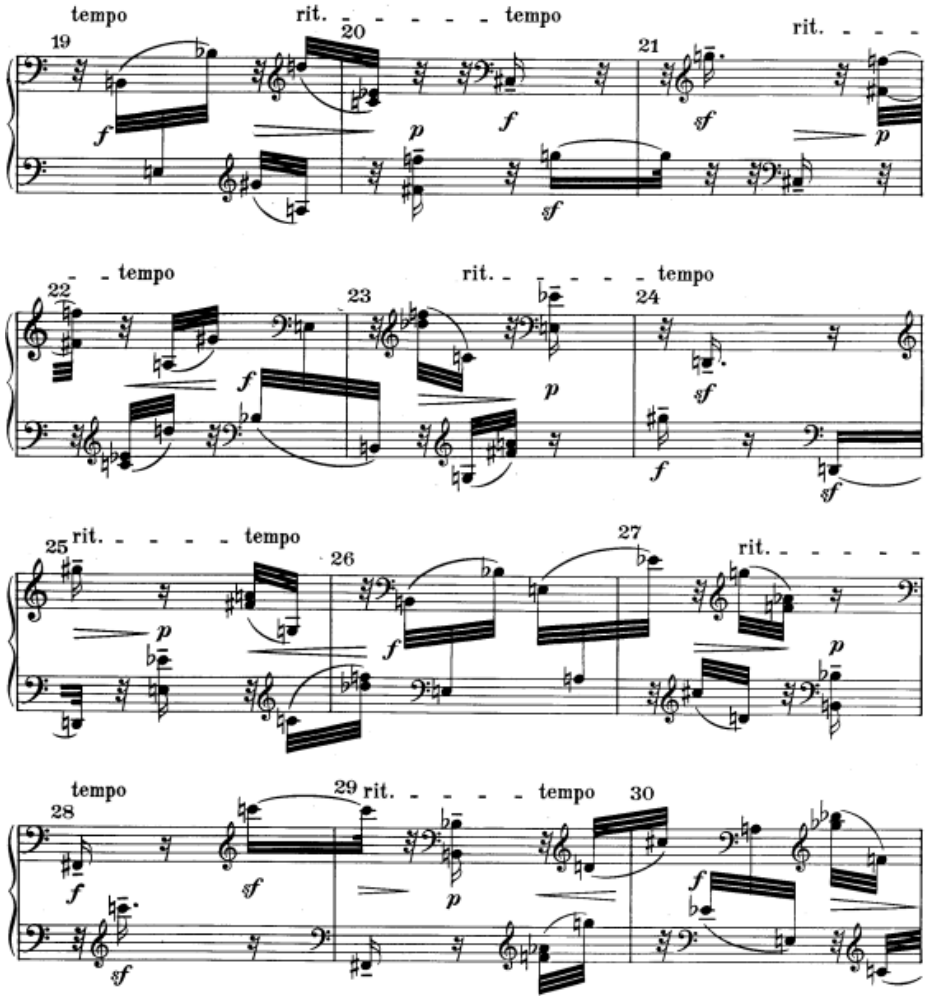



Figure 3.12: Example indications of dynamics, articulation, and changes in tempo. Webern, Variations Op.27, I. *Sehr mässig*, bars 19-29, Universal Edition.

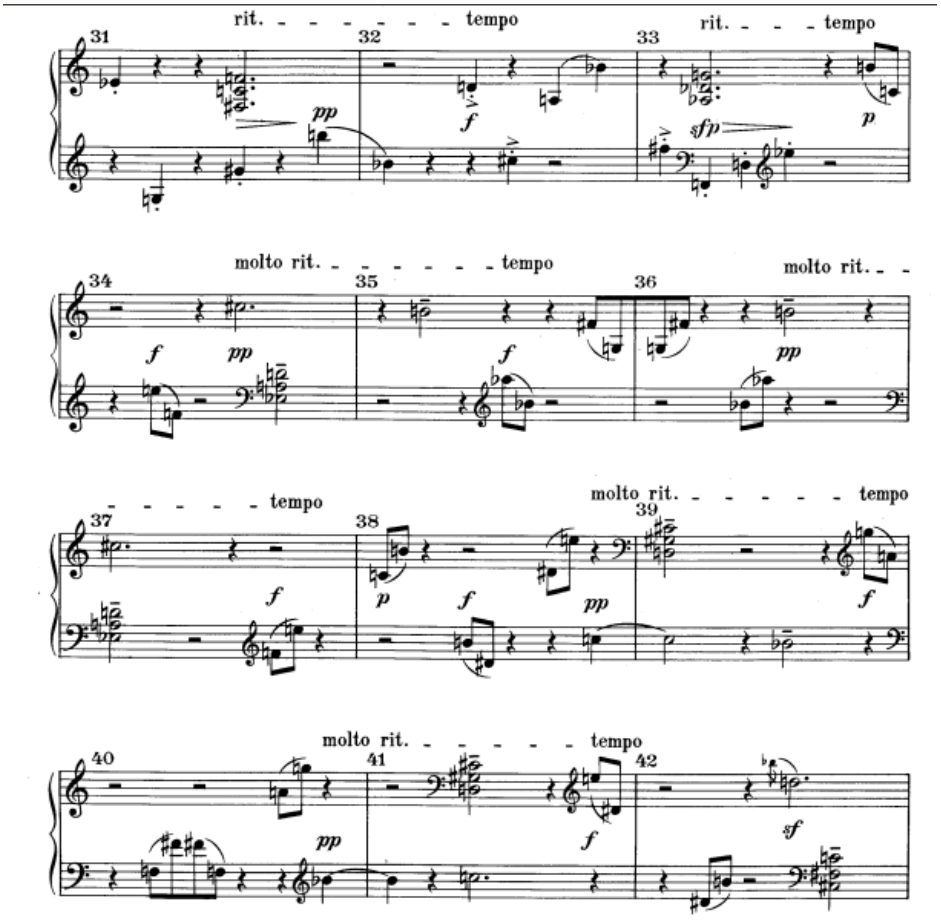



Figure 3.13: Example of phrases. Webern, Variations Op.27, III. *Ruhig fliessend*, bars 31-42, Universal Edition.

not specifically indicate crossing or alternating hands, when, at first sight, it seems much simpler to take said passage with one hand, in a more standard manner. It seems as if the composer intended the piece to be a gesture and choreography puzzle, as well as a very difficult piece to learn. However, after analysing the piece and trying multiple alternative ways of playing certain passages, it seemed evident that the problem was also part of the solution. Gesture and choreography are strong methods of memorization. Pianists use these methods intuitively, and often unconsciously. Every time we play a piece that has big jumps for instance, or in general whenever we cannot keep our eyes checking both hands, at least one of them has learned its way by memorizing a gesture, by measuring the distance between where the hand currently is and where it has to go, and by incorporating that movement into a choreography.

The symmetry found throughout the movements is one of the key elements to help the process of memorization. This is particularly evident in the second movement, where each note or group of notes is positioned at exactly the same interval from the key A4. Given the strong symmetry, it appeared also that using a symmetric fingering would help to consolidate the memory even more.

In the first movement the symmetry is again evident, for instance at the very beginning of the piece, bars 1 to 7 (see Figure 3.14), where Webern presents the twelve tones and then mirrors them backwards. Even though it was necessary to do a few rearrangements between hands (due to the uncomfortable stretches, and only with the purpose of improving tone production) the fingerings remained symmetrical. In bars 8 to 10 it is also possible to appreciate the symmetry in hand shape, as in both hands the thumb rests on a black key, while fourth and fifth fingers play on white keys.

The third movement was by far the most difficult to memorize. First of all, it is a slow movement. It is also mostly composed of single notes rather than groups of notes. This makes it more difficult, because patterns are much more evident in groups of notes than in a sequence of single notes.

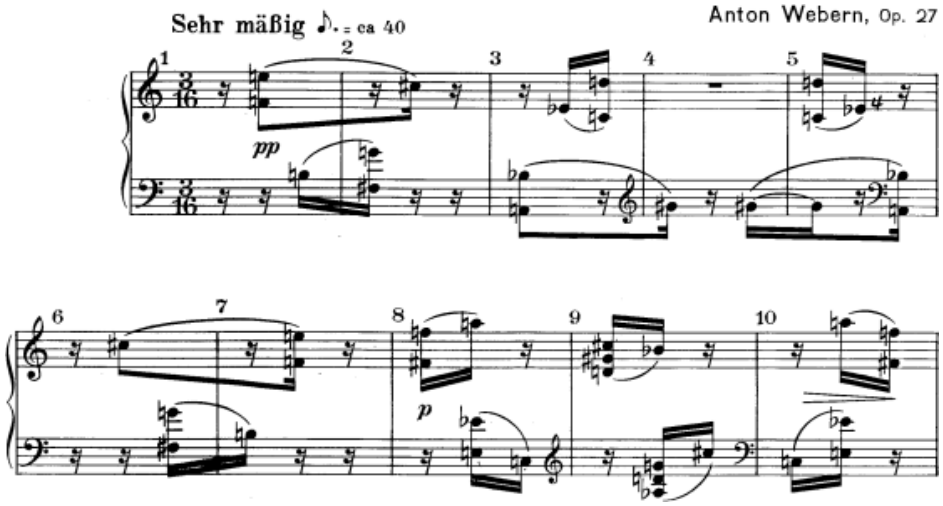



Figure 3.14: Example of phrases. Webern, Variations Op.27, I. *Sehr mässig*, bars 1-10, Universal Edition.

In the first twelve bars of the movement, the twelve tones are introduced in single notes and with no evident pattern in the intervals between them. As the next group of twelve notes is presented it is possible to observe the repetition of the rhythm pattern, and as the twelve notes appear once more, there is a clear symmetry as the notes appear backwards, compared to the first twelve tones. This alone is not helpful though, as to remember single notes going backwards or forward in a slow movement is very inefficient and requires enormous effort. Again, the use of gestures as a unifying tool is crucial here. The strategy is to put the single notes into phrases and include as many notes as possible in the same gesture. Because this is a slow movement, the gestures will need to be somewhat bigger in order to keep them smooth and in a cyclical, non-stop motion. This can be better understood and appreciated by watching the attached DVD recording.

## 3.5 Debussy. *Préludes* livre 2: III, VI, XII

Debussy's 24 preludes were composed between late 1909 and early 1913. They are arranged in two books, each containing 12 preludes. Book 1 was

composed between December 1909 and February 1910, while Book 2 was composed between December 1911 and January 1913. The three preludes chosen for this study are taken from book 2. *La Puerta del Vino* is a Spanish Habanera, with a sensual rhythm and frequent evocations of flamenco guitars. It is believed to be inspired by an image on a postcard sent by Manuel de Falla to Debussy, depicting the Alhambra Gateway in Granada.

*Général Lavine - eccentric* is a musical portrait of Edward Lavine, one of the most celebrated figures in international vaudeville (a theatrical genre of variety entertainment) of the time. It is written in the style of a cake-walk, which is a strutting dance popular at the end of the 19th century in the Southern United States, hence its humorous character and strong rhythmical cadence.

*Feux d'artifice* is the last prelude of the set, and it is an emphatic end to the series. It is very *avant-garde* in its use of harmony, in the sense that it completely lacks a tonal centre. It is replete with pianistic effects and it very successfully portraits the imagery if a fireworks display.

### 3.5.1 Harmonic Language

Some sections of *La puerta del vino* present problems of bi-tonality or bi-modality. While the left hand, which carries the habanera rhythm, stays mostly in D flat Major (briefly modulating to B flat Major in the middle section), the right hand moves through different harmonies much more freely, creating often harmonic tension and dissonance, the most notorious of which happening in the climax of the piece, in bar 44 (see Figure 3.15) where the left hand has a B flat Major chord while the right hand has a B Minor chord, both marked fortissimo. There is also a non-functional parallelism of chords occurring on the right hand in the middle of the piece between bars 35 and 41. This problem was addressed by finding patterns for the sequence of chords.

In bar 35 for instance, there is a sequence of Major chords starting on C

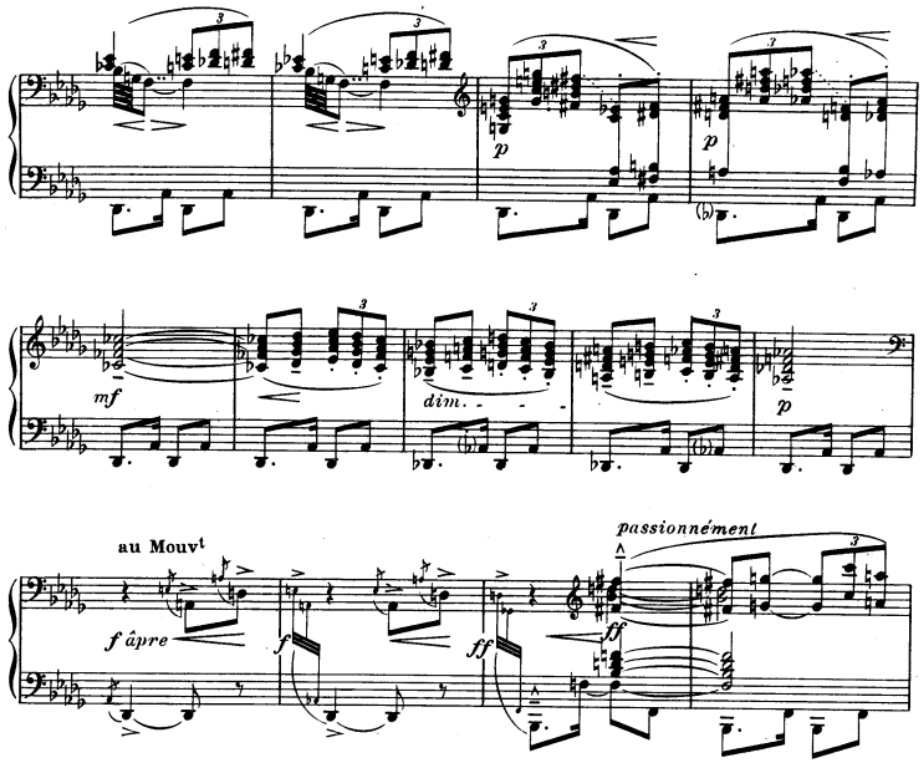



Figure 3.15: Example of bi-tonality or bimodality. Debussy, *La puerta del Vino*, bars 33-45, Durand.

Major played twice, then B Major, A flat Major and back to B Major. In bar 36 exactly the same happens, except one tone higher.

In bars 37 - 40 something similar happens. There is a sequence of Major-Major-Minor chords which repeat one semitone lower.

## 3.6 Olivier Messiaen. *Vingt regards sur l'Enfant-Jésus*: XIV, XV

*Vingt regards sur l'Enfant Jésus* (Twenty contemplations of the infant Jesus) is a suite of 20 pieces composed on 1944, and dedicated to his wife Yvonne Loriod. There are three main themes or leitmotifs that reappear throughout the movements and that give the cycle a sense of unity and binding. Two out of the three main themes can be easily recognised in the two selected pieces. The two chosen pieces for this study are consecutive pieces on the set, and are extremely contrasting. Dissonances are used extensively in both pieces, but in *Regard des Anges* they are more confronting, edgy and sharp. In this piece, especially on the second half, Messiaen explores in detail the sonorities of birds.

In *Le baiser de l'Enfant-Jésus*, despite the extensive use of dissonances, the effect is a much warmer, rounder sonority. The piece itself is a lullaby and it is full of love and passion.

### 3.6.1 Harmonic Language

If there is a feature that makes Messiaen a real challenge to memorize, it is his harmonic language. Dissonances are more common than not, with very few places of harmonic relief, and the number of notes he writes simultaneously makes the music very difficult to read, assimilate, learn and memorize.

One clear example of this is found in bars 73 to 78, shown in Figure 3.16. There are certain patterns that can be identified, particularly in the right

hand, where the intervals between the notes in the chords at the beginning of each bar are the same. There is also a clear pattern in hand shape for both hands in bar 77.

Another example of this is found in bars 85 to 90 (Figure 3.17); in this case with the added difficulty of the big stretches, which would force most pianists to rearrange notes between hands, making it even more difficult to find common patterns or hand shapes, which would have otherwise helped in terms of memorization. In this section, it was helpful to isolate the three different parts, namely chords in the right hand, double notes in the left hand and bass notes. Each of them had a particular pattern. Once learned this way, the next step was to practise them in all possible combinations.

### 3.6.2 Melody and Phrasing.

In the second half of *Regard des Anges*, until nearly the end of the piece, Messiaen explores the sounds of birds. There are multiple melodies carried by the right hand, while the left hand plays a repeated melodic pattern (probably another bird). These melodies are not easily remembered, as they have an irregular melodic pattern, and they seem fragmented. One can imagine a number of birds, each waiting for their turn to sing a very short phrase.

There are two major elements in memorizing a melody: rhythm memory and pitch memory. Usually these two things happen simultaneously when memorizing a relatively easy melody. When memorizing a more complex melody, it is better to split the process and start by learning the rhythm of the melody. Therefore, I spent significant amounts of time playing the left hand, and at the same time, either singing or tapping the rhythm in the right hand.

Once the rhythm was incorporated, I tried to put all of these small fragments of melody into a longer melodic line. It was possible to observe that certain groups of short melodies had common hand shapes. This certainly helped the process of memorization.

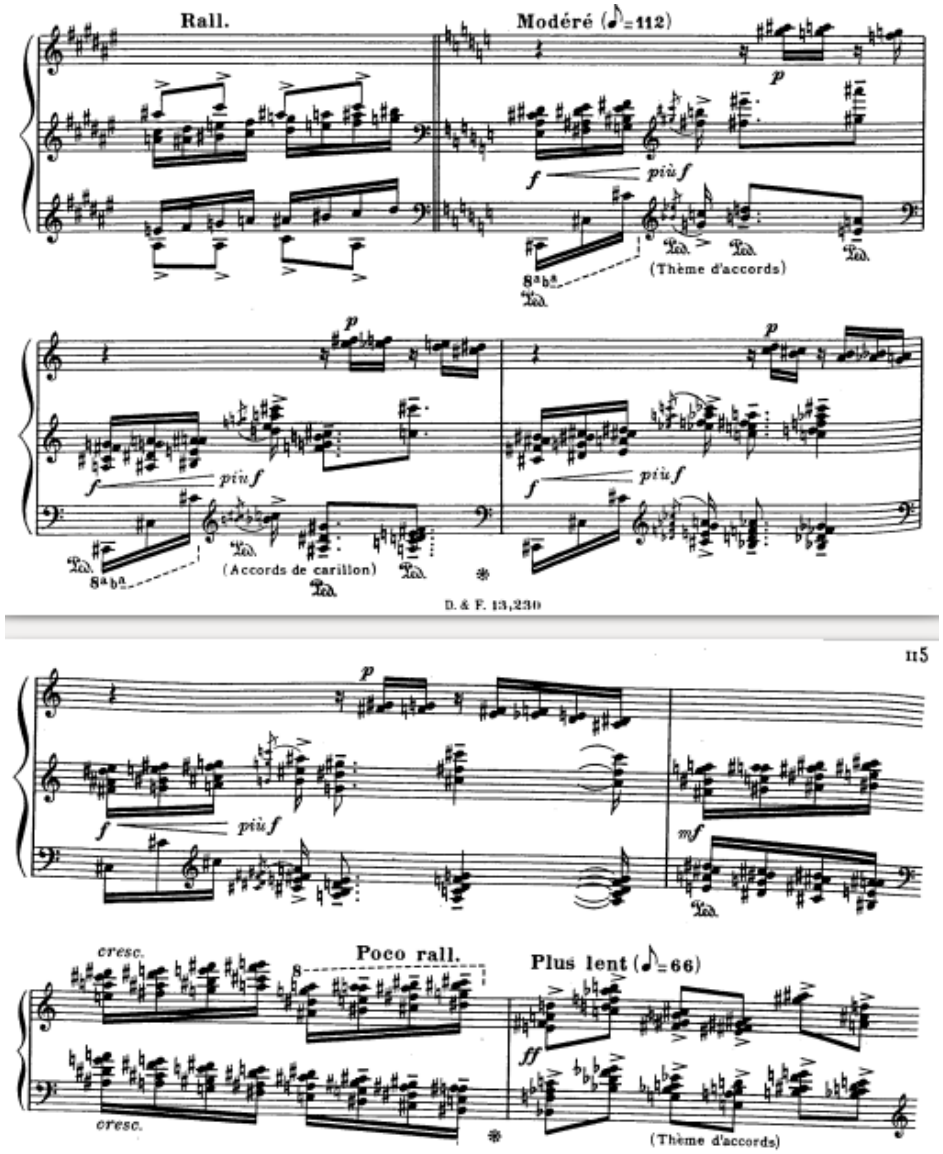



Figure 3.16: Example of patterns. Messiaen, *Le baiser de l'Enfant-Jésus*, bars 72-78, Durand.

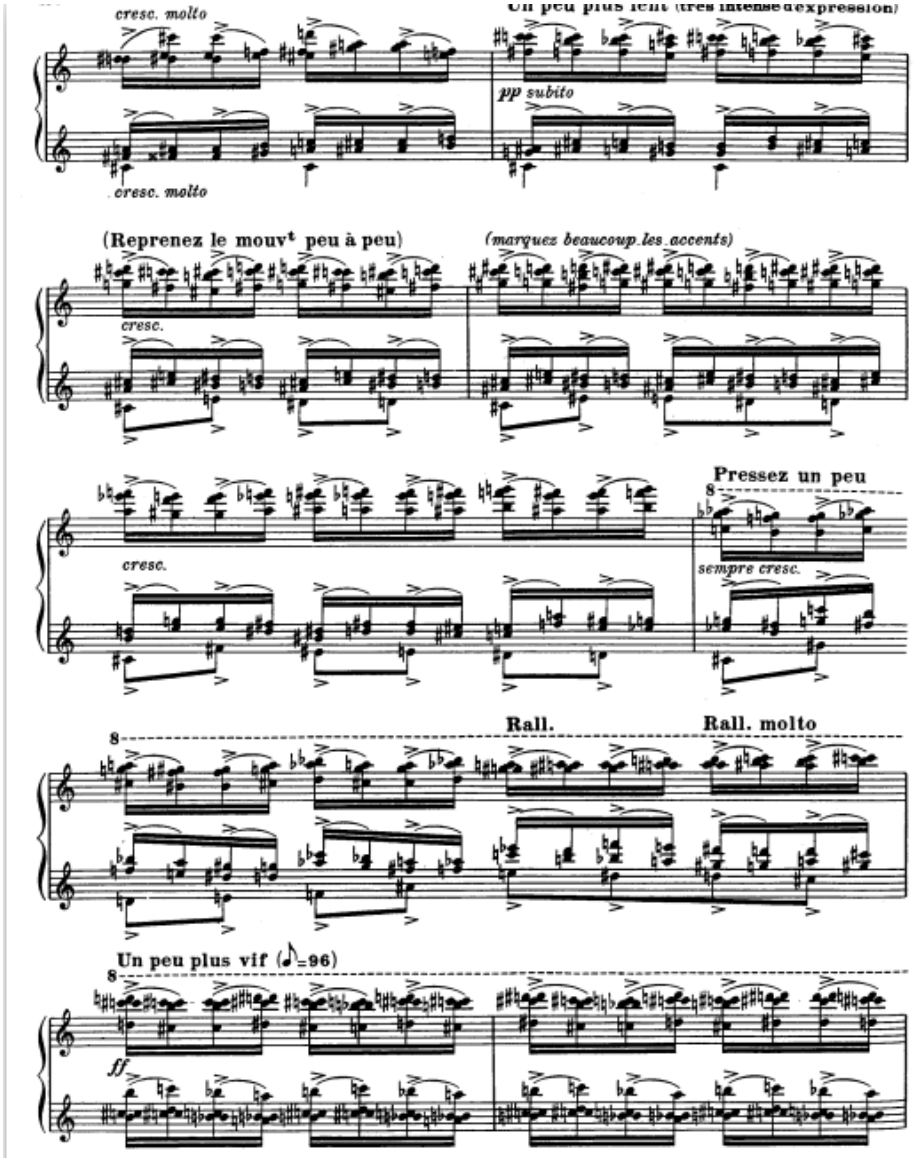



Figure 3.17: Example of patterns and large hand stretches. Messiaen, *Le baiser de l'Enfant-Jésus*, bars 84-91, Durand.

### 3.6.3 Form and Structure

*Regard des Anges*, particularly the first half of the piece, is composed of a series of various thematic motifs, which are presented in the opening bars. The transitions between the motifs are very abrupt. These motifs are then repeated as the piece goes on, each time incorporating some new material or adding extra segments of the same material. The effect is one of fragmentation, and a musical path is not evident.

The first step was to identify the different motifs and to see how they interact with each other, in order to create a map of the piece. There are five initial motifs: three of them remain unchanged as they reappear later on, two are extended by adding extra segments of the same material. As the cycle repeats, two new motifs appear.

# Chapter 4

# Evaluation of performances

This chapter will present and discuss any memory issues (or lack thereof) that occurred during the two 60 minutes recitals, which were a partial requirement for this study. At the same time, this chapter will discuss performance aspects of the recitals, focusing on what was successful, in the view of the author, and what would be done differently in a future performance.

## 4.1 Ligeti: *Musica Ricercata*

### 4.1.1 *Sostenuto Misurato Prestissimo*

The memory in this movement was quite secure. There was a slight hesitation in bars 48-49. In the Prestissimo section, at the very end of the movement, when it gradually adds one more repetition of the octave in each bar, the last bar (with 7 repetitions) is missing.

In terms of performance, this movement was successful in producing the different articulations indicated by the composer. The accelerando towards the *Prestissimo* was also steadily organised. For future performances I will aim to have a stronger sound and more clarity in the repeated notes in the *Prestissimo* section, and, in general, a greater dynamic range.

### 4.1.2 *Mesto, rigido e cerimoniale*

The memory in this movement was very secure. This performance was successful in achieving the character of the piece: sad, rigid and ceremonious. For future performances I will attempt to achieve more evenness in the repeated notes, particularly after the *sf* octaves.

### 4.1.3 *Allegro con spirito*

The memory in this movement was quite secure. There were a few errors in bars 4-5. These mistakes, however, were not related to memory, but to a slip in the hand position. The repeated pattern in bars 31-32 was slightly shortened, similar to what happened in the last section of the first movement.

For future performances I will try to convey the humorous character more convincingly by means of a lighter touch and more rhythmical accuracy.

### 4.1.4 *Tempo di valse (poco vivace à l'orgue de Barbarie)*

The memory in this movement was secure. There were a couple of wrong notes, but they were not related to memory.

For future performances I will aim to use the rubato more freely, as the composer indicates, in the manner of an organ grinder.

### 4.1.5 *Rubato. Lamentoso*

There were no memory issues in this movement.

This performance was successful in conveying the *lamentoso* character of the piece. A rich tone and a careful use of rubato were achieved in the *pesante*

section, contrasting with the lighter touch used in the *Piu mosso, non rubato* middle section.

For future performances I will strive to more accurately observe the articulations indicated by the composer in Tempo I, especially in the agitato, string. molto section. A richer and stronger sound is also needed in the left hand.

### 4.1.6 *Allegro molto capriccioso*

The memory in this movement was secure.

For future performances I will aim to have more control and security in the rhythm, especially in the opening bars, which in this performance presented a slight miscoordination of the hands. The tempo in general needs to be more steady and the changes in dynamics and articulation require more contrast.

### 4.1.7 *Cantabile, molto legato*

There were no memory issues in this movement.

In terms of performance, there was a balance issue between the hands, particularly notorious towards the end of the piece, where the left hand was almost disruptive. For future performances I will try to achieve a softer, clearer and more *leggiero* texture in the left hand, which will allow the right hand to project the tone without having to grow in dynamic.

### 4.1.8 *Vivace. Energico*

The memory in this piece was very secure. There were a few wrong notes in the last line, but they were due to a slip in the hand position, and not related to memory.

This performance was successful in achieving an energetic sound throughout the entire movement. The choice of tempo was appropriate, not too fast, which allowed the piece to be under control and to perform the changes in rhythm accurately.

For future performances I will aim to have a greater range in dynamics, and also to have a stronger tone projection in the melodic lines that appear in from bar 43 onwards.

### 4.1.9 *Adagio. Mesto*

The memory in this piece was secure. In the DVD it is possible to see how the gestures and timing in both hands helped considerably with memorizing the piece.

This performance was successful in portraying the different moods each section. The tone in the middle section was incisive and penetrating, without being sharp, and the changes in *tempi* and the *accelerandi* were well organised.

For future performances it would be desirable to exaggerate the *crescendi* more, and to have a greater sound in the *ff* and *fff* sections. I will also aim for greater tone definition in the trill section, as the trills were slightly blurred in this performance.

### 4.1.10 *Vivace. Capriccioso*

This movement presented the first important memory slip in the whole set. Bars 93-100 presented both a technical and gestural problem, and even though this section was carefully practised during rehearsals, it did not work on the day of this performance. The solution during the performance was to skip ahead to the next section.

For future performances I will aim to have more clarity in the touch and

more stability in the tempo. It will be also be desirable to perform the articulation markings more accurately: although they were present in the opening of the piece, they were not altogether successfully produced in the pages that followed.

### 4.1.11 *Andante misurato e tranquillo*

This movement presented an important memory lapse in the last two pages, in the section where augmentation and diminution of the main theme occur (see Appendix A). This section was always a challenge, not just to memorize, but also to play. It not only has a complex polyphonic texture, with three main themes happening at the same time in different durations, but also the right hand has to take the two upper staves most of the time, often having to cover big stretches and finding itself in uncomfortable shapes. This was carefully practised during rehearsals but did not work during the performance, hence I was forced to skip forward to the next section.

In terms of performance, some sections were successful in having a good tone balance between the main theme and the counterpoint, in producing a smooth legato touch, and in conveying the tranquillo character.

For future performances I would like to have more clarity in the entries of the theme in the *stretto* sections, and to have more clarity in the texture, particularly when the texture becomes richer in the number of voices.

## 4.2 Stravinsky: *Petrouchka*

### 4.2.1 *Première Tableau. Fête populaire de la semaine grasse*

Memory in this tableau was mostly very secure. There was a very small hesitation between the *stringendo* section in bar 152 and the third *come*

*prima* of the movement in bar 158. I wanted to start the *come prima* slightly earlier, but the cue from my partner's part helped me to quickly get back on track. There was a more noticeable hesitation in the next *coma prima* section, in bar 210, and once more, the cue from my partner was crucial for a quick recovery.

The performance of this *tableau* was successful in achieving a good sound balance between both pianos. It was also successful in producing different sonorities to represent the character in the differet sections of the *Tableau*. The opening showed a bright and resonant sound, followed by a warmer, cantabile touch in bar 6. The section from bar 42 was rich and resonant, and the *stringendo* section in bar 74 was approached with an incisive sound.

For future performances, the aims will be to achieve more rhythmical accuracy between the two parts, for instance, in the *stringendo* section in bars 79 - 82 and 95 - 99. In the first *meno mosso*, in bars 89 - 92, I will aim to achieve a lighter touch, more like a textural harmonic background in the right, as the right hand was somewhat disruptive in this performance.

### 4.2.2 *Deuxième Tableau. Chez Pétrouchka*

The memory in this *Tableau* was secure. There was a small mistake in the *Andantino*, in bar 56, where I played a wrong figuration in the right hand.

This performance was quite successful in achieving a variety of sonorities to portray the character of the sections. The opening had an incisive and penetrating sound, and the ensemble was rhythmically accurate. The more mellow tone adopted in the *Molto meno*, from bar 9 onwards, was appropriate for the *lamentoso* character of this section. In the *Andantino* section, bars 52 - 69, the passing of the melodic material between piano 1 and 2 was very clearly achieved, striking the correct balance between the melodic material and the accompanying figurations

For future performances, I will aim to have more clarity in the sound during the rapid passages, particularly in the *Allegro* section, bars 24 - 34, and in

the *Vivo stringendo*, bars 90 - 102. In the *Furioso* section, from bar 35, and the *Allegro* section from bar 72, I will aim to produce a stronger and more incisive sound, as in this performance my part was overpowered by piano 2.

### 4.2.3 *Troisième Tableau. Chez le Maure*

The memory in this *Tableau* was very secure. There were a few errors in the *Allegretto* section, starting on bar 122, that were not memory related.

This performance was successful in achieving a smooth blending of the sound between the two pianos in the *Sostenuto* section, starting on bar 17, in *valse*, starting on 102 and in *Tempo de Valse*, starting on bar 169. *Danse de la ballerine* showed a strong rhythmical control and a well defined touch in the melody.

For future performances the aims will be to achieve more rhythmical accuracy in terms of ensemble in *Tempo del principio* (bars 46 - 54) and in *Stringendo assai* (bars 162 - 165). The *agitato* section starting on bar 197 needs more clarity and control. I will also aim to achieve more definition in the tone, especially in the double notes in the right hand, in *Tranquillo* (bars 55 - 66).

### 4.2.4 *Quatrième Tableau. Fête populaire de la semaine grasse. (Vers le soir)*

The memory in this *Tableau* was mostly secure. In section *Tempo del principio*, bars 132 - 135, I lost count of the figurations, and was forced to improvise, but quickly recovered in *Piu mosso*, bar 136. Similarly, in *Tempo I*, bars 166 - 171, I lost count of the figurations and once more was force to improvise by playing in the same harmony until I got to the next *Piu mosso* in bar 172. In *Danse des nounous* there was a small hesitation in the chromatic leading in the right hand in bars 82 - 85, but I recovered in bar 86, as right hand and

left hand swapped parts. In *Les deguises* there was a slight hesitation in the chords in bars 325 - 328.

