Unity in György Ligeti's First Book of Etudes for Piano

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Abstract

Unity in György Ligeti's First Book of Etudes for Piano

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This dissertation analyzes the six etudes in György Ligeti's first book of etudes for piano. Each etude is examined, both individually and within the context of the entire group of six. There are allusions to a wide variety of influences in this set, including: African polyrhythms, Eastern European folk music, Shepard Tones, jazz and fractals. In addition, this paper focuses on the use of three different tools to unify six vastly different pieces. Intervallic content is used to help give the work cohesion. Specifically, the tritone, with an added half-step above or below, permeates the entire work. The general rhythmic complexity is achieved through different means in each etude, but it is a common thread in the first book of etudes. Finally, the use of extreme changes in register is utilized not only in these six etudes but also throughout Ligeti's oeuvre. There are also short sections for each etude discussing performance concerns and how to combat the possible problems.

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Introduction

Ever since Frederick Chopin composed his 27 etudes for piano, this genre has occupied a unique space in the piano repertoire. No longer were etudes only for the sake of developing virtuosity, or as functional warm up exercises. These works were now expressive concert pieces that to this day find their way onto many programs. Countless composers would take to writing pieces in a similar vein such as: Franz Liszt, Robert Schumann, Camille Saint-Saëns, Sergei Rachmaninoff, Béla Bartók, Ferruccio Busoni, Igor Stravinsky and Claude Debussy. These pieces would incorporate a huge variety of virtuosic technical devices while still being designed as concert pieces.

As a result, György Ligeti was writing in a genre that had a rich history of beautiful, technically dazzling works, long before he began composing his own etudes. This type of pressure could be discouraging for many composers, but writing etudes seemed to have had the opposite effect on Ligeti. After writing *Le Grand Macabre,* Ligeti suffered from writer's block for many years, while he tried to compose a piano concerto. He famously began writing this concerto some 21 times before being happy with the opening![1] This project would ultimately not appear in its final five-movement form until 1988, eight years after his first attempts to begin composing the work. However, to help ease this block Ligeti began writing etudes to urge the creative juices to flow once again. He would continue to be interested in writing etudes for the rest of his life. A total of three books were published in his lifetime. These amount to 18 etudes in all, and they are considered one of the crowning achievements of his late style. In addition, these etudes are already "classics" in the piano repertoire despite being comparatively new.

[1] Richard Steinitz, *György Ligeti: Music of the Imagination* (Boston: Northeastern University Press, 2003), 315.

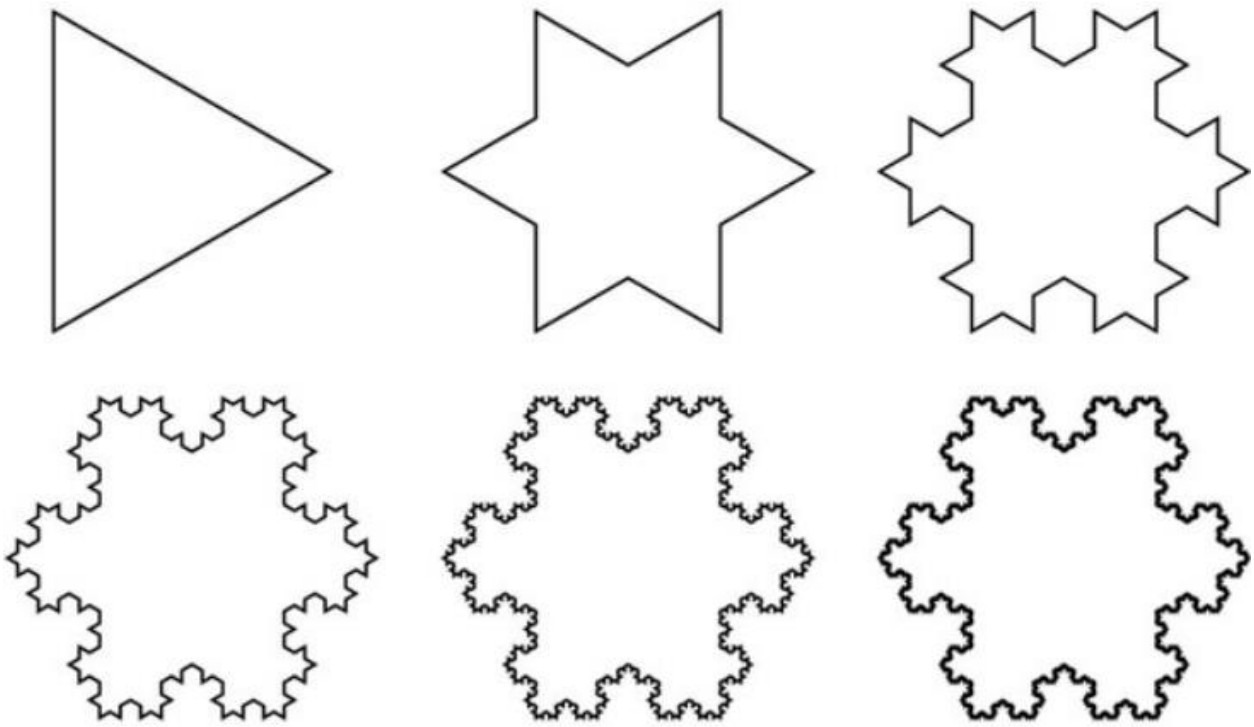
This dissertation will focus on the six etudes included in the first book. All the etudes in this first book have a wide variety of influences and, as such, all present their own interesting challenges to the analyst and performer. The etudes as a set are interesting aesthetically because they are outwardly expressive. This was not always the case in Ligeti's earlier works. Typically, he would tend to explore a cooled expressionism exemplified in works like *Aventures.* In contrast, these etudes feel much less like a series of emotional caricatures. In these works, the general characters are more in the same vein as late Romantic music but taken to greater extremes. The emotionally outward nature of these etudes alone owes something to Chopin's example even though Ligeti's late, expressive style began with the Horn Trio three years earlier.

These etudes are unique and interesting in their own individual ways, yet there are common threads that connect them. The general rhythmic complexity of these works and the unique methods for making these rhythms possible for one performer is a common thread through many of these etudes. Moreover, the prevalence of the tritone and the half step throughout the etudes is what gives this work, that might otherwise be disjunct, a sense of cohesion. Finally, the sheer wide range of the influences in these pieces help make this first book a modern masterpiece of the piano repertoire.

Chapter 1 Désordre

Désordre is the first of what would become 18 etudes in total. This etude is striking not only for its chaotic and anxiety-ridden character, but also because, despite its recourse to mathematical principles, it never loses emotional potency. Structurally, the work is based on strict principles and processes that, through small changes, become more distorted through each iteration. The reiteration of the same process repeatedly is an allusion to the mathematical concept known as fractals. Fractals essentially take a clear formula and keep carrying out the same process with different outcomes to create visually stunning images from relatively simple processes. Although this mathematical principle could have been discovered at any point in history, with the invention of the computer it became a more realistic task. In the early 1980s, the invention of the computer meant that these processes could be carried out easily and quickly. Earlier attempts were much more difficult to carry out because of the sheer amount of arithmetic needed to create a large enough image to see the patterns. Ligeti was fascinated by the images created from these processes and these processes clearly influenced this etude. Although the connections to mathematical principles are subtle, they do have a clear effect on the structure of the piece. The processes introduced are examined in this chapter to see how the same repeated processes help the piece grow dramatically over the course of the etude.

In this etude Ligeti takes a few simple compositional processes and reiterates them over and over again, with the outcome becoming more chaotic each time. In addition, there are small sections of the piece that, when examined more closely, can be seen as a microcosm for what is taking place on a larger scale. This is taken directly from the concept of fractals, where no matter how far the perspective is zoomed in or out it can look identical (the most famous example of this being "Koch's Snowflake," example 1.1).



Koch's Snowflake

Example 1.1

"Although the results are infinitely complex it is based on incredibly simple procedures."[2] - Benoit Mandelbrot

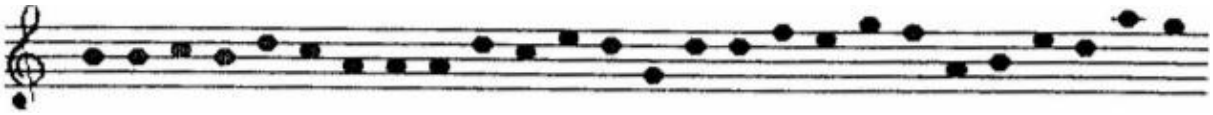
Form

The first and most prevalent process at work is the use of phrase structures. They remain remarkably consistent over the course of the piece. Each hand, individually, follows its own phrase pattern and uses the same pitch content for the entire etude (shown in examples 1.2 and

[2] Benoit Mandelbrot, "The Mandelbrot Set – The only video you need to see!" (video compilation of documentaries), accessed September 29, 2018, https://www.youtube.com/watch?v=56gzV0od6DU

1.3). It is simply a few differences between the right and left-hand structures that create disorder at an exponential rate.

Each hand individually follows the same clearly-defined pattern for the duration of the etude. The right hand exclusively follows a 4+4+6 bar phrase structure. This pattern is reiterated thirteen times plus approximately half of a fourteenth iteration. Each time this structure is repeated the entire melodic contour is transposed up one step. However, the right hand is always on white keys. So, the half and whole steps within the melodies are in different places for each repetition which creates a different mode. The point where the chaos begins to be created is in the right hand. From the first four-bar phrase, the right hand starts leaving off an eighth note at the end of every four bars. This creates tension, even within the right hand alone, because not every phrase in the right hand is four bars. This means as soon as there is a six-bar phrase, the ending of each phrase and the removal of the eighth note no longer coincide.



Series of Pitches in Upper Voice

Example 1.2

The left hand follows a 4+4+6+4 phrase structure. Normally, the extra four-bar difference between the hands would be hidden to the listener initially, because the first phrase of the right hand is also four bars. Therefore, it would not sound too chaotic until a few iterations have passed. Ligeti prevents this by changing the melodic contour of the last phrase in the left hand. This clarifies that the 4+4+6+4 structure does not repeat until the left hand returns to the head motive (two repeated melodic notes with the three and five eighth-note lengths respectively). The

different melodic contour is punctuated by the fact that the last four-bar phrase of the left hand is the only phrase in the right or left hand that does not start with this head motive.

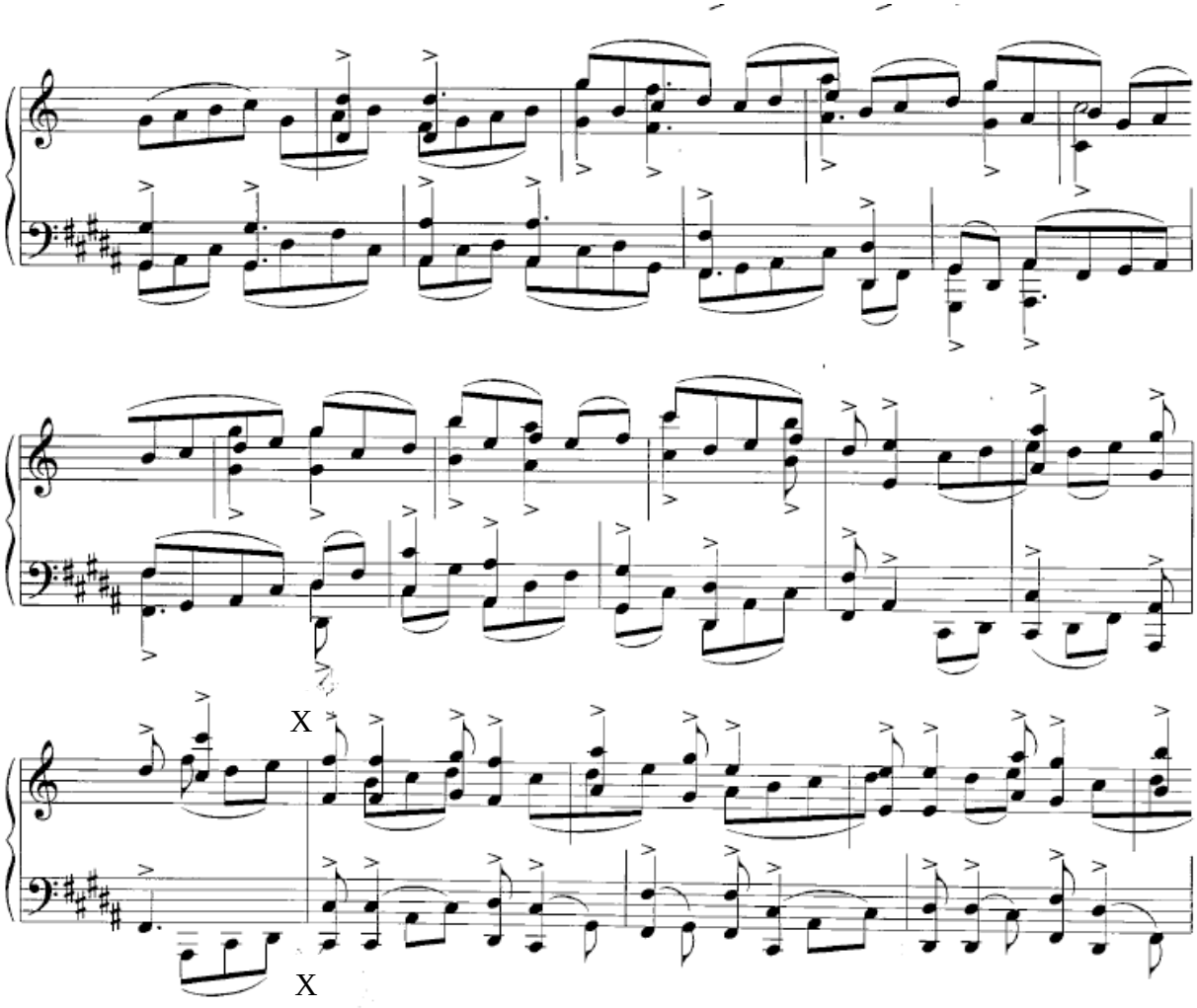
Standing in contrast to the right hand, the left hand doesn't leave out any eighth notes, which allows the right hand to slowly creep further ahead of the left hand. This is a process that the listener can hear clearly as the accents in each hand become more and more out of sync.

Series of Pitches in the Lower Voice

Example 1.3

By the end of the third iteration of the left-hand phrase structure, the beginnings of the phrases in both hands coincide for the first time since the first note of the etudes (marked by the "X" in example 1.4). This is the final time that this happens in this piece. For this event to occur in the first place, a lot of extra eighth notes in the right hand must be left out (in addition to the one every four measures). To add to the confusion, as the parts line up again vertically, the left-hand leaves out many eighth notes, which means that the right hand must leave out even more, to catch up! This small section, primarily taking place on the third page of the etude, can be seen as a sort of microcosm of what happens over the first five pages leading up to the climax. On a small scale, compressing things means that phrases get more and more disjunct before they can line up again. Meanwhile, on a larger scale, phrases are more gradually becoming compressed, and out of synchronization in the build-up to the climax. This is a reference to fractals, because

zooming in on this the process just on page three is similar to looking the at the whole first five pages.

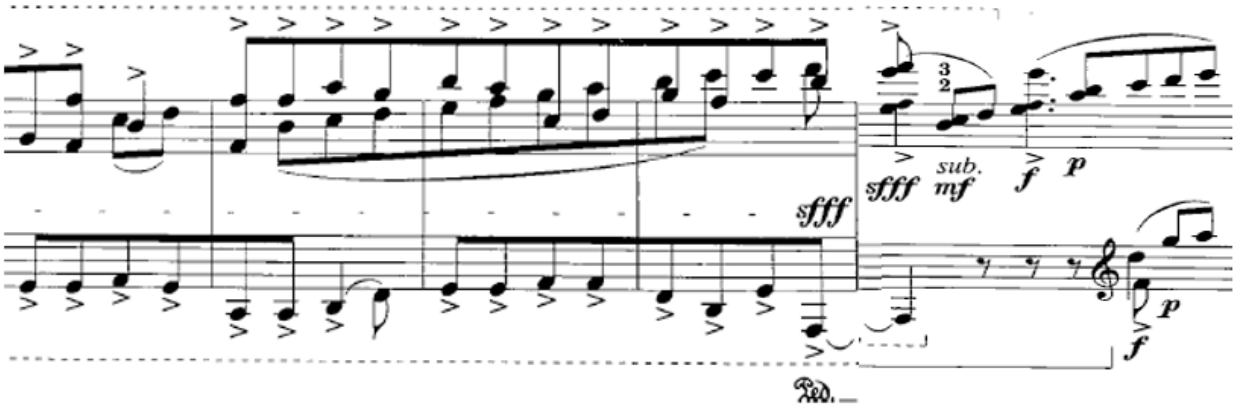


Third line second measure, marked by two X's, is where the phrases briefly coincide

Example 1.4

The first section is defined by the compression of the phrase structure in each individual hand. This compression, rather than developing at a consistent rate, develops first slowly, then exponentially faster, until the ***sfff*** chord in the right hand (shown in example 1.5). To achieve this, Ligeti begins with groups of five and three eighth notes accompanying the melodies in each hand. Then, as the first section of the piece moves forward, more and more of the accompanying

eighth notes are dropped until, eventually, only melodic notes are left as straight eighth notes in both hands.



