Defining a Style: The Role of Rhythm in Motivic and Formal Cohesion in the Music of György Ligeti

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In the later Twentieth century’s world of diverging musical traditions and experimentation, one of the most recognizable names is that of György Sándor Ligeti. Rather than trying to overthrow the musical establishment (as was the desire of some of his more controversial contemporaries), Ligeti quietly established himself through rigorous attention to detail and musical continuity.¹ One of the most forward-thinking composers of the later twentieth century, his music has been performed by many highly regarded ensembles in the U.S. and Europe, including the San Francisco Symphony, New York Philharmonic, Vienna Philharmonic, London Voices, and the famed InterContemporain Ensemble, among others.² Ligeti’s ability to construct form from small-scale materials lends his music a distinct continuity and style, giving him a unique place apart from other trends in the post-war musical generation.

Born in Hungary in 1923, his early years were beset by the difficulties of being an artist living under the Soviet regime. Following the Hungarian Revolution in 1956 he left Hungary for Western Europe where he truly began his path as a radical innovator of music.³ Soon he became interested in what he called “global composition,” an approach where the total sound became much more important than individual parts or lines. This textural approach to composition resulted in the public listing him with progressive composers such as Iannis Xenakis, Witold Lutosławski, and Krzysztof Penderecki.⁴ He also had strong ties to other leading avant-garde figures such as Pierre Boulez and Karlheinz Stockhausen, which by association seemed to identify him with their systematic approach as well. This did not sit well with the composer,

¹ Some serialist composers such as Pierre Boulez and Karlheinz Stockhausen sought a decisive break with tradition in European music following World War II.
⁴ Phillip Magnuson Sound Patterns, Chapter 48-Texturalism.
however, as Ligeti was against being a slave to systems in his music and did not appreciate being grouped with many of his avant-garde contemporaries who he found to be dogmatic. For example, in his interview with Péter Várnai Ligeti discusses his analysis of Boulez’s *Structures IA*, stating that: “While I found serial music extremely interesting, I realized that it was not for me. I was fascinated by serialism but found it too dogmatic.”

Ligeti’s detailed approach to parameters of music such as dynamics, register, and texture soon influenced his contemporaries’ conception of music, and will likely continue to influence composers for years to come. Although there are many mystifying elements that constitute the “Ligeti sound,” some of his most innovative compositional ideas pertain to the realm of rhythm. Over three distinct stylistic periods, Ligeti’s fascinating approach to rhythm has been influenced by sources ranging from African influences to the player piano music of Conlon Nancarrow to folk rhythms from his own homeland of Hungary. Perhaps his two most recognizable rhythmic features are his *meccanico* music and his later *aksak*-based music, both of which will be discussed in depth later in this essay.

His *meccanico* music is one of the most complex and fascinating concepts of the Twentieth century. This music often consists of a group of instruments repeatedly playing short notes in multiple tempi, usually notated through irregular tuplets. The resultant texture is a sea of metronomic points, creating a disjointed and revolving pattern of sounds rather than a traditional...

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6 For example, his Darmstadt colleagues including Boulez and Stockhausen as well as Mauricio Kagel, Bruno Maderna, and others. He also had many notable students including Martin Bresnick and Michael Daugherty, among others.
7 Steinitz, p. 266-76.
8 For the sake of this discussion, Ligeti’s “middle” period (and association with meccanico music) is defined as his escape from Hungary (1956) to *Le Grande Macabre* (1977). His later works consist of works after *Le Grande Macabre* until his death in 2006.
pulse. It can also be seen in his solo works for keyboard instruments, such as Continuum. In these cases he frequently uses constant streams of repeated pitches to create different pulses through the rhythmic distribution of notes. When talking about his meccanico music, Ligeti frequently references a childhood experience that has played a large role in these specific works:

In the works of Krudy you find again and again a character, a widow whose husband was either a botanist or a meteorologist and has been dead for years. The widow lives alone in a house, mostly in Nyírség, as Krudy’s characters often do, and, another typical feature, she is quite isolated. She would have a house among the dunes which is full of clocks, barometers, hygrometers… One of the stories was about the widow living in a house full of clocks ticking away all the time. The meccanico-type music really originates from reading that story as a five-year-old, on a hot summer afternoon.⁹

His rhythms in his later works feature a different but equally effective approach to rhythm. Rather than fracturing the pulse into smaller and smaller units (and blurring the concept of pulse all together), he worked with additive rhythms that pay homage to Hungary, as well as the music of Central Africa. In these works, there is frequently a constant pulse that has different additive rhythms superimposed over the rhythmic grid. In this sense it is similar to his meccanico music, but on a less complex scale and with a uniting common pulse.