This performance was successful in achieving a good balance and blending of the sound in *Sostenuto*, from bar 102 onwards, in *Lento*, starting from bar 414, and in the very end of the piece, from bar 450 onwards. *Les deguises* presented a strong rhythmical drive, conveying the *agitato* character convincingly.

For future performances the aims will be to achieve a greater sound, resonance and evenness in the touch and rhythm in the opening of the *Tableau*, as well as in *Tempo del principio*, from bar 114 onwards. Improvements could be made to the balance between both piano parts in *Danse des nounous*, as in many sections piano 1 was overpowered by piano 2. The *meno mosso*, starting from bar 391, showed some rhythmical inaccuracies and miscoordinations between both parts, which will have to be resolved for future performances.

## 4.3 Ravel: *Valses nobles et sentimentales*

### 4.3.1 *Modéré-très franc*

Memory in this valse was secure. In bars 33-43, the bass notes were not very consistent, some of them were missing, some were wrong. This does not necessarily imply a memory problem, but it suggests that the gesture on the left hand was not well incorporated.

For future performances I will aim to project the tone more clearly in the descending quavers in bars 13 - 14, 22 - 24 and 73 -74, and to exaggerate the *diminuendo* in each of these phrases, as in this performance they were unnoticeable. I will also aim to achieve a better voicing, balance and definition in the tone of the chords in bars 45 - 61. Another aspect that needs to be addressed in this piece is rhythmical steadiness. The rhythm should be straight forward in most of the movement, except perhaps in the middle

section, where there is some room for *rubato*. An example of this is bars 6 - 14, where even the use of a slight *rubato* seems inappropriate.

### 4.3.2 *Assez lent - avec une expression intense.*

The memory in this piece was secure. There were some wrong notes in bars 14-15, but these were caused by a temporary distraction and not by a memory slip.

This performance was successful in producing distinctive types of touch and tone during the piece. The sound in the opening was clear and expressive, changing to a warmer sound in bar 9. From bar 25 onwards, the balance was successful by combining a bell-like tone in the right hand with warm, well defined chords in the left hand.

For future performances I will aim to achieve a more convincing leading to the climax of the piece, as in this performance, the *crescendo* in bars 46 - 49 was not fully successful, and the chords in the right hand in bar 49 were not well placed and defined, resulting in a weaker climax than what was intended.

### 4.3.3 *Modéré*

The memory in this piece was very secure.

This performance was successful in producing a warm and rich sound in the *expressif* sections in bars 33 - 47 and 61 - 64. It also succeeded in having a sense of flow and continuity, despite being slightly under *tempo*.

For future performances I will aim to convey the *léger* character more convincingly by having more definition and clarity in the touch, particularly in bars 25 - 32, where the chords in the left hand were not well defined, with the result of a slightly heavier sound than intended. I will also aim to achieve a better voicing in chords, particularly in bars 17 - 24 and 48 - 52. I will also

aim to have more balance between the hands in bars 61 - 64, as the right hand needed to be stronger in this performance.

### 4.3.4 *Assez animé*

The memory in this piece was secure. There were a few wrong notes in the right hand in bars 37 - 38, especially in the first repeat, but these errors were not related to memory.

This piece was successful in achieving a good balance between the hands throughout the entire piece, and also in having a strong sound blending by bringing up the chromatic middle layers.

For future performances I will aim to have more clarity in the touch in the quick passages, for instance, in bars 7 - 8, 15, 37 - 38. I will also aim to achieve more flow and continuity in the performance, as I felt that this movement could have flowed better in this recital.

### 4.3.5 *Presque lent - dans un sentimente intime*

Memory in this movement was very secure.

This performance was successful in bringing out the chromatic middle voices.

For future performances I will aim to achieve more distinctive sounds for the different layers. In this performance, the two layers in the right hand would often have the same quality of tone. The top layer needs to have more clarity and definition, whereas the middle layer needs a warmer and slightly softer sound.

### 4.3.6 *Vif*

The memory in this piece was mostly secure. There were a few wrong notes/chords in bars 19 - 21 and 24 - 26, but there were no important memory

problems.

For future performances I will aim to have more clarity and definition on the sound, as in this performance the sound was a bit mellow, and not entirely appropriate for the playful character of the piece. I will also aim to convey longer lines and phrases as I feel this performance lacked of flow. Perhaps a slightly faster tempo would help.

### 4.3.7 *Moins vif*

The memory in this movement was secure. There were a few wrong notes, especially in bars 47 - 56, but they had more to do with a moment of panic rather than with memory.

This performance was successful in achieving a colourful introduction with distinctive sonorities, as well as a clear and distinctive melody in the middle section of *en dehors*, from bar 66 onwards. Similarly, in bars 39 - 46, the chords in the left hand were carefully voiced and the shaping of the melody was satisfactory.

For future performances I will aim to achieve a greater range of dynamics, particularly in the section leading to the climax of the piece. Bars 47 - 58 were not fully successful, as this section was somewhat unstable and rushed, and the sound was not strong, full and resonant enough. Another example of this occurred in the middle section, bars 90 - 97, where the *crescendi* were not strong enough, resulting in a slightly weak sound in the bars marked *fortissimo*. I will also aim to have a better balance in the middle section, starting on bar 66. The left hand was almost inaudible in some parts, giving the melody no harmonic foundation.

### 4.3.8 *Epilogue: lent*

The memory in this piece was secure.

This performance was successful in conveying the dreamy character of the piece, and in achieving different sonorities as fragments of the previous *valses* appeared.

For future performances I will aim to treat the pedalling in a more subtle way, as in this performance there were quite a few issues with the pedal, particularly notorious at the beginning in bars 1 - 8, and at the end of the piece, from bar 65 onwards. I will also aim to achieve a clearer and thinner texture in the chords, as many of them were not well defined. This also had an effect in the general dynamic range, as the chords were not well controlled, and they sounded louder than intended. This made the *pp* and *ppp* markings very difficult to achieve.

## 4.4 Webern: *Variations for piano Op.27*

### 4.4.1 *Sehr mässig*

The memory in this movement was secure. There was a small hesitation in bars 12 - 13.

This performance was successful in approaching the entire movement in a expressive manner. It also conveyed most of the articulation and phrasing indications quite accurately.

For future performances I will aim to achieve more contrast in the indications of dynamics.

### 4.4.2 *Sehr schnell*

The memory in this movement was very secure. There were some accidental wrong notes, which were not memory related.

This movement was performed with strong energy and rhythmical accuracy, precisely following the articulation markings.

For future performances I will aim to have a greater contrast in dynamics, as well playing the movement faster, as this performance was slightly under *tempo*.

### 4.4.3 *Ruhig fliessend*

The memory in this movement was mostly secure. A wrong entry in bar 19 caused some confusion in bar 20, but the problem was promptly solved. There was another brief moment of hesitation in bars 48 - 50.

This performance was successful in terms of phrasing and how the single notes were organised in bigger gestures, which gave the movement a sense of flow and continuity.

For future performance I will aim to follow more precisely the very detailed articulation markings, especially from bar 45 -55, where some of the accents and *tenuto markings* were lost.

## 4.5 Debussy: *Préludes*

### 4.5.1 *La puerta del vino: Mouvement de Habanera*

Memory in this piece was very secure.

This performance was successful in having a convincing opening, with a fierce touch in the first two bars, followed by and expressive and intimate sound from bar 4 onwards. In bars 35 - 41 a round, warm and resonant sound was achieved, which was exacerbated in bars 45 - 49, these bars being the climax of the piece.

For future performances I will aim to achieve a clearer sound in the rapid figurations, particularly in the double notes in bars 72 and 74. I will also try to portray the flamenco guitar evocations more convincingly in bars 25 - 30.

### 4.5.2 *Général Lavine - eccentric*

The memory in this piece was very secure. There was a small hiccough in bar 29, due to a misplaced finger.

This performance was successful in achieving a playful, humorous character.

For future performances I will aim to portray the *eccentric* character more convincingly by exaggerating the dynamics and articulation markings, for instance, in bars 17 - 19, where the articulation markings were not being precisely, and bars 57 - 59, or bars 101 - 102, where the *crescendi* were not successful. I will also aim to sustain a steady tempo, in order to enhance the *sforzandi*, accents and dynamic markings of the score, which are somewhat diluted by a less rigorous pulse. An example of this occurred in bars 74 - 76.

### 4.5.3 *Feux d'artifice: Modérément animeé*

Memory in this piece was quite secure. However, wrong notes occurred in various places. This had to do with the technical difficulties of the piece: the quick passages require very fast adjustments of the hand position, and any slip of the fingers or the hand shape can result in wrong notes.

For future performances I will aim to have more clarity and spark in the touch. The rapid figurations at the beginning of the piece were not *léger* and *égal*, and often the 'sparks' that appear over the background of rapid figurations were not distinctive enough. An example of this can be heard in bars 7 - 10, and it was particularly notorious in bars 42 - 43. I will also aim to achieve more clarity and definition in the chords in the right hand in bars 45 - 52, and in general, have a greater dynamic range. Another aim for the future is to refine the use of the pedal, as it was generally over used throughout the piece.

## 4.6 Messiaen: *Vingt regards sur l'Enfant-Jésus*: XIV, XV

### 4.6.1 *Regards des Anges*

The memory in this piece was mostly secure. There were quite a few small mistakes in the *comme un oiseau* section, from bar 79, but these were not memory related. In bar 136 there was a slight memory hesitation in the right hand. Another hesitation occurred in bar 131, where I had to restart the bar.

This performance was successful in producing distinctive types of touch and colour in the different sections, and in achieving a strong and incisive sound without sounding harsh. In fact, I deliberately chose to slightly drop down in dynamics, in sections where there was a risk of producing a harsh sound by forcing the upper register of the piano, for instance, bars 14 - 19 or bars 79 - 80.

For future performances I will aim to have more clarity and definition in the sound in the *Très vif* sections, as well as more rhythmical accuracy between hands in the *comme un oiseau* section, where in various moments a slight miscoodination of hands occurred. I will also aim to have a greater and richer sound from bar 135 to the end, as in this performance this section was weak.

### 4.6.2 *Le baiser de l'Enfant-Jésus*

The memory in this piece was mostly secure. There were a few wrong notes in bars 72 - 76,but this was due to a moment of panic and not memory related. There was a memory slip in bars 88 - 89, which was promptly solved by skipping forward to the end of bar 89, where the rallentandi are. An extra repetition of the repeated patterns was accidentally added to the section starting in bar 128.

This performance was successful in achieving a warm and well defined tone in the chords in the first two pages. This section flowed naturally, and the lullaby character was conveyed convincingly. In the *Modéré* section, from bar 95, a strong, rich and resonant sound was achieved, which were appropriate for the indication *avec amour*.

For future performances I will aim to improve the balance and blending of both hands in bar 40, by bringing up a bit more the melody in the left hand and making the trills in the right hand sound more fluent and smooth. I will also aim to have more clarity and a more incisive sound in the *Pressez* section, bars 53 - 55, and to give more flow to the section starting from bar 119, as in this performance, continuity of this section was slightly interrupted by a few errors in the right hand figurations.

# Chapter 5

# Conclusions

One of the most important things I have learned from this study is that we cannot separate the memorization process from the learning process. Memorization is not an isolated step, but one portion of the many complex processes that occur when we learn. What we learn, we memorize, and what we memorize, we learn.

It is possible, therefore, to say that the memorization strategies specified in this study are also learning strategies, which can be applied at the very early stage of learning a piece, rather than leaving them as a final 'memorization' step.

There are certain features in music which undoubtedly make some pieces more difficult to learn and memorize than others. In the present study, these features were identified, described and organised into five categories: harmonic language; melody and phrasing; rhythm; structure and gesture.

The selected repertoire for this study presented memorization problems in all these categories. Some of the pieces only presented one type of problem, for example Debussy or Ravel, where most of the memorization issues that might occur are related to the harmonic language.

Some other pieces show problems in three or four of the categories, proving themselves much more challenging to learn and memorize. Such is the case

of Webern or Messiaen.

After analysing the strategies used, it is also possible to conclude that certain characteristics in the music suggest which strategies to use.

For example, rhythmical problems were usually addressed by identifying rhythmic patterns, tapping or clapping the rhythms, or creating a kind of code to remember how the rhythm patterns change. Problems related to harmonic language with polyphonic textures were addressed by isolating the parts/voices, and practising them in different combinations. Pieces that did not have a clear and recognisable melody were addressed by organising small sections into meaningful phrases, or grouping the notes into bigger gestures. Issues related to awkward or unusual gestures were addressed by analysing and finding symmetries and choosing symmetrical fingerings.

By listening to the recordings and watching the DVDs it is possible to appreciate that there were no major memory issues, and most pieces were performed without any memory lapses. Some of them had minor memory errors/hesitations and a couple of them had some more noticeable memory slips. It was possible to observe that memory issues were more evident in the sections of the pieces where there was a combination of unusual harmonic language and polyphonic texture. An example of this was Ligeti XI and Messiaen XV.

Similarly, atonal music and absence of a melody, especially in slow movements, would create hesitations more often than in other pieces. An example of this was the third movement of the Webern Variations, where any wrong entry or any misplaced finger would cause a slight confusion and a temporary lost of track, as there are no melodic cues.

Overall, the strategies used in these study proved successful in helping to memorize and learn the selected repertoire, resulting in a satisfying and solid performance.

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John A Sloboda, Beate Hermelin, and Ncil O'Connor. An exceptional musical memory. *Music Perception: An Interdisciplinary Journal*, 3(2):155–169, 1985.

Halina Zielinska and Kacper Miklaszewski. Memorising two melodies of different style. *Psychology of Music*, 20(2):95–111, 1992.

# List of Music Scores

- **György Ligeti.** Musica ricercata (1953), Schott
- **Igor Stravinsky.** Petroushka (1911), Reduction for one piano, four hands, Kalmus.
- **Igor Stravinsky.** Petrouchka (1911), Piano duet, revised 1947 version, *Édition russe de musique*, Boosey & Hawkes.
- **Maurice Ravel.** Valses nobles et sentimentales (1911), Durand.
- **Anton Webern.** Variations for Piano Op. 27, (1936), Universal Editions.
- **Claude Debussy.** *Préludes* $1^{er}$ *et* $2^{e}$ *livres* (1913), Durand.
- **Olivier Messiaen.** *Vingt regards sur l'Enfant-Jésus* (1944), Durand.

# Appendix A

## Score: Ligeti, Musica ricercata

NOTE:
These musical works have been removed
to comply with copyright regulations.
They are included in the print copy of the thesis
held by the University of Adelaide Library.

# Appendix B

## Score: Stravinsky, Petrouchka

NOTE:
These musical works have been removed
to comply with copyright regulations.
They are included in the print copy of the thesis
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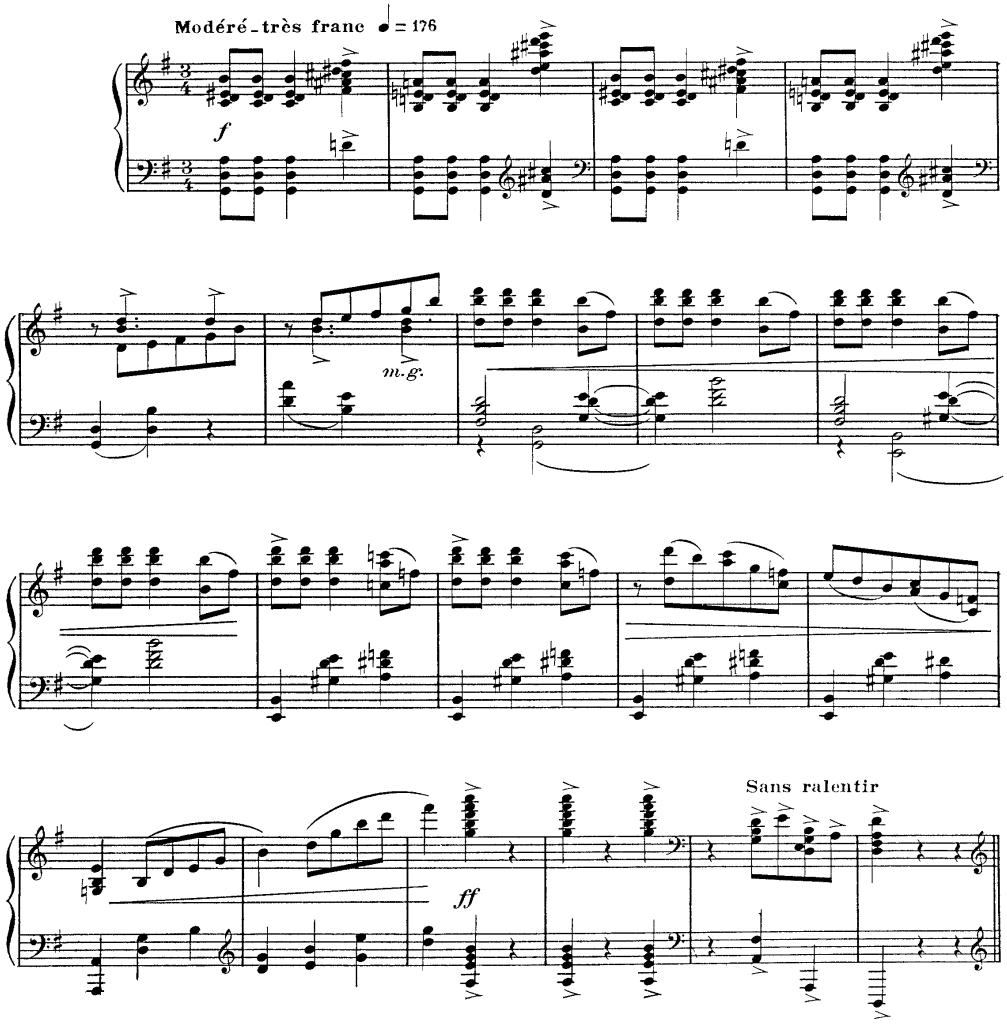
# Appendix C

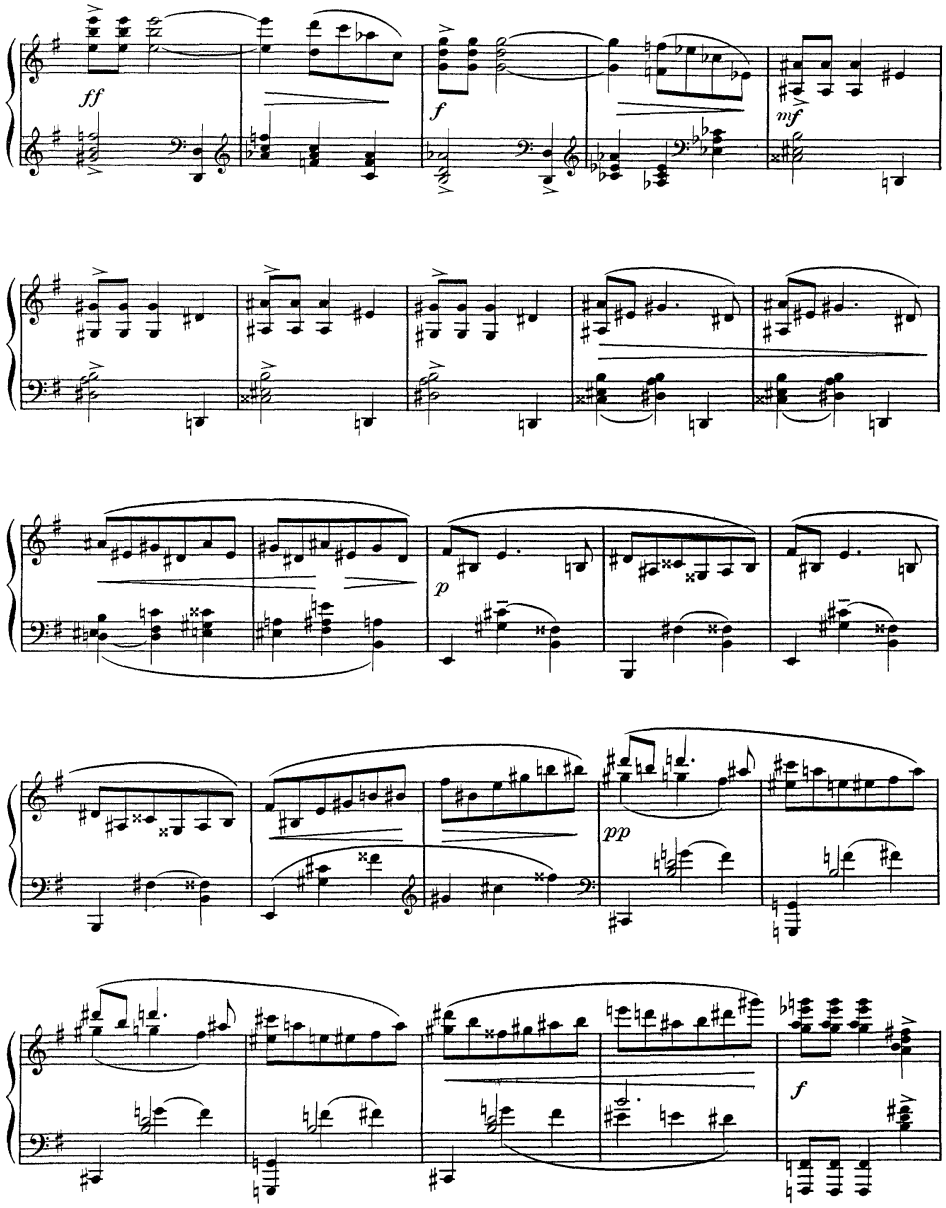
## Score: Ravel, Valses nobles et sentimentales

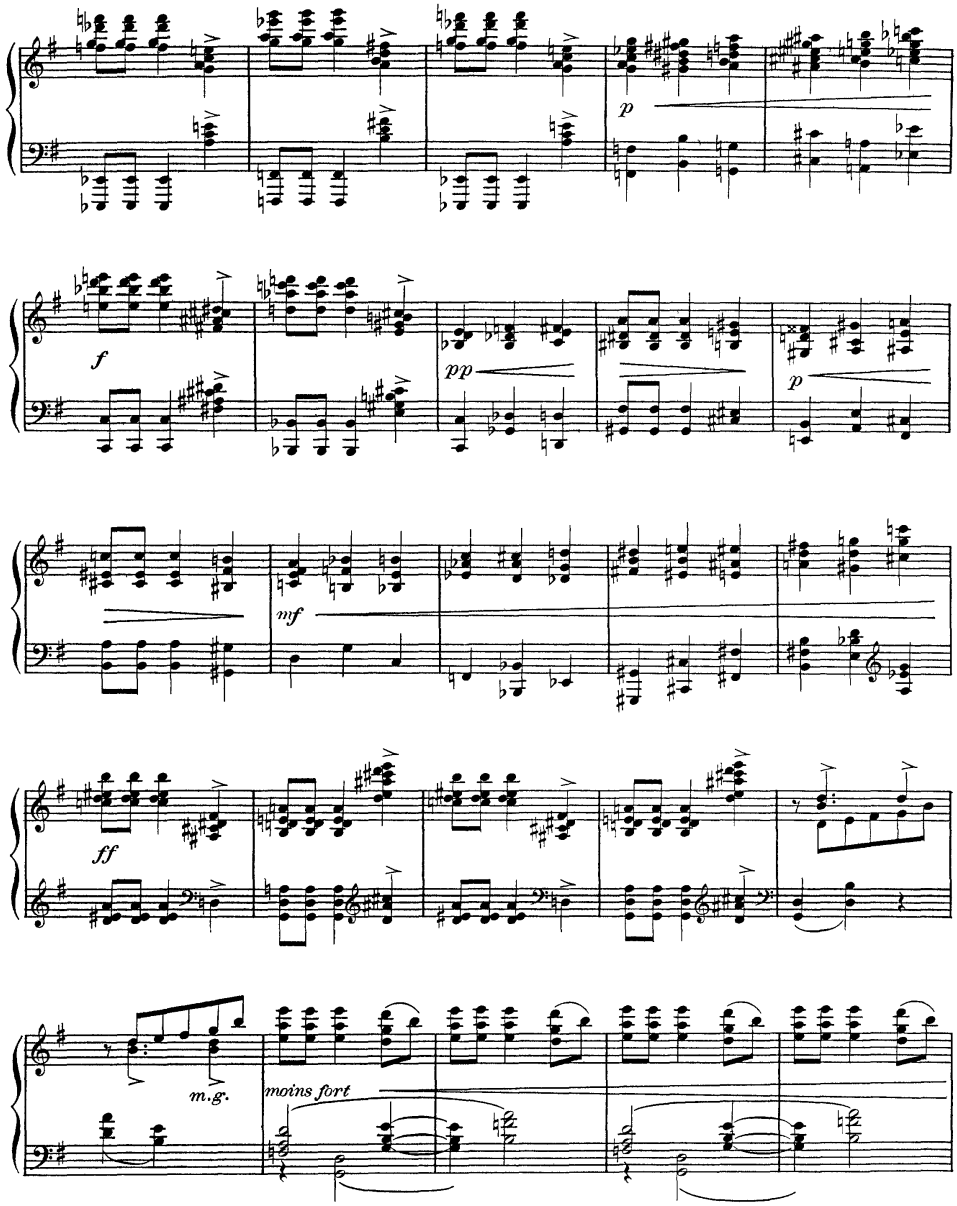
Ravel

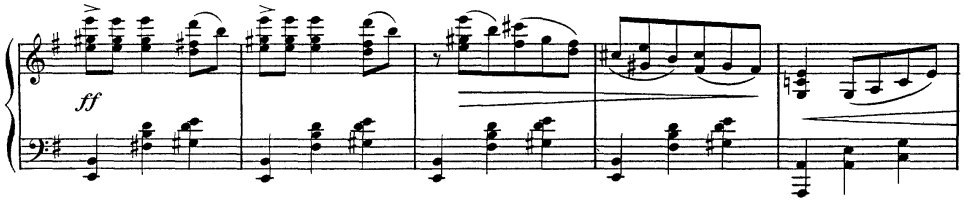
# Valses nobles et sentimentales

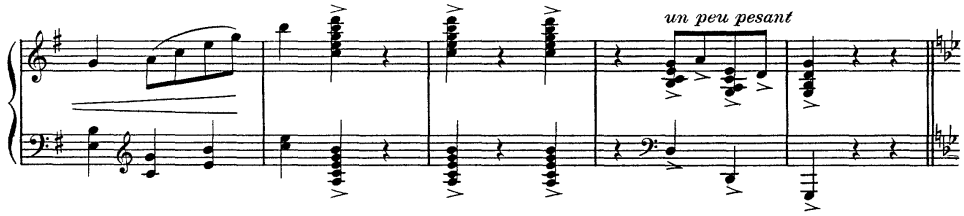
## I.




ff
f
mf
p
pp
f

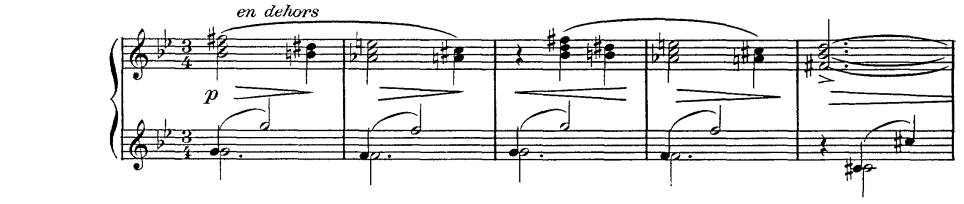

p
f
pp
p
mf
ff
m.g.
moins fort

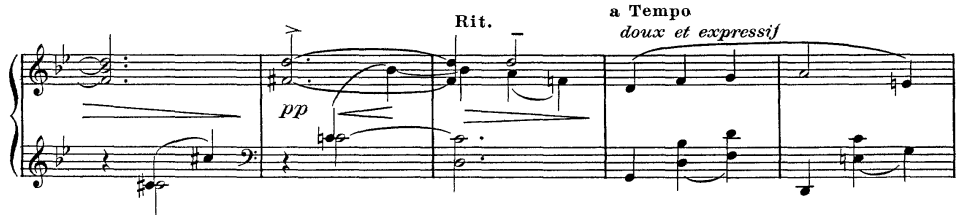


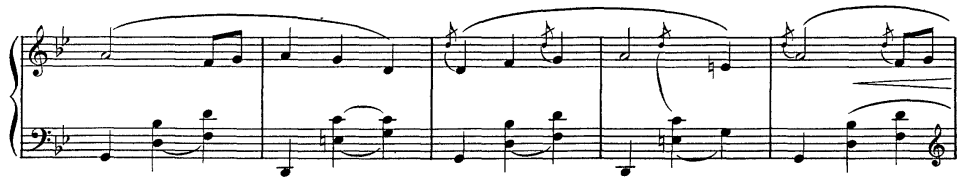



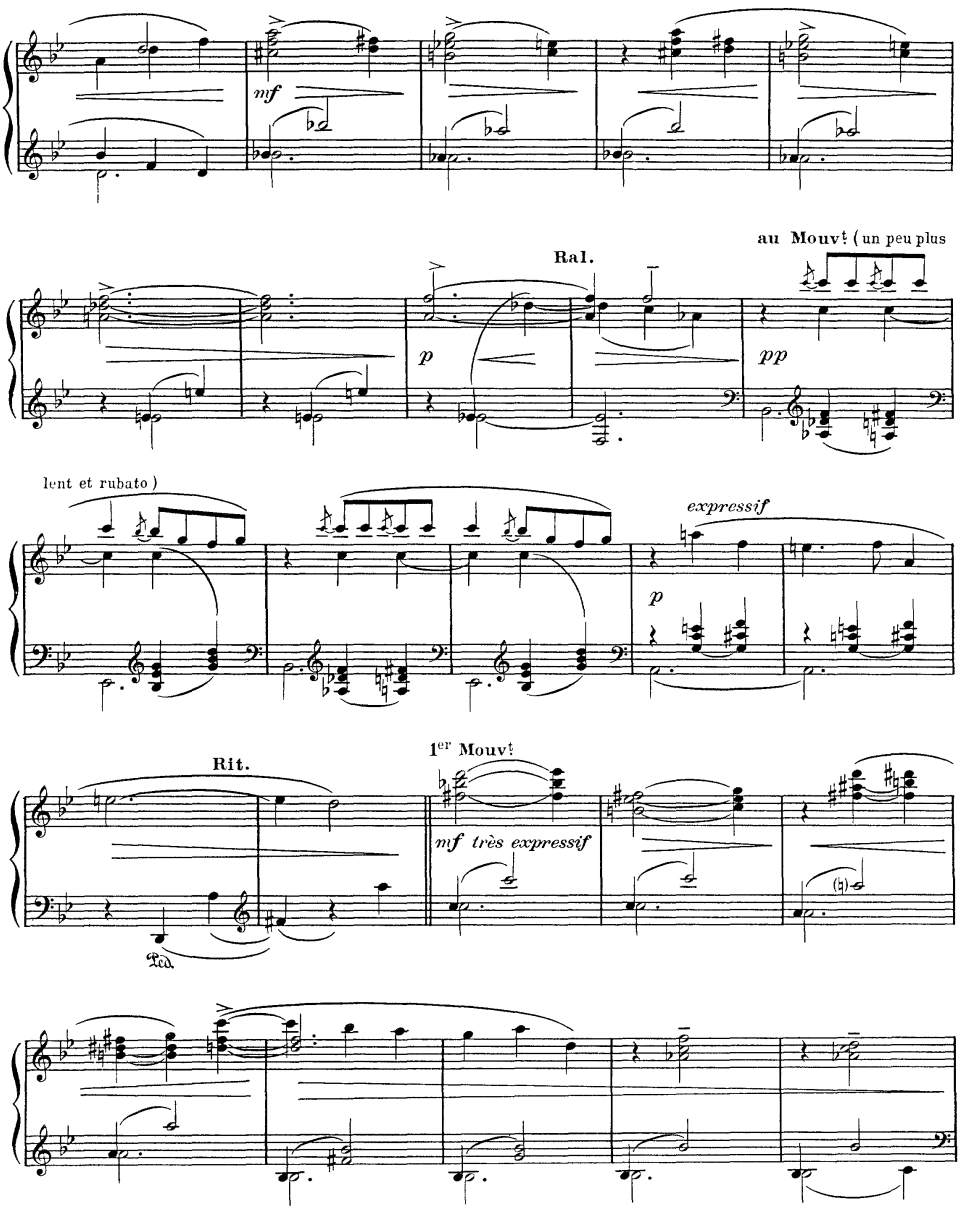

## II.

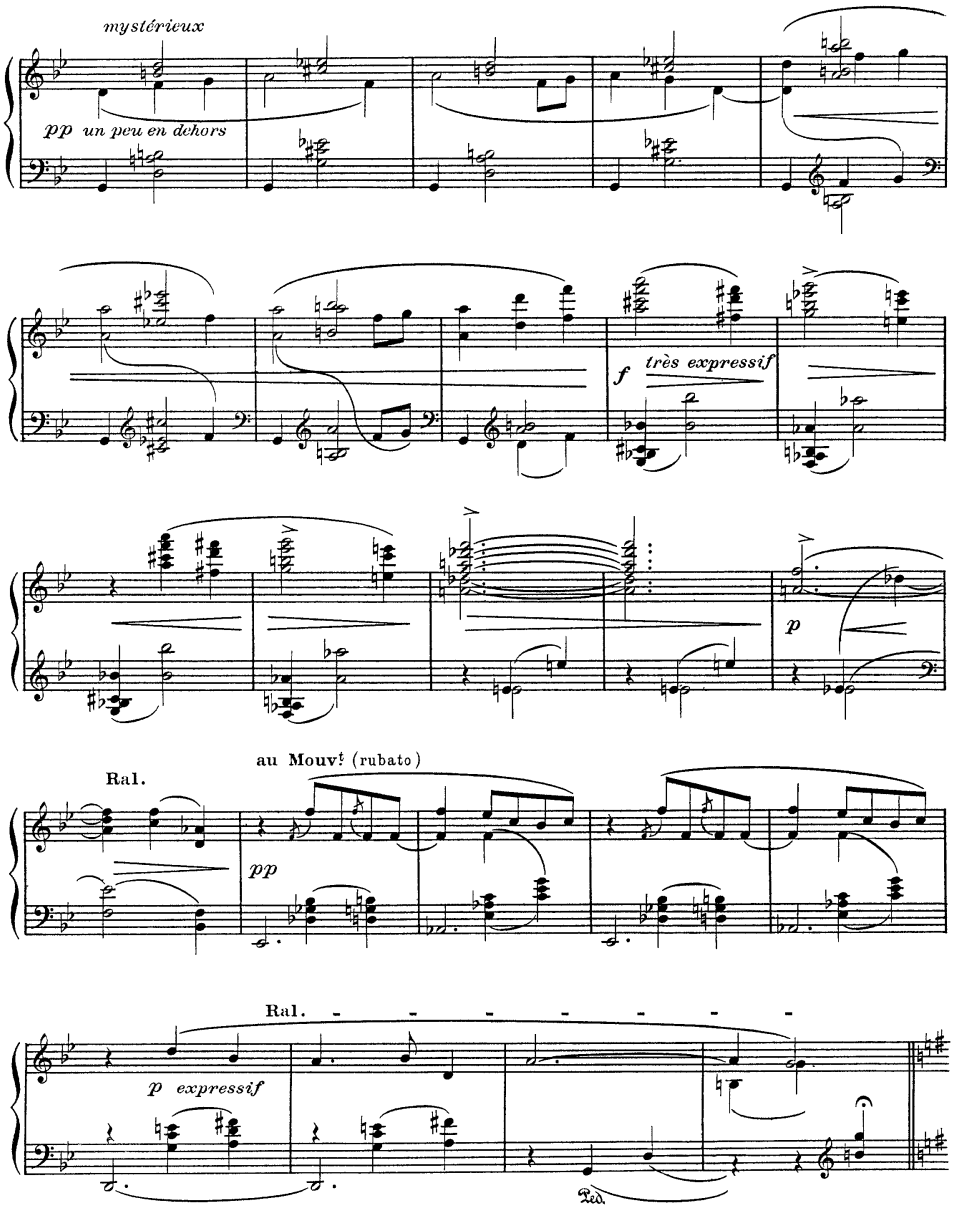
**Assez lent** avec une expression intense ♩ = 104