Lead up to climax

Example 1.5

After the ***sfff***, rather than the right-hand compressing, eighth notes are added to the accompaniment of the left hand, which means that it falls behind the right. However, the extra eighths are not added to the left hand until after the longest period in this etude, where bar lines in both hands coincide. This gives the etude a rhythmic symmetry contrasting a gradual compression of melodic notes with a gradual decompression of melodic notes over the last several pages. The right hand, incidentally, is consistent rhythmically for the remainder of the piece, using groups of the three and five almost exclusively until the end.

Dynamics and Register

The study of dynamics and register separates this etude into two main sections. The first section includes all the material leading up to the only chord in this etude marked ***sfff***.[3] Both

[3] Using measure numbers to describe moments in this particular etude is impossible because bar lines typically do not line up vertically.

hands are marked ***f*** from the beginning, with the running eighth notes marked ***p***. Ideally, everything before the high point dynamically of this piece should be essentially one long crescendo leading up to the ***sfff***. Although there is no literal crescendo until the end of the fourth page of this etude, Ligeti creates one through the increase in frequency of accented notes, and the register of the left hand becoming lower. The two hands falling out of sync in the opening bars literally doubles the number of accents heard after the first four-bar phrase. Then, to increase the frequency of accented notes even more, Ligeti starts removing the running eighth notes between the melodic notes. In the opening, the normative bar length is eight eighth notes (there is no actual time signature). Right around the third page the measures become shorter and shorter until right before the ***sfff.*** Just before this point the measures have each become primarily four eighth notes in length, and the running eighth notes have all but disappeared. This disappearance of the accompanying eighth notes between melodic notes means that almost every note leading up to the climax is an accented melodic note. Moreover, the last page leading up to the climax is marked with a crescendo in case all the factors already contributing to this effect are not enough. This marked "crescendo" plus the extra accented notes should result in a crescendo that increases in volume at an exponential rate. Finally, to create the most dramatic effect, Ligeti has basically written out a rhythmic crescendo with his gradual compression of rhythmic structure so clearly stated in the opening.

The ***sfff*** is important as a structural point primarily because it is so reminiscent of the way sections were defined in earlier works such as *Atmosphères.* This chord appears at the moment when the hands are as far apart on the keyboard as they get in this etude. After the ***sfff*** is struck the register and rhythm has a dramatic shift. In addition, the dynamics drop from ***fff*** to ***f***. This change might not seem terribly dramatic, but by altering the register so that the bass completely

drops out, the effect becomes much more striking. In addition, this is first time in the piece where there is a drop in dynamic level.

An analysis of the pitch graph (shown at the end of this document) derived from this piece is enlightening primarily for the slow consistent change of register. On a local scale, it is difficult to see any changes in register because the melodies in each hand are quite angular, and the leaps up and down usually are not signals of a change in register. In addition, between each repetition of phrase structures, there is usually stepwise motion that gives the listener the sense of rising and falling.

The large-scale changes of the register, on the other hand, are clearly calculated and precise. The two hands in the opening are entirely contained within two octaves and the thumbs overlap initially. Over the course of the first two pages[4] the hands slowly move away and back toward each other multiple times. Starting on the third page the left hand slowly moves down away from the right. This is followed by the right hand slowly moving up to the upper extremity of the keyboard. The process happens over the third, fourth and fifth pages until the music comes to a dramatic climax marked ***sfff*.** However, these slow changes are hidden by the sheer repetition of many pitches sounding quickly. Thus, even if there is a big leap up, there is so much repetition of lower pitches after that is hard to hear the change in register over just a couple of notes. In this way, the general mass of eighth notes is able to slowly and subtly rise.

Finally, after the climactic ***sfff***, the music enters a sort of state of shock. This is another reference to his early works. Rather than just changing register, the general character of the piece changes as well, never really going back emotionally to what was happening before the climax. The bass drops out completely and the left hand jumps up to the middle of the keyboard. Then,

[4] All pages are referring to the 1986 Schott Edition.

the music takes an unexpected turn by keeping the registers comparatively static, until just a few measures before the end of the movement. As a narrative, the registers finally stabilize, making sense musically. Basically, the chaos gives way to a point of shock after every imaginative aspect of the music had reached its most chaotic. A listener experiences this as an antidote to five pages of breathless intensity.

Pitch content

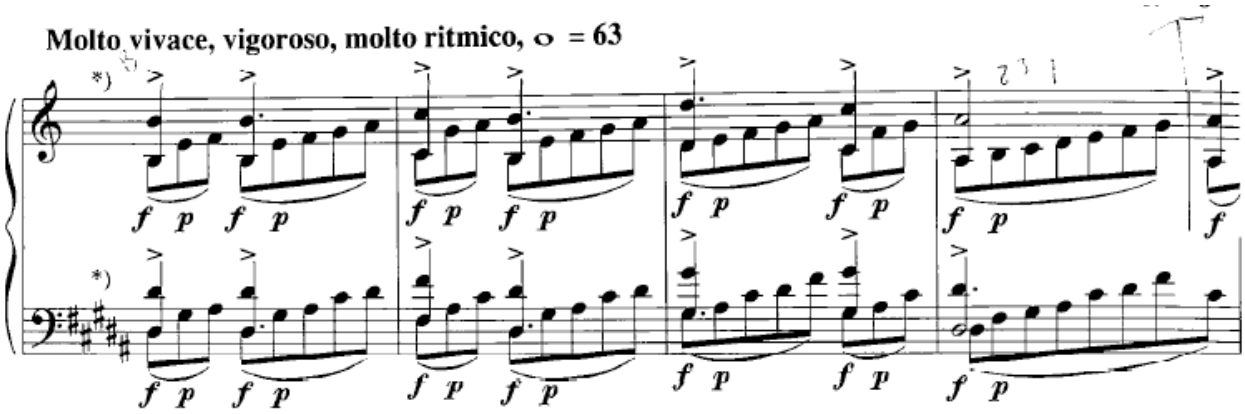
Other than the final note of this etude (in which both hands simultaneously play the highest C-natural on the keyboard), the left hand plays exclusively on black keys and the right hand plays exclusively on white keys. The right hand has a modal sound that, on its own, is very much in the vein of something Bartók might write. However, it doesn't adhere to any of the rules traditionally associated with modes. It starts on B-natural, and playing exclusively white notes initially, employs a Locrian scale. Then, each time the phrase restarts (every 16 measures), the melody keeps its same contour but moves up one step. After 14 iterations, the contour of the right-hand phrase structure has started on every white key twice. Then, the music stops abruptly before the B's are played for a third time. The left hand makes use of the pentatonic scale in this etude. This pentatonic scale, in particular, can be traced to the folk music of many different cultures and peoples including Eastern Europe folk music as well as the folk music in parts of Asia. When the two hands are played together, the listener gets both a modal flavor as well as a twelve-tone aggregate, which gives the music a unique harmonic language.

Folk Influence

Despite the clearly defined, strict structures used in this piece, Ligeti does retain some of the elements of folk music. In addition to each hand individually using a harmonic and melodic language that is quite similar to Bartók, repeated notes at the beginning of every phrase can

suggest any number of styles of Eastern European folk music. Examples of the repeated head-note motive can be found in works such as Bartók's *Six Dances in Bulgarian Rhythm* or his *Allegro Barbaro*.[5] These are just two of many examples.

The groups of 5 and 3 are also a reference to the music of the Balkans. On the face of it, much of the first and the last several pages maintain eight eighth notes per measure (shown in example 1.6). These measures can often be divided in groups of 5 and 3, which is an accent pattern common in Balkan music.



mm. 1-4 of *Désordre*

Example 1.6

Much has been made of the influence of Sub-Saharan African drum music in Ligeti's music, but if this is present in this etude the relationship is tangential at best. Much of the chaos in this opening etude is dependent on the four- and six-bar phrases present throughout much of the movement. However, the African music Ligeti was acquainted with would not have been feeling the four-bar phrases or even measures in the traditional Western hierarchical sense.

[5] Denys Bouliane and Anouk Lang, "Ligeti's Six 'Etudes pour Piano': The Fine Art of Composing Using Cultural References," *Theory and Practice* 31 (2006): 168.

Without the initial clearly defined phrases, the music would be much less effective in creating the sense of anxiety and disorder. However, the simultaneously occurring tempi common in Sub-Saharan African drum music can be applied to *Automne à Varsovie*, which will be discussed later.

Performance Concerns

The main difficulty inherent in this etude is the rhythmic complexity. The only thing that really makes this rhythmic concept performable by one person is the motoric eighths that are present throughout the etude. The trick to performing the accents accurately requires the simplest approach possible. Rather than the performer attempting to grasp the complex processes at work, it is best to approach the music on a smaller scale and listen for the cross rhythms. In other words, listen to the accents moving further apart and closer together depending on where the phrases are in relation to each other. Perhaps more important is carefully training each individual hand to perform the accents as written even if aurally they feel uncomfortable.

In order to maintain the folk element in this work, the accents should have a dance-like feel as much as possible. This requires a hierarchy of accents that puts an emphasis on the first of the two note accent groups. For instance, the first accent of the piece in both hands would be heavier than the second accent of the piece. This feels unnatural to most pianists because to keep a consistent line the long note needs to be accented to account for the greater amount of time it must be sustained. As a result, it is important to remember that it is the shorter note values that should be emphasized.

Technically this piece is really a test of endurance in the most literal sense. This piece requires two separate techniques to be played with the greatest ease. For the accented notes, the biggest muscle groups possible should be used to help prevent any extra pressure on the tendons

in one's hands. This means that primarily the upper arms to the wrists should be used to help the accents stick out of a busy texture. The small running eighths should be played primarily using only fingers to keep them as light as possible. Perhaps even more, the performer should be careful not to exert extra effort holding down the octaves. Once the octaves are struck, the hand should relax and use its natural weight to keep the keys depressed. This helps the melody stay legato and prevents unnecessary tension.

Conclusion

Over the course of this etude Ligeti uses many different aspects of his music to create an incredible sense of anxiety and chaos. The phrase structures are the basic building blocks for the entire piece. By establishing these clear consistent phrases, the combination of the two hands acts as a sort of large-scale polyrhythm. Then, through the use of registration and rhythmic compression, Ligeti informs large scale structure of the work. Even with all of these interesting innovations the use of folk elements is retained. By combining all of these factors, an emotionally turbulent, yet satisfying piece is created.

Chapter 2 Cordes à vide

Cordes à vide literally translates to "open strings," which is a direct reference to the cascades of open fifths that are an integral part of the harmony in this etude. However, the truly amazing aspect of this etude is not only the rigorous use of open fifths to build the harmony, but the unique sonic world and pliant expressiveness Ligeti achieves. In addition, even with a less dissonant harmonic language, Ligeti retains the intervallic structure that connects the entire set of etudes.

Throughout this etude open fifths are prevalent, but what prevents any sort of monotony that could arise are the half-steps that frequently appear. Including half-steps in a quintal harmony seems counterintuitive at first, but the half-step relationships introduced are fairly predictable, at least in the opening. The half-steps are created easily by cycling though five fifths. The fifths are cycled through so quickly that many tritones are introduced, as well as the half steps. For instance, in the first measure of this etude the first melodic note is an accented A. Eighth-notes descend from this A by a series of fifths all the way to B-flat and E-flat before the second measure starts. The contrast between the half-steps and open fifths is what characterizes much of the harmony in this piece. In most cases the half-steps can be related in some ways to fifth-motion. The overlapping of harmony occasionally creates a tritone that permeates much of this entire cycle of etudes. Surprisingly, the etude as a whole still retains a relatively consonant harmonic vocabulary. This is primarily because, when using open fifths, to get a dissonant note with the first note that is struck there needs to be five open fifths stacked on top of each other. By the time this happens the first struck note is more than two octaves away from the dissonant note which makes the dissonance much less jarring.

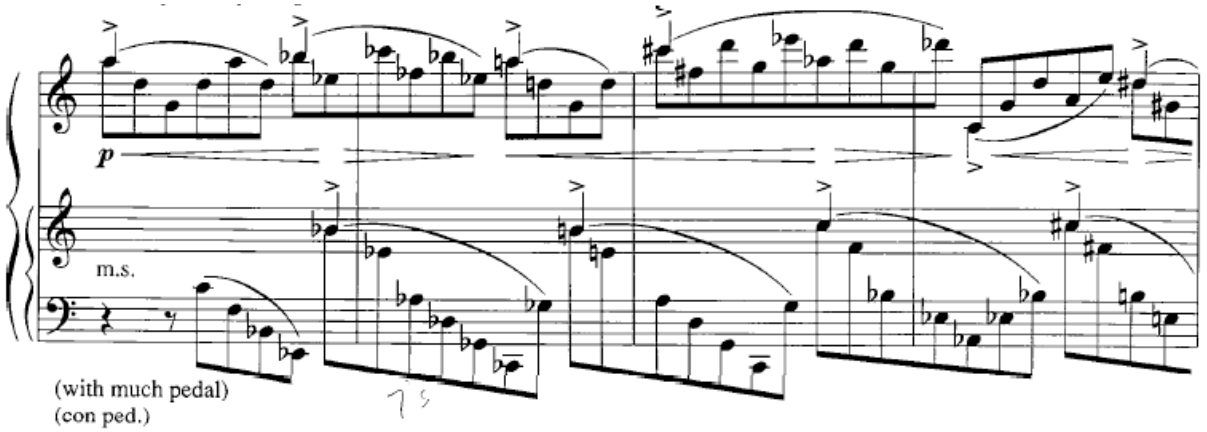
The harmony in this movement is consistently shifting rapidly through chords that often seem to overlap. The open fifths are commonly used to suggest major 7^{th} chords. This occurs already on the third beat of the first measure. In this spot the right-hand plays A and D and the left hand plays F and B-flat which creates the major 7^{th} chord. As one moves through the piece, finding these harmonies becomes more difficult. The problem is there is so much overlapping of different sonorities that is it is hard to pinpoint exact harmonies in the vertical sense. Therefore, this analysis will focus primarily on linear structures and intervallic content, especially those that complement the open fifths.

The opening sounds of the fifths are constantly being juxtaposed with half steps in the upper voices as well as between melodic notes. This contrast of the open fifths and dissonant half steps is what characterizes the harmony of this piece and makes it so problematic to analyze.

Harmony

In *Cordes à vide* the natural tendency is to think of all the open fifths as steps, and to look for patterns based on this "stepwise" motion. However, there are so many half-step relationships between the accented notes that is difficult to compare the accented notes in this way. If fifths are the building blocks it would take either five or seven fifths, depending on which way the fifths are moving. This problem is easy to combat in the left hand because it is in groups of seven throughout the opening twelve measures. Therefore, whatever is the next melodic note should have appeared somewhere in the group of seven preceding it. To aid in this, the first three notes of the right hand should also be considered part of the first group of seven for the left hand. Starting on the first note of the piece, A5, the music moves down by fifths through D, G, C, F and finally B-flat. This is followed immediately by an accented B-flat in the right hand then another in the left hand over the next two eighth notes. The next group of seven in the left hand

starts with the accented B-flat at the end of the first measure. From this B-flat Ligeti steps down through the circle of fifths and after five steps ends up on a C-flat (enharmonically B natural) which is the next accented note in the left hand (shown in example 2.1). Moving from the accented notes in the left hand, B4 to C5, follows precisely this same pattern. Starting in measure 3 the left hand becomes less predictable while still maintaining some of the original patterns.



mm. 1-4 of *Cordes à vide*

Example 2.1

In measure 5 and 6 of the left hand the melodic notes are actually switched intriguingly. In measure five the expected note is D because that is a half step up from the previous accented C-sharp in measure 4. The note that appears, though, is a D-sharp and the D-natural is delayed until measure 6. However, when notes are switched like this, it actually makes the relationships a little easier to follow because going up a whole step is only two fifth steps, whereas moving the half step is five steps.

Starting with the lilting motive in the right hand of measure 21, the connection of the fifths becomes less clear. This is primarily because the open fifths are being struck simultaneously more often from this point. However, most of what proceeds is still made up of fifth "steps" or just direct half step transpositions of fifths (or ninths). The main difference is that

Ligeti is shifting between going up and down by fifth more freely within the same hand than previously. At the beginning of this lilting motive the right hand starts on E and B which drops down a fifth to A. Then the E is rotated around the B to get F-sharp which is transposed down an octave for purely practical purposes. This F-sharp B dyad is then followed by C-sharp and G-sharp (more stepwise fifth motion).

Through all these more complex fifth-based operations, the left hand remains much more predictable in its pitch content, moving at least until measure 23, almost entirely by perfect fifth motion. This provides a more stable base for the right hand to play off, which keeps the music from sounding too chaotic in what is largely a calm and sonorous movement.