Although these are hallmarks of his style, his music displays many other examples of rhythmic ingenuity that sets his work apart. His vast appetite for music of the past, his own time, and other cultures all helped to fire his insatiable appetite for new forms of expression.

⁹ Várnai, In Conversation with Ligeti, p. 17.
One of the earliest works that demonstrates Ligeti’s interest in unusual rhythmic relationships is his *Polyphonic Etude* of 1943.\(^\text{10}\) This work was one of a few compositions for piano duet that he composed in the early forties and is only a brief two minutes in length. The piece consists of four subjects in four different keys, each entering at asymmetrical times and with subjects of different lengths. These short motor-like devices continue on independently, rising in a crescendo to a final dissonant sonority that seems to be the inevitable result of these perpetual folk-like melodies. Although a far-removed sound world from what Ligeti would cultivate over the next two decades, the automated nature of this study is a clear precursor to the mechanical devices he would employ in his *meccanico* music. Ligeti even refers to another early piece as “two little machines at play.”\(^\text{11}\) Whether or not he consciously incorporated this interest in his music at the age of twenty is unclear. However, his fascination for the idea of “recalcitrant machinery” began long before with his discovery of the short stories of Gyula Krudy.\(^\text{12}\)

Ligeti’s imagination was vast: other anecdotes from his childhood include creating an entire imaginary kingdom that included its own language and geography, or creating different songs for bedtime, brushing his teeth, and other daily activities.\(^\text{13}\) This was naturally reflected in his musical progression as a composer, and his early works such as the *Polyphonic Etude* show an interest in unconventional ideas. Hungary was not the ideal location for an innovate composer searching for new ideas, however, as he was studying with conservative teachers in a country that suppressed modernist tendencies in music. The restrictiveness soon began to chafe on his

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\(^{10}\) Steinitz, p. 42.  
\(^{11}\) Várnai, *In Conversation with Ligeti*, p. 16.  
\(^{12}\) Described in the quote at the top of p. 3.  
\(^{13}\) Steinitz, p. 10.
artistic sensibilities in addition to his personal freedom as the effects of the war started to take their toll.

This came to a head in May of 1944, when he narrowly avoided capture by the Nazis in the city of Nagyvárad. Later that month he discovered that his family had been taken to Auschwitz. Following a series of near-death episodes, Ligeti escaped to Russian-occupied Kolozsvár, which was renamed Cluj following Romania’s repossession of the land. Following the end of the war, Ligeti was able to enroll in the Franz Liszt Academy in Budapest and return to his musical studies. Immediately following the war there was a brief period of artistic freedom in which The Rite of Spring and The Firebird were performed in Hungary in addition to many of Bartók’s major works. After the eviction and extermination of so many artists and musicians, it seemed that artistic times were beginning to brighten.

This was painfully short-lived however, and by 1948 the communist government began to tighten its grip. For the next several years Ligeti was forced to write little to no instrumental music, unless it could be proven to be grounded in folk music. There was a large emphasis on vocal music, cantatas in particular, that had text celebrating the supposed grandeur and benevolence of the state. Although occasionally writing music that pushed the boundaries (and was subsequently rejected by the Soviet compositional review committee), Ligeti stuck to folk-influenced work in a popular style in order to avoid dangerous confrontation with the government. Ligeti was not alone in this regard: Dmitri Shostakovich had years earlier been

14 Steinitz, p. 20.
15 For example, the Sándor Végh Quartet performed all six string quartets, and The Miraculous Mandarin received its first Hungarian staging.
accused of “formalism” for *Lady MacBeth of Mtsensk*¹⁶ and Prokofiev had been censored multiple times by the government and forced to change portions of accepted works.¹⁷

Soon Ligeti learned the value of writing for the bottom drawer, and began composing separate works that he kept private rather than trying to infuse his music for the state with new ideas. An important result of these secret works was his first string quartet, finished in 1954.¹⁸ A stylistic homage to Bartók, it also contains many automated sorts of technical devices such as canonic entrances of subjects similar to his Polyphonic Etude. Although not an example of his later *meccanico* music, the disjunct and mechanical nature of much of the material showed that despite the artistic oppression he was experiencing, his thoughts on rhythm and meter were still evolving out of sight of the public. Two years later, something happened that changed Ligeti’s life forever and launched him into the world that saw the true beginning of his compositional life: on December 13th, 1956 he and his wife Vera escaped across the Hungarian border into Austria.¹⁹

Over the next several years Ligeti experienced countless things his artistic mind had been deprived of. He lived for a time with Karlheinz Stockhausen, with whom he would spend hours discussing the music he had been so effectively cut off from: Serialism, electronic music, the post-war avant-garde; any and all musical happenings since the Second Viennese School. In Cologne, he studied electronic music at the West German Radio with Stockhausen and Gottfried