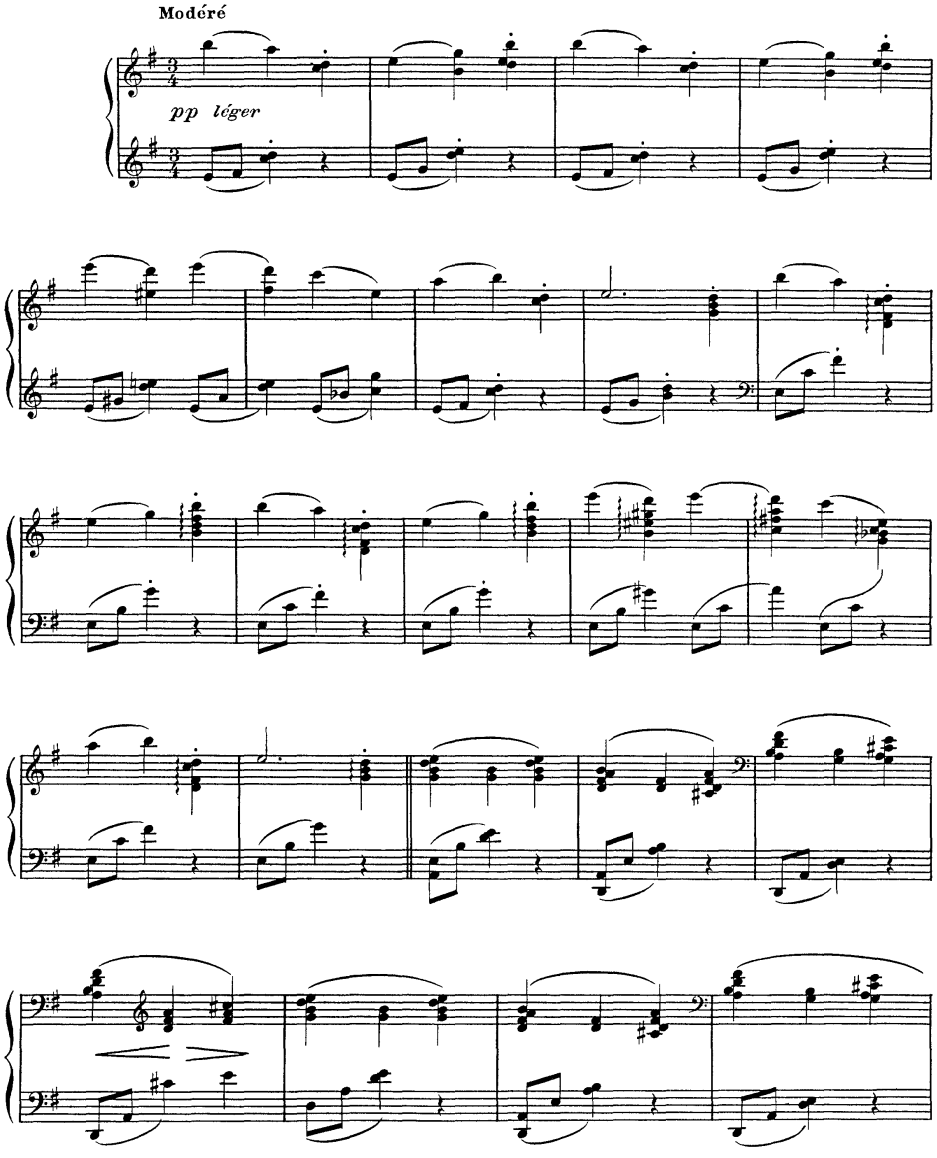



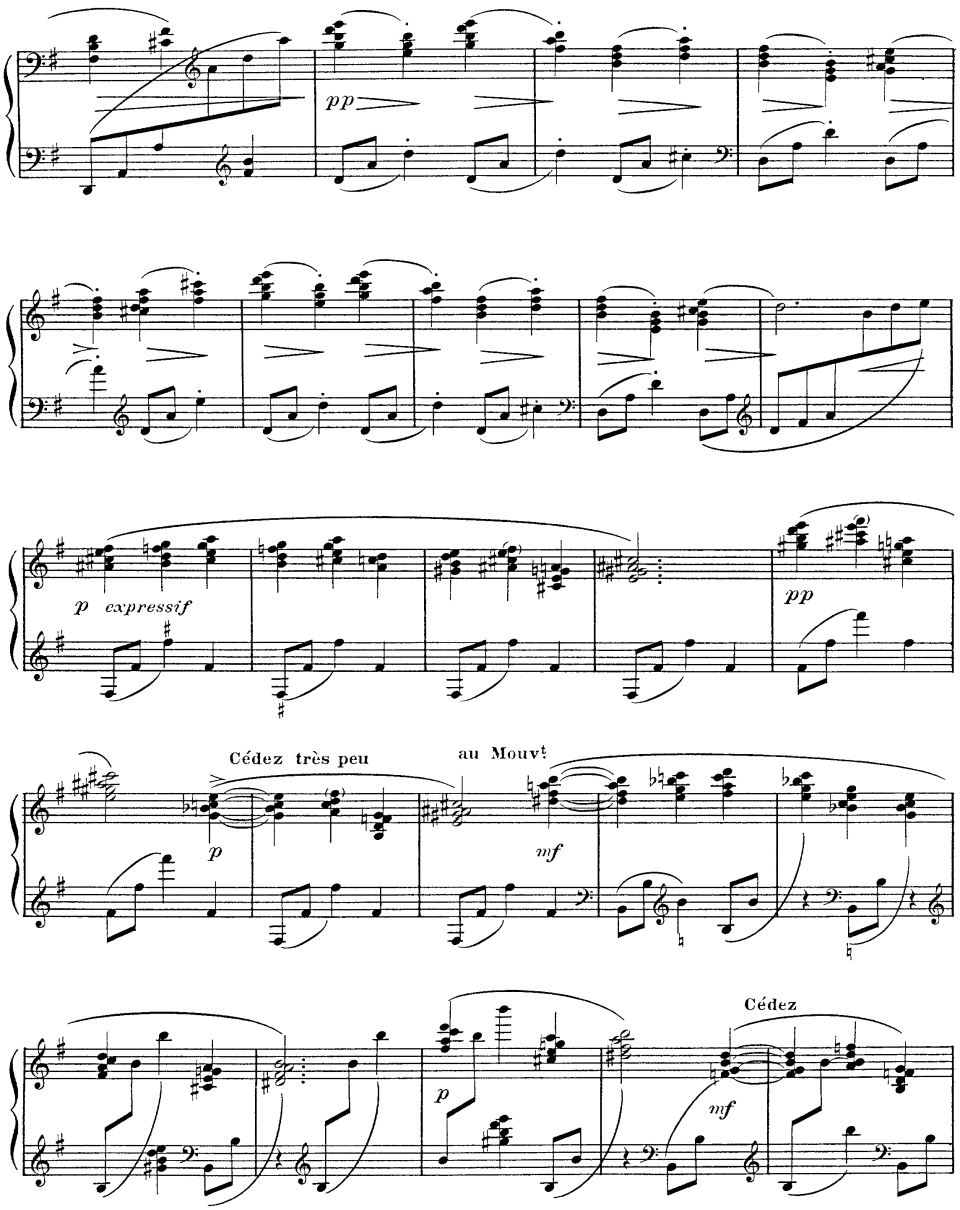



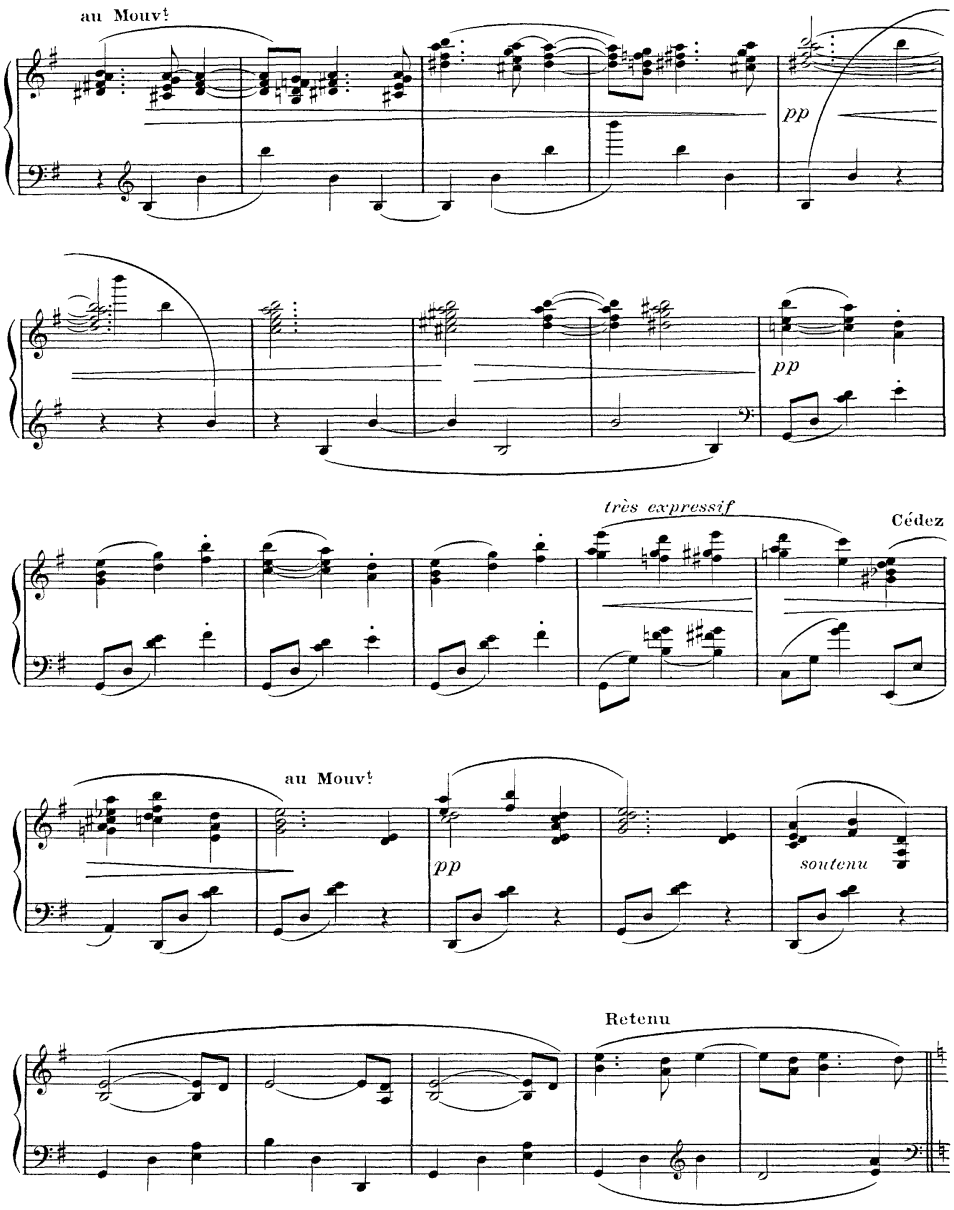

mf
au Mouvt (un peu plus
Ral.
p
pp
lent et rubato)
expressif
p
Rit.
1er Mouvt
mf très expressif


mystérieux
pp un peu en dehors
f très expressif
p
au Mouvt (rubato)
Ral.
pp
Ral.
p expressif

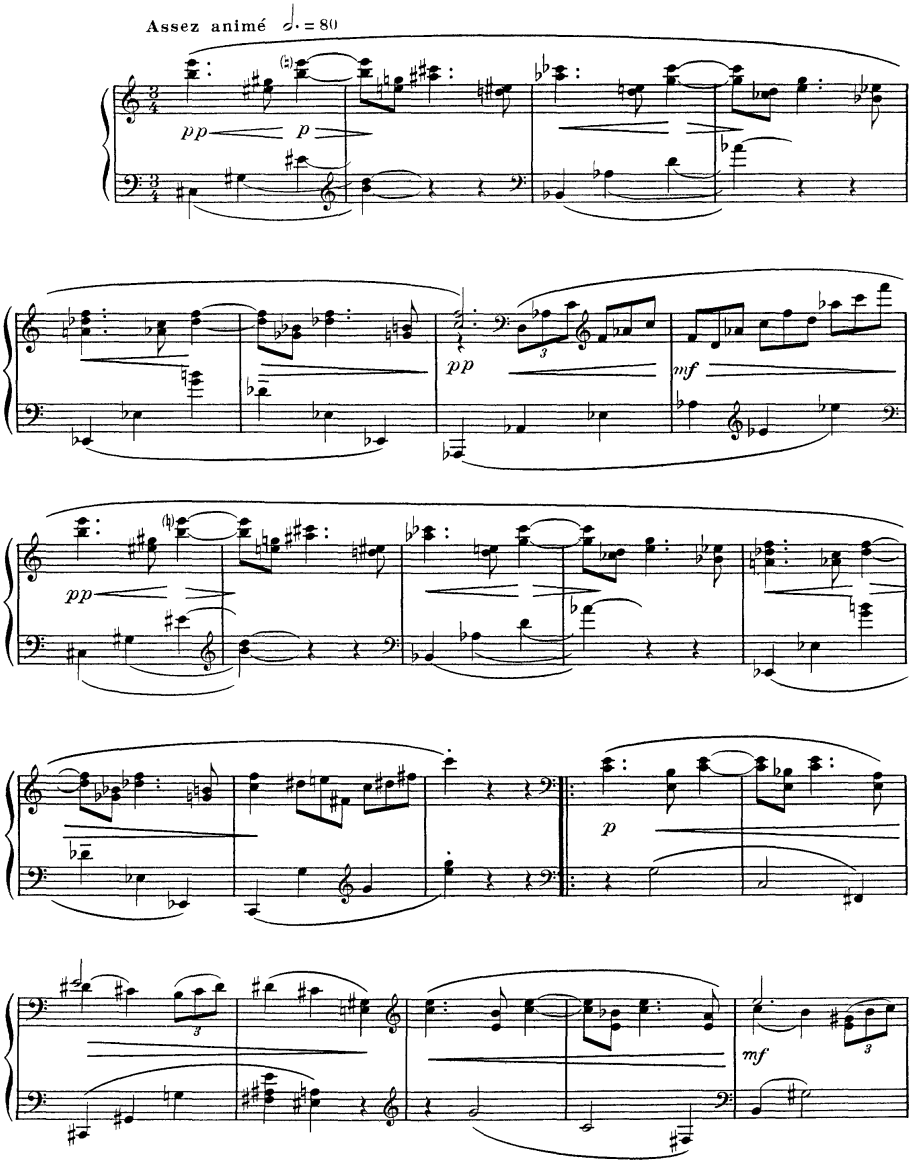
## III.

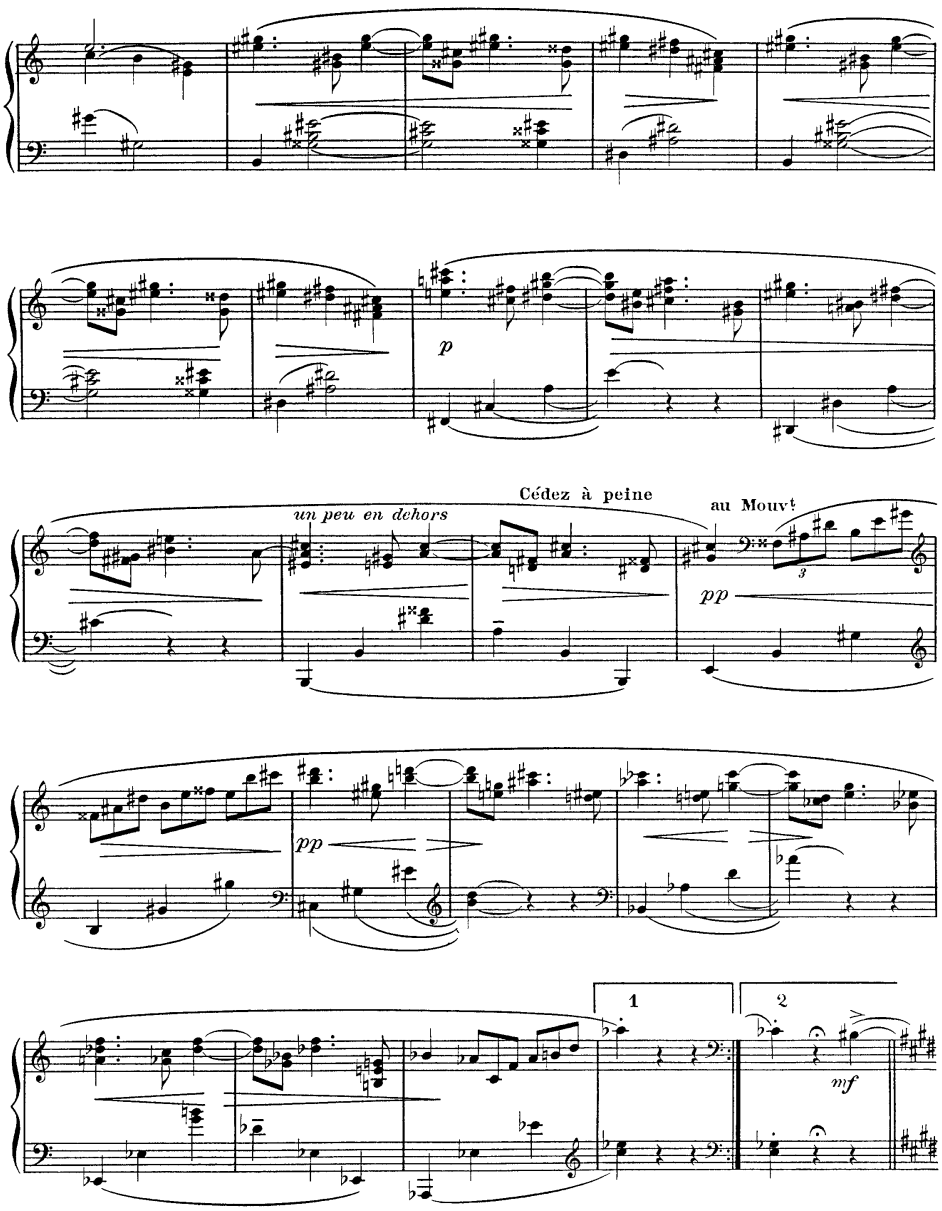



pp
p expressif
pp
Cédez très peu
au Mouvt
p
mf
p
Cédez
mf

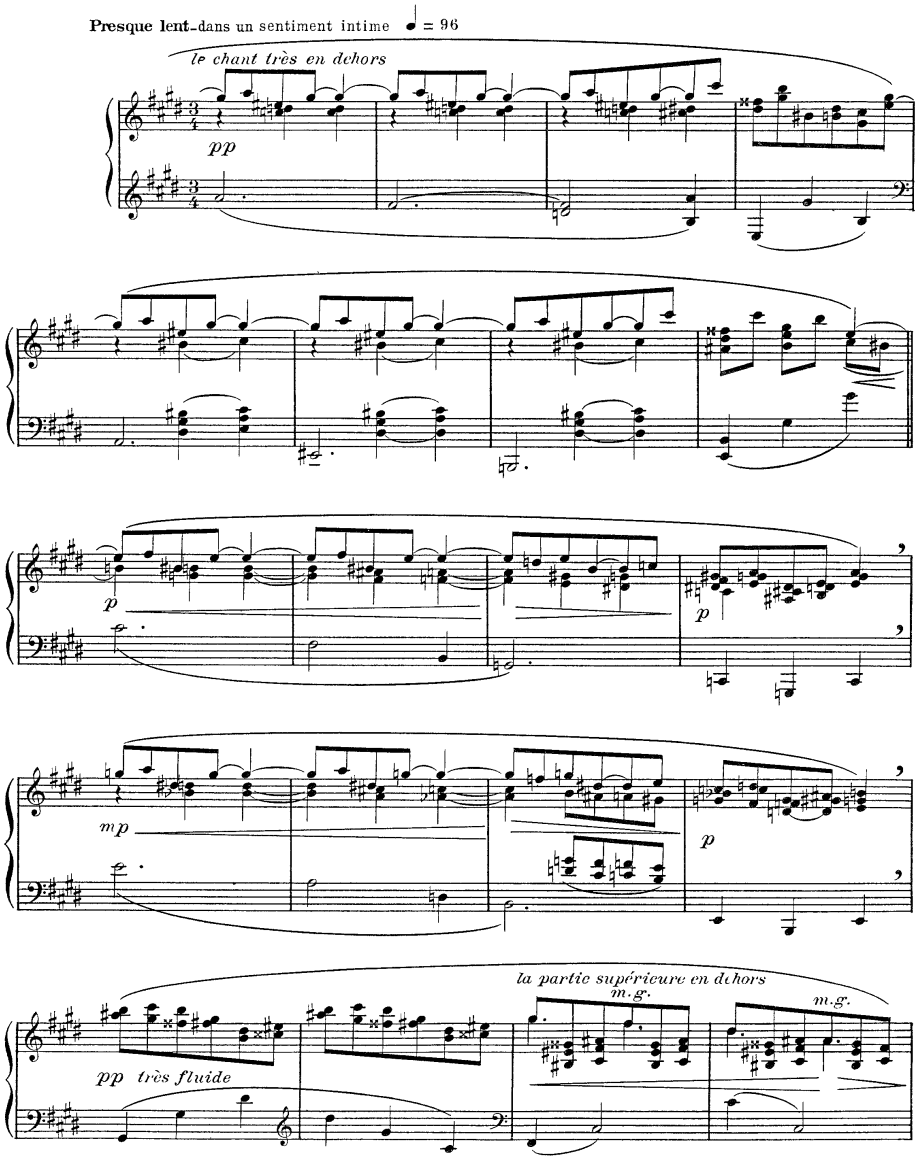

au Mouvt
pp
pp
très expressif
Cédez
au Mouvt
pp
soutenu
Retenu

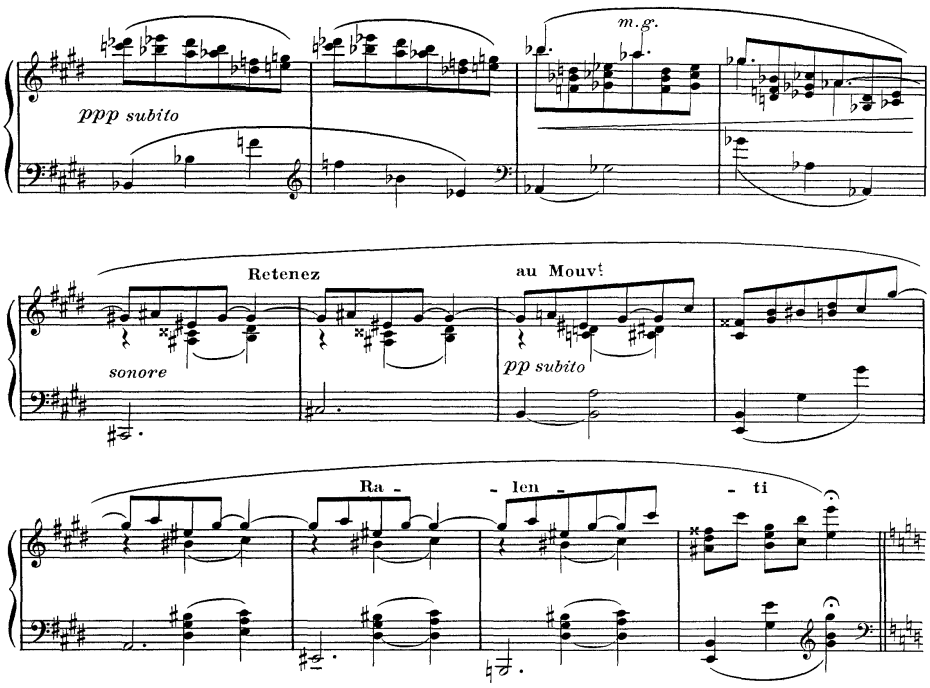
# IV.



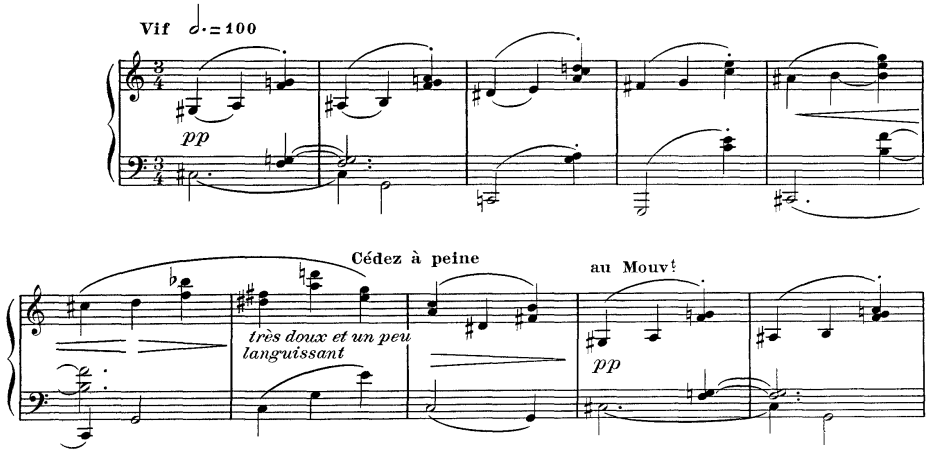

p
un peu en dehors
Cédez à peine
au Mouvt
pp
pp
1
2
mf

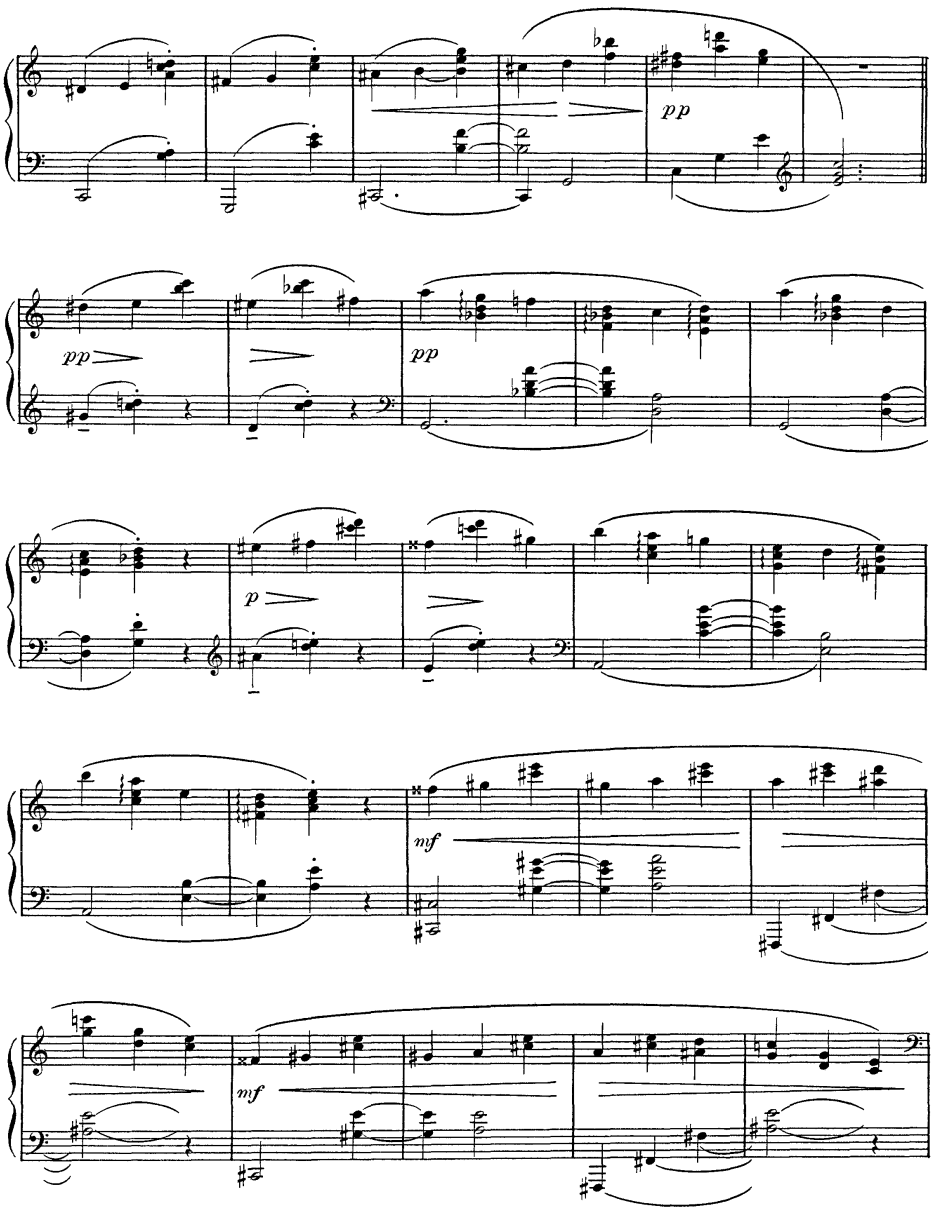
# V.