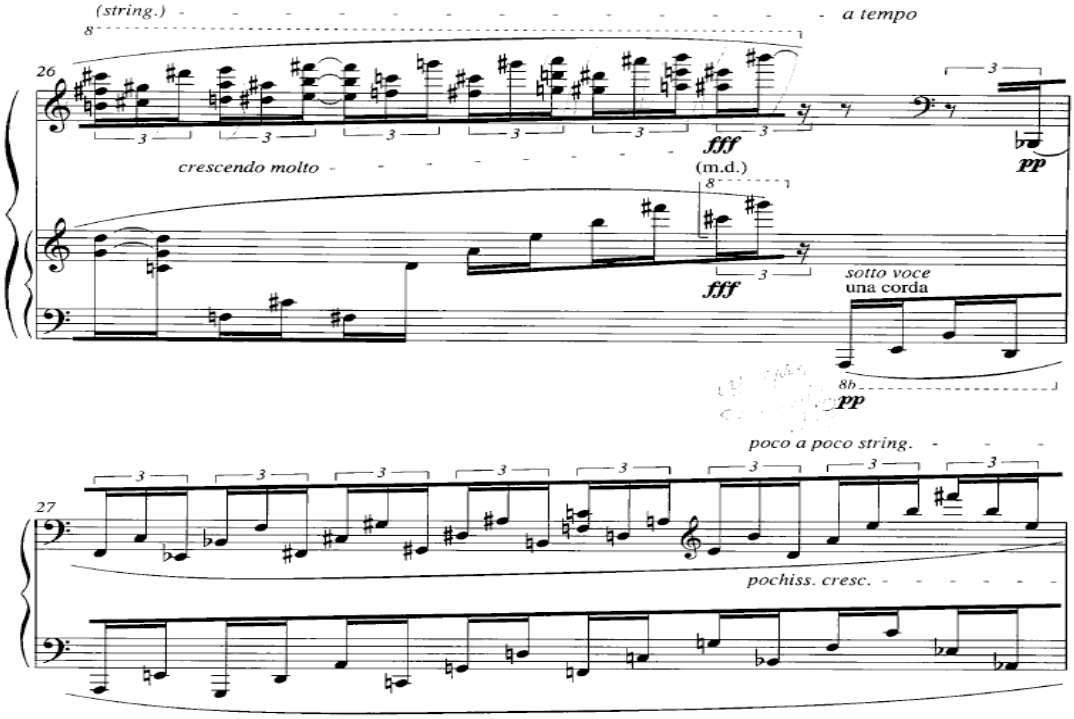
The left hand, with its more consistent fifth motion, frequently alludes to the tritone by taking the six fifth steps needed to achieve it. This happens immediately in the first measure. The right hand starts on A then falls through D and G. This is then picked up by the left hand, which continues the line through C, F, B-flat and E-flat. This A to E-flat outlines a tritone. After this first statement Ligeti tends not to reach down to the tritone, often halting one fifth away to outline the half step relationships that make up much of the melodic content in this opening.

Melody

The melodic material of the left hand in the opening is made up primarily of a line ascending by half steps. Each time a note is accented in the left hand, it is harmonized by seven eighth notes that are perfect fifths stacked atop of each other. By measure thirteen, the accented notes in the left hand have gone through all twelve possible pitches. Meanwhile, each note is harmonized with perfect fifths, which is reminiscent of Debussy. The right-hand melody is much more expansive. It is made up of many compound intervals frequently jumping above and below the left-hand melody. It uses almost all twelve tones melodically by measure 13. The only note

missing is a D-natural, which can actually be found in the open string quotation (A and D in the right hand) on the downbeat of measure 12.

This etude, relatively speaking, does not really use register in the same large-scale expressive ways that most of the other etudes do. This is at least partly because of the recurring fifths. Putting fifths in both hands and moving them outward encompasses large portions of the keyboard very quickly. There is one really dramatic moment in the piece that is typical of Ligeti's music throughout his output: measure 26 features a striking change in register. Both hands move further up the keyboard building to a ***fff*** dynamic, before suddenly dropping to the lowest note on the piano marked ***pp*** and una corda (shown in example 2.2). This could be viewed as a signature gestures of many works in Ligeti's output. The first one that comes to mind is a passage in *Atmosphères* where the music shifts from very forceful piccolo playing to double basses alone, which is very similar to this passage in terms of registration:



mm. 26-27 of *Cordes à vide*

Example 2.2

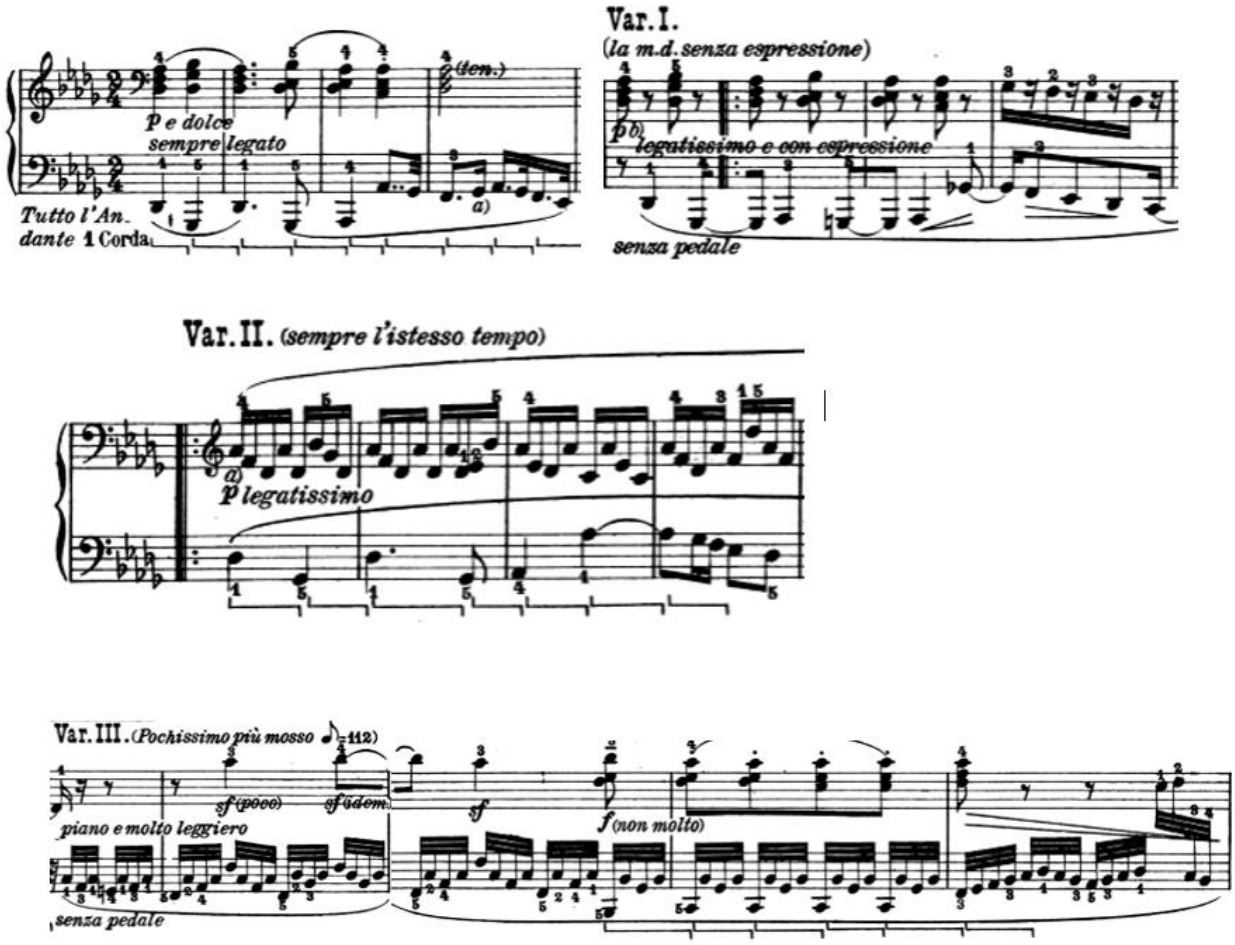
These moments are significant because, in almost every work Ligeti uses them, they are an important structural device. Ligeti's music often takes the form of a cumulative process. In other words, it rarely revisits material that has already been presented. Whenever there are dramatic changes in register they signify, not only a change in texture, but a change in the emotional state of the piece. They represent events in the progression of the piece that considerably alter everything that follows. This type of composition parallels literature in a sense. In a traditional narrative there are usually important events, whether traumatic or alleviating, that affect the personality of a character. This is essentially what Ligeti is doing with his dramatic, abrupt changes in register. Once they occur, there is really nothing that can bring the story back to the way the narrative began.

In the coda, fifths are finally recognized as a melodic interval and for the first time a melody is spun out primarily using perfect fifths rather than half and whole steps that often make up the melodic material in this piece. There are many places where open fifths are the most important voice, but this is the first time they have the contour of a melody with expressive leaps in both directions, and an accompaniment figure that is more understated in nature.

One interesting aspect of this movement is that there are many times in which the open strings of violin, viola and cello are evoked such as measures 11-13, 13-14, 16-17 and 36-37. Each time, they are present at a lower dynamic level than that of the material around the quotation. This is gives the strings a far-off and distant effect. To add to this effect, Ligeti also instructs that the "*una corda*" be used only for the beats of the measure that have the literal open strings.

Rhythm

The rhythmic shape of this piece is a textbook example of Ligeti's view of form as a cumulative process. Ligeti never reprises the opening material of this movement. Rhythmically this etude gradually uses shorter and shorter subdivisions. Initially the music is exclusively eighth notes. This idea of gradually introducing smaller and smaller subdivision is not a new one. One well-known example is the slow movement of Beethoven's *Appassionata* sonata (shown in example 2.3). This movement includes various faster and faster subdivision throughout the slow movement moving from quarter notes all the way to thirty-second notes. To take this concept further, Ligeti introduces each of the subdivisions while the previously used subdivision is still present which creates more complicated cross rhythms. Then in the right hand of measure 21 marked ***pp***, triplets are followed by eighth-sixteenth triplets, straight sixteenth triplets and finally thirty-second notes. The thirty-second notes continue to the end of the piece, at which point they slow back down as the sound drifts off dynamically to virtually nothing. Each time a new note value is introduced, the former note value is retained in one hand. This makes the transitions seem much more gradual and subtle.



Second Movement from Beethoven's Sonata in F Minor, Op. 57 *Appassionata*

Example 2.3

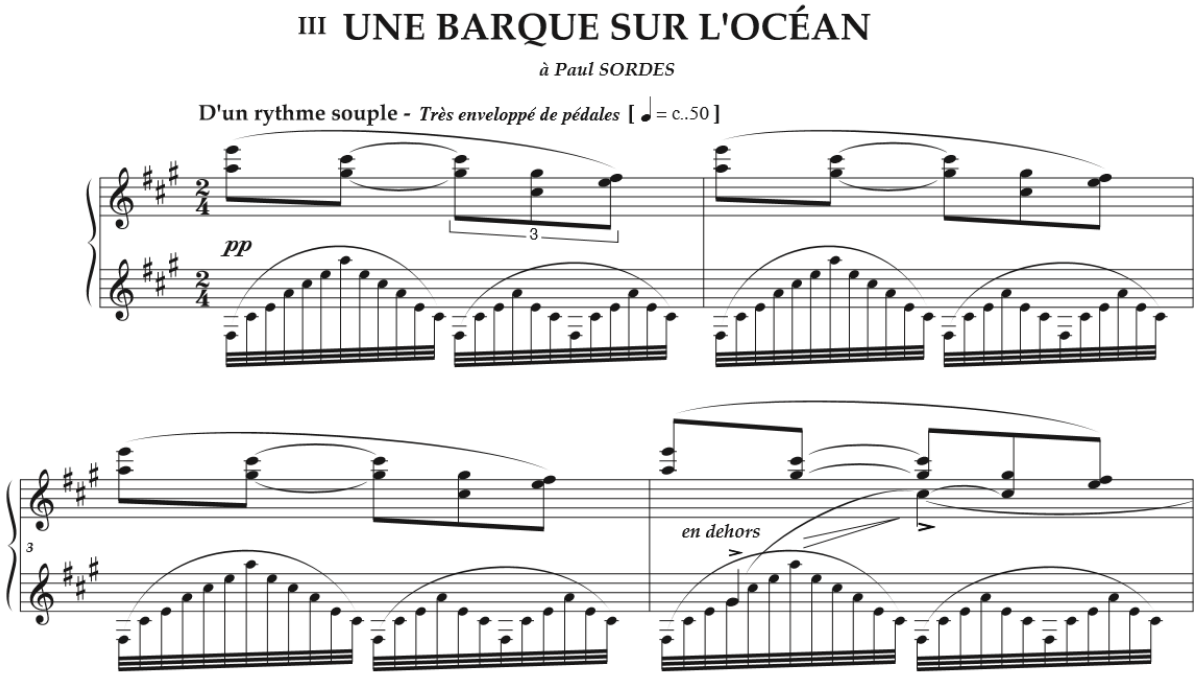
Performance Concerns

This etude is probably the most straightforward etude to perform from a classical pianist's perspective. As with many pieces, taking care to recognize everything in the score is the key to a good performance. Throughout *Cordes à vide*, expressive markings are meticulously added to every measure. This leaves little open to interpretation by the performer. Moreover, being too free with the rubato compromises the integrity of the rhythmic structures at work.

Almost without fail, every note in this movement is marked with some kind of dynamic shaping or accent. Right from the beginning the melody is clearly accented. In addition, the shaping of the unaccented eighth notes is clearly marked in the score. The only exceptions are the small sections alluding to the open strings which are marked with no shape. The clarity and the sheer volume of crescendos and decrescendos imply that when Ligeti leaves dynamic shaping out it should be taken seriously. Therefore, it is not really up to the discretion of the performer to add shaping in sections that do not already have it.

One aspect of this etude that is not specific is the pedal markings. The etude is simply marked "with much pedal." In general, the pedal changes in this work should not be extremely clean or clear to the listener. The easiest way to achieve this is by using a shallower pedal and changing only when notes are still being held in the hands to prevent any breaks in the sound. The goal is to find a middle ground where there is enough resonance to blend the harmonies but not so much that the texture becomes thick or overly dissonant.

To complement the sonorous nature of the etude, many different types of touch should be employed. In the quieter sections a slow attack and release of the keys is ideal. This is especially helpful in the accompanying eighth notes in the opening. The accented melody notes can be depressed much more swiftly to help them sing out above the accompaniment figures. The sections with the thirty-second notes should be approached in a similar way to works of Ravel such as *Jeux d'eau* or *Une barque sur l'ocean* (shown in example 2.4). All the notes in these sections should have energy and a sort of sparkle to them within an impressionistic sound world. Measures 25 and 26 are the one spot in this etude where an aggressive, violent attack is necessary.



mm. 1-4 of *Une barque sur l'ocean*

Example 2.4

This etude is both compelling and integral to the structure of the six etudes a whole. The quintal harmony used in this piece explores a richer harmonic vocabulary that has not been heard in Ligeti's music or most of the standard classical repertoire until this point. In addition, comparatively old techniques such as Ligeti's use of register or his concept of form as a cumulative process continue to play a major role. Finally, the juxtaposition of the fifth and half step provide the allusion to the tritone that pervades much of the entire book. Even with all these interesting compositional devices, the music never loses the expressive quality characteristic of much of his late music.

Chapter 3 Touches bloquées

Touches bloquées is immediately set apart from the other etudes by means of some lengthy performance notes (relatively speaking) and a few slightly unusual notational devices. This piece is a further exploration of a technique first used in *Monument – Selbstportrait – Bewegung* (1976). A constant stream of eighth notes is interrupted by silently held notes. This creates a stuttering effect reminiscent of Nancarrow's studies. However, the method used to create this effect is much different from that of Nancarrow. The main reason for this difference is that Ligeti wants to make this stuttering effect possible to be performed by a person rather than by a machine.[6] What is notated is a constant stream of eighth notes. But, because of the silently-held notes, there are many irregular breaks in the line. This makes it possible for the performer to rapidly create complex rhythms, because the sensation for the performer is just playing straight eighth notes. The rhythm that results is remarkably different and complex from the listener's point of view.

Although, at first glance, pitch content seems secondary to the complex rhythms, the pitch content provides cohesion. The cohesiveness of the pitch content in this piece is likely a side effect of the fragmented nature of the rhythm and melody in this etude, providing clarity to the listener. In this analysis, the rhythmic structures are largely ignored for two reasons. First, the structures themselves are very irregular almost to the point of being deliberately difficult to analyze. Moreover, Ligeti states clearly that the bar lines exist just for the orientation of the eye and do not imply any hierarchical beat structure.[7] This chapter's aim is to focus on pitch content,

[6] Denys Bouliane and Anouk Lang, "Ligeti's Six 'Etudes pour Piano': The Fine Art of Composing Using Cultural References," *Theory and Practice* 31 (2006): 173.

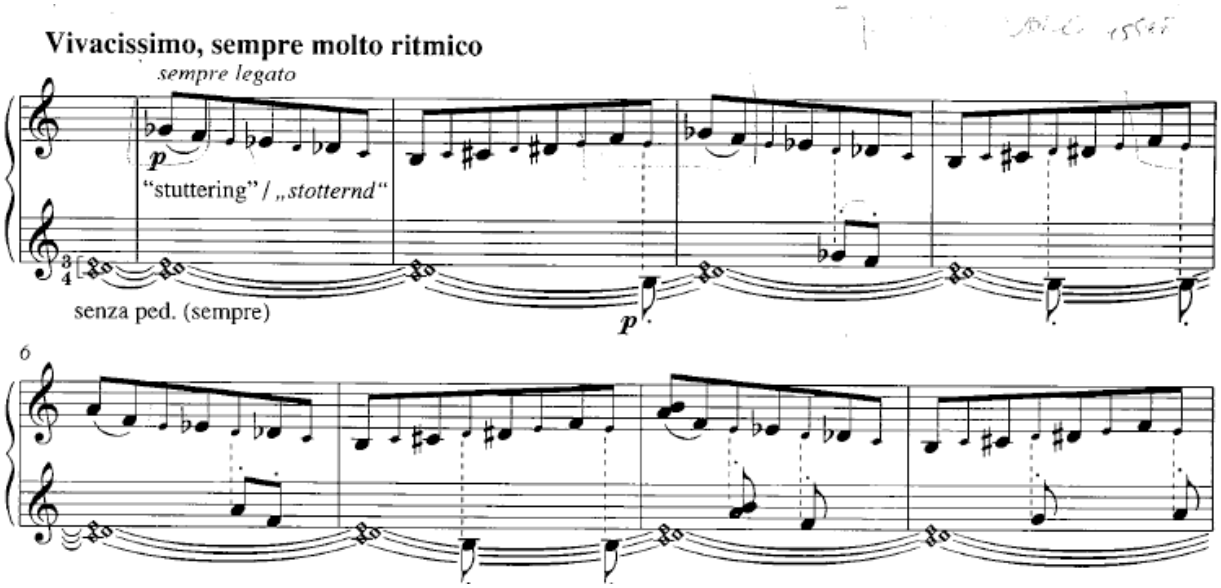
[7] György Ligeti, *Etudes for Piano* (Mainz: Schott Music, 1985), 20.

as well as some of the issues concerning performance. Ligeti uses intervallic content to give this individual movement cohesion and to highlight how the same intervallic content is prevalent in all six of the etudes.