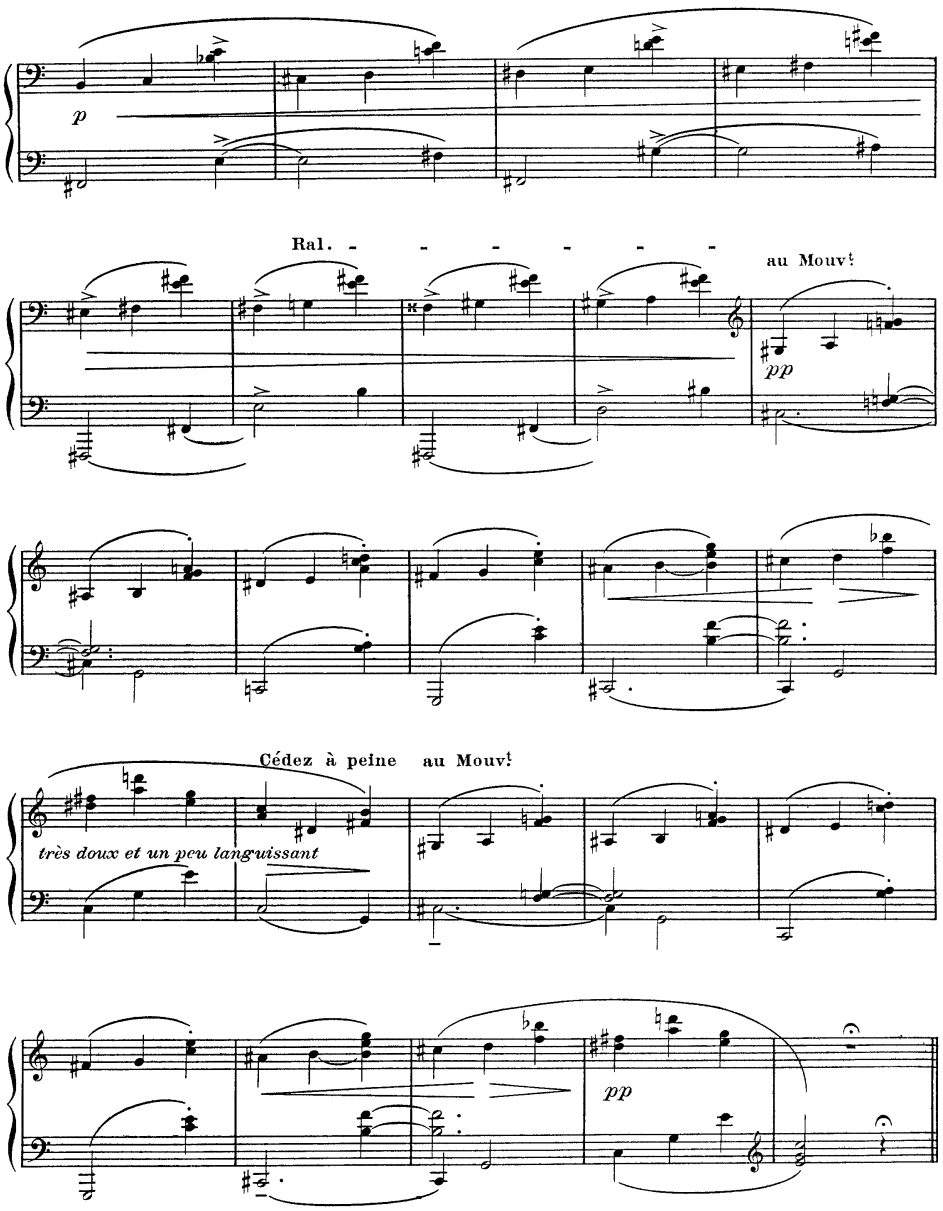

Presque lent-dans un sentiment intime ♩ = 96
le chant très en dehors
pp
p
p
mp
p
la partie supérieure en dehors
m.g.
m.g.
pp très fluide


m.g.
ppp subito
Retenez
au Mouvt
sonore
pp subito
Ra - len - ti

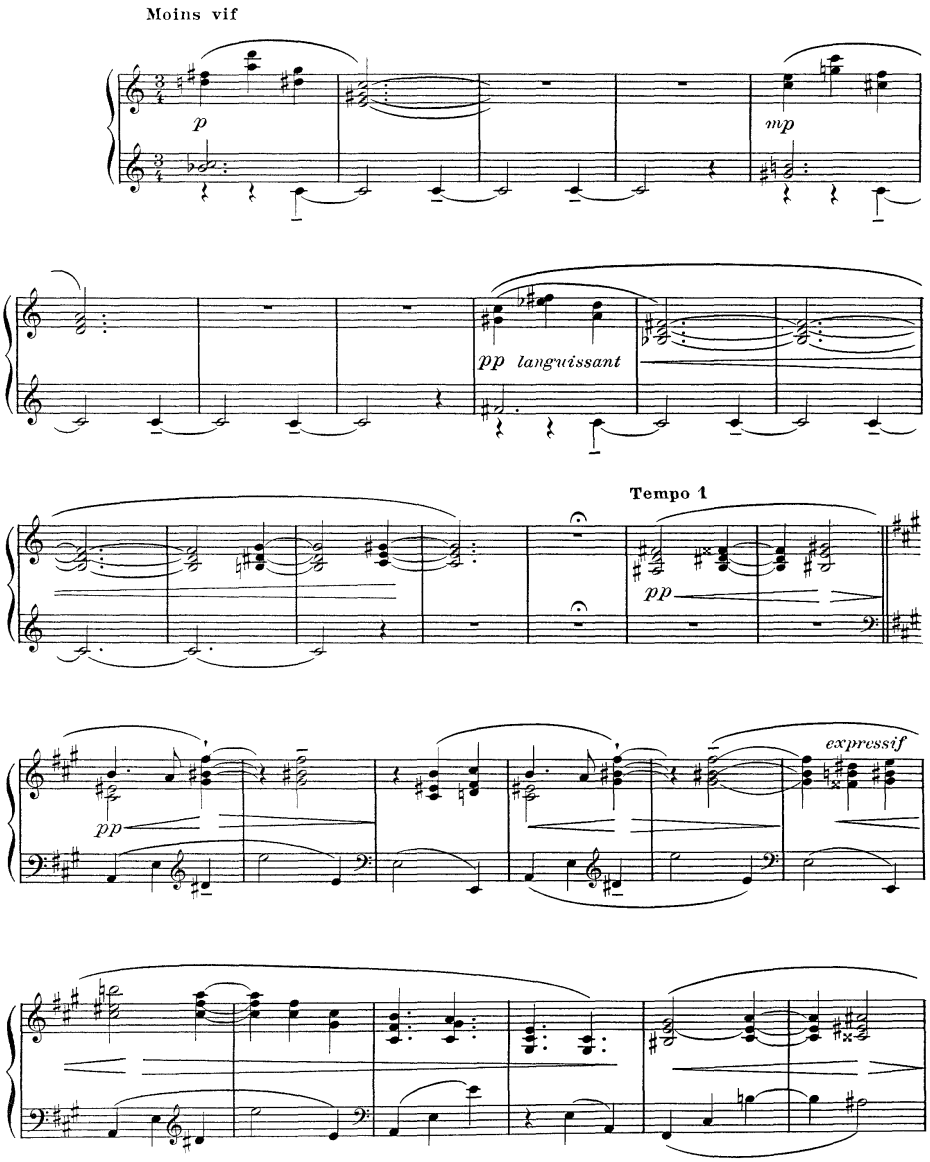
## VI.

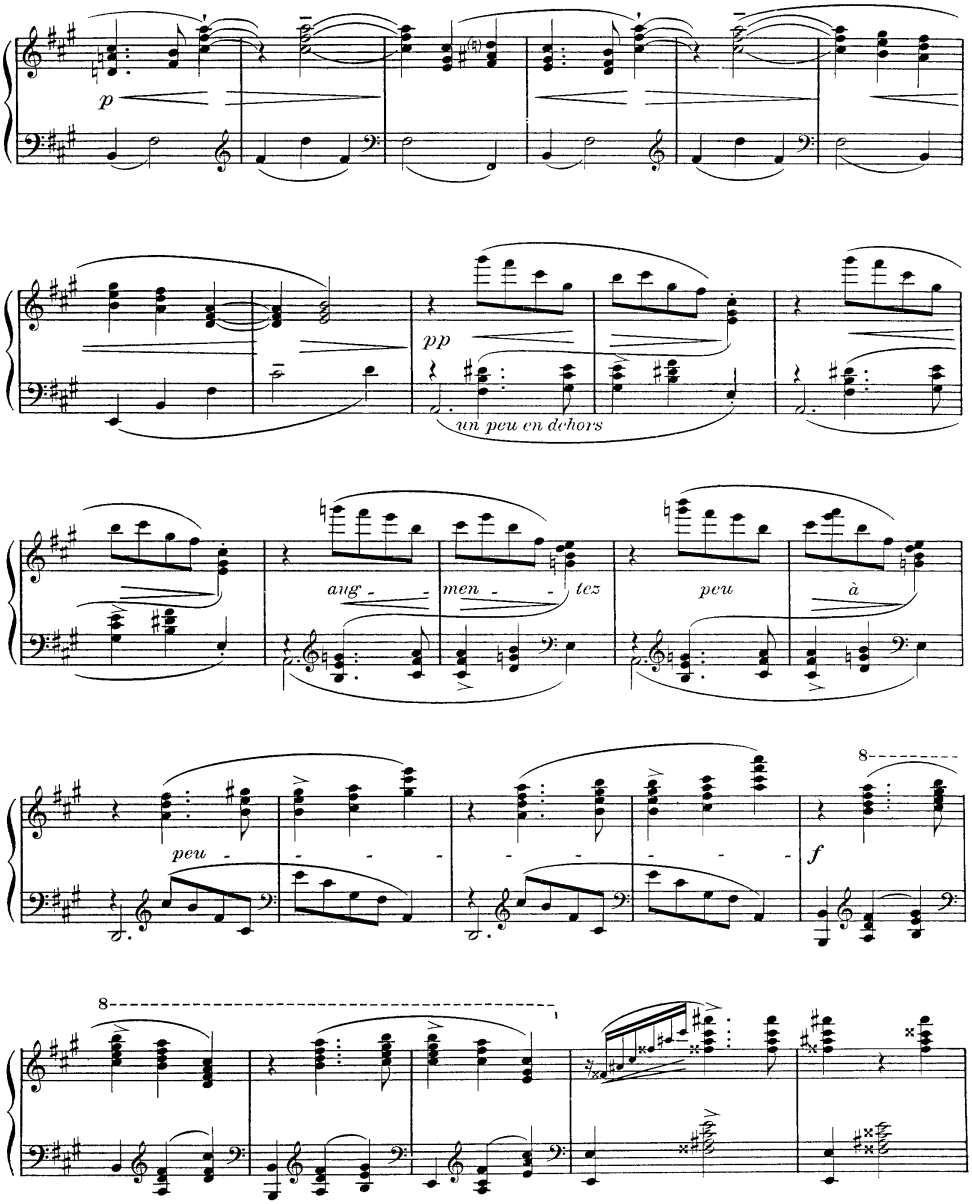

Vif 𝅗𝅥. = 100
pp
Cédez à peine
au Mouvt
très doux et un peu languissant
pp

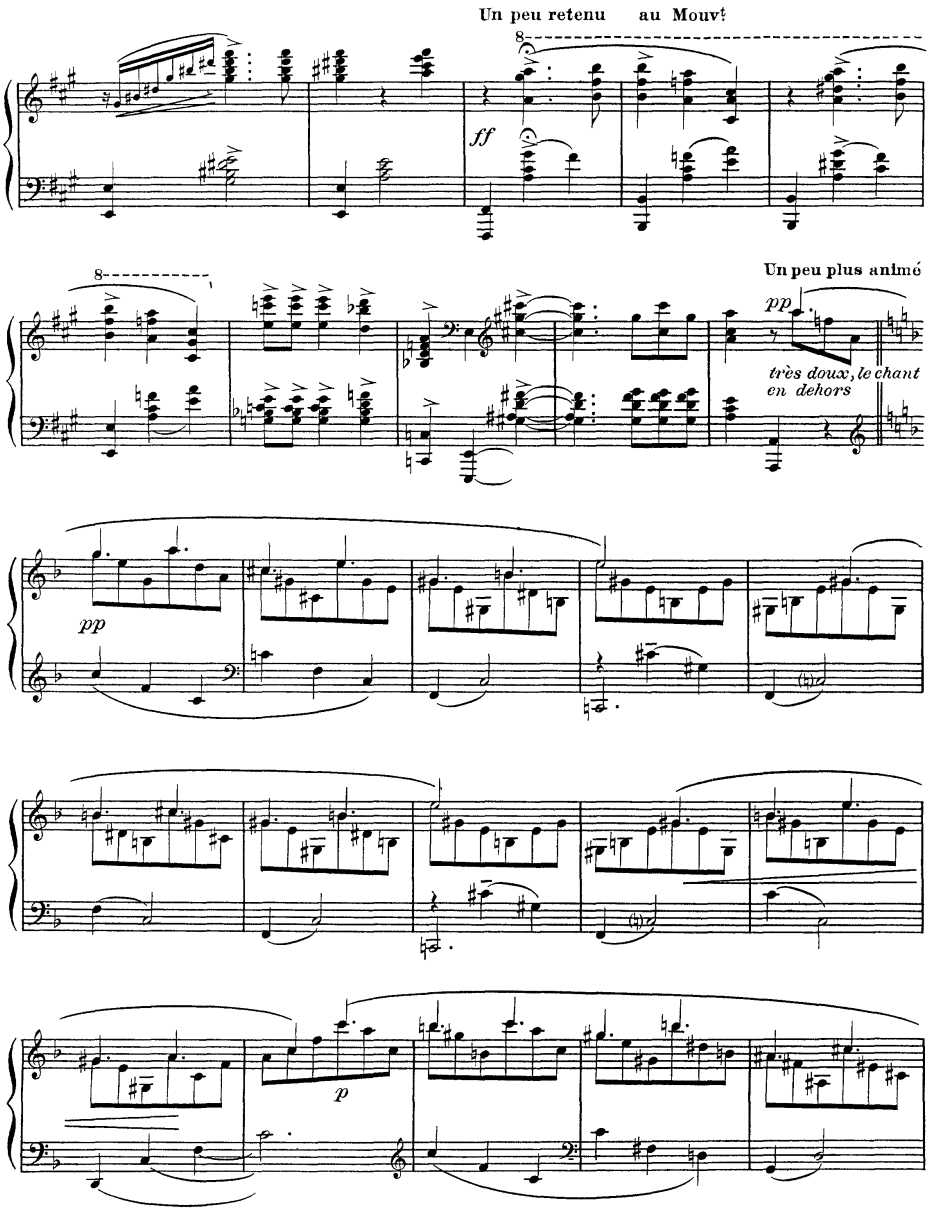

pp
pp
pp
p
mf
mf

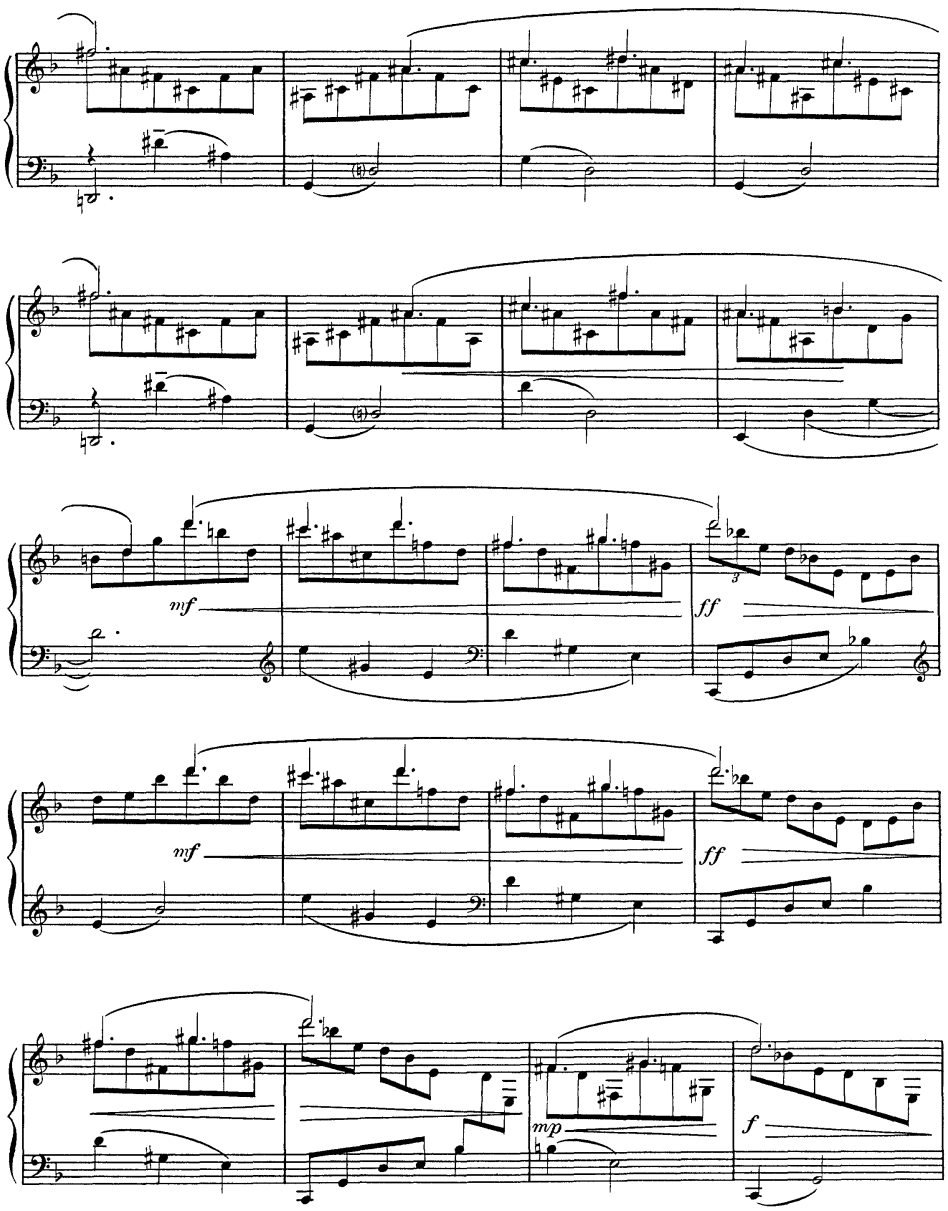

p
Ral. - - - - - - -
au Mouv!
pp
Cédez à peine au Mouv!
très doux et un peu languissant
pp

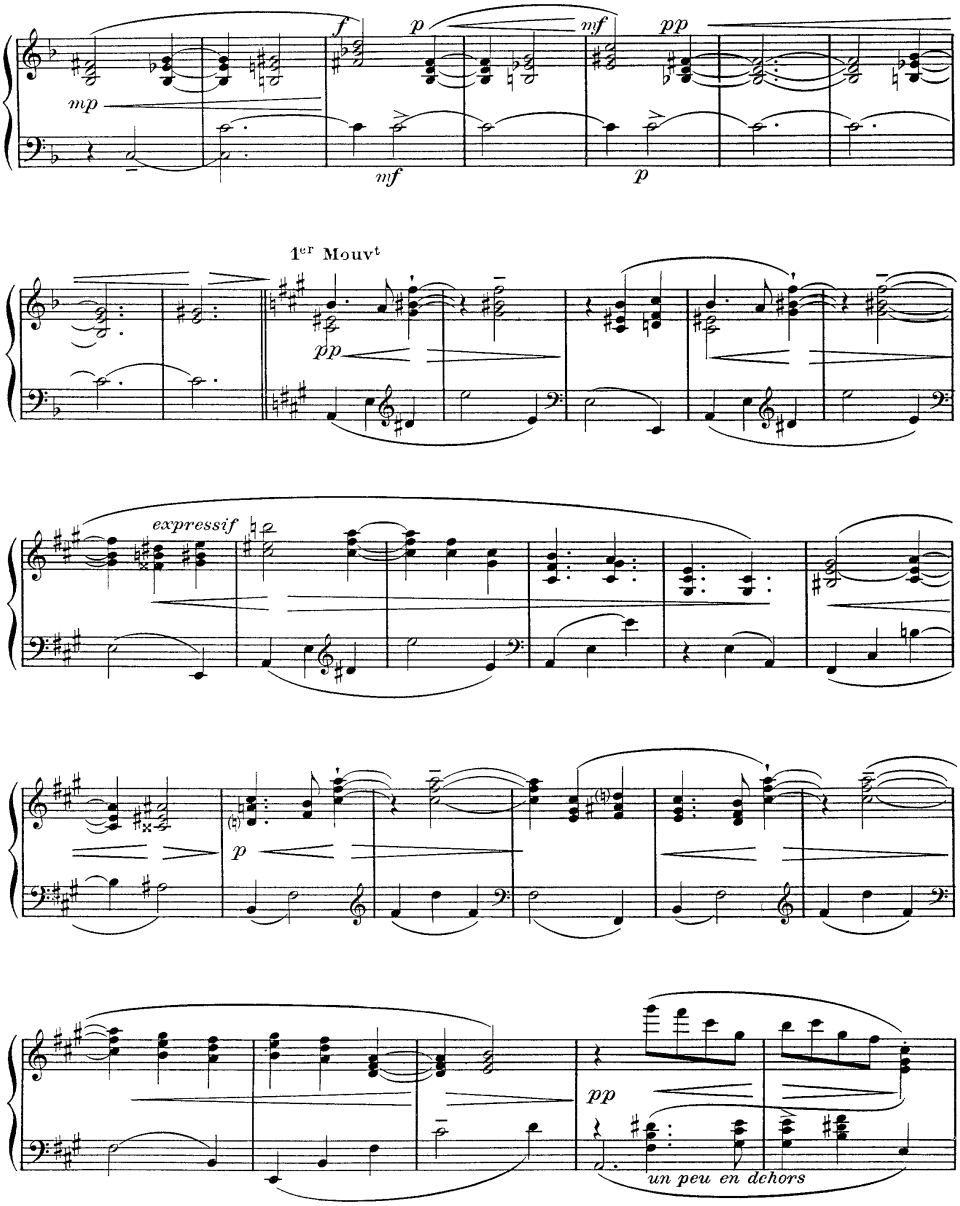
# VII.

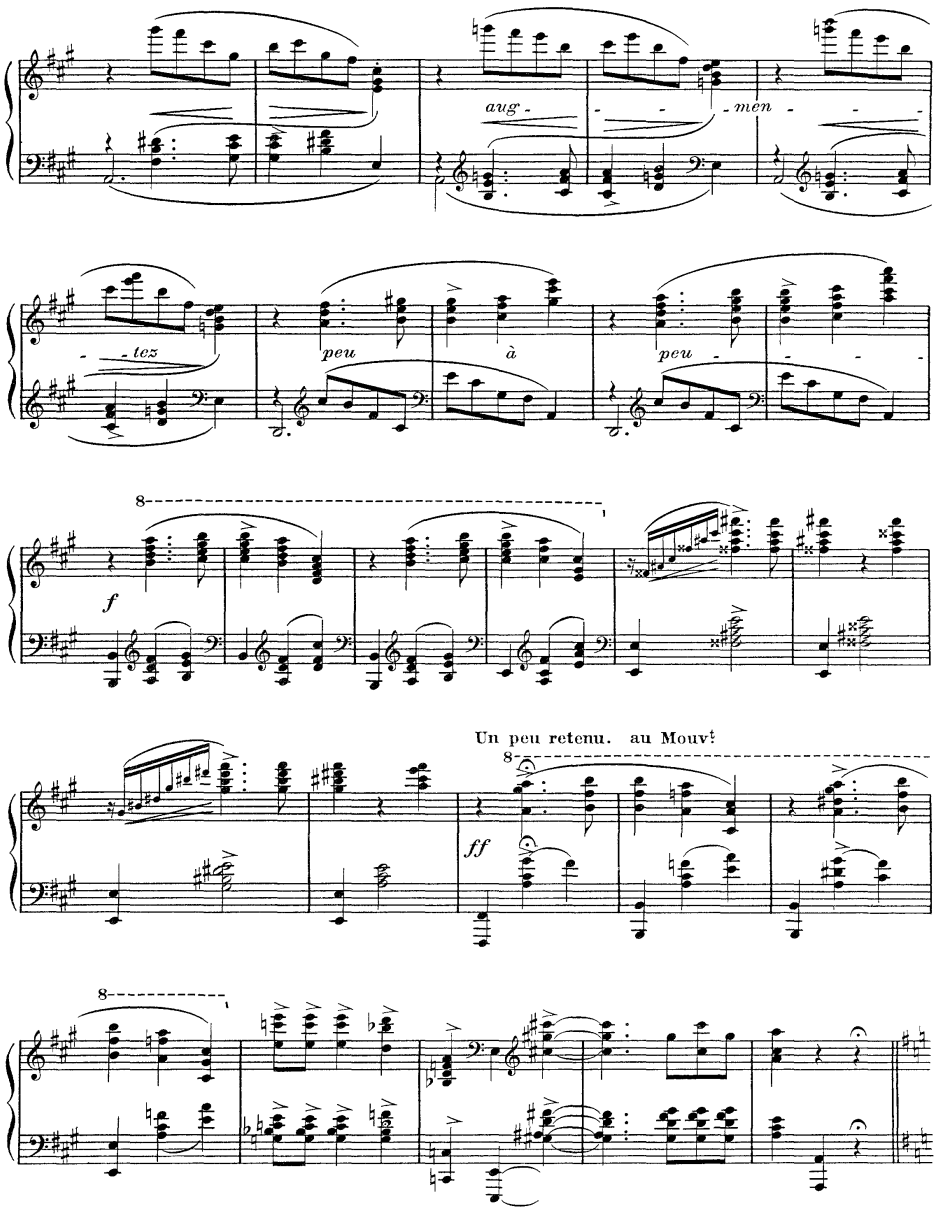



p
pp
un peu en dehors
aug - men - tez
peu
à
peu
f
8
8

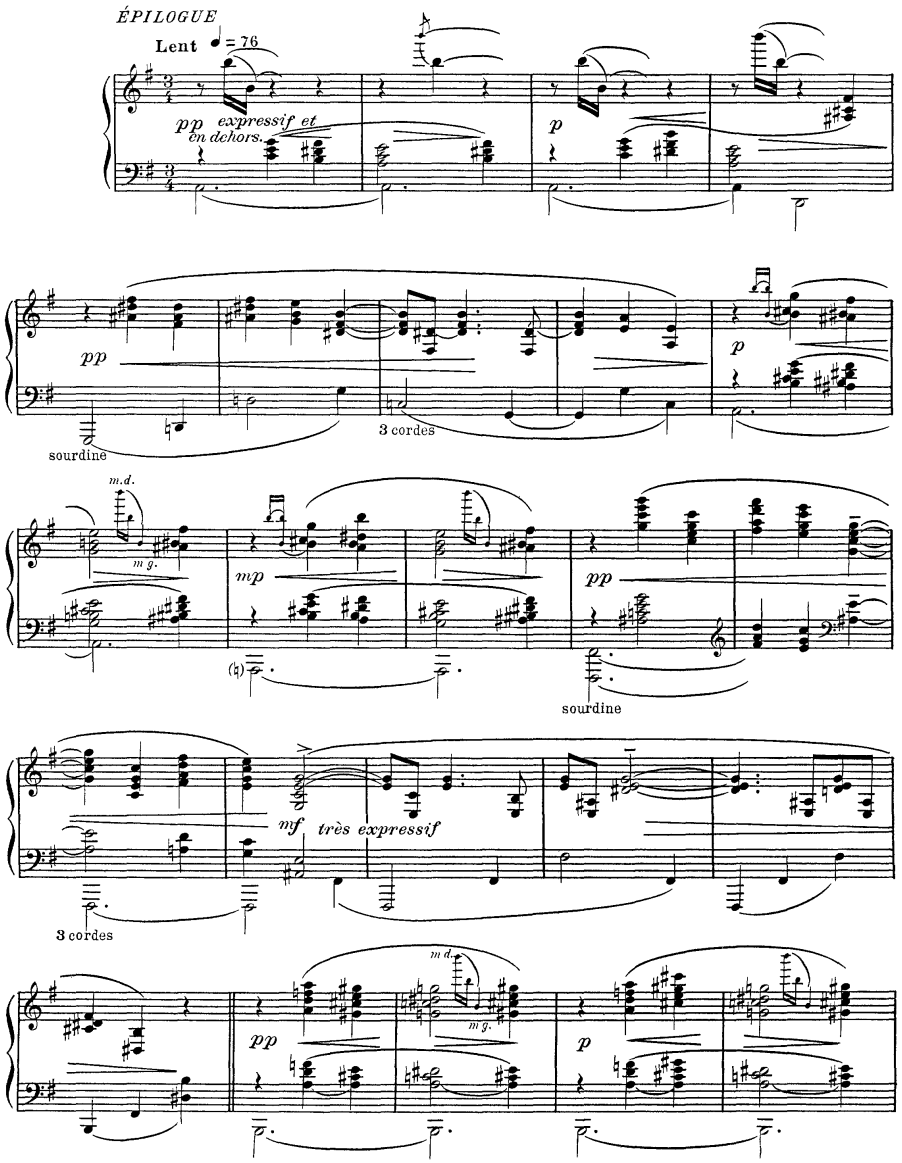

Un peu retenu au Mouvt
8
ff
Un peu plus animé
pp
très doux, le chant
en dehors
pp
p

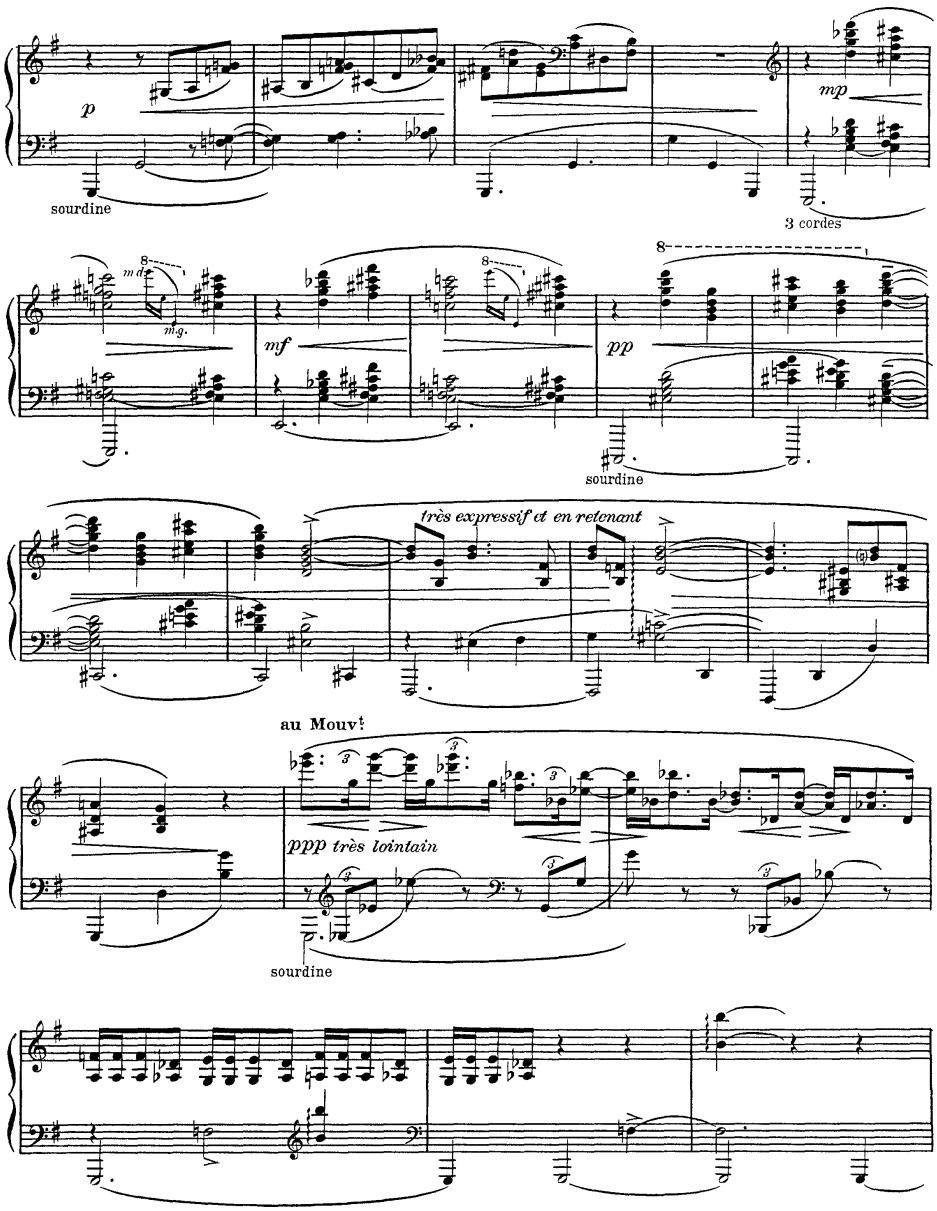

mf
ff
mf
ff
mp
f

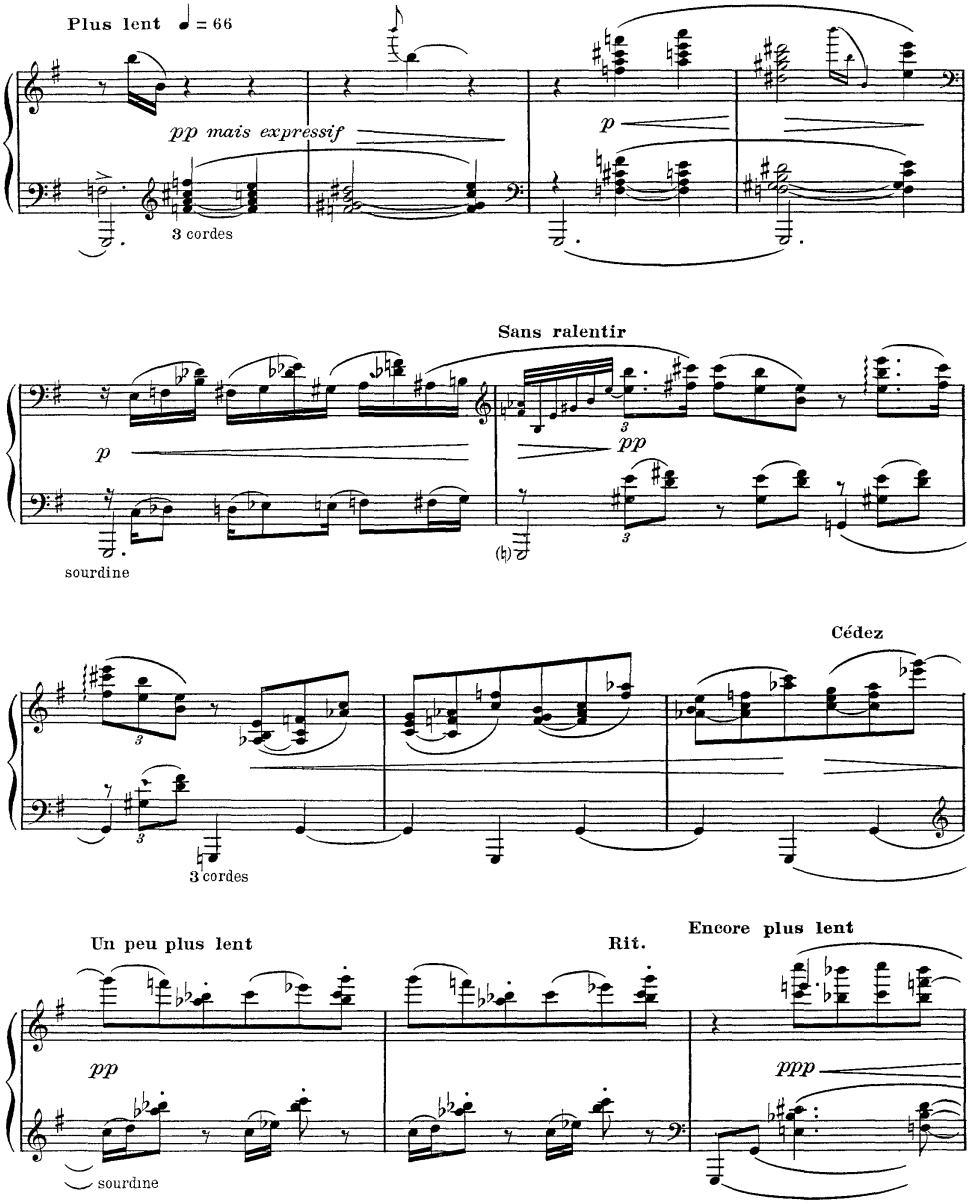

mp
f
mf
p
p
mf
pp
p
1er Mouvt
pp
expressif
p
pp
un peu en dehors

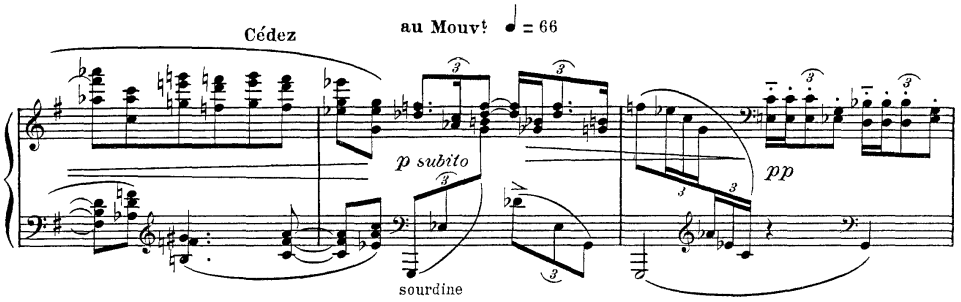

aug - men -
- tez
peu à peu
8
f
Un peu retenu. au Mouvt
8
ff
8

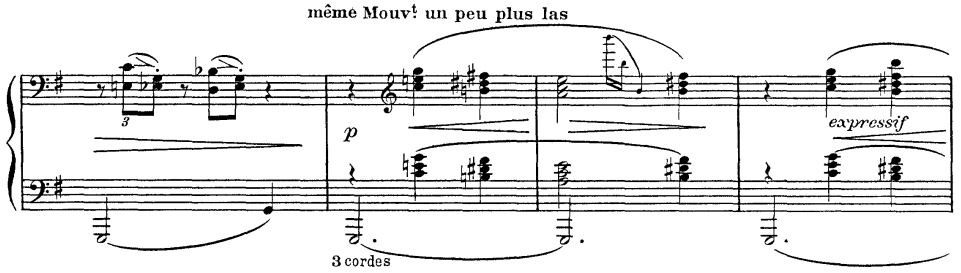
# VIII.

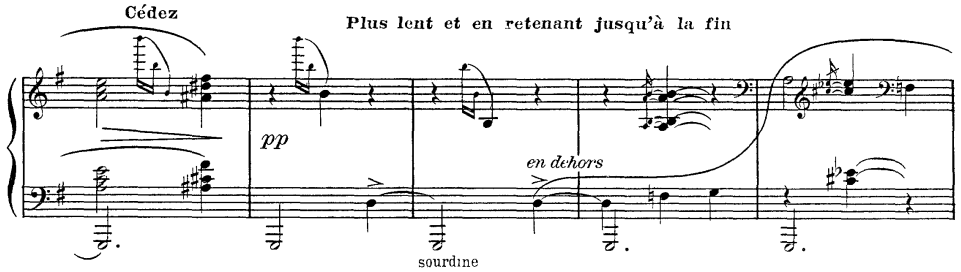

ÉPILOGUE
Lent ♩ = 76
pp expressif et en dehors
p
pp
sourdine
3 cordes
p
m.d.
m g.
mp
pp
sourdine
mf très expressif
3 cordes
m d.
m g.
pp
p

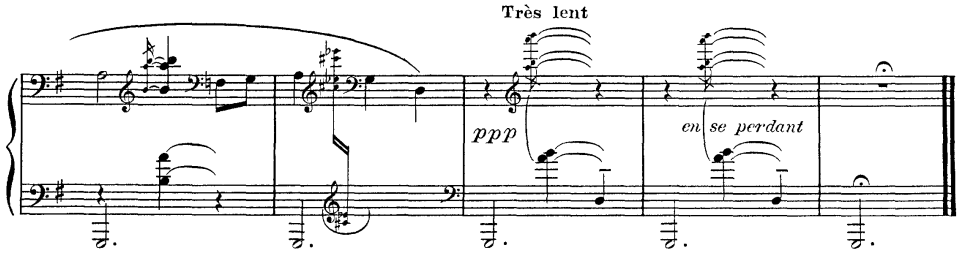

p
sourdine
mp
3 cordes
m.d.
m.g.
mf
pp
sourdine
très expressif et en retenant
au Mouvt
ppp très lointain
sourdine


Plus lent ♩ = 66
pp mais expressif
3 cordes
p
Sans ralentir
p
pp
sourdine
Cédez
3 cordes
Un peu plus lent
Rit.
Encore plus lent
pp
ppp
sourdine


Cédez
au Mouvt ♩ = 66
p subito
sourdine
pp


même Mouvt un peu plus las
p
3 cordes
expressif


Cédez
Plus lent et en retenant jusqu'à la fin
pp
en dehors
sourdine


Très lent
ppp
en se perdant

# Appendix D

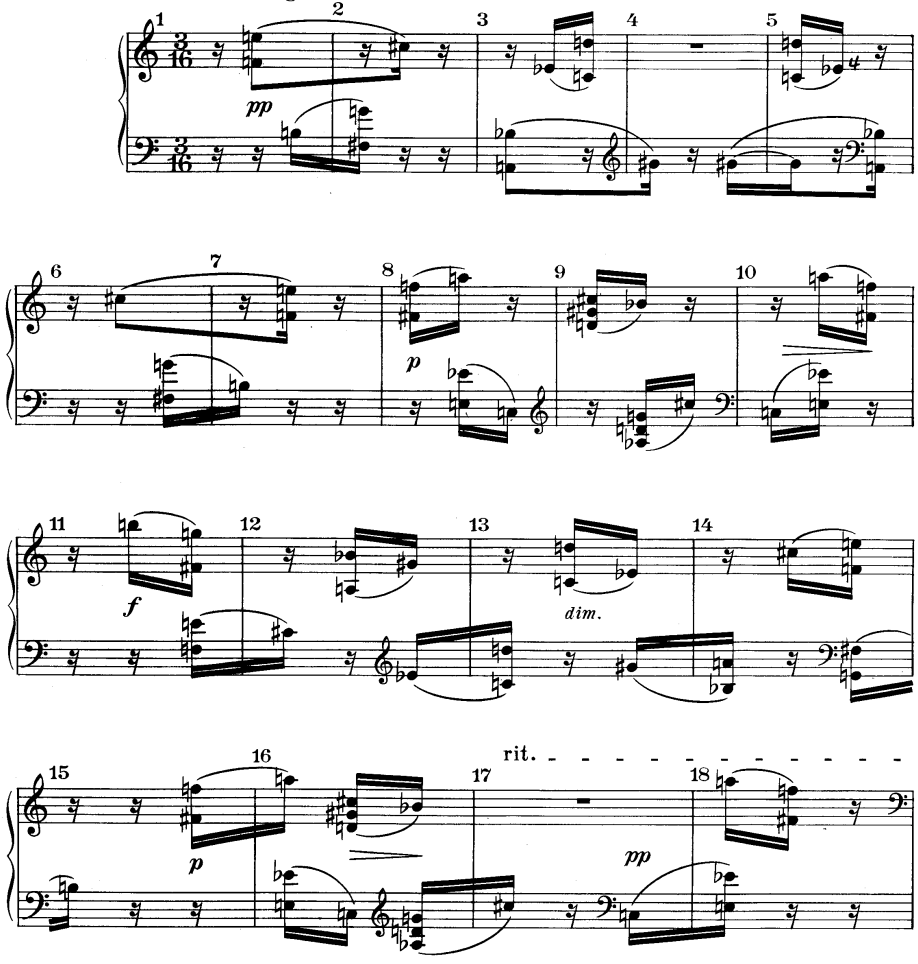
## Score: Anton Webern, Piano Variations Op 27

# VARIATIONEN

## I

Sehr mäßig ♪. = ca 40

Anton Webern, Op. 27

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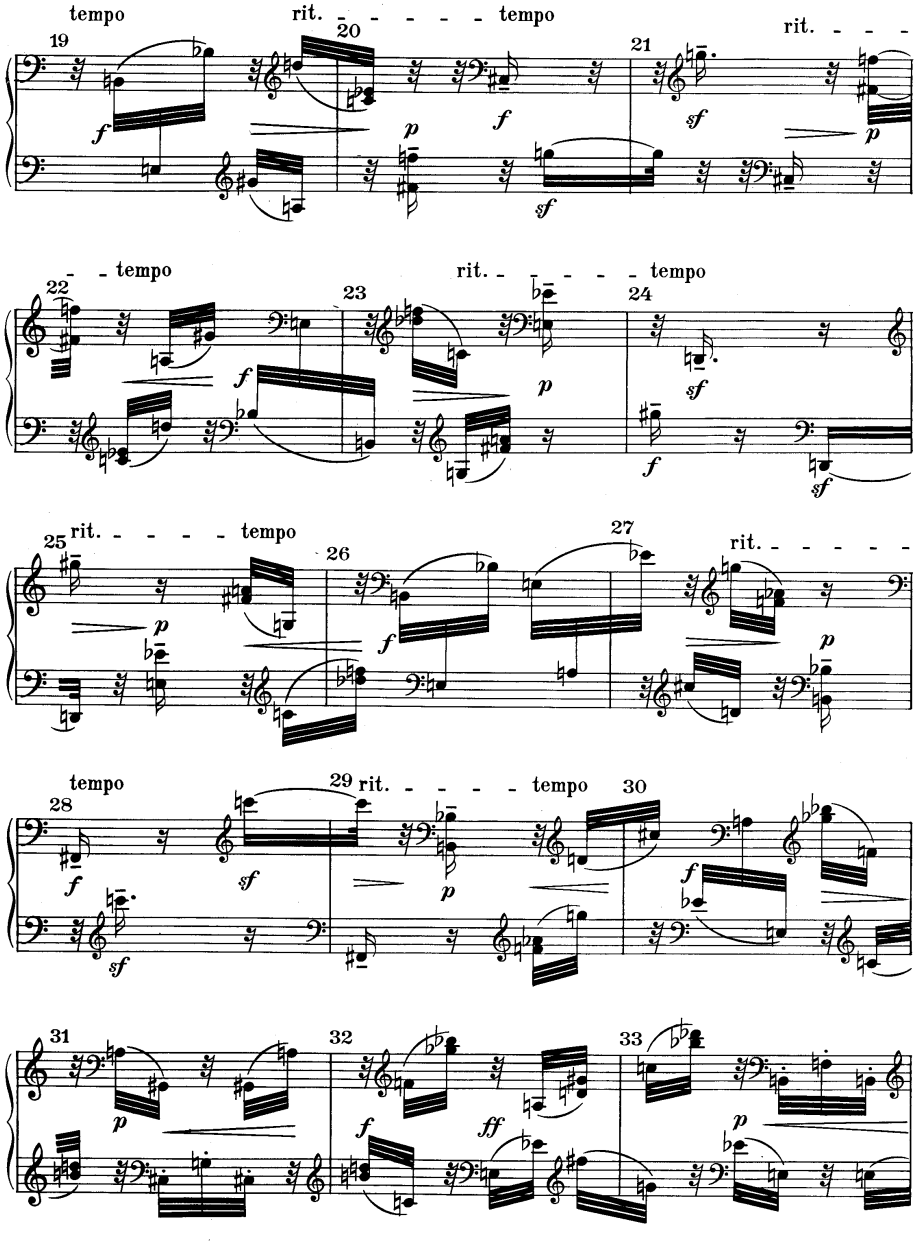
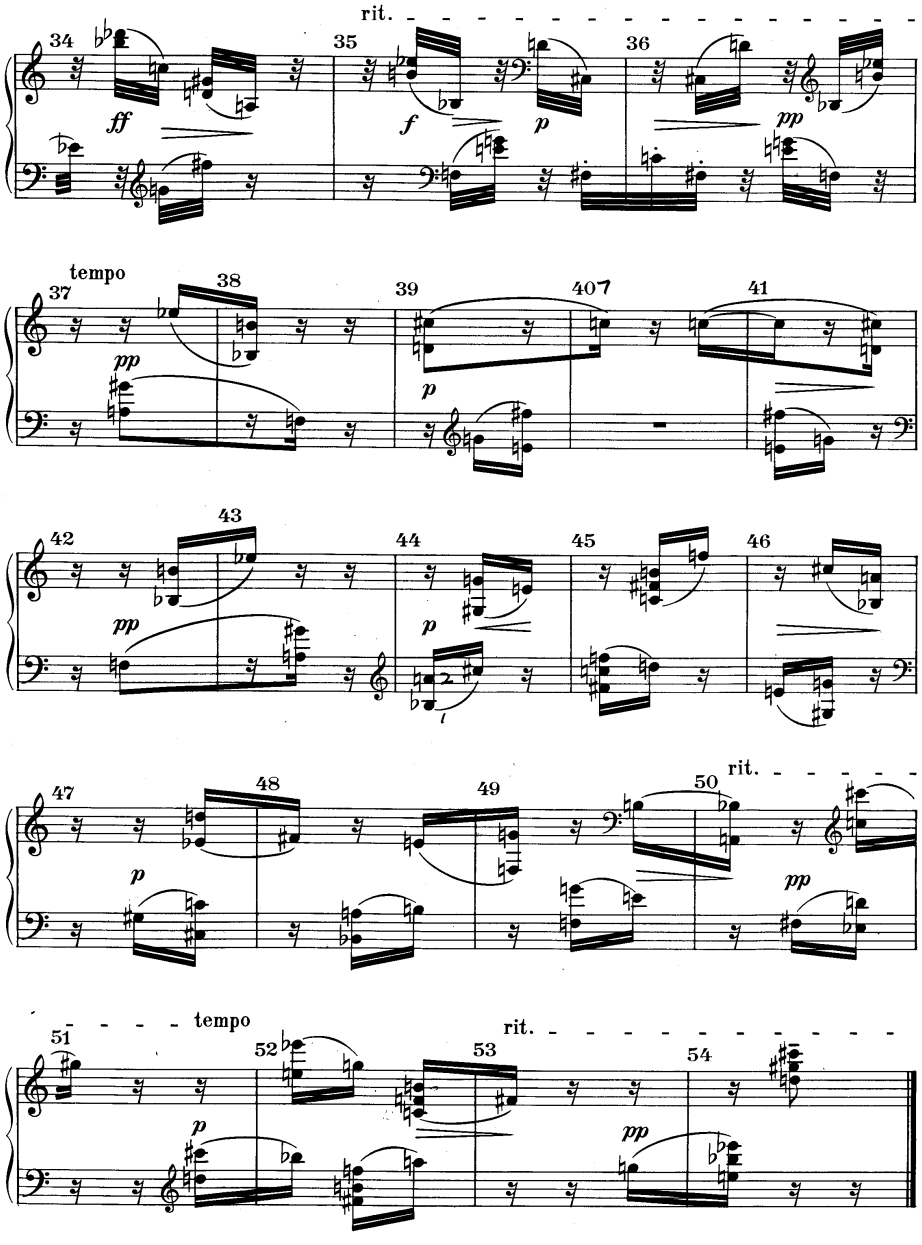
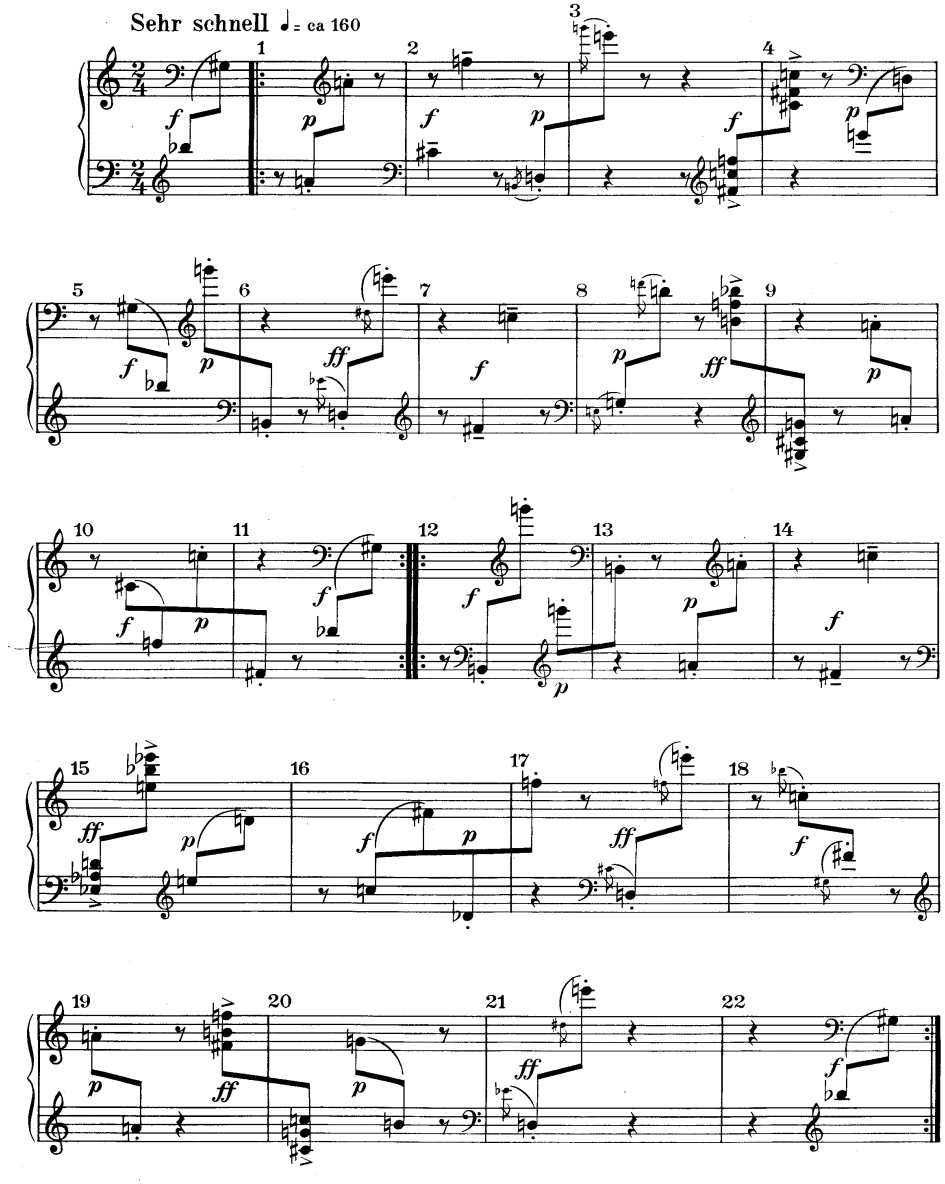
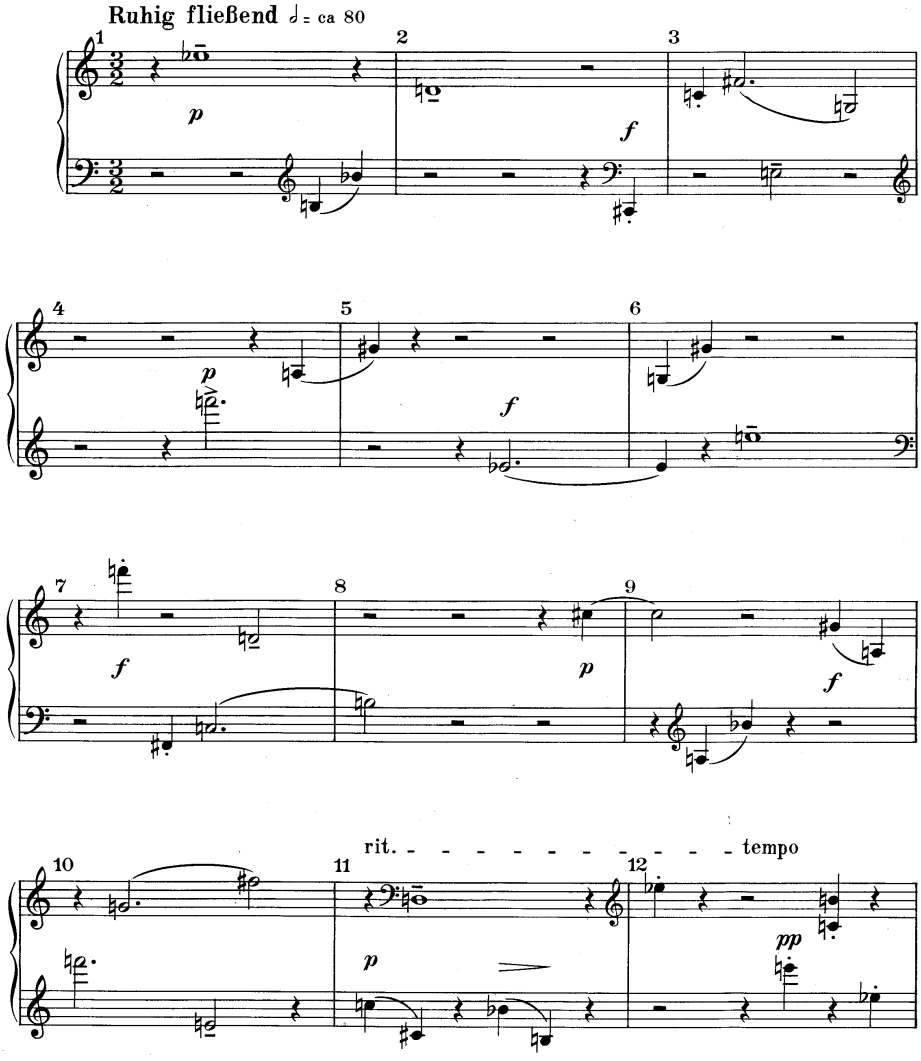

tempo
rit. - - - - - tempo
rit. - - - -
19
20
21
22
- - tempo
rit. - - - - - tempo
23
24
25
rit. - - - - - tempo
26
27
rit. - - - - -
28
tempo
29
rit. - - - - - tempo
30
31
32
33

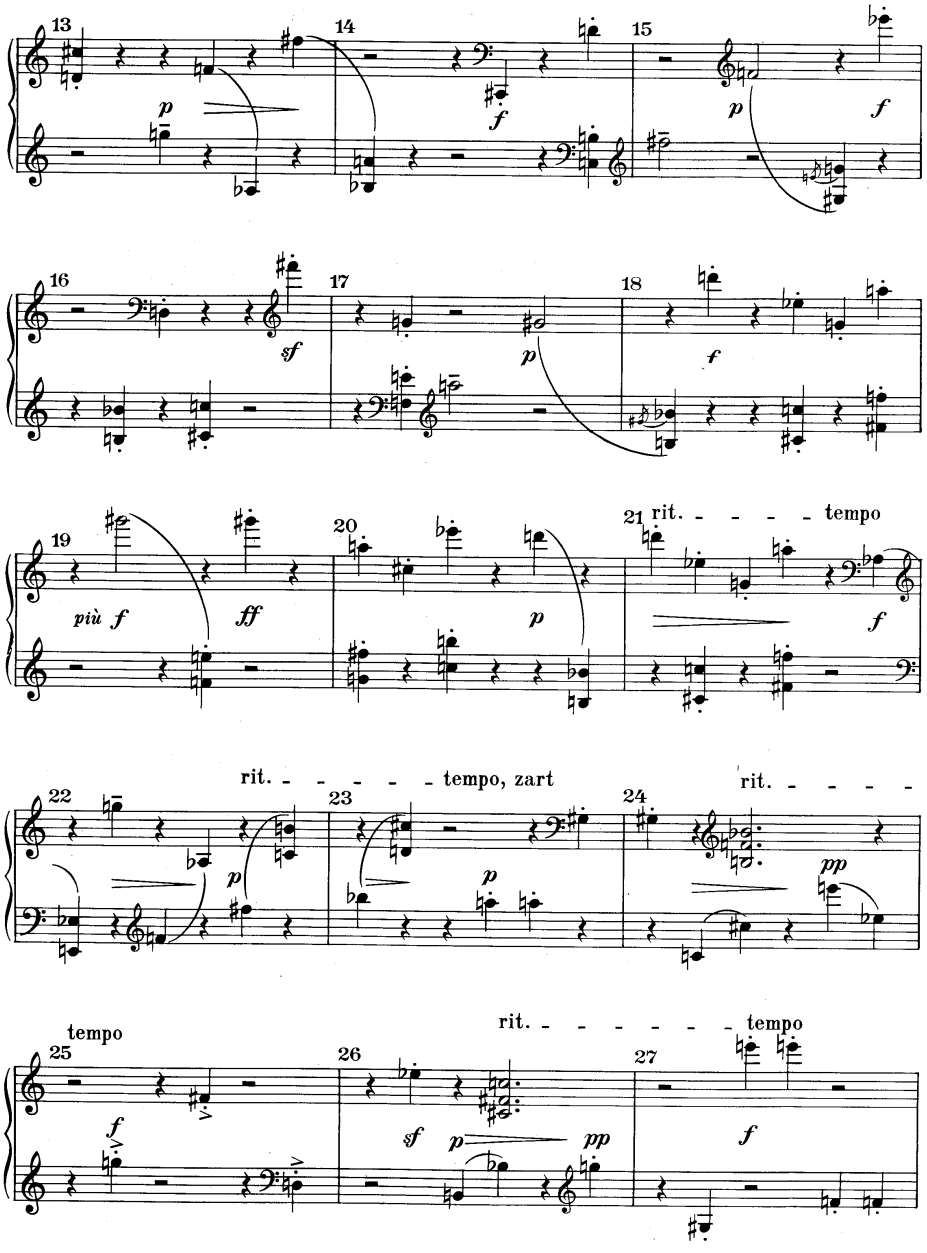

rit.
34
35
36
ff
f
p
pp
tempo
37
38
39
407
41
pp
p
42
43
44
45
46
pp
p
47
48
49
50
rit.
p
pp
51
tempo
52
53
54
rit.
p
pp