Performance Concerns:

For the performer, these held notes challenge the most basic relationship the fingers have in producing sound on the keyboard. Anyone who has even touched a piano knows that if one depresses a key, a sound is produced! However, this is not the case in this etude. The silently depressed keys at the beginning of this etude create many breaks in what would otherwise be a constant stream of eighth notes. This results in a piece that is incredibly awkward, both mentally and physically. The most daunting aspect of this piece arises from the dichotomy between the physical sensation and the aural sensation. The physical sensation is that one is playing a constant stream of eighth notes. The aural sensation, on the other hand, is discombobulated and irregular.[8] This concept alone sets this etude apart, not only from the other works in the set, but also from the vast majority of etudes in the standard repertoire. There are earlier examples of composers silently depressing keys in piano music, such as the opening of Aaron Copland's *Piano Variations* and the *Drei Klavierstücke*, Op. 11 of Arnold Schoenberg, but nothing nearing this degree of focus. In the case of Copland, it is primarily for the resonance it creates, which can be applied to Ligeti's etude as well. However, in *Touches bloquées* the primary goal is to change the rhythmic profile of the piece.

[8] Eugene Montague, "Pleasure and Habit in Playing Ligeti's 'Touches Bloquées,'" *Indiana Theory Review* 30, no. 2 (Fall, 2012): 65-94.



mm. 1-8 of *Touches bloquées*

Example 3.1

Physically, there are many aspects of this piece that are uncomfortable. The main problem is that both hands are playing in almost the exact same register most of the way through the etude. This means there are a lot of nimble acrobatics that need to happen in order to play accurately what is notated. In addition, the hand sustaining the notes is challenging because there are many instances where more notes are being held than fingers to hold them. The opening is a perfect example (Example 3.1). Before the piece even begins, Ligeti marks that C, D, and E should be silently depressed with fingers three and four of the left hand. Then Ligeti immediately has fingers 1, 2 and 5 of the left hand play other notes while the right hand is playing running eighth notes in the same register. This technical device reaches its zenith in measure 22 when the left hand is holding B, C, D, E, F, and G. Then, on top of this, the left hand must play A and B while holding the six other pitches. So, at that moment five fingers are holding eight keys simultaneously.

One tends to wonder if Ligeti was being intentionally perverse here. The constant state of the hands impeding one another seems to suggest that he knew exactly what he was doing. Perhaps Ligeti intended to make the music even more irregular by writing something that is not practical or pianistic. He likely knew it would be nearly impossible to play everything exactly in time at the marked tempo with the hands so frequently impeding each other at least in a live performance. Considering some of Ligeti's earlier works this concept is not out of character. This is supported by the relatively pianistic nature of the other etudes. Even *Désordre* and *Automne à Varsovie*, as difficult as they are technically, are still written in a way that is fairly pianistic.

Ligeti marks running eighth notes in some part of the musical texture for the duration of this etude. Through a combination of notating silently depressed keys and marking breaths irregularly, Ligeti creates a stammering effect. In the score, Ligeti provides performance notes about why noteheads are notated in different ways and how to execute them:

Étude 3: Touches bloquées

Performance notes / *Spielanweisungen*

◇ = Depress the key silently and hold.
● = Depress the key, sounding the note, and hold.
●‿◇ = Depress the key, sounding the note, and hold. The sounded note is joined on to the 'silent note' in the next bar with a tie (even if the tone continues to sound).

Normal-sized note head: sounding note.
Small note head: the note does not sound since the same key has already been depressed and held by the other hand.

Play the quaver (eighth note) sequences as fast as possible (or 'even faster'). The note sequences are interrupted wherever small note heads indicate the non-sounding keys. Sounding and non-sounding keys should be struck at the same speed so that the resulting pause, represented by a small note head, has the same duration as the sounding note, represented by a normal note head. Longer pauses occur when several non-sounding keys are struck in immediate succession. In this way, the length of the pauses is automatically regulated. (The idea of movable key blocks comes from Henning Siedentopf. See his essay "Neue Wege der Klaviertechnik", Melos, Mainz, XL/3 (1973), pp. 143-146.)

A bar-line metre is not intended in this piece. The bar-lines only serve as a means of orientation. They have no metric function nor do they indicate any articulation. The duration of individual 'bars' results only from the number of sounding and non-sounding keys struck in succession between two bar-lines; i.e. the 'bars' differ in duration.

Performance notes for *Touches bloquées*

Example 3.2

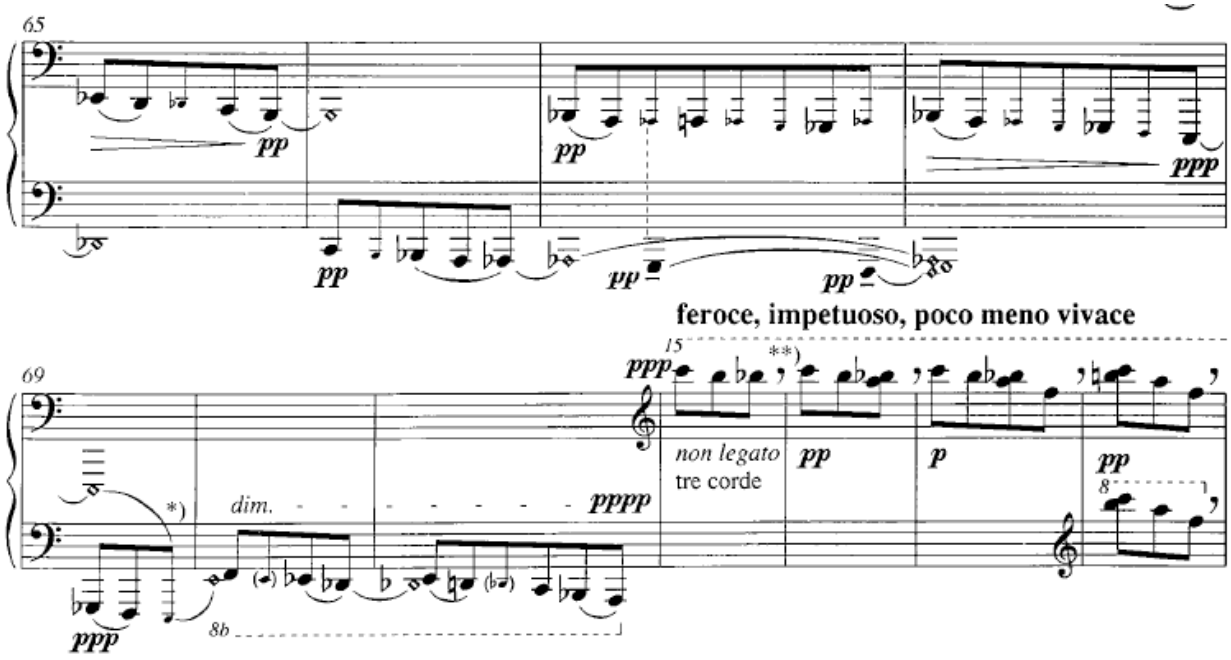
By silently depressing many keys, while continuing to have the performer try to play them, Ligeti creates several effects. The most obvious is the sputtering rhythmic character of this etude. Notating it this way prevents the performer from giving the off-beats the "upward" feel they would normally have if the silent beats were being skipped. The focus appears to be on eighth-note consistency, no matter where they take place in the notated measures. A metaphor for this concept might be taken from speaking. If someone were to speak in a normal voice and random syllables were removed electronically the effect would be very different than if one were asked to sound only these specific syllables out of context. So, by keeping the sounding eighths within the physical sensation of running eighth notes, Ligeti changes the tone of the sounding notes dramatically.

Some ambient noise is created by the strings vibrating sympathetically. This usually will not be perceptible to the audience. However, if the acoustics are right it is possible to clearly hear some of the extra resonant sound in the last few measures of the etude, when the sounding notes occur further and further apart rhythmically. Even if the acoustics are not ideal, the held notes still create a sort of added sheen to the overall sound being heard. For the audience, it is difficult to distinguish this specific sound from the overall texture, but if one does not hold the notes there is a noticeable difference in timbre. Moreover, by the end, there are so many struck notes that do not sound that the listener can usually hear some noise from the fingers hitting the keyboard.

Finally, these held notes serve a contrapuntal purpose, clarifying at least three separate voices in the texture. For example, in the opening, the top voice starts with the first half-step motive and encompasses anything around the G-flat4 and F4 or higher than this. The low voice is anything below the held notes, which most commonly includes A3, G3 and G-sharp3. Often, these two outer voices are punctuated by slurs or staccatos. Meanwhile, all the notes in the

middle voice, mostly E-flats and D-flats in the first section (mm. 1-22), are written without articulation, which helps make the notes with a marked articulation sound distinct. This feature is complemented by the middle voice being primarily of whole steps. Whole steps by their very nature do not have the distinctive intervallic profile that helps the half-steps stand out from the overall texture. Without these held notes, the texture would simply be a constant stream of chromatic eighth notes and would lack any sort of contrapuntal interplay.

The dynamic instructions for this piece are interesting: until the double-octaves section, each section is partially defined by its dynamic level. For the first main section, measures 1-71, each subsection is left largely without any change of dynamic until just before a transition to a new subsection. Then, there is a sudden change in the dynamic level. For instance, the first twenty measures are marked simply *piano*. Then in measure 23, there is a three-eighth note *crescendo* to a *forte* dynamic level. The pace/tempo is a clear indicator that this *crescendo* will be sudden, just based on the logistics of getting louder rather quickly. The flat dynamic character on a small scale is contrasted with the larger-scale dynamic changes in measures 52-71 and measure 100 to the end of the etude. The flat dynamic character on the local scale helps punctuate the overall form and makes the diminuendos at the end of larger sections more effective dramatically. The first major transition is shown in example 3.3.



mm. 65-75 of *Touches bloquées*

Example 3.3

Intervallic Content

The pitch content in this movement is slippery at best and chromatic, but there are some pitch sets found in the Lydian scale (is not a mode in any strict sense) that help organize what is being heard. The opening is the clearest section with an incessant preoccupation with a scale based at least partially on a Lydian scale. More specifically, Ligeti focuses on the tension between the raised fourth scale degree (F) and primary note of the scale (B). Even if this opening is not intended to be centered around B it does assume some importance through sheer repetition. In addition, the half-step between the fourth and fifth degrees of the scale appears many times in the first 22 measures. Even after the pitch content becomes too unpredictable to compare it to the Lydian scale, the tritone with an added half step above it is maintained to help give the work cohesion.

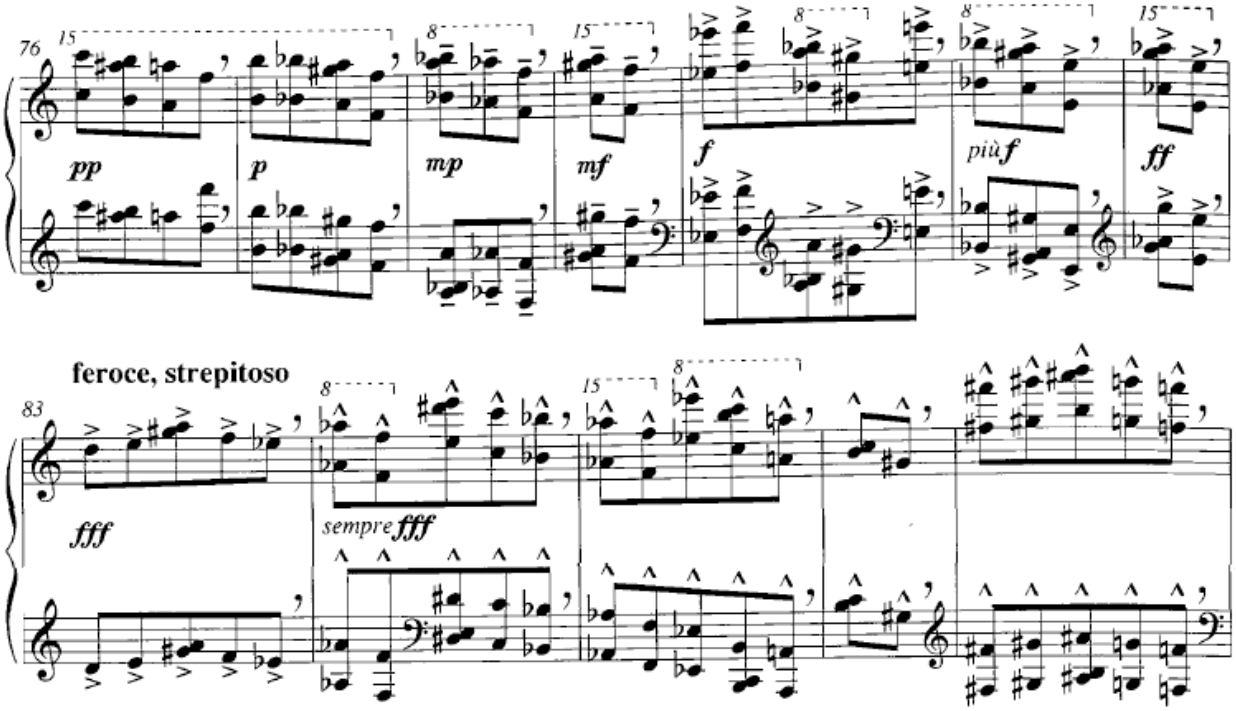
Boiled down, this motive highlights the set class (016) and the order in which it normally appears [0,6,7]. These sets permeate the entire etude. It is rare for Ligeti to compose even two of the notated measures without including an instance of this set somewhere in the intervallic content.

After the first 22 measures, there are two successive sections that use all twelve pitches of the scale, too frequently to identify any specific mode or scale. However, at measure 52, the Lydian scale is reestablished briefly in the bass register, a tritone away from where the etudes begin (centering on F rather than B). This persists until measure 65 where the pitch drops lower and lower, reaching the bottom of the keyboard. Even before this return, though, there are many references to the Lydian scale by maintaining the use of the (016) set class.

The accompanying figures throughout this etude are interesting because of the way in which they echo and highlight the motives in the right hand. This is helpful to the listener, because the eighth notes are flying by so fast that it can be hard to latch on to anything. By repeating specific pitches, the composer clarifies which parts of this texture are motivic. For instance, in the third measure the opening G-flat to F is mimicked four eighths later, and in exactly the same register. The same device is used in measures 6 and 8. After the opening bars, the motives become more spread apart from the material highlighting them, because connections are still there even if in subtler iterations. For instance, in measures 11 to 12 the G-flat to F is repeated in the next measure. Then, in measure 23-26, the B-flat to A is used three times because it is expanded to include C and C-flat while maintaining the half step motive and staccato articulation.

Form

In a style consistent with many of Ligeti's works, the change in section and texture is punctuated by a dramatic shift in register. From the last note of measure 71 to the first measure of 72, the pitch moves from the lowest note on the piano to the highest note. The important change in the section from measure 72 to measure 92 is the complete lack of held notes for this entire middle section. To achieve a similar stuttering effect, Ligeti inserts breath marks at seemingly random points, but measures are never more than five notes, or fewer than two, without a breath mark (shown in example 3.4).



mm. 76-87 of *Touches bloquées*

Example 3.4

The outbursts in this section are connected to the opening by their intervallic content. These outbursts in many cases contain the tritone up from the lowest note as well as the half step above, a reference to the intervallic content expressed at the beginning of the etude. Specifically,

every time there is a group of five notes, there is a usually a tritone and a fifth included in the intervallic content. This is another example of the prevalence of the (016) set in this etude. For instance, the first four eighth notes in measure 83 contain a D as the lowest note, with the G-sharp and A appearing a tritone and a fifth above the D respectively.

The first section foreshadows the form of the piece as a whole. Each individual section adds more and more sustained notes, until barely any played pitches are sounding. Then, the held notes are dropped back to typically one held note to start the new sections, although there are occasionally two held notes. As one makes comparisons among sections, the sounding pitches distance themselves further and further as the performer moves through the piece. Finally, this culminates in 20 unheard attacks between the last two sounding pitches! This process contrasts with the short double-octave section, where the groups of eighths tend to get longer, although not through any discernible linear process. In addition, the end of the piece is a more dramatic version of the end of each of the sections. At the end, the number of held pitches is lower. This is not perceived by the listener, because most of the struck notes are F-sharp3 and G3, which are the two already being held down.