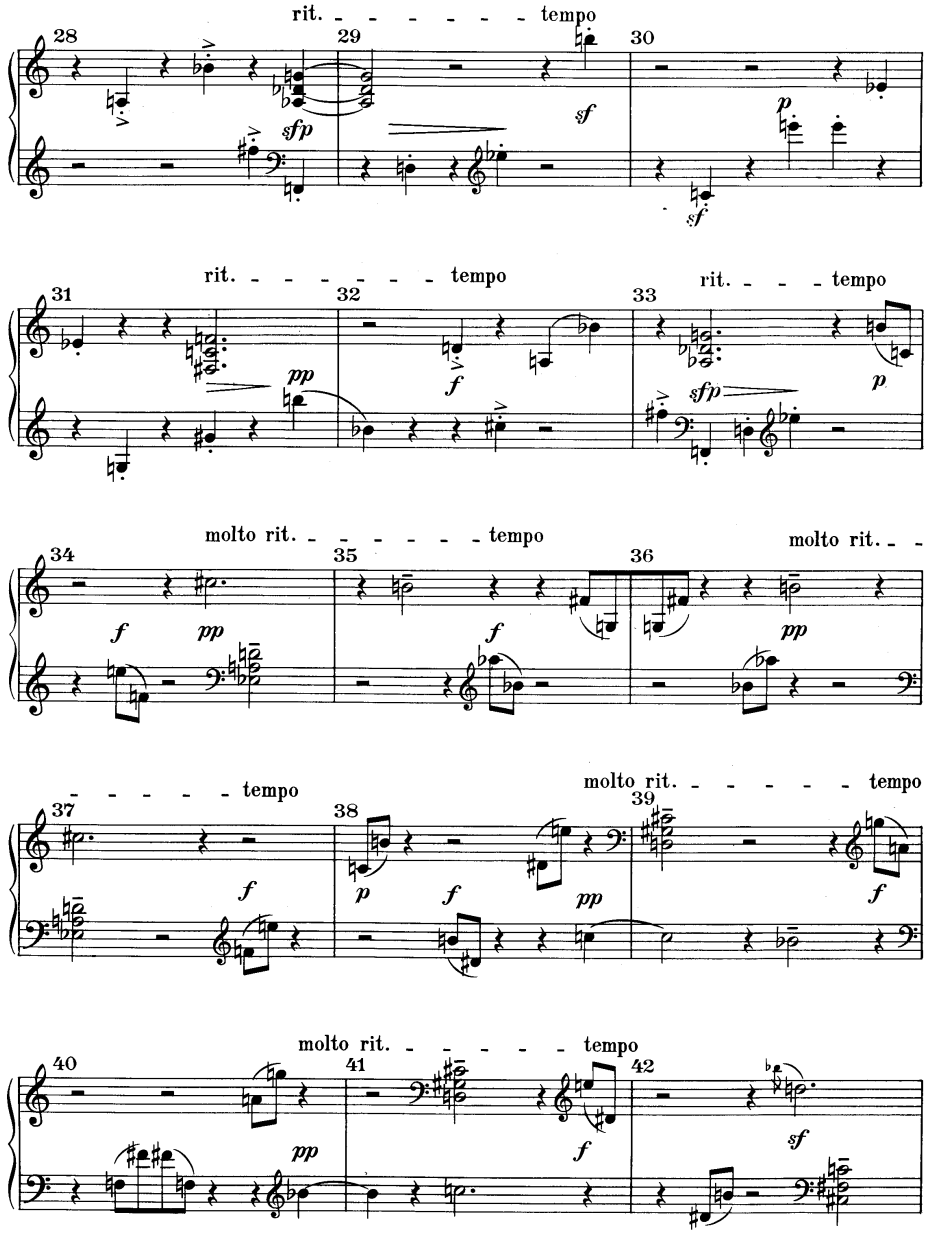
# II

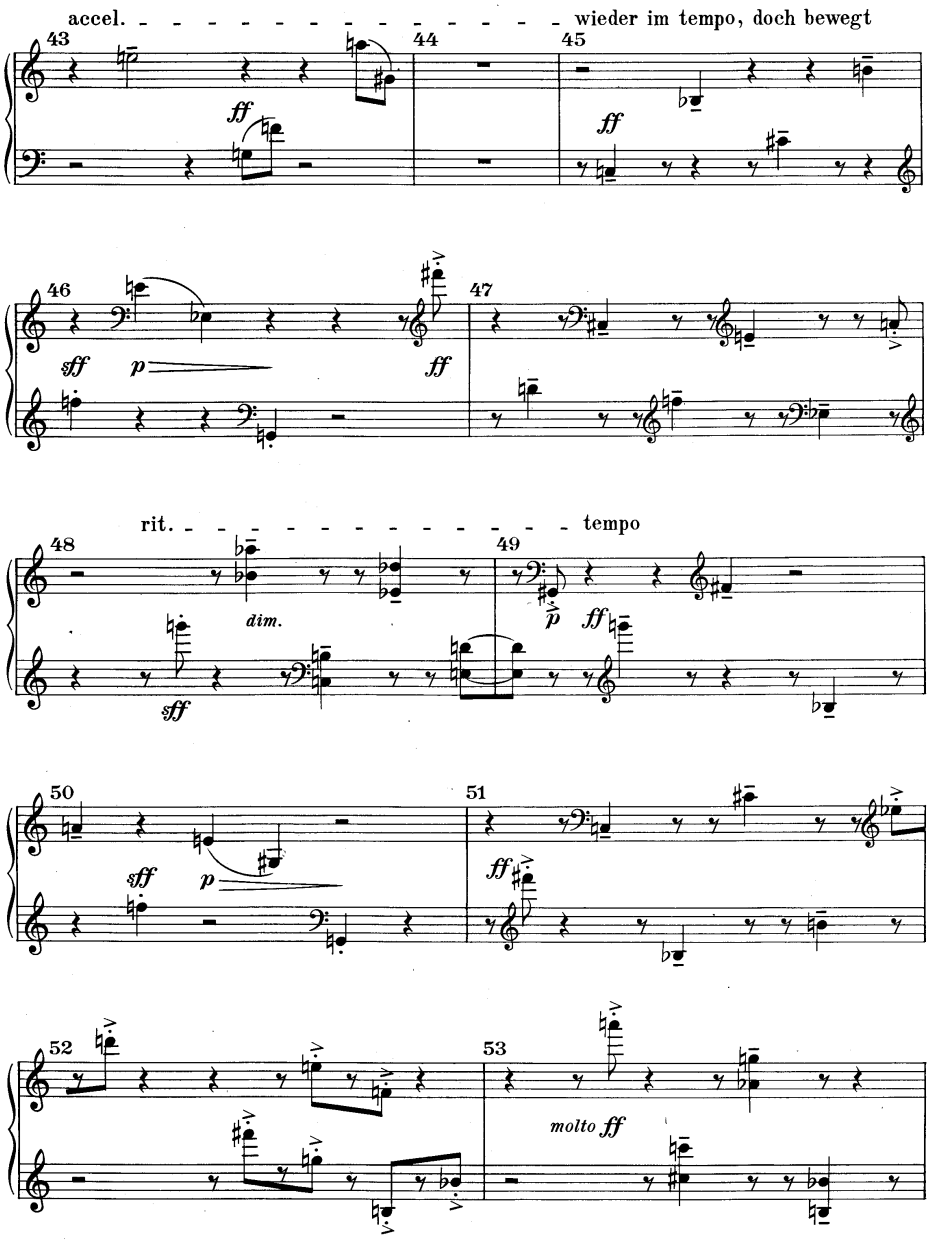


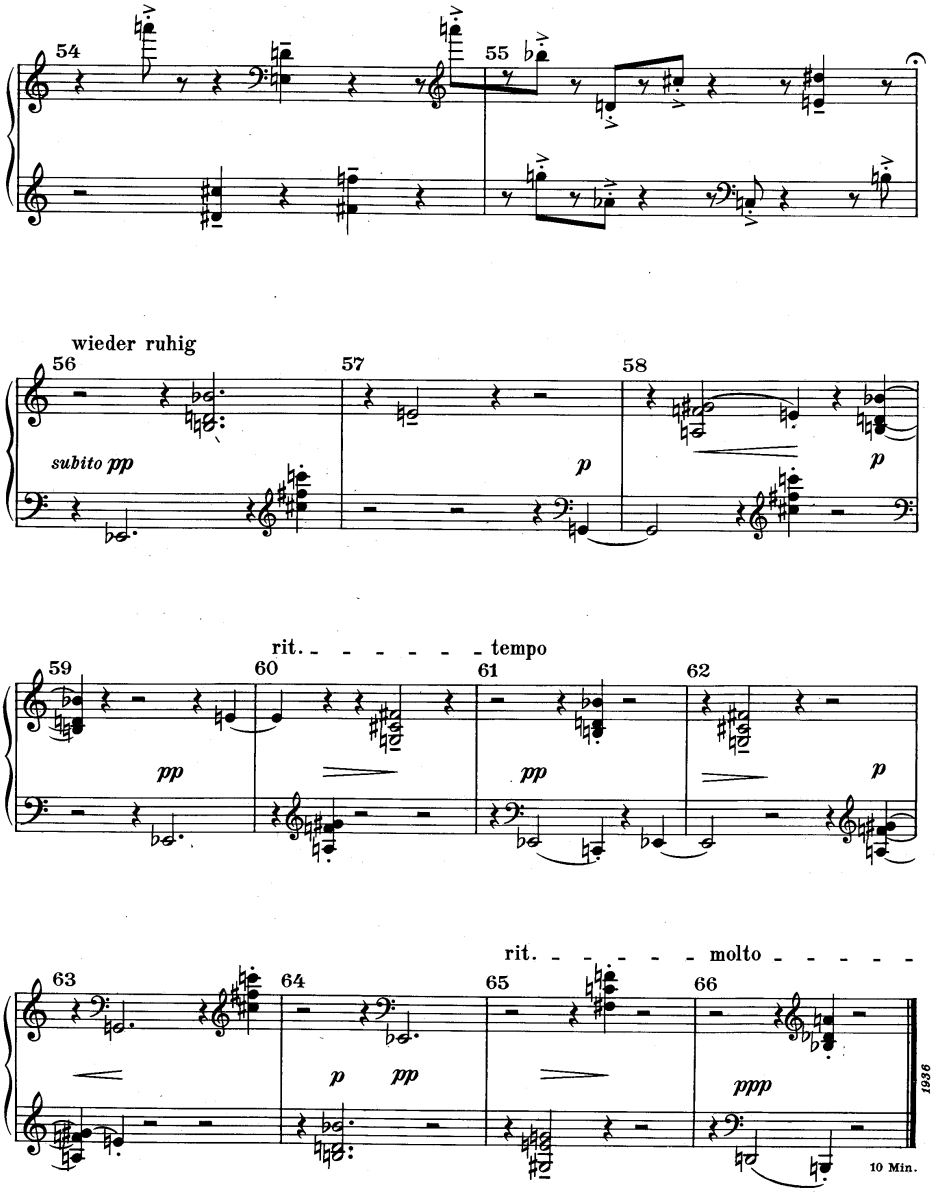
# III




13
14
15
p
f
p
f
16
17
18
sf
p
f
19
20
21
più f
ff
p
f
rit. - - - - - tempo
22
23
24
rit. - - - - - - tempo, zart
rit. - - - - -
p
p
pp
tempo
25
26
27
rit. - - - - - - - tempo
f
sf
p
pp
f


rit. - - - - - - - tempo
28
29
30
sfp
sf
p
sf
rit. - - - - - - - tempo
rit. - - - - tempo
31
32
33
pp
f
sfp
p
molto rit. - - - - - - - tempo
molto rit. - -
34
35
36
f
pp
f
pp
- - - - - tempo
molto rit. - - - - - - tempo
37
38
39
f
p
f
pp
f
molto rit. - - - - - tempo
40
41
42
pp
f
sf


accel. - - - - - - - - - - - - - - - - wieder im tempo, doch bewegt
43
44
45
ff
ff
46
47
sff
p
ff
rit. - - - - - - - - - - - - - - - - tempo
48
49
dim.
sff
p
ff
50
51
sff
p
ff
52
53
molto ff

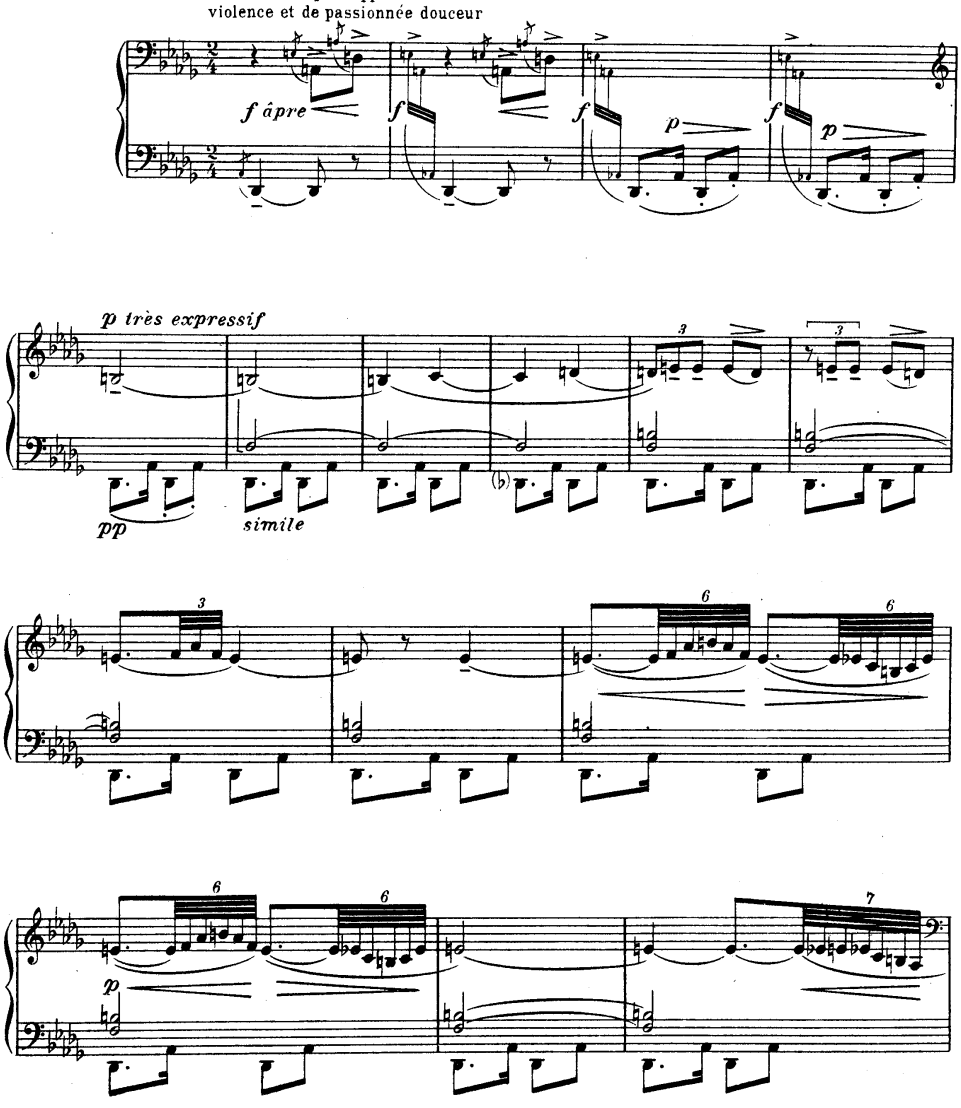

54
55
wieder ruhig
56
57
58
subito pp
p
p
rit. - - - - - - tempo
59
60
61
62
pp
pp
p
rit. - - - - - - molto - - - - -
63
64
65
66
p
pp
ppp
1936
10 Min.

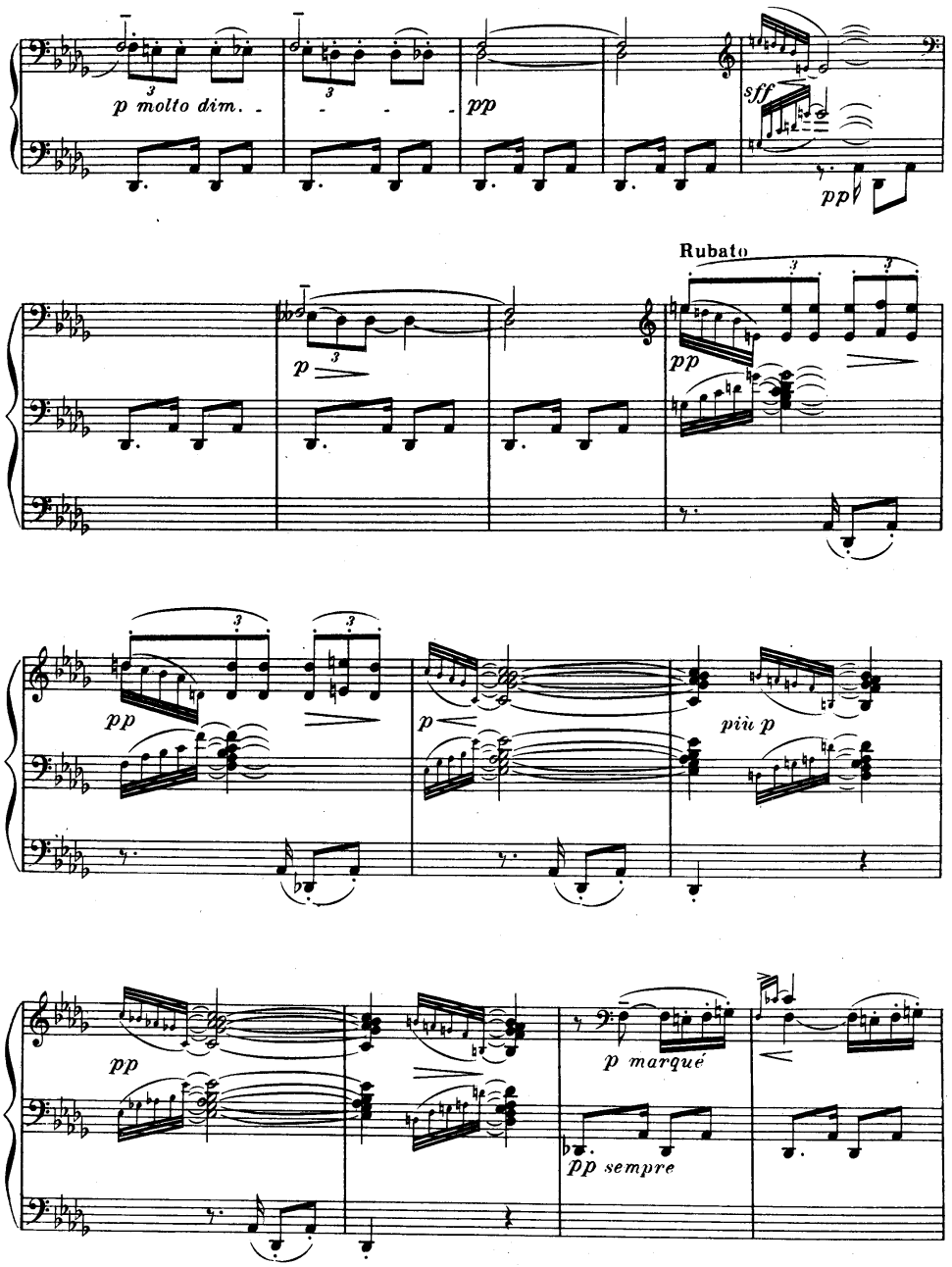
# Appendix E

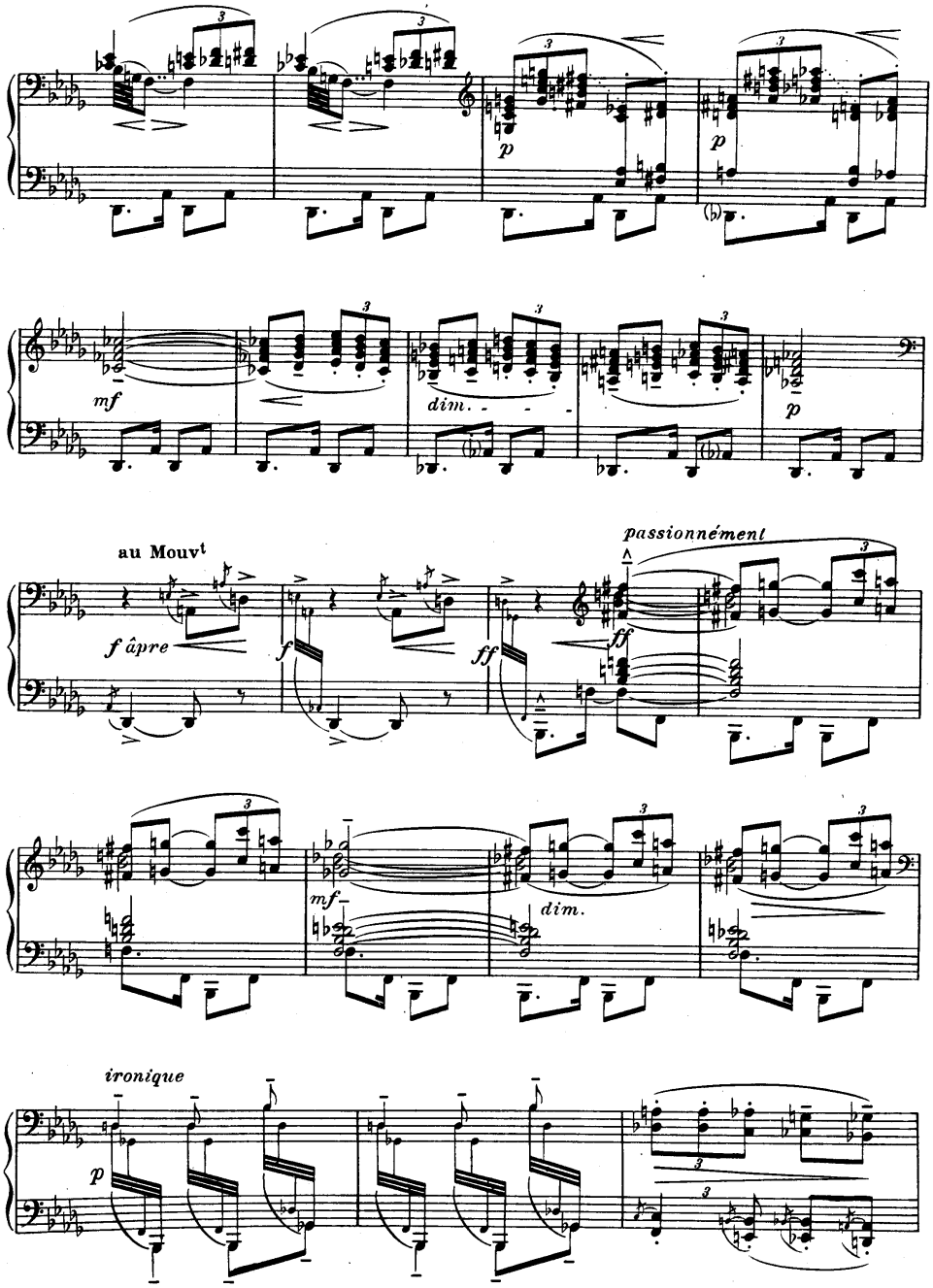
**Score: Debussy, La puerta del vino: Mouvement de Habanera**

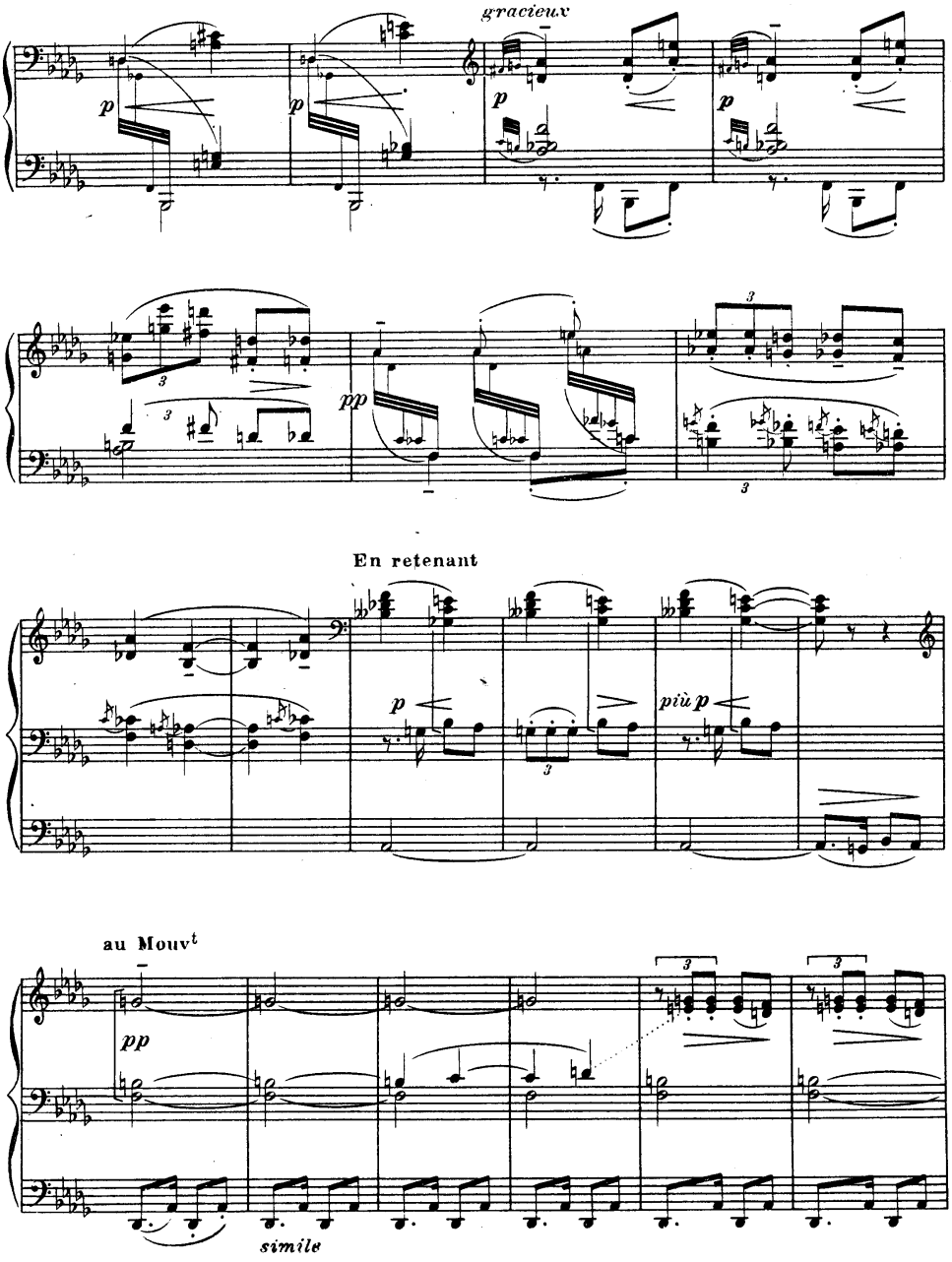
III.

**Mouvt de Habanera**
avec de brusques oppositions d'extrême
violence et de passionnée douceur




p molto dim.
pp
sff
pp
Rubato
p
pp
pp
p
più p
pp
p marqué
pp sempre


p
p
mf
dim.
p
au Mouvt
passionnément
f âpre
f
ff
ff
mf
dim.
ironique
p


gracieux
p
p
p
p
pp
3
3
3
3
En retenant
p
più p
3
au Mouvt
pp
3
3
simile

molto dim.

mp

pp

pp

pp

pp lointain

Un peu retardé

au Mouv!

ff molto

p

pp

p

pp

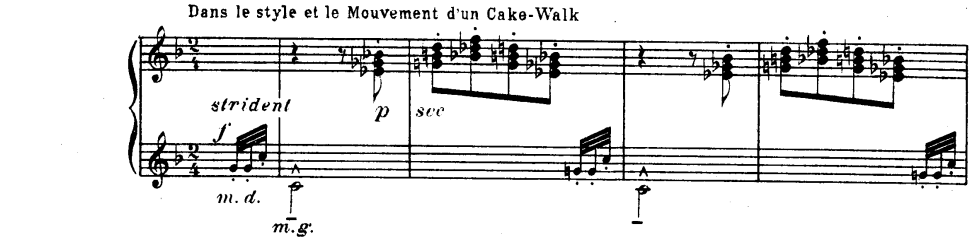
(... La puerta del Vino)

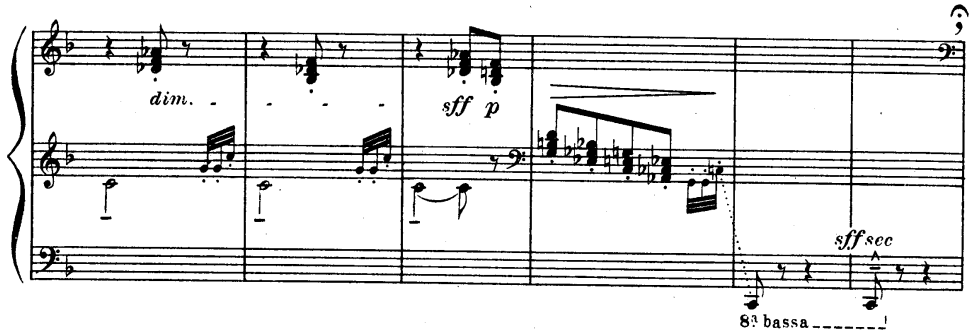
# Appendix F

## Score: Debussy, Général Lavine - eccentric

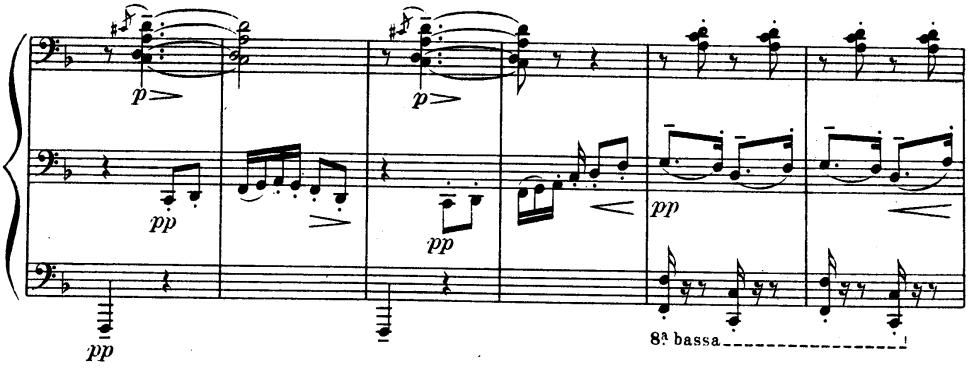
VI.

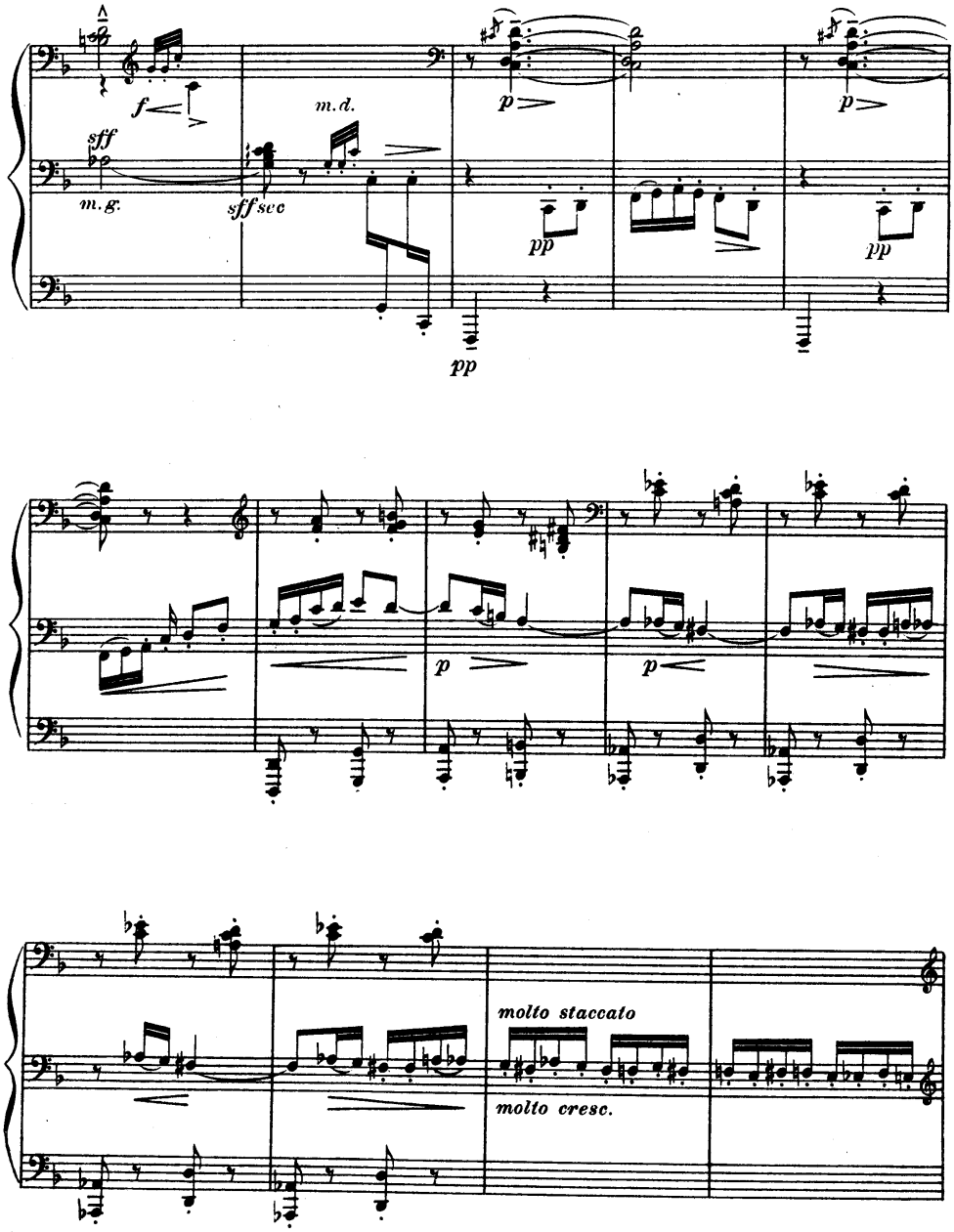
Dans le style et le Mouvement d'un Cake-Walk