Conclusion: Rhythmic Silence

The primary aural effect explored is the unpredictable rhythm throughout the etude created by silent notes. What really promotes cohesion is the consistent intervallic content in this work, the definition that the dynamic shape provides and the overall separation of sounding pitches. The reference to the Lydian scale provided by the preoccupation with the [0, 1, 6] set could connect to the folk music of any number of countries but is surely not a clear allusion to anything specific. The slow spreading apart of sounding pitches is reminiscent in concept to minimalist music. In addition, an almost motoric rhythm (the effect being that of a

malfunctioning motor in this case!) and lack of clear melody add to the validity of the possible connections to the works of earlier composers. Ligeti cleverly incorporates many references to earlier composers and their works while both retaining the registral device used throughout his oeuvre and integrating both new technical challenges and rhythmic explorations.

Chapter 4 Fanfares

Fanfares juxtaposes two contrasting compositional devices in this etude. The use of an incessant measure-long ostinato accompaniment is paired with a melody that is improvisatory in style. This concept is by no means new. The use of an ostinato can be traced throughout music history in various guises. In fact, this compositional device is so common that it is not even exclusive to classical music. It is commonly found in jazz, gospel, musical theatre and even in some folk music traditions. What sets this etude apart is the creative harmonization of the melodies and the extreme independence of the melody against the ostinato.

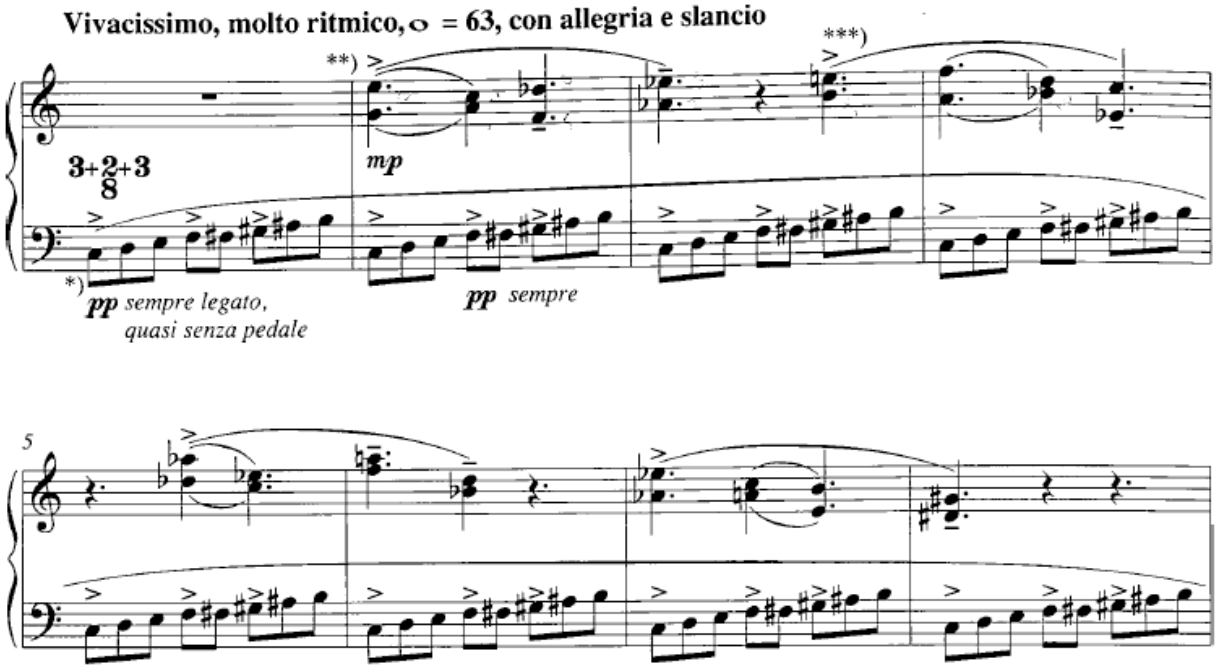
The ostinato repeats itself without pause for the entire movement in various registers, with the exception of the last six bars. The melodic lines are notable for often alluding to horn-fifths, likely the primary motivation behind the title of this etude.

This movement is probably the most unusual in the set because it really doesn't develop its themes at the same speed or in the same fashion as the other movements. This is likely a side effect of the composer's choice to base the etude on an ostinato. The only aspect that routinely changes in the melodic material is the way it is harmonized. The melody itself is improvisatory in nature, and the notes used to harmonize it are difficult to predict with any regularity.

Ostinato

In *Fanfares,* the ostinato is made up of two identical tetrachords transposed a tritone apart. Each tetrachord is a made up of a whole-step, plus whole-step, plus half-step pattern. The ostinato can be found in the left hand of example 4.1. This means that the four intervals of each tetrachord are also the first four intervals of a major scale. The ostinato is divided with accents into three unequal beats per measure. The beat structure consists of a group of three eighth notes, followed by a group of two, then ending with another group of three. This adds a level of

complexity to the ostinato, because the symmetrical tetrachords do not match the placement of the accents in each measure. This creates a level of rhythmic tension that two groups of four would normally not possess, because the second tetrachord never occurs on an accented beat whereas the first one always does. As in many of Ligeti's other works, barlines are not meant to suggest a standard hierarchical beat structure. The barlines themselves are simply a visual tool to help the performer read the music. According to the composer, all accents should be played with equal volume. Therefore, where the accents appear in the measure has no effect upon the accents themselves. To add to the rhythmic confusion of this piece, Ligeti instructs the performer to make every entrance of the melody sound as a downbeat, regardless of where in the measure it falls.



mm. 1-8 of *Fanfares*

Example 4.1

The ostinato freely switches from left and right hands between sections, but never drops out during the main body of the etude (mm. 1-209). It is varied in two way: registration and dynamics. The changes in register are usually at the end of each melodic phrase and usually do not skip into a new register. The dynamics of the ostinato are always marked softer than the melodic material.

Melody and Harmony

The melodic material in this etude primarily consists of pitches that are consonant with whatever note is in the ostinato at the moment in which the melodic note is played. Even when sevenths are added to the melodic material, the notes in the ostinato are usually still consonant with the seventh chord. Despite the frequent use of consonant triads and seventh chords, the etude completely avoids traditional harmonic progressions. Even with many moments of consonance, the music sounds only vaguely tonal.

Although most of the melodic notes are consonant, they are by no means predictable. Each major beat only has three possible consonant triads. The ostinato's accented note could either be the root, the third or the fifth of the chord. For example, the first C in the ostinato could be part of a C major chord, an A-flat major chord or an F major chord. If the chords are in minor it could be C minor, A minor or F minor. However, the order in which the chords occur seems arbitrary. The only rule that is followed is that there is never direct repetition of a chord, even when possible. In Mike Searby's words, Ligeti is using the "vocabulary but not the syntax of tonal music."[9]

[9] Mike Searby, 'Ligeti's "Third Way: 'Non-Atonal' Elements in the Horn Trio," Tempo, 216 (2001), p. 17

The voice-leading in the dyads that make up the melody does take into account some of the traditional rules of voice-leading. Namely, the dyads always avoid parallel fifths (or octaves). This means that any sequential dyads would move quite smoothly from one to another despite avoiding traditional harmonic progressions. In addition, starting in measure 89, literal horn-fifths begin to appear with some regularity. Hearing horn-fifths verbatim highlights the similarity much of the melodic passage work already had to them before measure 89. The ending is a prime example of these distorted horn fifths moving from an augmented fourth to a minor sixth before a perfect fourth.

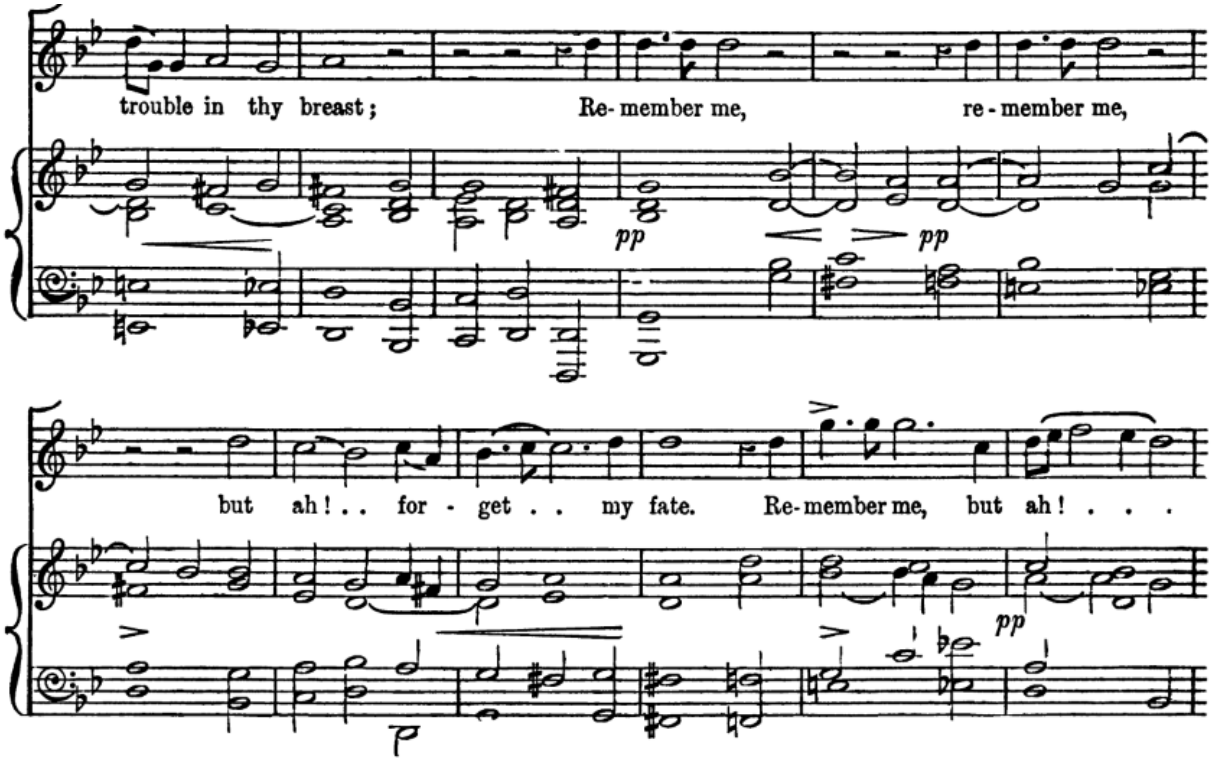
For much of this etude, the melody is separated in clear phrases, punctuated by one-measure breaks in the melodic line. Initially, the melody is in the right hand and composed of dyads that make up major triads when combined with the ostinato. This then contrasts with the second phrase, in which the same tools are used to create minor triads when the melodic notes, now in the left hand, are combined with the ostinato. Then, slowly, additional notes are added to the harmony of the melody, creating seventh chords.

Rhythm

Much of this work is dictated rhythmically by the 3+2+3 grouping inherent in the ostinato. Until measure 45, all melodic notes are struck on one of the accented beats of the ostinato. Starting in measure 46, the melody begins to incorporate more eighth-note grouping. In addition, these melodic eighth-note groups begin to accent notes on the unaccented parts of the ostinato more and more frequently after measure 46.

Even the contrasting rhythmic feel of the melody against the ostinato is not something particularly new. For instance, in "Dido's Lament," from Henry Purcell's Dido and Aeneas, the sentences that make up the text often do not line up with the chromatic ostinato in the bass.

Moreover, the repeated line “Remember Me!” occurs at many different places within the ostinato as shown in example 4.2.

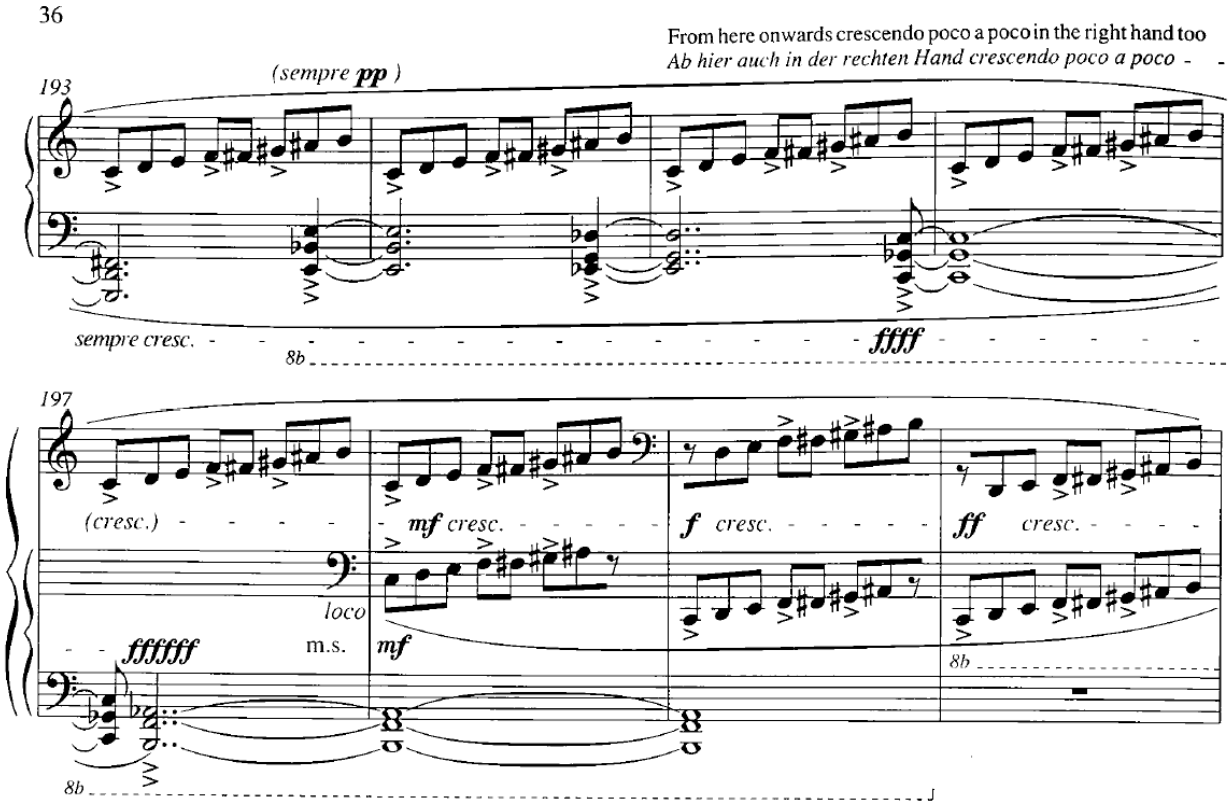


Dido’s Lament mm. 22-33

Example 4.2

Beginning in measure 171 of *Fanfares,* there is a sudden change in the rhythm that persists to the end. This could be understood either as a written-out *ritardando,* or as a new tempo superimposed on the same eighth note subdivisions. To the listener, it sounds like a *ritardando,* because each phrase is successively slower than the previous. The note values become one eighth-note longer each time. In measure 171, the melodic notes switch from eighths to quarters. Then, in measure 174 at the ***fff***, the melodic notes are now dotted eighth notes. From measure 189, the notes move briefly to quarters. This is followed by note values of the melodic line becoming progressively longer. This continues until measure 197 where the low chord marked ***ffffff*** is held for almost three measures. Then, in measure 202 at the *subito* ***pp***, the

original notes values are reintroduced before they slow again over the last four dyads of the piece.



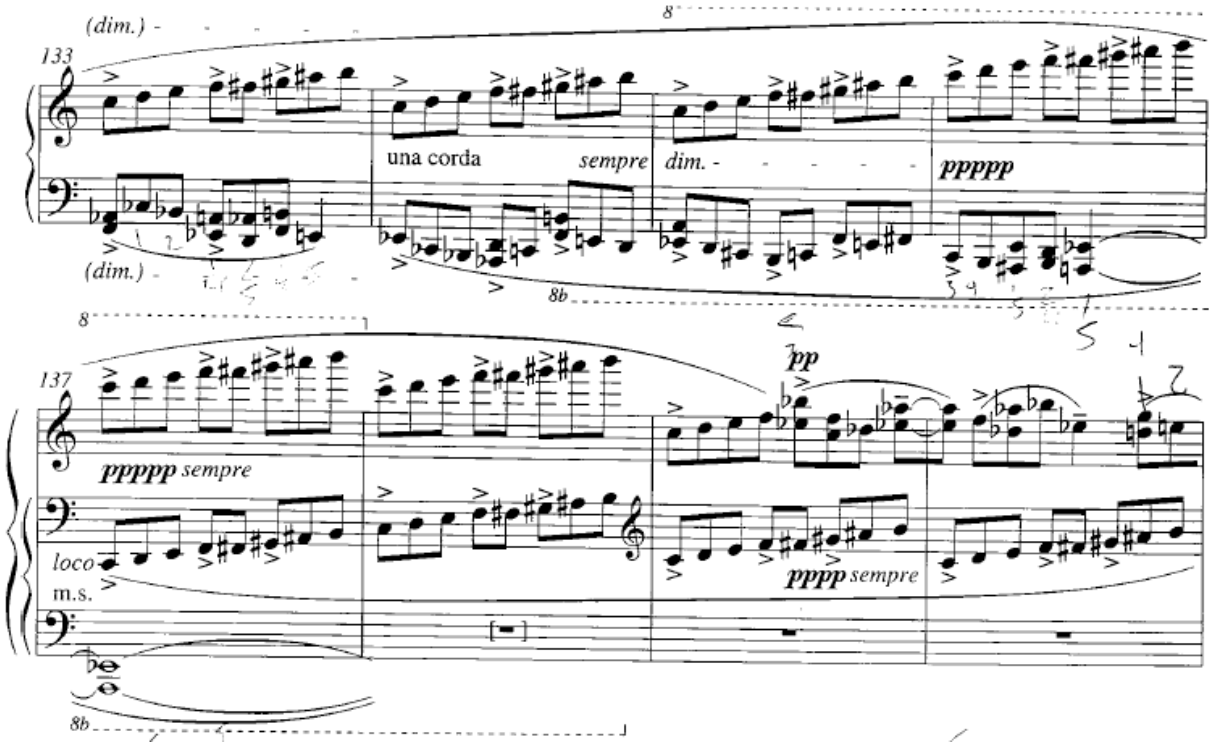
mm. 193-200 of *Fanfares*

Example 4.3

Register

Ligeti's use of register in this piece tends to suggest a more improvisatory approach to composition. Measure 201 and measure 137 are both examples of Ligeti's registral "calling card." This signature is made up of the use of sudden dramatic shifts in register and dynamic level. In this etude though, the large changes and contrasts in register are not as calculated and methodical as they were in other pieces, such as *Désordre*. In measure 137, for instance, the two hands are at opposite ends of the keyboard but, in this case, the registral difference is achieved

only after building up in measures 130-136. This lapse of time is quite small when compared to the scale of *Désordre,* where the change in register happens over several pages. In measure 202, the change occurs over a slightly longer section, this time fourteen measures of escalation. Even at fourteen measures in length, this is nowhere near the amount of time used to reach these same extremes in register in most of his other works.



mm. 133-140 of *Fanfares*

Example 4.4

Performance Concerns

This etude essentially explores the extreme independence of the hands, both rhythmically and motivically. The unique rhythms in each of the hands can be approached much in the same way as *Désordre*. Rather than trying to hear the complex independent processes at work, the performer should just focus on the composite rhythm of the accents. In many ways this is much easier to do in this etude because the rhythmic profile of the melody is much more inconsistent

than in *Désordre*. When one plays *Désordre*, it is much more tempting to try to hear the overarching polyrhythms because, even if the effect is complicated, the principle is much more predictable.

The sounds in each hand should be in stark contrast to one another. The ostinato should be rigid, unmoving and mechanical. Meanwhile, the melodic lines should be free, improvisatory and fluid in nature. To achieve this, the depression of the keys in the left hand should be sharp and crisp, whereas the right hand should depress the keys much more slowly, to create a singing tone. In addition, the left hand should not always be playing to the bottom of the keys, to prevent the sound from becoming heavy. This contrasts with the right hand, where the performer should always play to the bottom of the key, to get a richer sound. The dynamic balance between the hands is another point of interest in this etude. The ostinato is always marked softer than the melodic lines, which is the way a pianist would typically voice the two. However, in this case, the melody is marked two dynamic levels higher which is a little more extreme than a typical voicing of melody and accompaniment. This implies that the ostinato should sound more far off and be a little less focused in comparison to the melody.

The contrast between this rigid ostinato and an improvisatory melody gives this piece most of its interest.[10] With all the complicated processes at work in the previous etudes, it is a welcome contrast to hear essentially an improvised melody over an ostinato. In some ways the intuitive nature of this etude actually makes it much less predictable to the listener. This is ironic, because the tools used are so simple. This notion could help explain why an analysis of this etude

[10] Eric Drott, "The Role of Triadic Harmony in Ligeti's Recent Music," *Music Analysis* 22 No. 3 (October, 2003), 285.

is so difficult. However, the methodical nature of so many of Ligeti's compositions seems to strongly imply that there is more to this music than just one's intuition.

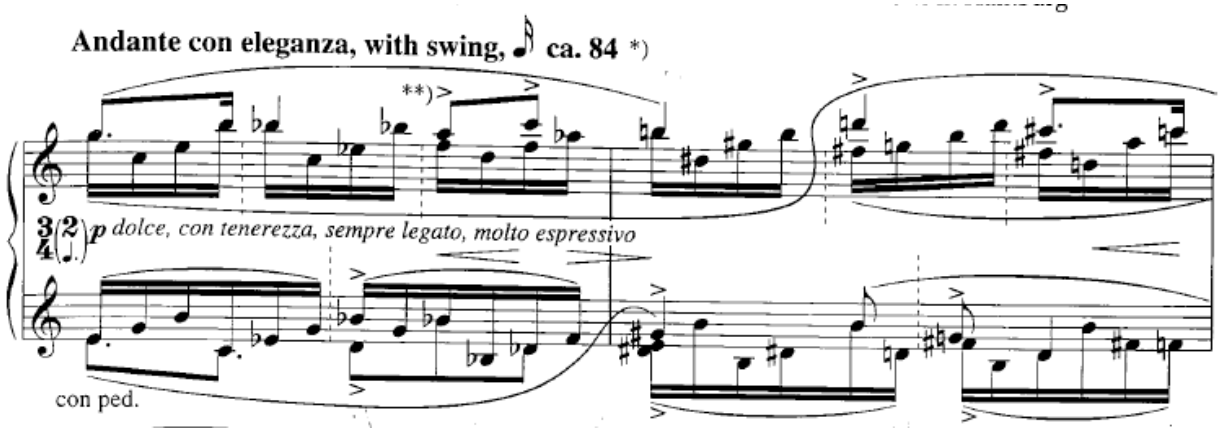
Chapter 5 Arc-en-ciel

Arc-en-ciel is the most melodic and lush of the etudes in the first book. This movement is sprinkled with the major/minor seventh chords and chromatic bass lines that are both homages to the late Bill Evans. In the score, Ligeti goes as far as to instruct the performer to freely vary the tempo, as in jazz. This etude is particularly startling in context for several reasons. The relative consonance of the opening, the free structure, the *lamento* melody and the fresh, inventive harmonic progressions all give this work a unique place in the first book of etudes. For the analyst, this degree of freedom creates many challenges. What can be most paradoxical is that even with all this "freedom," the movement remains a cohesive unit. One needs to explore common threads that unify this seemingly improvisatory work. Upon closer inspection, there are quite a few things that are relatively predictable. First, the harmonic language does follow some consistent processes. Second, Ligeti maintains the hemiola in the romantic sense for most of the way through this etude. Finally, the *lamento* motif informs some of the harmonic choices and appears in various voices throughout the work.

Rhythm

Ligeti maintains some of his polyrhythmic techniques in this movement, although they are much simpler than in *Désordre* or *Automne à Varsovie*. For instance, the first measure of the left hand is in groups of six, and the right hand is divided into groups of four (example 5.1). In this case, the 4 against 6 hemiola is maintained for almost three measures before the right hand switches to groupings of three on the last sixteenth of measure 3. However, the left hand maintains the groups of six for almost the entire piece. There are four measures (16-19) in which the left hand strays from its groups of six. Here the left hand can be divided in the traditional three-beat structure one would expect of music written in 3/4. In the right hand, Ligeti moves

frequently and unpredictably between different groupings. From measure 20 to the end the left hand is in groups of six, while the right hand is in groups of four. This could perhaps be a reference to the romantic hemiola that Ligeti talks about in his liner notes to the etudes.[11] This can be supported by the fact that in this short section Ligeti does not seem to be ignoring the meter. Before this section, the bar lines seem to exist for the aid of the performer without the hierarchical connotations that accompany 3/4 meter. In a sense, this can also be viewed as a sort of rhythmic recapitulation, because it returns to the same rhythmic pattern used in the opening two measures.



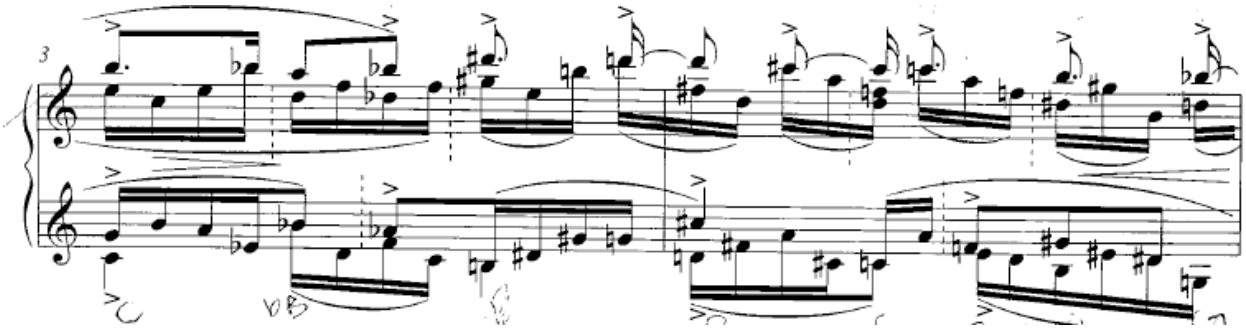
mm. 1-2 of *Arc-en-ciel*

Example 5.1

This piece makes use of the romantic hemiola, sense of rubato, and even extended tertian harmonies. Ligeti references the romantic hemiola directly in his notes. This effect is introduced right from the opening, by using a rather unconventional dual time signature. The right hand should clearly be felt in 3/4, while the left hand should be grouped as two dotted half notes per measure. Tension is added to the hemiola by having the phrases of the melody grouped, each in

[11] György Ligeti, "On My *Etudes* for Piano" and "On My Piano Concerto," Translated, respectively, by Sid McLauchlan and Robert Cogan, *Sonus* 9, no. 1 (1988): 3-13.

four beats. So, there are three equal phrases over the course of the 4 measures. This is on top of the groups of six in the left-hand all together, making a deceptively complicated rhythmic opening. The groupings also create an interesting dichotomy between the relaxed harmonious character and a tight rhythmic structure usually associated with expressive tension. The strictness of the left hand to this time signature could suggest that he is writing out a type of rubato characteristic of Chopin.[12] Chopin was known to have allowed his right-hand melody to expanded and contract the tempo around the steadier left hand "conductor." Therefore, the hands were not always together in the vertical sense, which could explain the very flexible rhythmic nature of the right-hand. The "early" entrances in the right-hand, such as the D-natural at the end of measure three (shown in example 5.2), are examples of the right hand pushing forward a little bit before resynchronizing in measure five.



mm. 3-4 of *Arc-en-ciel*

Example 5.2

Melody

The melody throughout this etude is saturated with descending chromatic lines: this could be an allusion to the *lamento* motive. This motive is prevalent in much of Ligeti's late music, but nowhere more common than the etude that follows *Arc-en-ciel*. The melodies are even in the

[12] Reginald R. Gerig, *Famous Pianists and Their Technique* (Bloomington, Indiana: Indiana University Press, 1974), 159.

short-short-long groups that are used in the final etude of the first book. The opening, for example, starts with what are basically two two-bar phrases followed by one longer four-bar phrase (the phrases don't always start and end with the marked bar lines).

Harmony

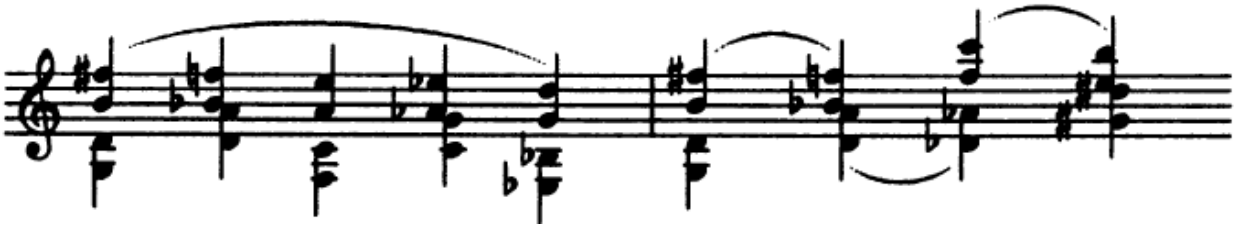
The harmony in this movement is primarily built on major seventh chords and other extended harmonies as the piece becomes more complex. The bassline is chromatic harmonically and avoids leaps. The bassline primarily moves by half and whole steps. Upon closer investigation, most of the progressions involve root motion by a minor third. For example, the first seventh chords all involve the root moving by a minor third. The root of the first chord is C, which is followed by an E-flat seventh chord. The E-flat root then drops a perfect fourth to a B-flat, which again moves up by a minor third to D-flat. The D-flat rather predictably ascends a minor third to E, which is followed by another leap of a minor third to G. This time, the root moves up by a fifth, to D, before moving down by step back to C. This amounts to seven chord changes over six beats!

Consistent root motion is not the only thing that gives this progression its cohesion. Clifton Callender analyzes this opening passage using the rotation and slide operations from Neo-Riemannian theory and it helps shed light on how Ligeti can move through all these different harmonies so smoothly.[13] Every major or minor seventh chord is made up of two perfect fifths. Basically, Callender shows that any two adjacent chords can be related by either sliding one of these pairs up or down, or rotating the fifths around each other. For example, a C major seventh chord is made up of two pairs of fifths; C and G, and E and B. By simply sliding

[13] Clifton Callender, "Interactions of the Lamento Motif and Jazz Harmonies in György Ligeti's Arc-en-ciel," *Intégral* 21 (2007): 41-77.

the E and B down by a half step, the C minor seventh chord is created. Moving from a C minor seventh chord to an E-flat major seventh chord requires the use of the other operation, a rotation. To move from C-E-flat-G-B-flat, to E-flat-G-B-flat-D, all that needs to change is that the C needs to become a D. The easiest way to do this using Neo-Riemannian theory is by rotating the C around the G (the other part of the pair) to D. So, the C goes from being a fifth below G to a fifth above. To maintain smooth voice leading, the only thing Ligeti must avoid is moving all four voices in parallel motion by half steps. This sort of motion would result in chords with no common tones, which would not blend well with the rest of the progression.

In addition, Callender's article points out that the *lamento* motive itself informs some of the harmonic decisions that are made. Example 5.3 shows the use of the *lamento* motive fitting easily within a progression of major seventh chords, using only the two operations explained above.



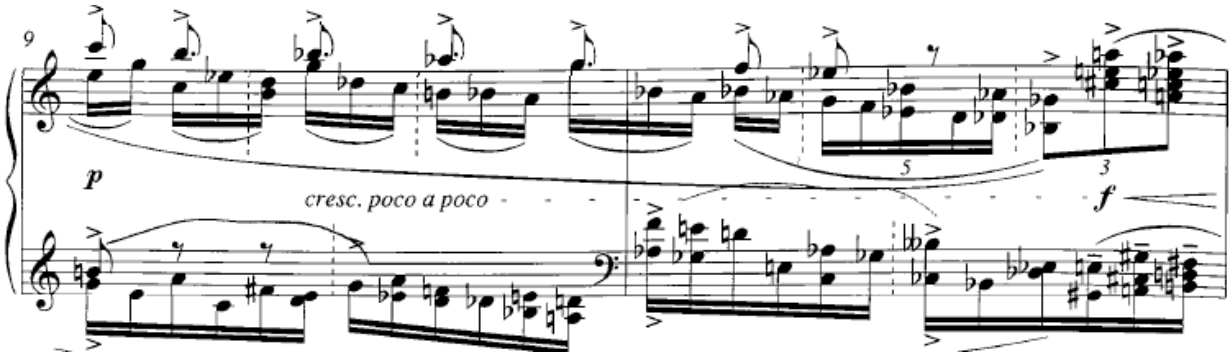
Lamento motive being used to help inform harmonic decisions

Example 5.3

The sheer pace of the chord changes, along with mostly weak inversions of triads, are what prevent the listener from ever feeling any harmonically stability. In addition, the chords are voiced in a manner that prevents the bass line from moving in way that would clearly suggest a specific key.

Some passages seem to be focusing more on linear voice leading rather than vertical sonorities. There are two passages in this etude that provide examples: the first is in measures 9

and 10. These two measures create the effect that the music is sliding down through the use of *lamento* gestures, or even just stepwise motion. The resulting verticalities are essentially impossible to frame in terms of traditional tertian harmony, or even Neo-Riemannian theory. However, even in this passage, the thirds are hidden in the left-hand accented notes shown in example 5.4. Starting on measure 9, the accented notes move from B to G, F-A (spelled enharmonically as B-double flat) and G to E. Interestingly, measures 12 and 13 tend to use E frequently until E becomes the root of the chord on the third beat of measure 13, which is one of the repetitions of the melodic material in the opening.

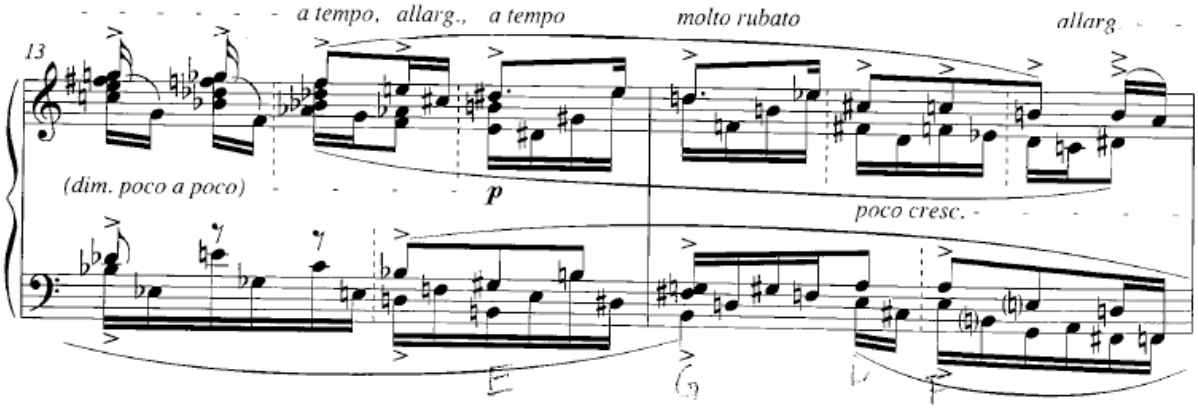


mm. 9-10 of *Arc-en-ciel*

Example 5.4

Form

Formally, this piece is free and difficult to define. The one main aspect providing some cohesion to this work is that the opening measures, recapitulated many times, are harmonized differently each time. The first two chords of each reprise are simple (relatively speaking) major seventh chords related by minor-third root motion. The first "fake" reprise appears on the third beat of measure 13, with the E major seventh chord (shown in example 5.5). This E major seventh chord is followed by a G major seventh chord.