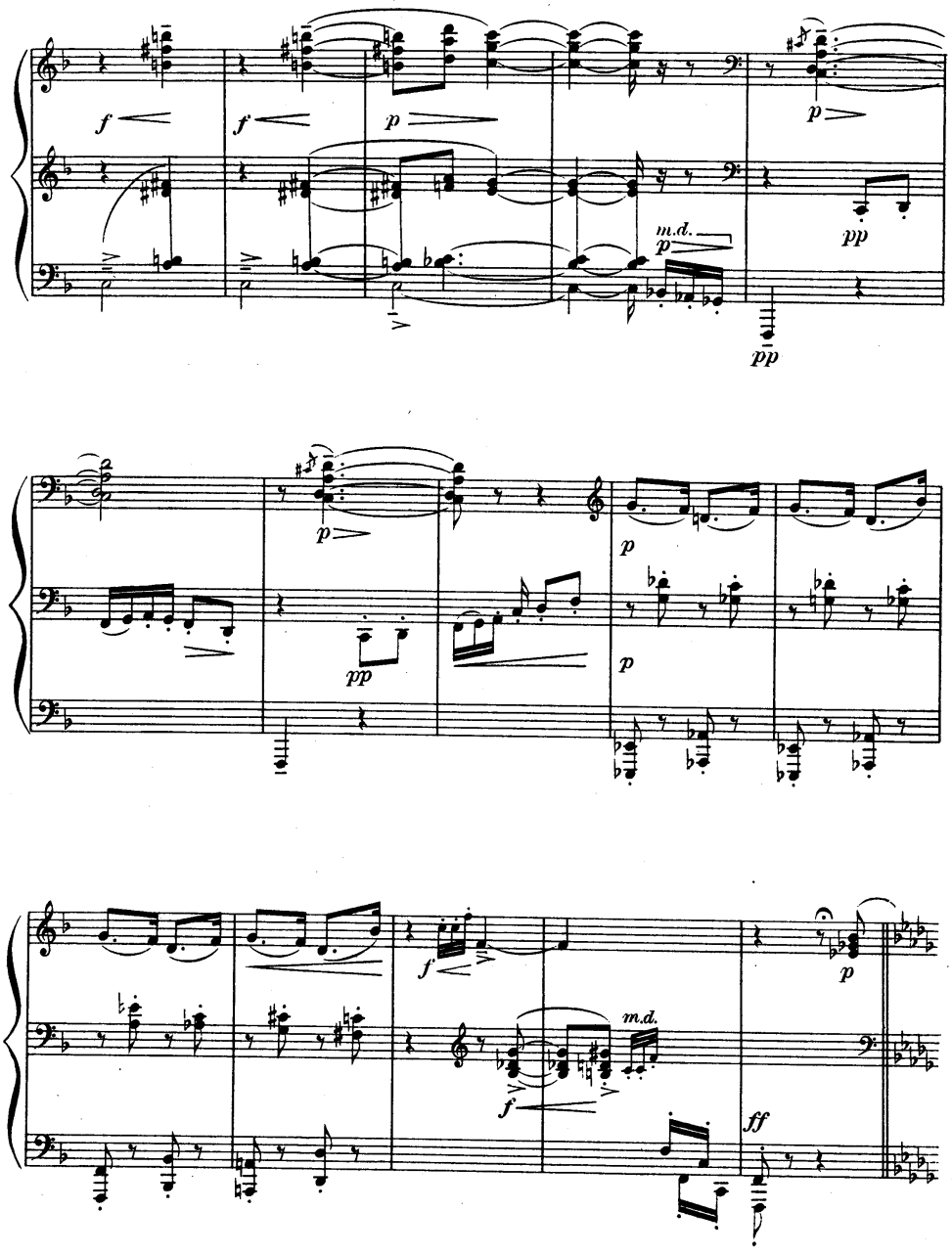


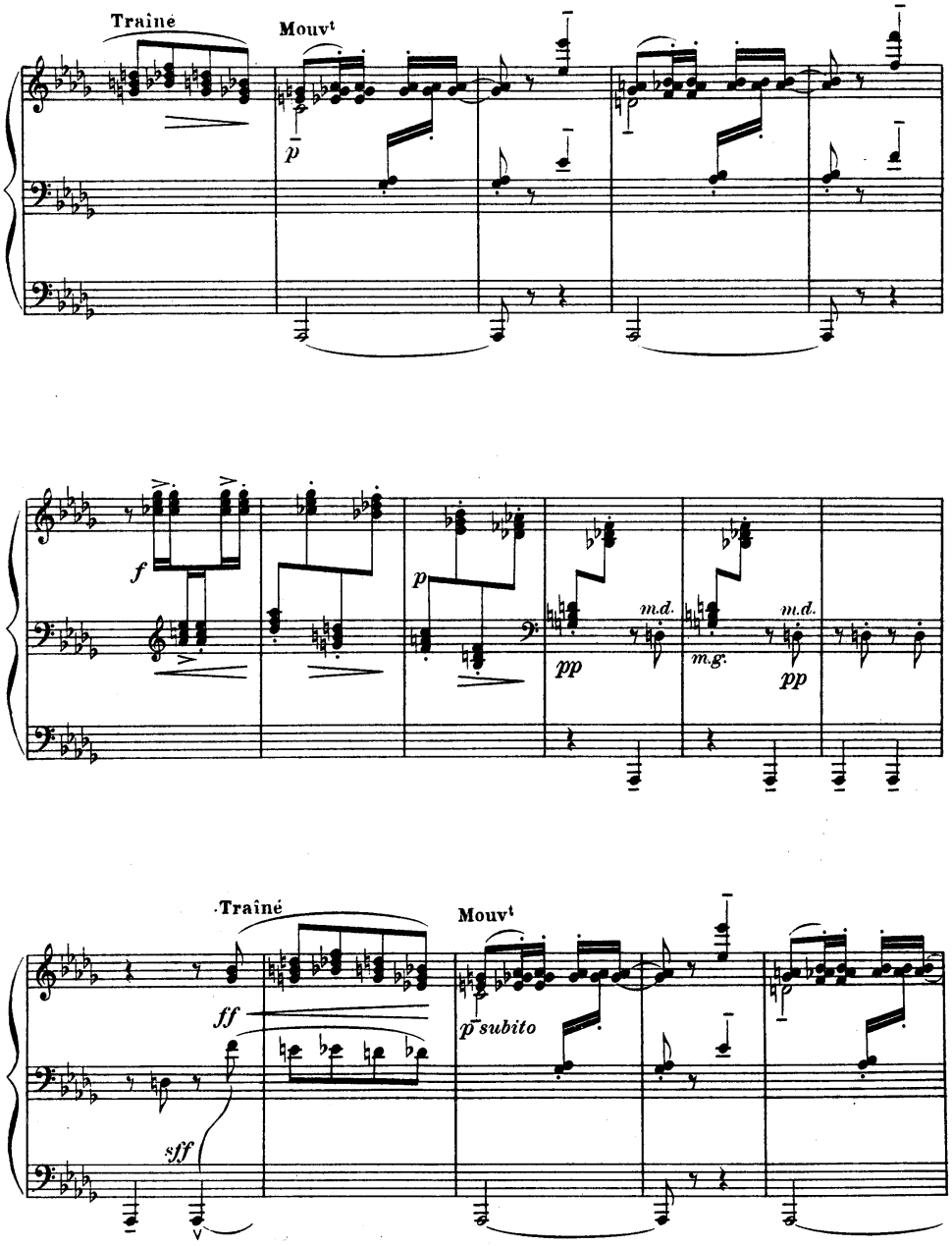



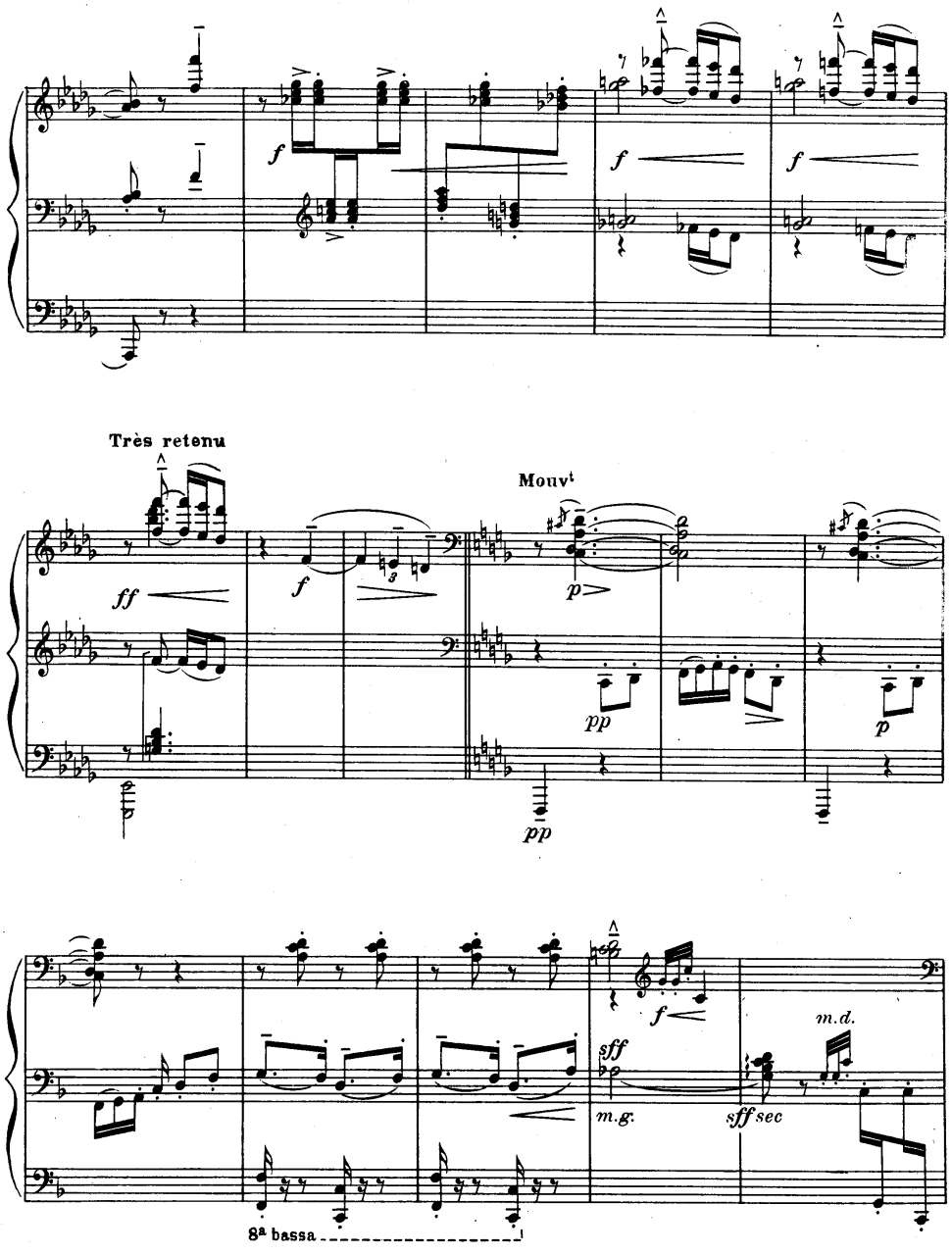

Spirituel et discret

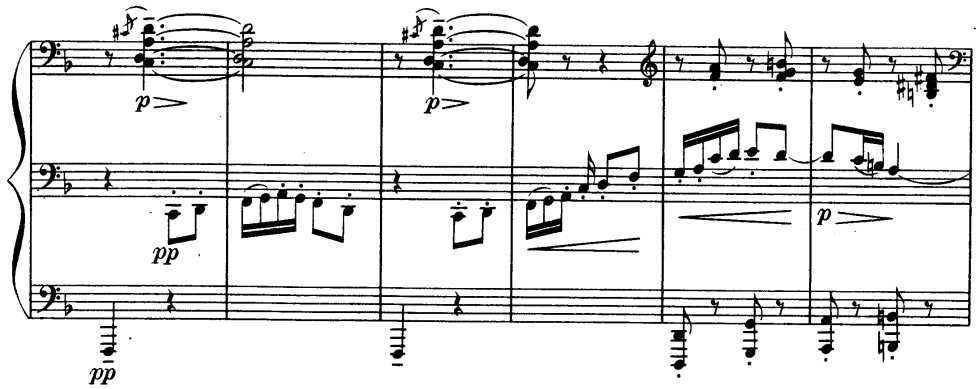


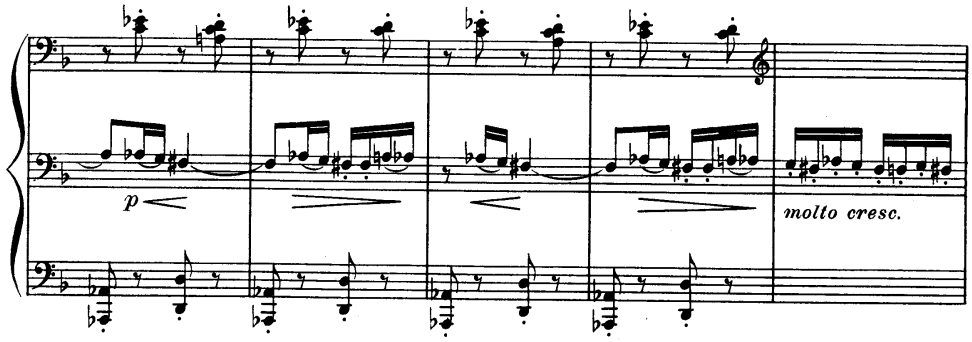

f
m.d.
sff
m.g.
sff sec
p
pp
p
pp
pp
p
p
molto staccato
molto cresc.

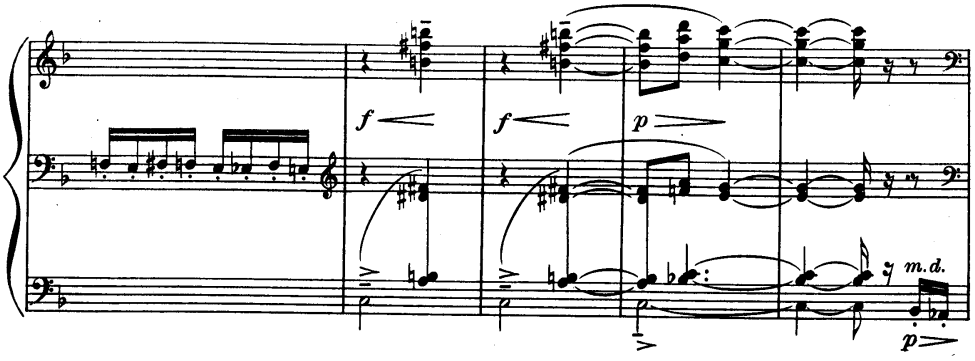

f
f
p
p
m.d.
p
pp
pp
p
pp
p
p
f
m.d.
f
p
ff

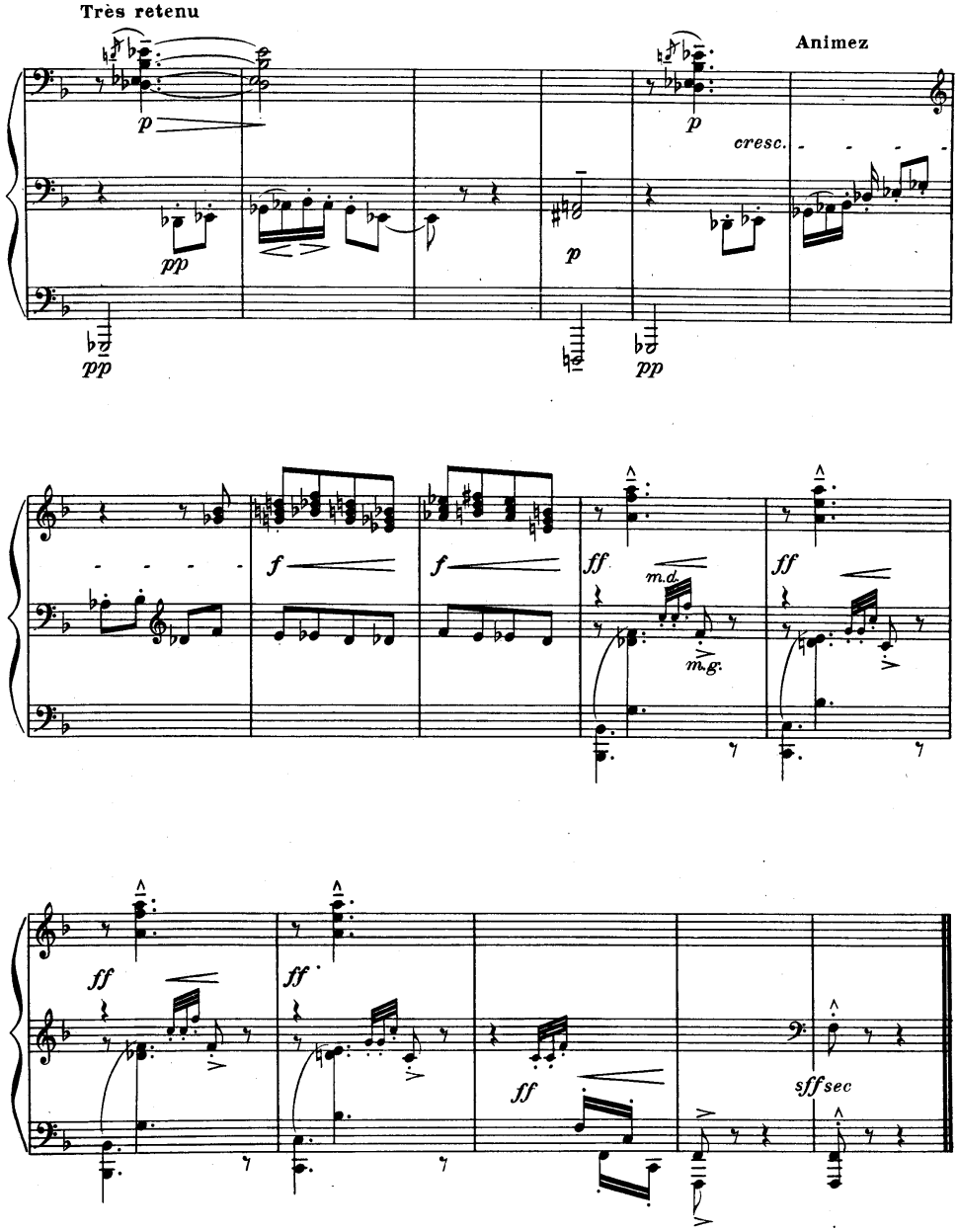

Traîné
Mouvt
p
f
p
m.d.
pp
m.g.
m.d.
pp
Traîné
Mouvt
ff
p subito
sff


f
f
f
Très retenu
ff
f
Mouvt
p
pp
pp
p
f
sff
m.g.
m.d.
sff sec
8a bassa


p
p
pp
p
pp


p
molto cresc.


f
f
p
m.d.
p




(..."General Lavine" *eccentric.*)

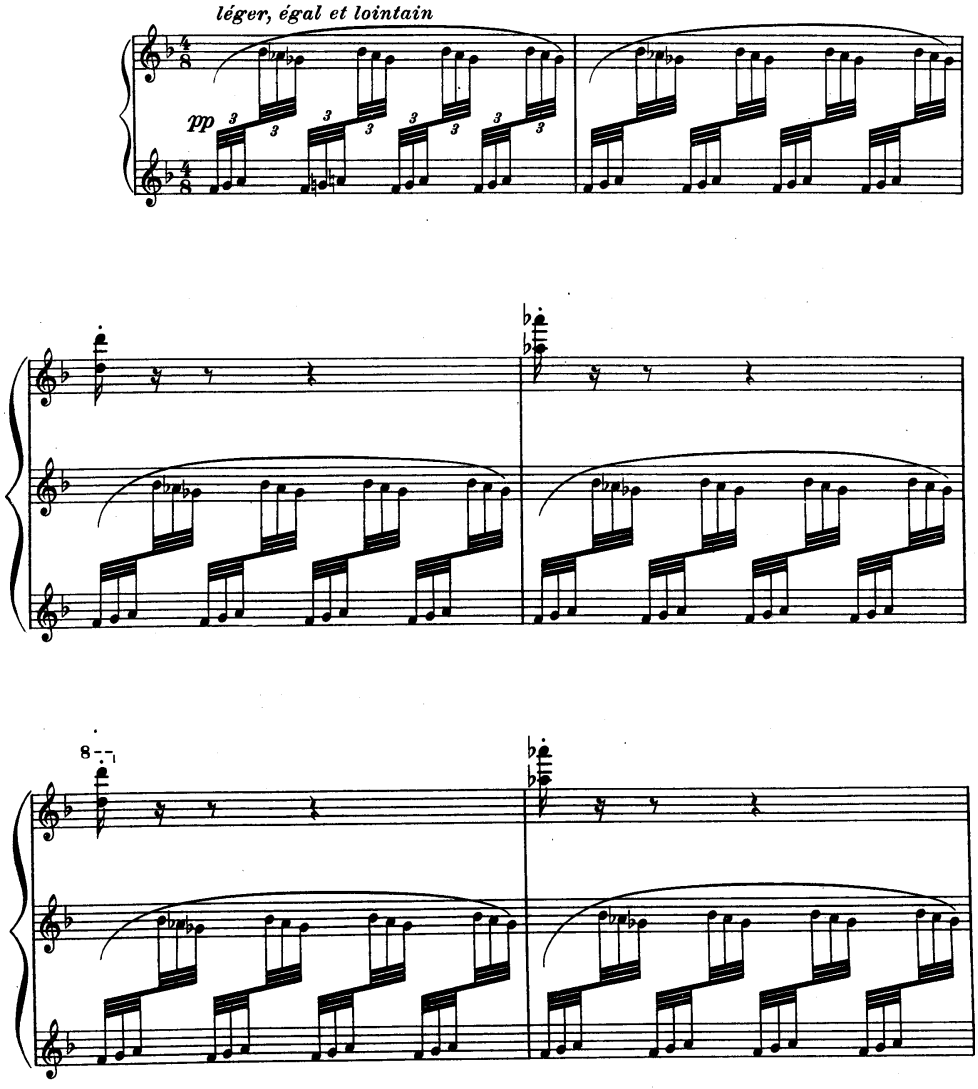
# Appendix G

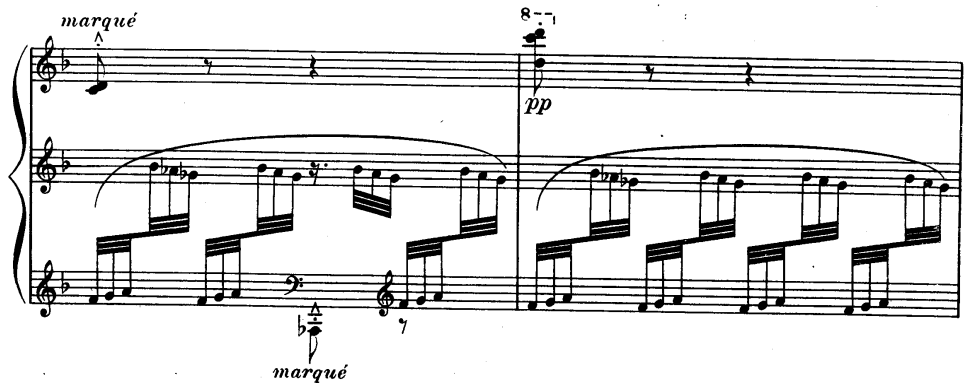
## Score: Debussy, Feux d'artifice: Modérément animeé

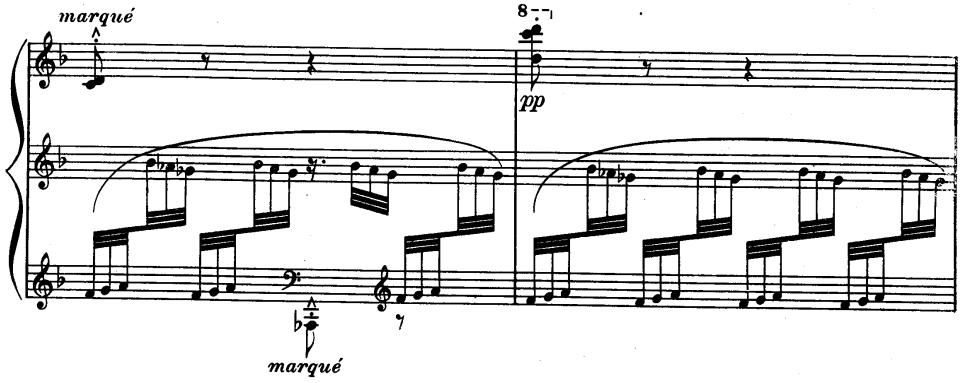
## XII.