First false reprise, mm. 13-14 of *Arc-en-ciel*

Example 5.5

The final reappearance of the opening is on the downbeat of measure 20, harmonized with an A major seventh chord, with a held C pedal tone. This is followed by a C major seventh, then an E-flat major seventh. Incidentally, the C to E-flat progression is what begins the etude. However, in this case, added tones are introduced much more frequently, making it difficult to identify roots after the E-flat. Ligeti continues to hint at the original progression by maintaining many of the same notes used in the opening phrase. For example, after the E-flat chord on the third eighth-note of measure 20, the B-flat is the next expected harmony. All the notes of this chord are still present, but it is much more difficult to distinguish. Then the right hand on the third beat of measure 20 has all the notes of a D-flat major seventh chord. After this it becomes much more difficult to follow the progression, because there are so many added and altered tones.

In addition, the opening phrase structure is notable for its adherence to a traditional sentence structure. In this case, it is a 2+2+4 structure. More interesting is that the first two phrases start with the C major seventh chord in its root position. Then, the four bar phrase begins with a G-flat root in the bass instead of the dominant one would expect. This makes sense,

however, because the dominant would help give the music more harmonic stability than the tritone.

To make the music more evocative of Bill Evans, more notes are added to the harmony that are not part of a major seventh chord any time the volume is increased. This makes the music much more dissonant, matching the harmony with the intensity of the dynamics.

Performance Concerns

The performance of this piece requires the average classical pianist to go a little outside of their "comfort zone" and embrace a few techniques common in jazz. The treatment of the rhythm is given specific instructions by Ligeti. He instructs the performer to freely fluctuate around an average tempo.[14] This gives the performer the license to use rubato as often as he/she would like. The accents should also be carefully observed, to bring to light the more subtle polyrhythms at play in this etude.

Although this work maintains many hallmarks of late Romantic music and jazz, it is still groundbreaking in its synthesis of so many different influences into one piece. The romantic hemiola is consistent, hovering above of jazz-inspired harmonies. The comparatively "ancient" *lamento* motive is utilized throughout the work, fitting elegantly into the progressions based on third root motion. This work ends rather poetically, drifting off very much in the style of an aural rainbow into the highest notes of piano, *quasi niente*. This also brings a compelling sense of balance to the next etude that ends with an explosive avalanche into the lowest notes on the keyboard.

[14] György Ligeti, *Etudes for Piano* (Mainz: Schott Music, 1985), 37.

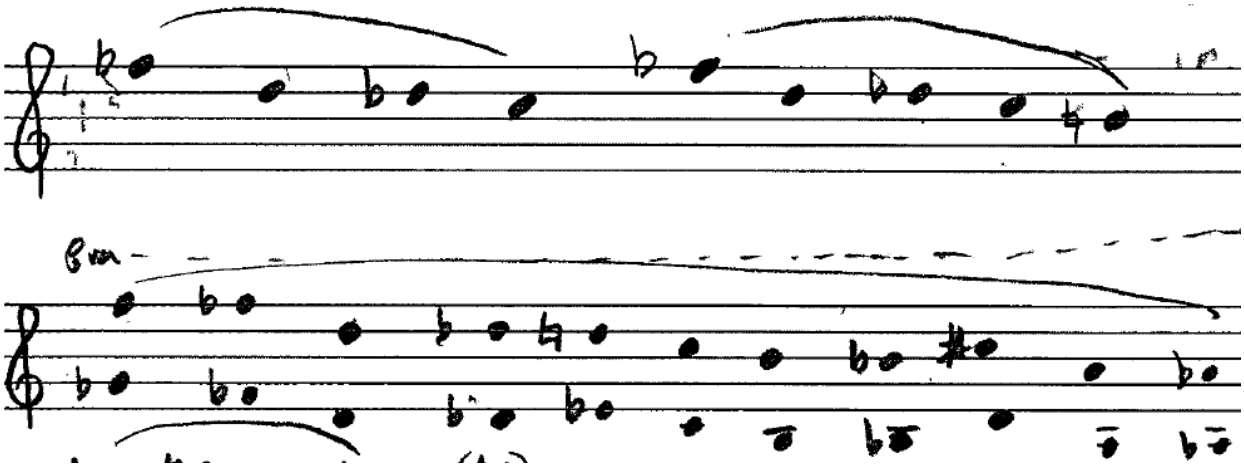
Chapter 6 Automne à Varsovie

The use of the *lamento* motive in Western art music immediately draws comparisons with many important works, extending from the Baroque era, all the way into modern-day compositions. Although the *lamento* had been used consistently for centuries, it is the way György Ligeti so seamlessly assimilates it with so many different compositional techniques that makes the use of such an old structure so remarkable. His sixth etude, entitled *Automne à Varsovie*, is one of the clearest examples of his use of *lamento*. *Automne à Varsovie,* like many of Ligeti's late works, uses a collage of different techniques taken from many different cultures, all altered to fit the needs of this composition. The *lamento* specifically is used in every measure of the piece, as the primary melodic content. In this work, Ligeti alters and develops the melodic content of *lamento* as a reference to his own Romanian heritage. The rhythmic structure of this work is largely dictated by the pulse streams used in many of his late works. These allude to the complex polyrhythms present in Central African drumming music. Moreover, Ligeti's experience with Jean-Claude Risset's computer-generated recordings of Shepard tones inspired him to incorporate them into his own works. Even with the addition of all these new tools, Ligeti's expressive use of register is maintained much in the same way events were underlined in his early orchestral works.

Melody and Form

This etude is saturated with Ligeti's altered version of the *lamento* motive. The way motive is used in this etude adheres to several rules. First, the *lamento* is made up of a combination of descending half and whole steps. This unusual combination of half and whole steps is an allusion to modal music, and more specifically to the Romanian *Bocet*, although this

is not the only type of folk music that can be associated with these patterns.[15] Traditionally, a *lamento* spans the distance of a tetrachord (perfect fourth). In a typical *lamento*, the line is either completely chromatic until the fourth is filled in or it is diatonic. But it is rarely so simple in this etude. The span of this motive morphs, depending on where in the larger structure it takes place. Usually, the span of the *lamento* expands as the phrases progress. For instance, the first statement of the *lamento* spans a major third. This is followed by a statement spanning a perfect fourth. Then the *lamento* expands even more to encompass a sixth (the statements are delineated by slurs as shown in example 6.1). The expanse of the slurs is at its greatest immediately before the sixteenth note pulse ceases and the pianist is left playing with the most extreme contrast in register in this etude.



First full statement of the *lamento* in the right hand, mm. 1-9

Example 6.1

Second, the *lamento* is usually presented in phrases that consist of three sections. The first line presented in the right hand follows this structure. The melody is marked with accents

[15] Denys Bouliane and Anouk Lang, "Ligeti's Six 'Etudes pour Piano': The Fine Art of Composing Using Cultural References." *Theory and Practice* 31 (2006): 175.

beginning in measure 2. The first subsection starts with the F-flat and ends with the C in measure 3. This grouping is reinforced by the slurs placed over the melodic line. The second subsection of the phrase starts on the D-flat on the last beat of measure 3, and ends with the B-natural on the first beat of measure 5. The first two statements are short in length and fill less expansive intervals. Then, the third subsection is longer and as a result encompasses a more expansive register than its two antecedents. The long subsection is always made up of multiple *lamento* that can be seen as overlapping. In addition, the first three full statements of the *lamento* have one incomplete statement in the last subsection of the *lamento* that can be finished with the first note of the next *lamento* (in a different octave). This etude begins with three clear statements of the *lamento* motive presented in this short-short-long format. This is shown in the example of measures 1-9.

As the *lamento* is developed within and between these three-part statements, more and more upward steps and leaps are incorporated. The first ascending notes occur in the third subsection of the first full statement. Even this early in the piece, the *lamento* motive is interrupted by an ascending half step from D-flat to D-natural, and an ascending minor third from B-flat to C-sharp in the same subsection. This minor third leap is near the end of all three of the statements at the beginning of the piece. In this way, the four-note *lamento* can be seen as expanding within the third subsection of the three-part phrase by incorporating the skip of the third with the half and whole-steps already present.

The *lamento* occurs on three different levels in this piece. The first is small-scale and only concerns melodic notes. The first appearance of this is the opening four-note melody in the right hand. The second level, or middleground, can be found by comparing the first note of each entrance. The first entrance in measure 2 starts on an F-flat. The second entrance is also F-flat,

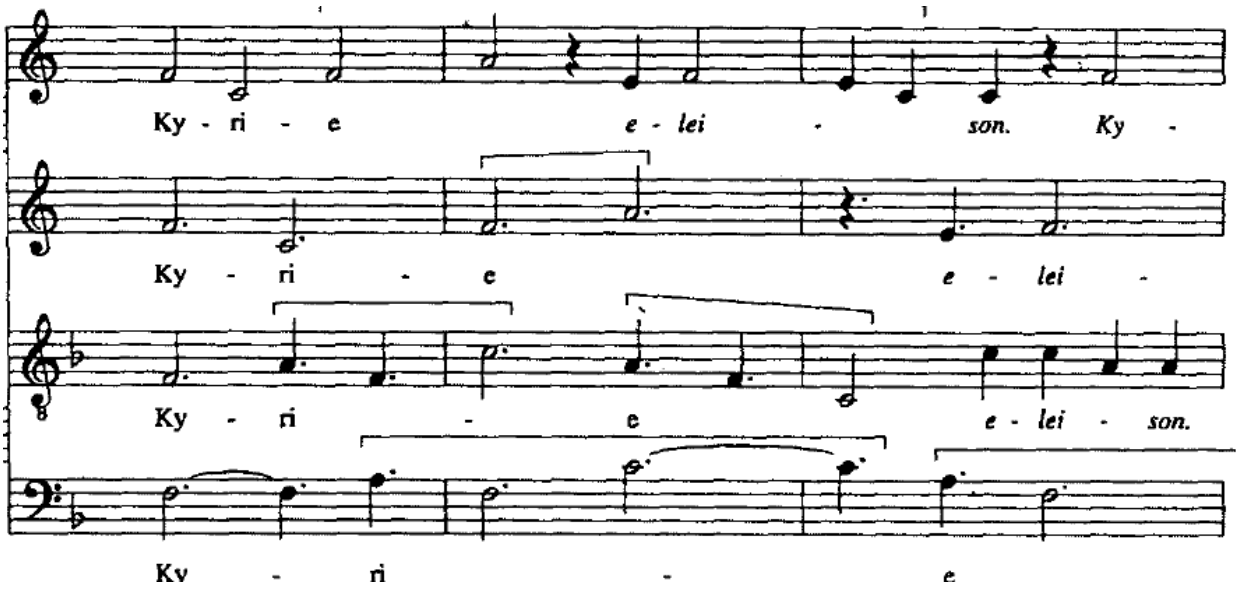
which can be ignored because it is the same pitch. The following entrance in measure five starts on an F-natural. This is followed by entrances in measures 10 and 11 on F-sharp. Then, in measure 23 the *lamento* starts on G-sharp. The movement from F-flat to F-natural to F-sharp and finally to G-sharp creates an exact inversion of the first *lamento* motive. The *lamento* is also present in the bass line on a much larger scale. The bass line starts on an E-flat in the opening measure. It moves to a D in measure 9, right at the end of the first full statement of the three-part *lamento* (short-short-long structure). Then, the bass descends another half step to D-flat in measure 17, at the end of the second full statement of the *lamento*. Here the motion quickens and the B-natural appears in measure 18, as well as the B-flat on the last sixteenth of measure 20. The motion from E-flat to D to D-flat to B-natural, and finally to B-flat, is yet another statement of the *lamento* on a larger scale than previously heard.

Rhythm

The *lamento* also appears in different polyrhythms throughout this etude. The barlines in *Automne à Varsovie*, and many of the other etudes, are simply a visual aid to the performer. Without barlines the performer could quickly get lost in the constant stream of sixteenth notes. They do not imply any hierarchical metric accent structure usually associated with common time. It is curious that this piece has a time signature at all, considering that there are various tempi set to occur simultaneously. The 4/4 time signature likely meant to just make things as simple as possible for the performer. The sixteenth-note pulse is constant throughout almost the entirety of the piece. On top of this sixteenth-note pulse, different pulse streams are overlapped to creating the illusion of different tempi heard simultaneously. The most common ratio is 5:3. In many cases, the rhythmic combination of five and three is commonly connected with the Balkans.[16]

[16] Bouliane, 169.

Initially, the most consistent pulse stream is the groups of 5 in the upper voice. Then, starting on the B-flat on the last beat of measure 24, the 5:3 sixteenth ratio permeates much of the remainder of this piece. In measure 47, the left hand adds to the complexity by adding a pulse stream of four. Starting in measure 47 the pulse streams become more and more inconsistent until the sixteenth pulse drops out completely in measure 55 and the only pulse stream present is the original groups of five that began the piece.



Opening of the Kyrie from *Missa Prolationum*

Example 6.2

The fact that Ligeti considered these different pulse streams as separate tempi rather than polyrhythms draws an immediate comparison with the work of Johannes Ockeghem (1410-25 to 1497). In the works of Ockeghem mensuration canons are commonly used, representing the same melody being sung by two singers in two different time signatures (shown in example 6.2).

In practice this causes different lengths of each note of the melody and creates simultaneous multiple tempi. In many cases, Ockeghem further complicates the rhythm by adding a second melody that is sung by two different voices at different tempi. This creates double mensuration canons, which are used throughout the *Missa Prolationum*.

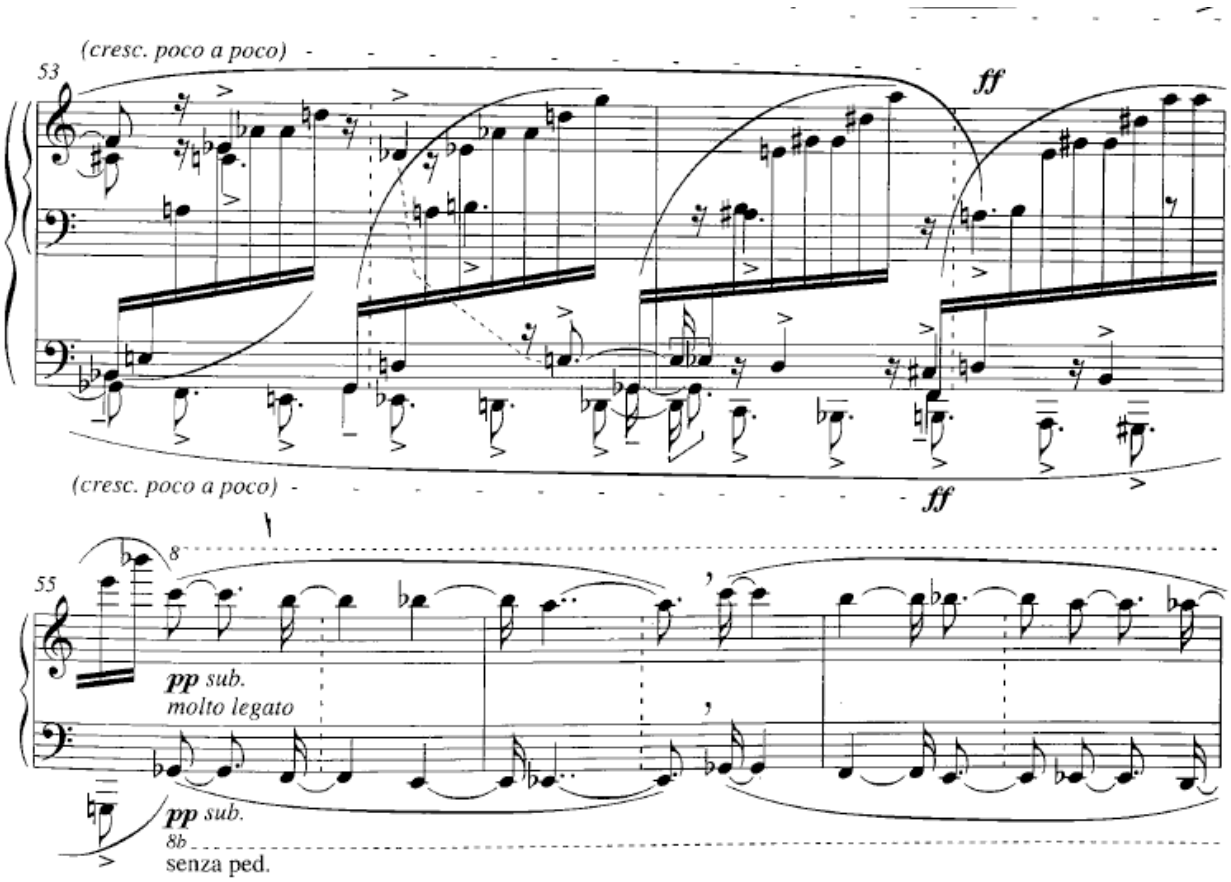
Register

Shepard tones are an auditory illusion that appear to continuously rise or fall without changing registers. As the voice falls, an overtone slowly starts to sound and eventually becomes the primary voice as the lower voice falls away. This paradox was invented by Roger Shepard and then was adapted by Jean-Claude Risset. Risset played computer-generated tapes of this phenomenon for Ligeti in 1973. The 9^{th}, 13^{th} and 14^{th} etudes are commonly linked by this effect. However, the influence of the Shepard tone is also present in this piece, and helps Ligeti maintain his expressive use of register while using almost exclusively descending melodic lines. Ligeti does this in several places. First, in many cases at the end of one *lamento*, the pulse stream length doubles before leaping back up to start another *lamento*. This extra time helps disconnect what occurs before the leap from the new entrance. So, rather than sounding like expressive vocal leaps back up to each new *lamento*, one experiences waves, repeatedly. In some cases, Ligeti even marks the upward leaps with ***sfz***'s, which helps disguise the upward leap. For instance, in the line in measures 13-15, the G-sharp 6 and the E6 are both marked ***sfz*** and they are both upward leaps. In addition, both notes are preceded by rests and have a sudden change in harmony which deemphasizes the leap. The G-sharp in measure 13 is preceded by a quarter note rest and harmonized with dissonant intervals. The E-natural in measure 16 is preceded by a sixteenth-note rest, and is also harmonized with relatively dissonant intervals. For the first 17 measures of the etude, the majority of melodic notes are harmonized by perfect intervals

(octaves, perfect fourths and perfect fifth). Through these upward leaps, the harmony suddenly changes to more dissonant intervals; sevenths, both major and minor thirds, tritones and minor seconds. This sudden change in harmony can also help distract from the upward leap, because it helps the listener focus upon the sonority of the chords rather than on the contour of the lines.

Another way Ligeti achieves the Shepard tone effect is in using many contrapuntal lines simultaneously with the same *lamento* motive. As each section in the piece becomes more complex, there can be up to four statements of the *lamento* occurring at the same time! This level of intricacy makes it nearly impossible for the listener to catch many of the upward leaps. Moreover, the performer could easily alter the voicing to draw attention away from the leaps, since there can be up to four voices that can be considered primary. For example, starting in measure 46, there are three separate chromatic lines descending at differing speeds. Even the most experienced listener can miss the ascending leaps when they are obscured by other chromatic lines moving at different speeds.

The use of register also helps delineate this first climax at measure 55 (shown in example 6.3). In some cases, the running sixteenth-note pulse can help make the register sound the same, even if the *lamento* has changed register. Starting in measure 48, the pulse slowly becomes more and more erratic in terms of register, and every time the register of the *lamento* changes, the initial register continues to be occupied by the sixteenth-note pulse. This pulse becomes more and more consistent until the sudden change in register in measure 55.



Abrupt change in register and dynamics

Example 6.3

In this piece, structure is primarily defined by the relative complexity and use of register. In general, each section begins with the simplest material. As each section progresses, the material becomes exponentially more complex, adding extra pulse streams, accelerating the harmonic rhythm and changing register. Take for example the first section: the piece opens with an E-flat pedal for the first nine and a half measures. The only element that is developed in these nine measures is the length and span of the *lamento*. Then, in measure nine, the pedal point changes to D. Then, starting two measures later, the lowest note of the pedal becomes its own *lamento* beginning on the G2 in measure 11. This *lamento* moves faster and faster with each

additional note. It starts with 32 pulses for the G. Then the F-sharp lasts for eight pulses, followed by a six-pulse F-natural, a five-pulse E and E-flat, and finally a four-pulse C-sharp and C. Meanwhile, the pedal changes again, this time moving by tritone to A-flat, just six measures after the first change (from E-flat to D). During this same period the harmony starts to incorporate dissonance more frequently. This occurs from the first full statement of the *lamento* to the second full statement. This same model can be applied to varying degrees in all of the larger sections of the piece. In addition, even the rate of change accelerates with each succeeding section. The most obvious way to find the section markers is to look for major registral shifts. The first section ends approximately on the downbeat of 25. Essentially the B-flat3 in the left hand starts the section, while the C5 in the right hand begins the section at the same time. The C-sharp6 and G5 in measure 42 mark another section. The most dramatic change in this section begins on the second eighth-note of measure 55. Each of these larger sections is more complicated than the last and the rate at which they increase in complexity accelerates.

Through approximately the first fifty measures of the piece, the occupied register slowly expands and contracts. For example, in the first twenty measures the bass slowly moves from E-flat3 to the C2 in measure 15, and then leaps up to B-flat3 in measure 24. Meanwhile, the right hand starts on F-flat6 and gradually moves up to its high point in measure 21, the C7, before slowly moving back down until measure 24 and jumping down to C5 on the downbeat of measure 25.

Starting in measure 50, the rate at which the register changes increases rapidly. Starting in measure 47, the lowest note in the bass is E4. Within nine measures Ligeti expands the bass all the way down to the G-flat1 in measure 55. In addition, the sixteenth-note pulse in this section covers more and more of the piano range as the *lamento* motives descend. This proceeds all the

way to the C7 in measure 55, at which point all inner voices drop out, leaving the high C and low G-flat. This sudden change in texture draws immediate comparisons with the juxtaposition of piccolos and double basses in *Atmospheres*.

Performance Concerns

This etude is likely the most challenging of the set in many ways. However, the real challenge is to prevent all the simultaneous tempi from sounding cold and machine-like. The feature that really makes this etude so amazing is that even with all of its incredible compositional devices and complexity, it is still an extremely expressive work. Dedicated to Ligeti's Polish friends, it is evocative of the tone of many of the works of Chopin.

There are some more technical concerns to be considered that can help with the overall effect. Whenever there are multiple *lamento* motives overlapping, it is important to take care that the voicing enhances the effect of the Shepard tones discussed earlier. In most Romantic melodies, it is the upward leaps that are considered the expressive high points of phrases and are often emphasized. In this etude the leaps should be hidden as best as possible. To prevent the music from quickly getting lower and lower in register the *lamento* leaps up after several steps down. During these leaps there is usually a different *lamento* motive also moving down. In order to keep the sense of constantly falling more reminiscent of Shepard tones the performer must always take care to keep the listener focusing on the descending lines rather than the ascending leaps. Ligeti helps with this by being careful not to mark slurs over the upward leaps.

The other challenge presented by this etude is to grasp the large-scale structure of the etude without losing the small details of the complex counterpoint. All of the registral changes are carefully planned to punctuate the form; as such, it is important to recognize this and to avoid blurring the sections together.

The coda is the first time in this etude that Ligeti works backwards in terms of complexity within the same section. In other words, this is the first time the number of *lamento* motives being introduced is going down within a section. Starting in measure 115, there are three pulse streams present at the same time. The upper part of the right hand is in groups of five, the bottom voice of the right hand is in groups of four, and the upper voice of the left hand is in groups of three. On the downbeat of measure 116, the groups of five and four, both streams in the right hand have lined up. From here on, the attacks of both voices continue to coincide, every four pulses. Then, on the second beat of 117, the group of three in the left hand and four in the right hand are both struck at the same time. After this, the right hand, adopts the left hand's three-sixteenth-pulse stream until the D-flat-C dyad in the right hand of 118, where the right hand moves to a two-sixteenth-pulse stream. The left hand appears to catch up the last two eighth notes of 118, but soon becomes rhythmically unpredictable. Finally, all the separate tempi revert to attacks on every sixteenth-note. Then, the hands are separated by the minor ninth. This is the first interval the listener hears in the piece that is not a broken octave. Parallel minor ninths cascade down until the performer runs out of notes at the bottom of the keyboard! This is also the conclusion of the entire first book.[17] As with many of Ligeti's works, the ending is marked to "stop suddenly, as if torn off."

[17] György Ligeti, "On My *Etudes* for Piano" and "On My Piano Concerto," Translated, respectively, by Sid McLauchlan and Robert Cogan, *Sonus* 9, no. 1 (1988): 3-13.

Chapter 7 Unity in the first book of Etudes

By creating works with such a wide variety of textures and so many different compositional devices, Ligeti makes it much more difficult to make the set of six an organic whole. However, it seems clear that this set was meant to be performed together as a unit. Using similar intervallic structures, as well as the *lamento* motive, Ligeti is able make this work one cohesive unit. The exploration of unique ways to approach performing complex polyrhythms is another common thread connecting all of the etudes.

The intervallic content in these etudes gives the group of six etudes a sense of unity that helps organize six otherwise vastly different pieces. Right from the first three notes of the entire set, the most important pitch set is already introduced. The first three pitches in the right hand of *Désordre* are B, E and F which, when put in prime form, create the set (016). In addition, the order this set most commonly appears in is any "root" with a tritone and a perfect fifth placed above it.

Ligeti continues to use this collection of intervals overtly in the structure of *Cordes à vide*. The harmony of the etude is based entirely upon open fifths, here combined with a chromatic melody. Together these create the tritone and complete the (016) set. This is also outlined in the groups of seven in the left hand. By moving down by a perfect fifth six times, the left hand outlines tritone.

Touches bloquées is probably the most melodically abstract of the etudes. The texture is reminiscent of Webern in its clear succinct use of material. It is the most fragmented of the set, and to combat this Ligeti is much more concise with his use of interval. He starts with a clear allusion to the Lydian mode that already contains all the required intervals. As the movement progresses through the sections, the music begins to use all twelve tones, too often to argue it is

adhering to any specific scale! However, even these more atonal sections are full of these intervals and the (016) set. It is cleverly included, even in the final chord of the piece. This time the G and F-sharp a tritone and half step vibrate sympathetically above the C-sharp.

The ostinato in *Fanfares* is the clearest way in which the tritone with the added half step is included in this movement. This ostinato is made up of two tetrachords related by tritone. In addition, it also contains (016) which can be found with the C, F and F-sharp all in the ostinato. Sections such as measures 130 to 137 are important because of the dramatic use of register. This is highlighted by the use of tritones in the melodic material with the greatest frequency in the etude.

Arc-en-ciel uses primarily minor-third root motion in the bass. But the tritone root motion occurs occasionally. This etude also continues the habit in this first book of including a tritone in the first measure. This time it is in the third, fourth and fifth sixteenth notes of the right hand. These notes are E, B and B-flat which again can be reduced to the (016) set.

Finally, *Automne à Varsovie* introduces the tritone in the most dramatic and extended fashion of the entire set. This occurs in measures 55 to 61, where a massive *crescendo* leads to a sudden ***pp*.** Both hands play in rhythmic unison, a tritone apart at opposite ends of the keyboard. The only spots where pitches are added to the individual lines follow the same rule. Ligeti adds only pitches that can be included in the (016) set or in these cases (0167). This movement also ends the entire set by highlighting the ninth or compound half step incessantly, as it cascades down the keyboard to an ominous ending.

The *lamento* motive is another vital part of the motivic contour of this piece. This *lamento* motive is embedded though out the work. The clearest examples are in *Automne à Varsovie* where *lamento* after *lamento* occurs in overlapping fashion. However, this is not the

only place in which this motive occurs. As early as *Cordes à vide,* this theme is already finding its way into the music. In this case its inversion is disguised in the accented melodic notes of the left hand. *Touches bloquées* is much more blatant in its use of this theme, because the first four sounded pitches are another *lamento* motive. While *Fanfares* does not overtly state the *lamento* motive, it does include two copies of the inversion of this set in the ostinato. *Arc-en-ciel* often makes use of chromatic descending melody, as well as occasionally hiding this *lamento* motive in the bass line. In addition, the short-short-long phrase structure used most prominently in *Automne à Varsovie* also makes its way into the openings of *Désordre* and *Arc-en-ciel*.

The rhythmic complexity that permeates all six etudes springs from a variety of influences and sources. Ligeti himself states that the most direct influences on rhythm are the romantic notion of the hemiola and African polyrhythm (or perhaps polymeter is a more accurate term). Every etude has new and inventive ways to approach the same problem. How can the music be written in a way that will be rhythmically complex, but still possible to be performed accurately by one person? In both *Désordre* and *Automne à Varsovie* this problem is solved by having every subdivision played by the performer, only using the accented notes to outline the complex rhythms. This allows the performer to play several simultaneous tempi in *Automne à Varsovie*. Then, in *Désordre*, it allows the performer to play the same rhythm, falling out of synchronization over a long period of time. Perhaps the most innovative approach to addressing this issue is the utilization of the blocked-key technique in *Touches bloquées*.

Finally, the use of dramatic changes of register and dynamics is a common thread that makes its way into every single etude of this set. This technique can be traced all the way back to early orchestral works such as *Atmospheres*. These changes tend to mark important structural

moments in his pieces and especially in these etudes. They have become virtually a calling card of his music at this point.

In striving to make a cohesive whole unit out of a set of etudes Ligeti is breaking new ground. This, combined with the incredibly wide variety of influences and compositional techniques, creates a compositional marvel. Amazingly, Ligeti never loses his own individual voice regardless of how many other inspirations are synthesized into the music. In addition, his signature use of register is a reoccurring device that connects Ligeti's entire output. Finally, the use of similar intervallic content throughout this set of etudes helps bond the set in an organized fashion.

The expressive nature of this work is arguably more important than all compositional techniques in play. This alone makes it much easier for all sorts of audiences to find some way to connect with it. When one tries the explain everything at work in these etudes to people not experienced in the world of contemporary classical music, it often leaves them feeling as though this music is too intellectual and complicated to connect with on a personal level. However, when they experience it, it often leaves quite an impression on them. This is because the etudes are still using the same emotional tools that have been used by composers for thousands of years. The only things that have changed are the extremes of the emotions being conveyed and the means of the conveying.

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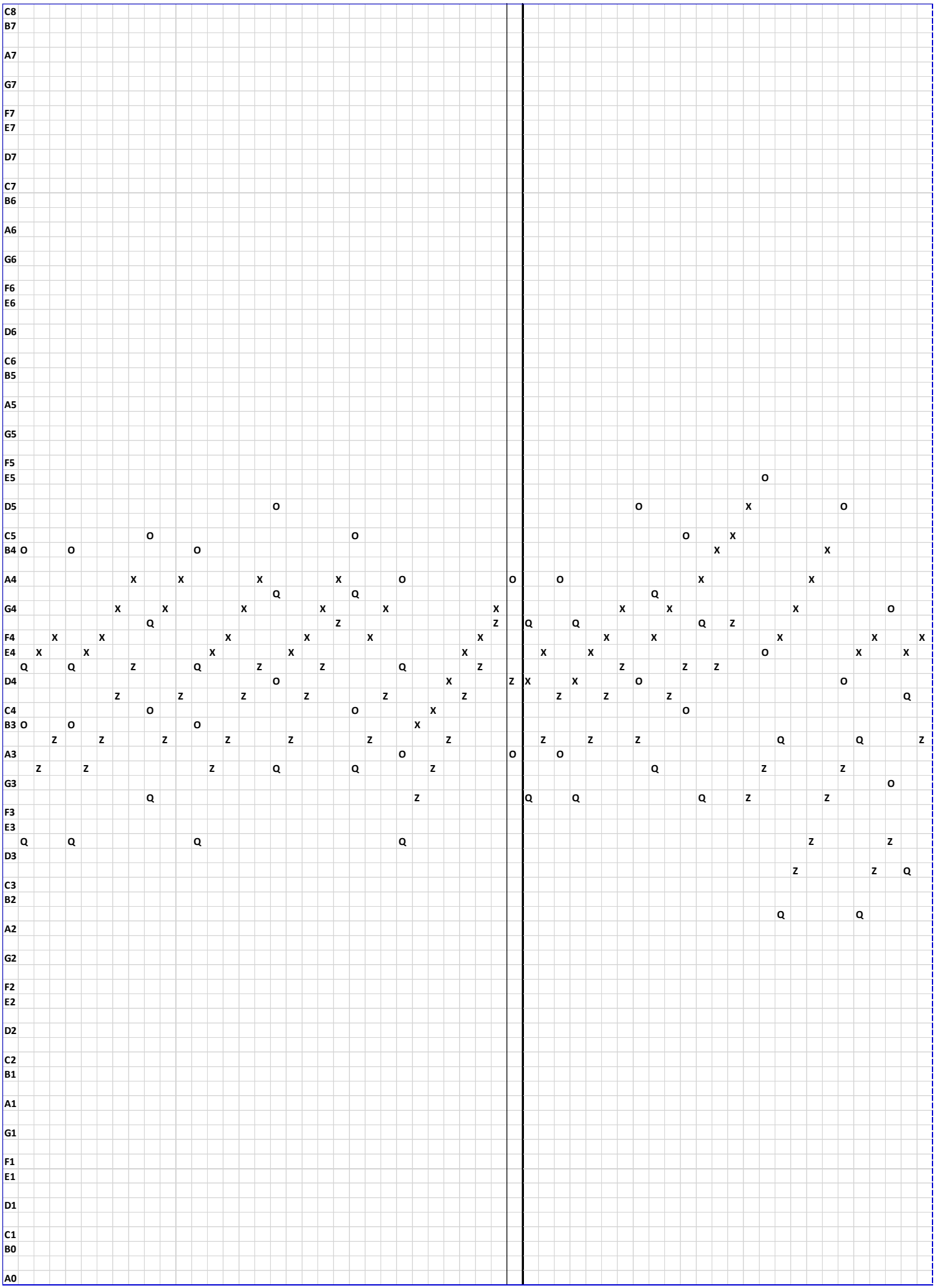
Désordre Pitch Graph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