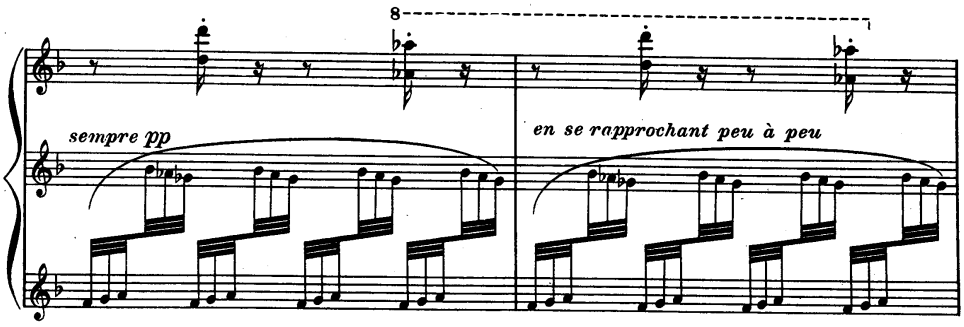
**Modérément animé**

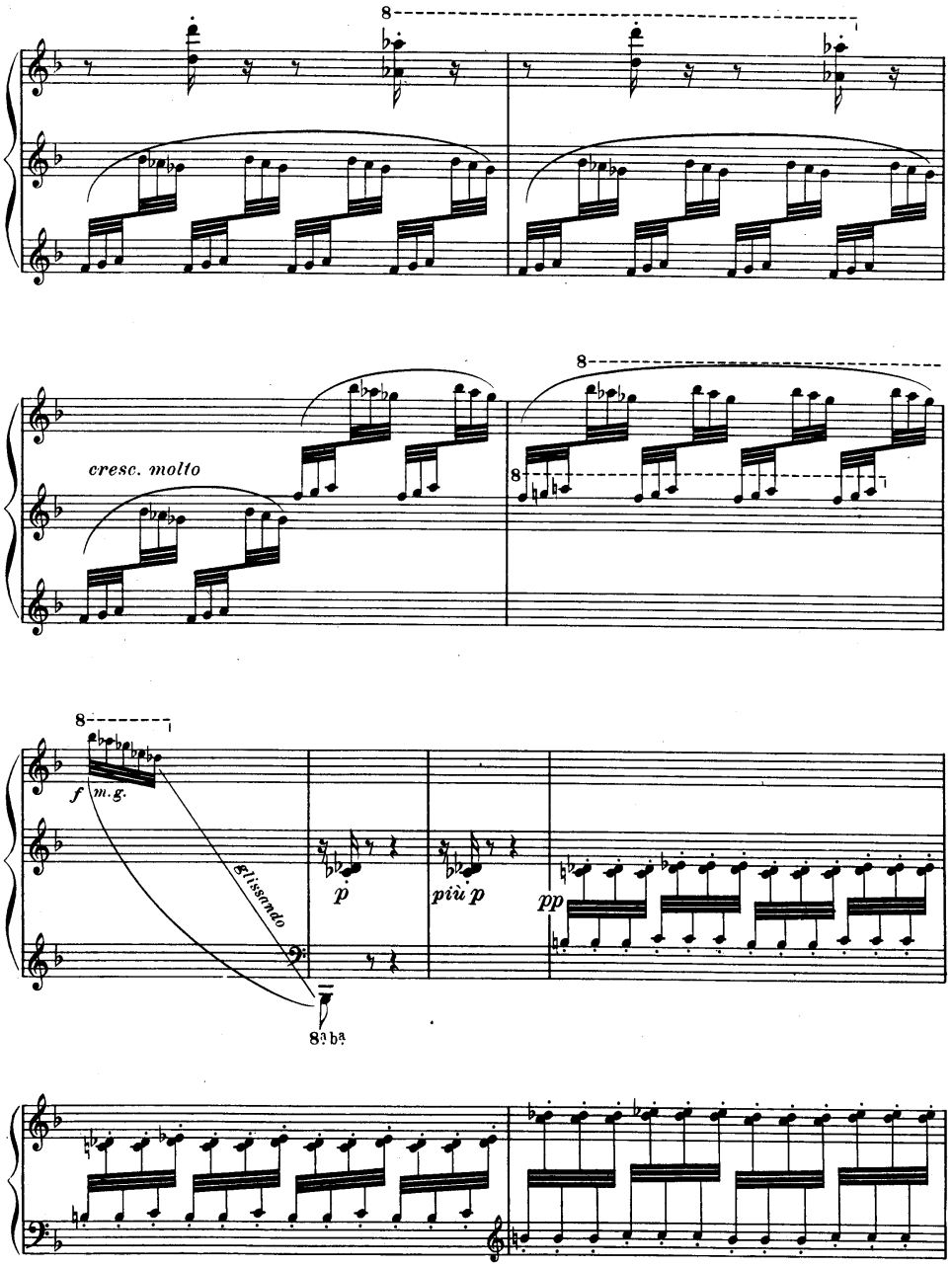
*léger, égal et lointain*

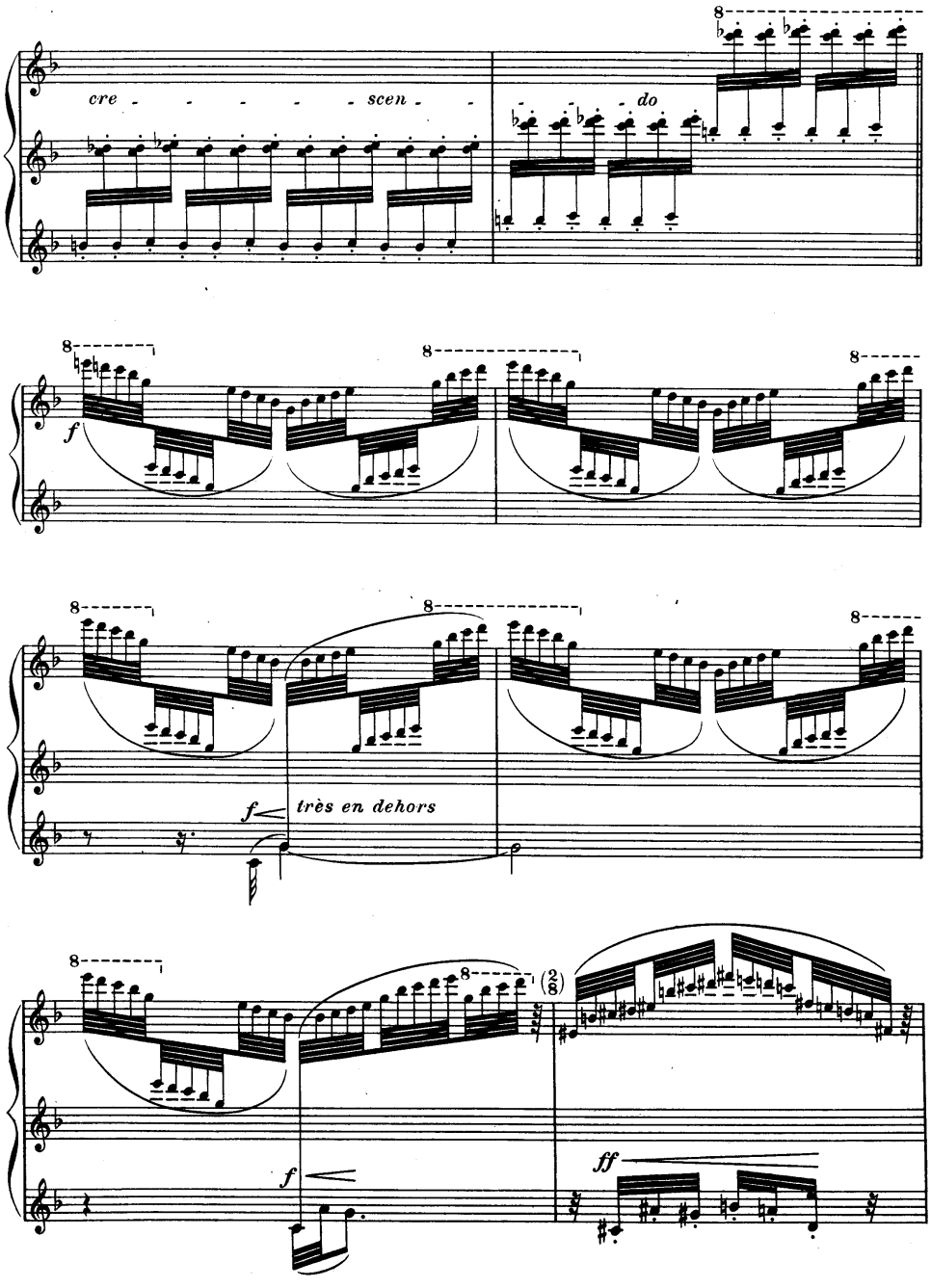


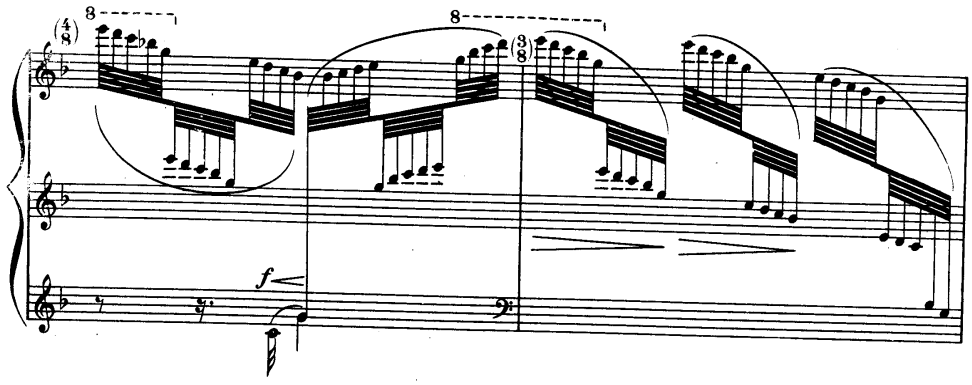

marqué
8
pp
marqué

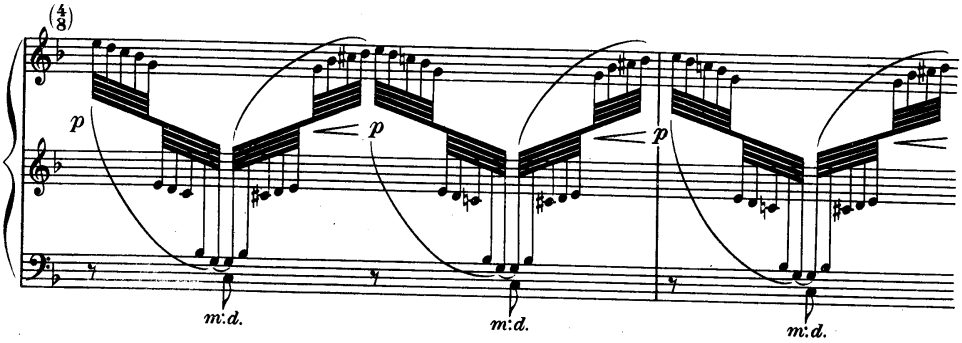

marqué
8
pp
marqué

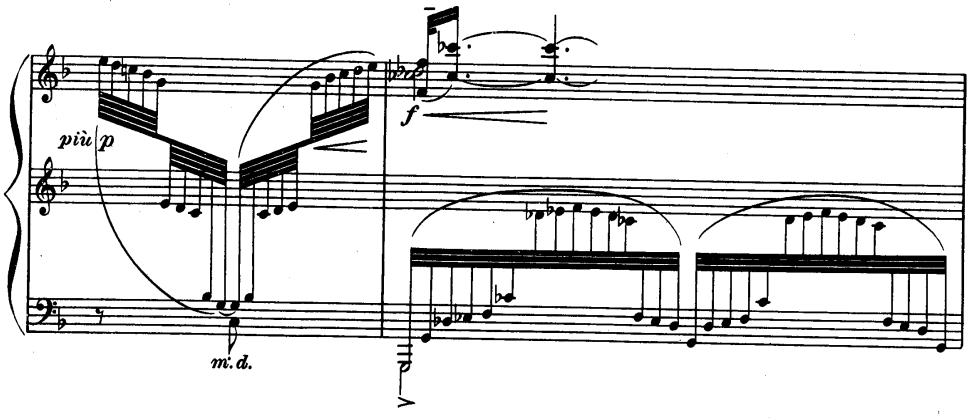

8
sempre pp
en se rapprochant peu à peu

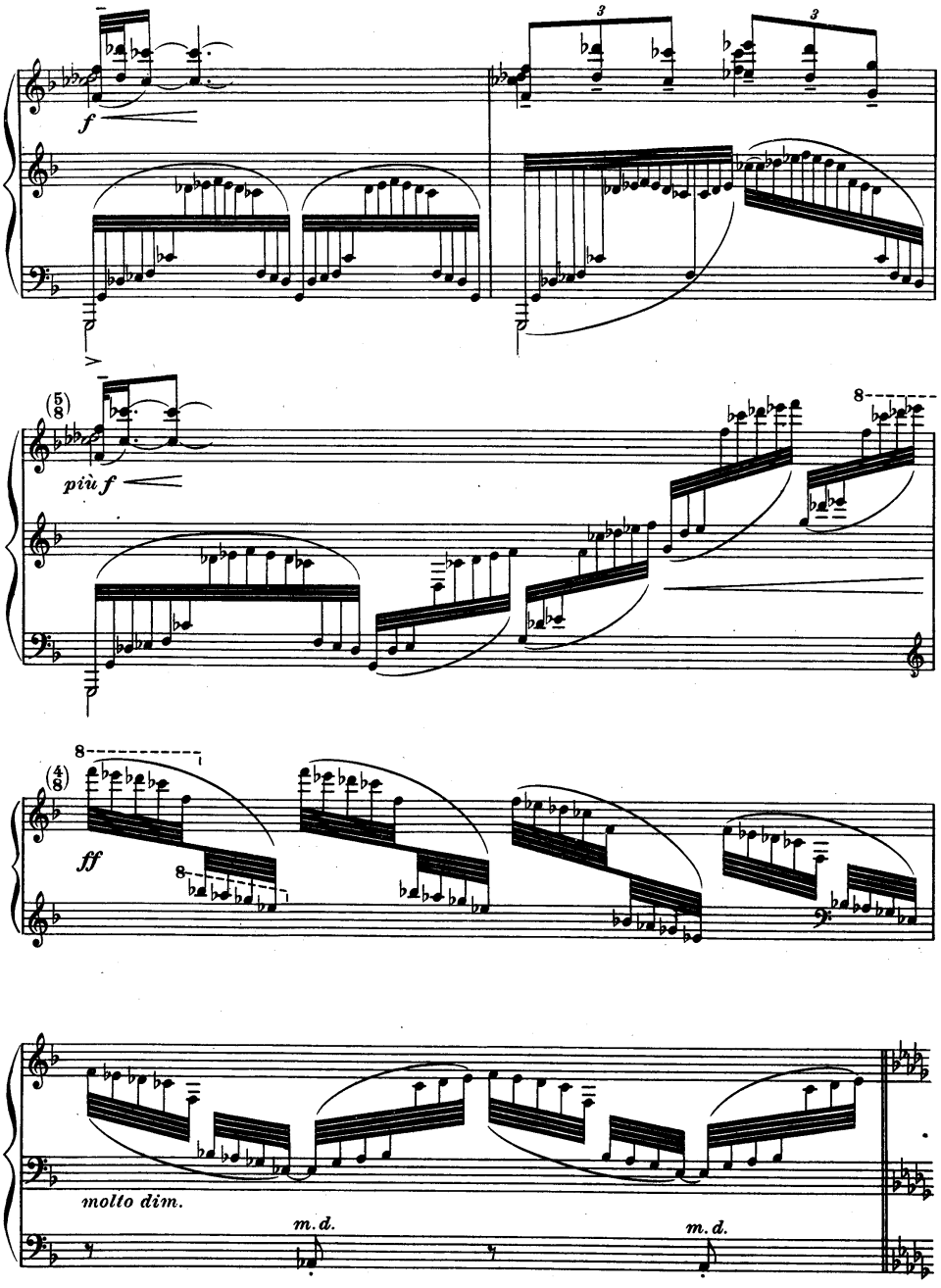

8
cresc. molto
8
8
f m.g.
glissando
p
più p
pp
8va

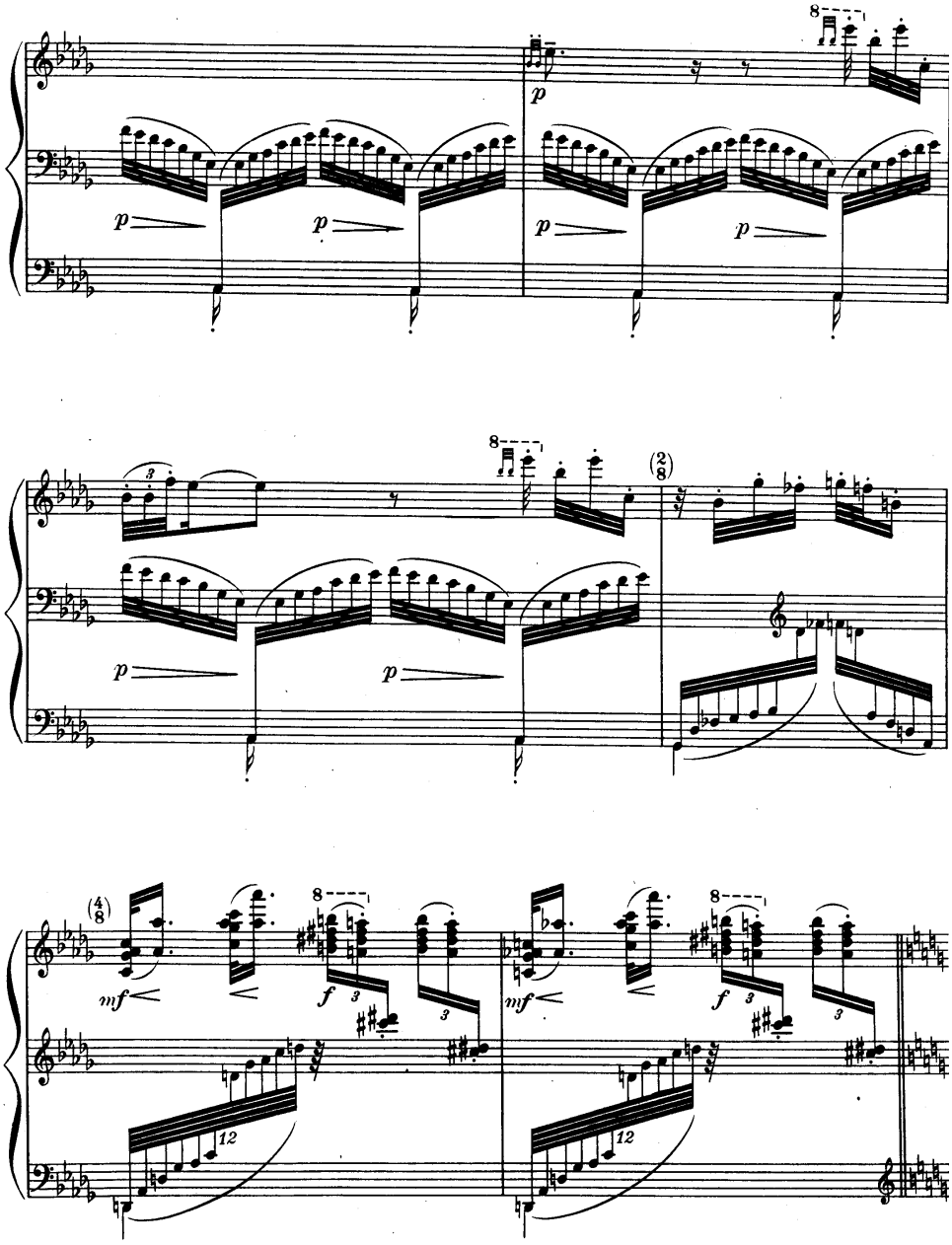

cre - - - - - scen - - - - do
f
f
très en dehors
f
ff

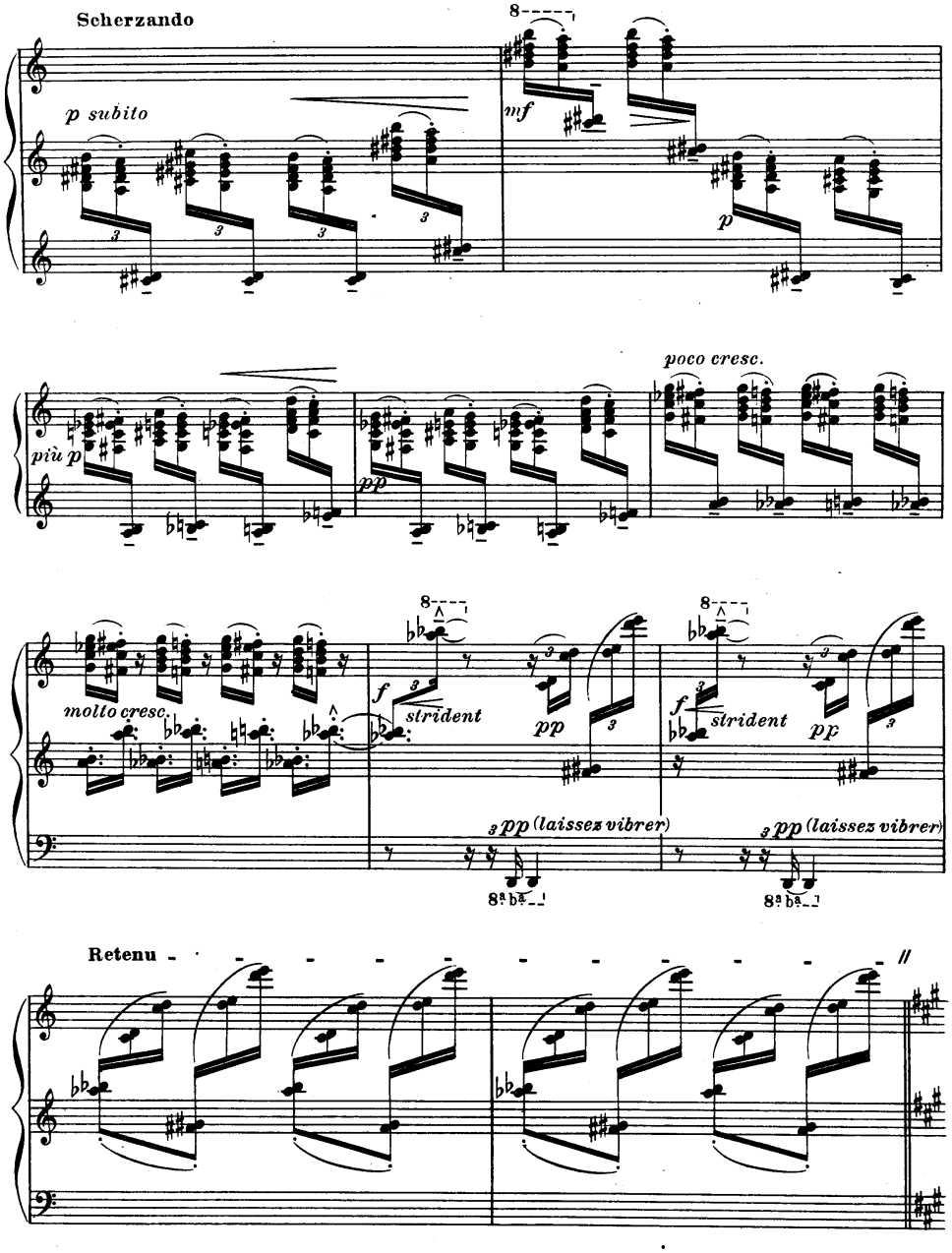

8
8
(4/8)
(3/8)
f

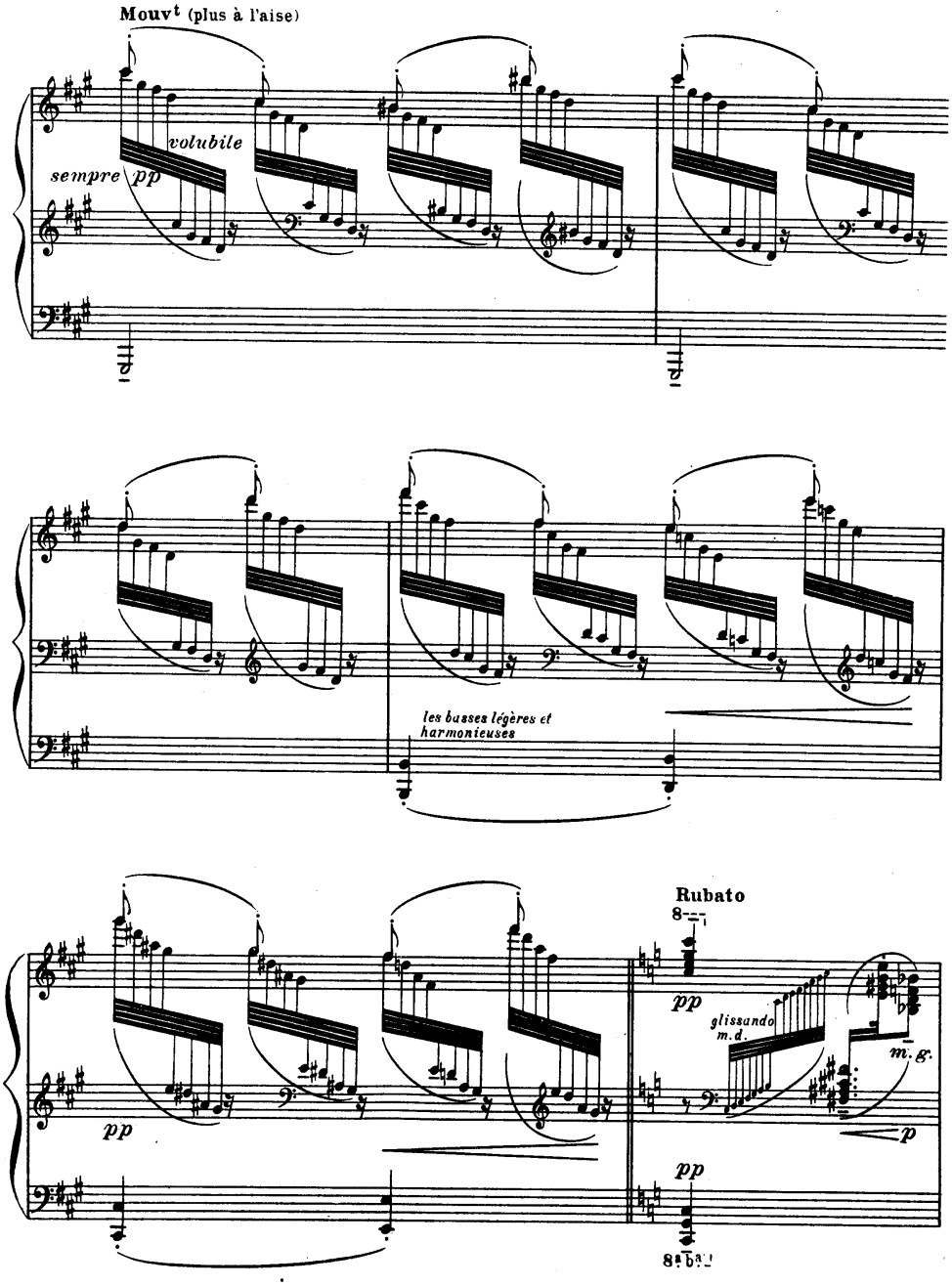

(4/8)
p
p
p
m.d.
m.d.
m.d.

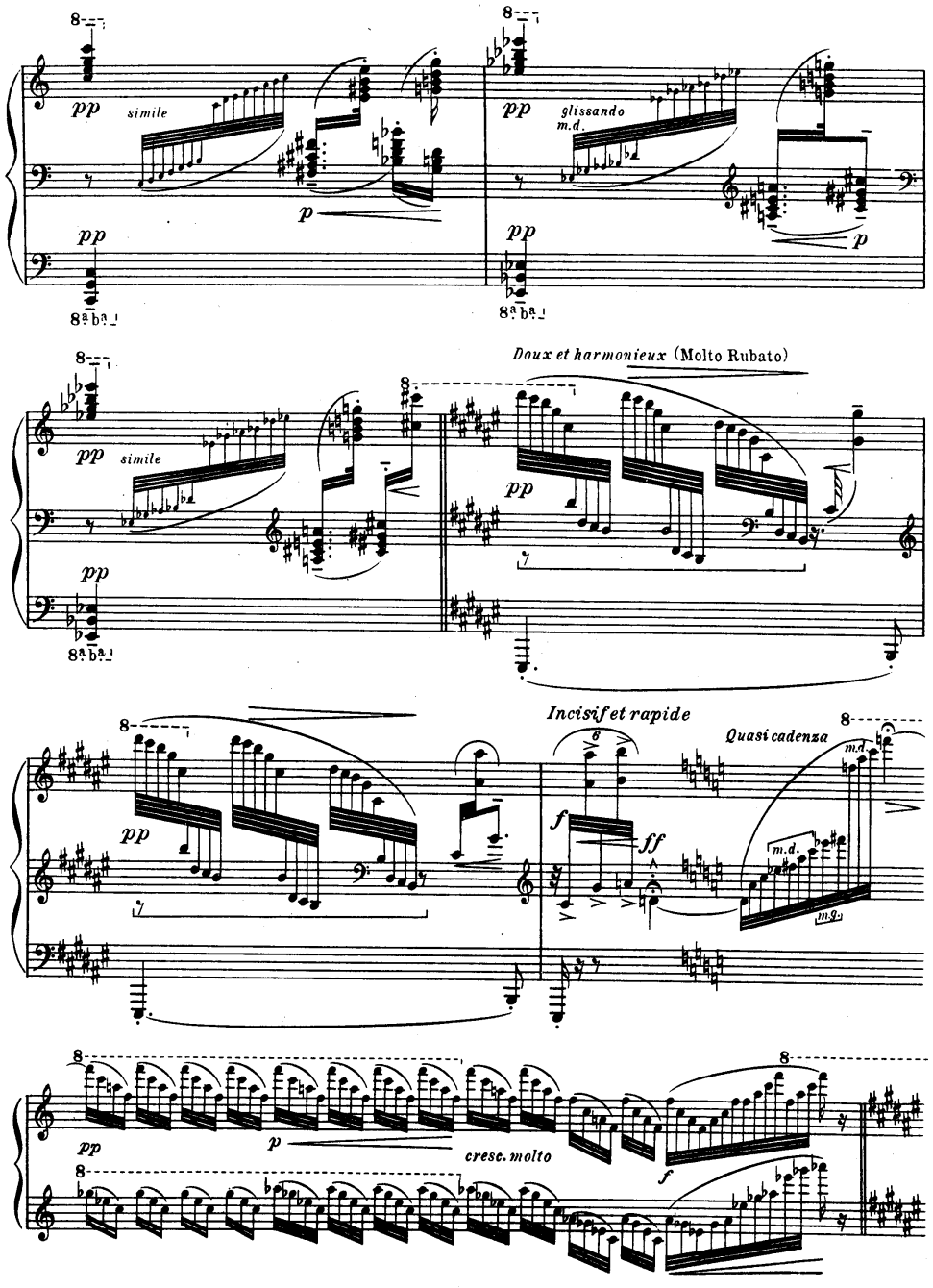

più p
f
m.d.

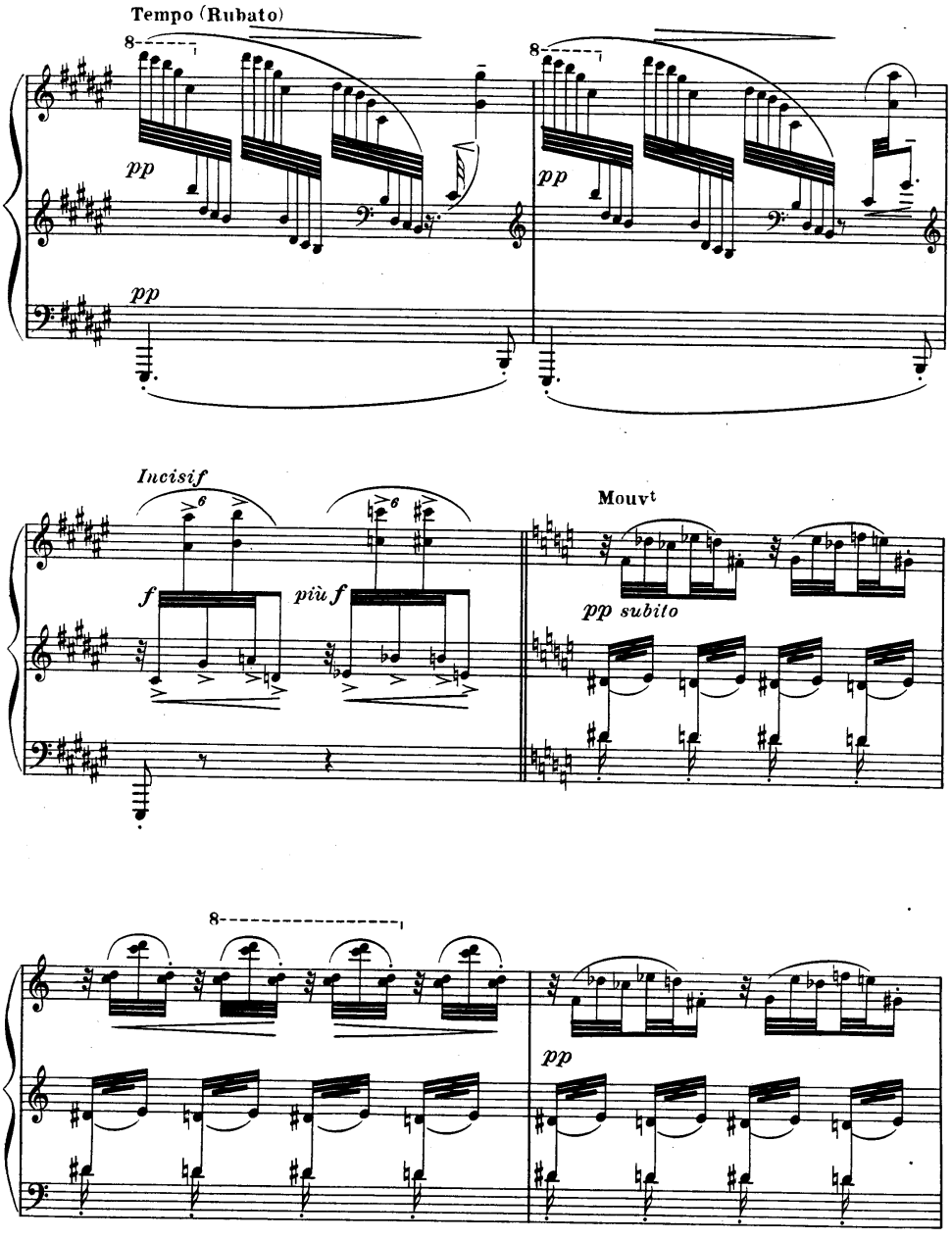

f
(5/8)
più f
8
(4/8)
ff
molto dim.
m.d.
m.d.

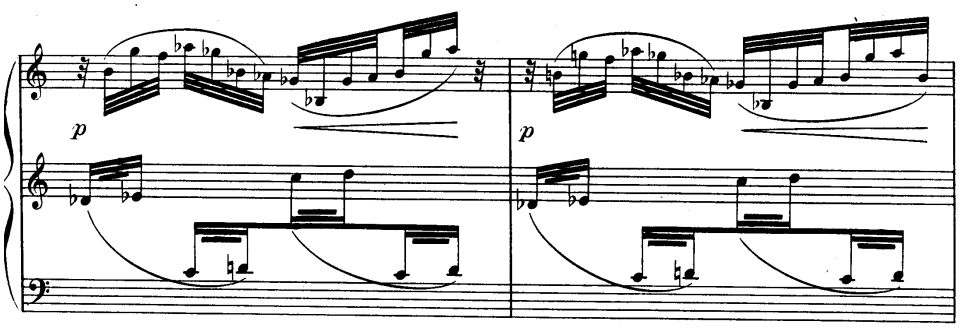

8
p
p
p
p
p
8
(2/8)
p
p
(4/8)
mf
f
8
mf
f
8
12
12

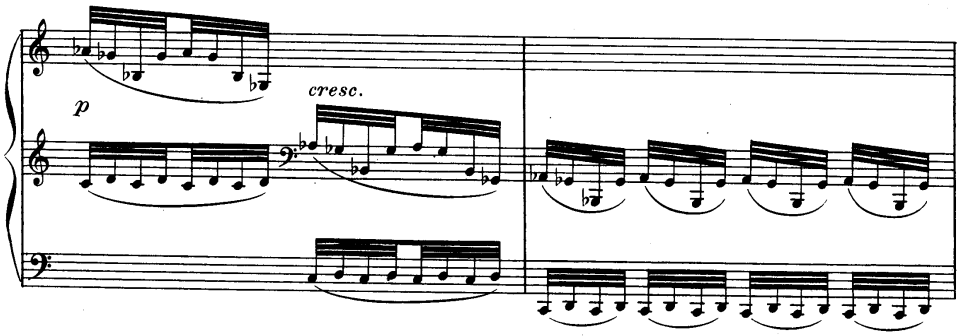

Scherzando
p subito
mf
p
più p
pp
poco cresc.
molto cresc.
f
strident
pp
pp (laissez vibrer)
Retenu

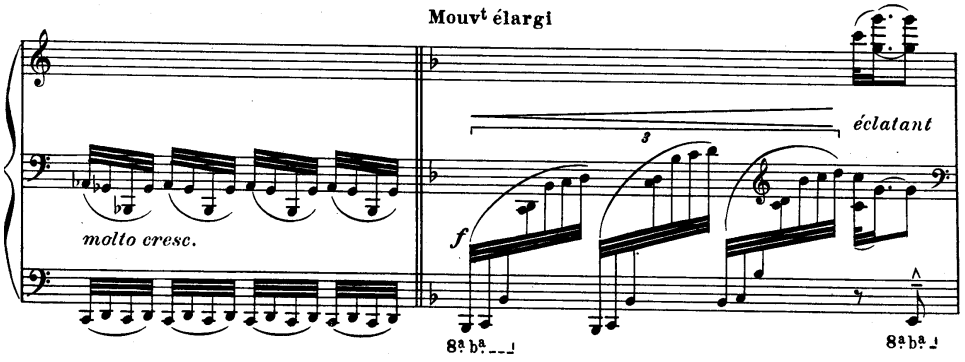

Mouvt (plus à l'aise)
volubile
sempre pp
les basses légères et harmonieuses
Rubato
pp
glissando m.d.
m. g.
p
pp
pp
8va bassa

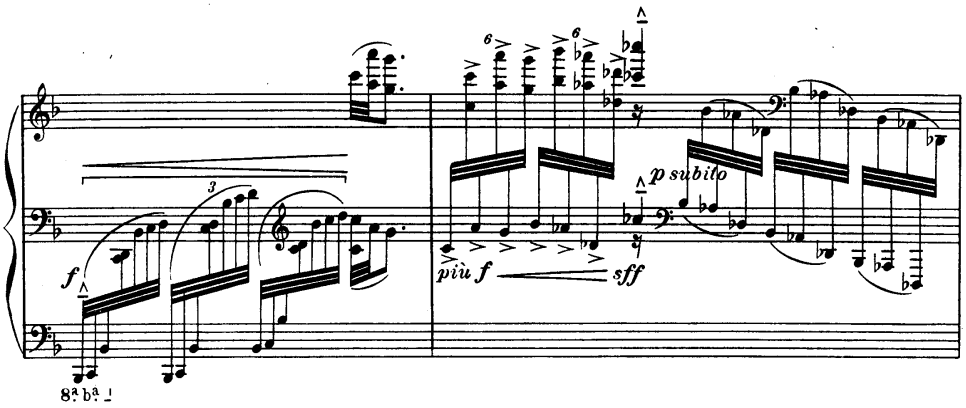

pp
simile
p
glissando
m.d.
Doux et harmonieux (Molto Rubato)
Incisif et rapide
Quasi cadenza
f
ff
crese. molto

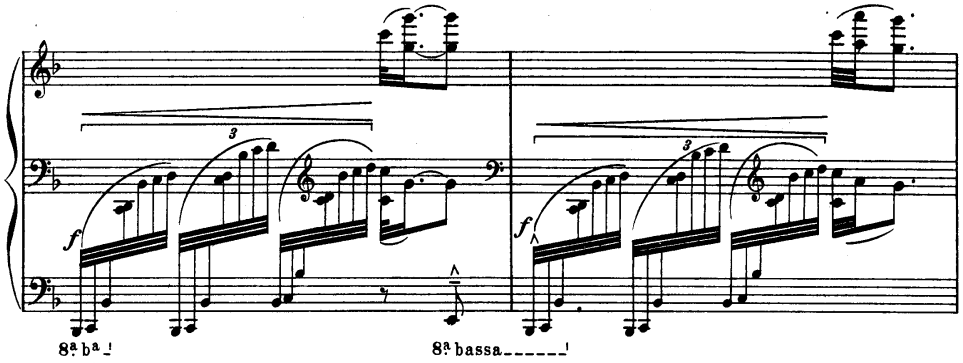

Tempo (Rubato)
8
pp
pp
8
pp
Incisif
6
f
più f
6
Mouvt
pp subito
8
pp

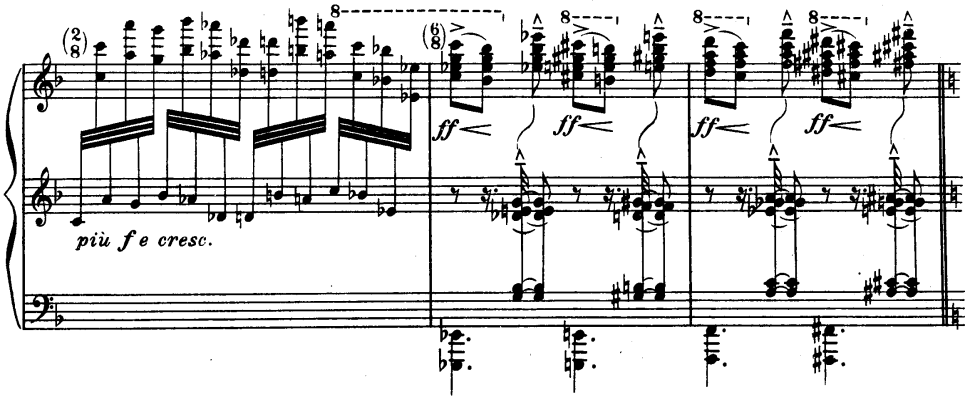

p
p

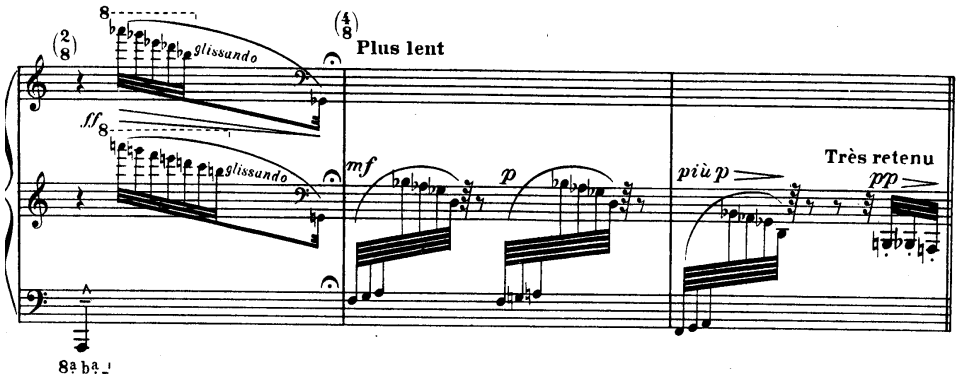

p
cresc.

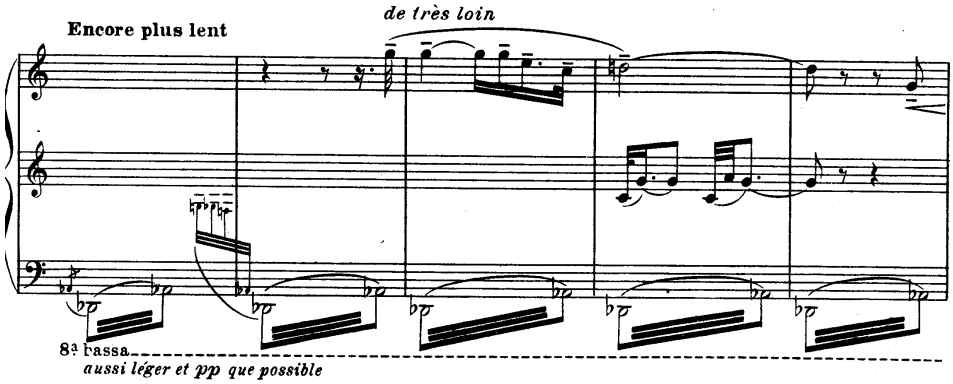

Mouvt élargi
molto cresc.
f
éclatant
3
8a ba
8a ba

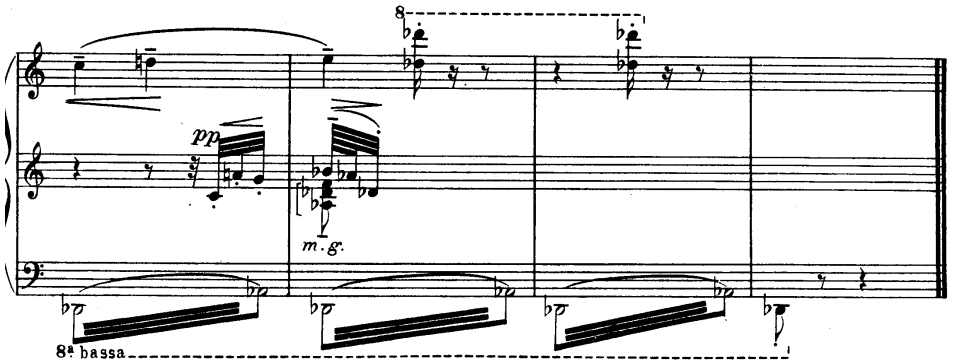

f
più f
sff
p subito
8ª


f
8ª
8ª bassa


più f e cresc.
ff
8




(...Feux d'artifice)

# Appendix H

## Score: Messiaen, Regards des Anges

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# Appendix I

## Score: Messiaen, Le baiser de l'Enfant-Jésus

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