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¹⁶ Toop, p. 30.
¹⁷ Simon Morrison *The People’s Artist* (Oxford: Oxford University Press, 2009), p. 369. For example, Prokofiev was refused payment for his ballet *The Tale of Stone Flower* until he made significant revisions demanded by the state. *On Guard for Peace* was another work during the same period (around 1950) that was revised following a state injunction.
¹⁹ Steinitz, p. 51.
Michael Koenig. He both attended and gave lectures at the Darmstadt summer courses, and published a thorough (if somewhat scathing) analysis of Boulez’s *Structures I A.* 20 1960 and 1961 saw the respective premieres of *Apparitions* and *Atmosphères.* 21

After meeting John Cage at Darmstadt, Ligeti briefly delved into aspects of the anti-art movement that had begun to gain popularity in Europe. The anti-systematic nature and humor of the ideas of Fluxus appealed to his ironic nature. One of the first personal experiences he had with this was a speech he delivered in 1961.

Ligeti had been asked to take part in a new music forum in Alpbach in August of that year. Each lecturer was asked to talk for ten minutes about the future of their art at the end of the forum. Ligeti naturally found this absurd, as he was not convinced that he or anyone else knew the future of music, although perhaps someone like Stockhausen would have loved this opportunity. As Ligeti recalls, the organizers insisted on his delivering this speech, encouraging him with: “It doesn’t matter what you say.” 22 His decision was to not say a word for the ten minutes, simply writing a few phrases on the chalkboard such as “Please don’t clap or stamp your feet” and “Don’t let yourself be manipulated!” 23 The reaction was predictably one of chaos, and Ligeti was nearly dragged offstage. Although a rather tame experiment in comparison to much of the Fluxus happenings, it connected Ligeti with the anti-art crowd and provided a revitalizing contrast to his more serious compositions.

Another work in this Cage-influenced period was the *Trois Bagetelles* written for David

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20 Steinitz, p. 73-88.  
21 Richart, p. 15,16.  
22 Toop, p. 80.  
23 Steinitz, p. 120.
Tudor, who also premiered John Cage’s famous “silent” work for solo piano.\textsuperscript{24} Although clearly an homage to Cage’s work, only two of the movements are total silence, with the first movement containing a single note. He followed this with a work, \textit{Fragment}, which was a parody of his own work \textit{Apparitions} that had just been accepted for publication by Universal Edition. Although an interesting diversion, these works don’t play a large role in Ligeti’s overall output. Ironically, his final effort in this vein was also to prove to be the true starting point of his \textit{meccanico} music, a work that held both important social and musical implications: \textit{Poème Symphonique}.

Scheduled for the Gaudeamus Music Week in Hilversum, North Holland, \textit{Poème Symphonique} is a large-scale work for 100 mechanical metronomes. The director Walter Maas had ordered all 100 metronomes specifically for the event, without seeming to understand the implications of Ligeti’s request.\textsuperscript{25} The score instructs the performers to wind all metronomes down before performance, and to set them at a variety of speeds between 144 and 50 bpm. They are to be placed on resonant surfaces, with the faster metronomes to the back and the slower to the front. The performers are to set all metronomes off as close to simultaneously as possible, and then the result is to be observed until every single metronome has stopped ticking.\textsuperscript{26}

Naturally, the premiere of this work was shocking to the audience; an intended televised version of the event for the following day was cancelled, and audience members and event organizers alike were furious. However, with the distance of time and a view of what Ligeti would later compose, one can see both the musical worth of this piece and the ramifications it

\textsuperscript{24} Toop, p. 83.
\textsuperscript{25} Toop, p. 84.
\textsuperscript{26} See Ligeti, \textit{Poème Symphonique} (Mainz: Schott and Co. 1962).
had for his upcoming works. Theoretical aspects aside, the work is quite intriguing to listen to. The dense textural mass of the initial moments soon gives way to shifting patterns of resultant rhythms whose values are interesting both from the perspective of the music itself and from the idea that this is a sort of “independent” music that has no human mind governing it. This was a perfect realization of the idea of “unmanageable automata” that so fascinated Ligeti: a series of uncontrollable mechanical devices that created rhythmic entities outside of any control a composer could impose on them. 27 Although there is no documented evidence mentioning it, one can imagine hearing this for the first time must have been a fulfilling moment for Ligeti, and the influence on some of his later works attests to this. An important aspect of this intricate rhythmic web is the equality of all voices; the lack of a central pulse gives the sound a feeling of weightlessness, as if it simply exists in space. This detail is one of the defining differences between his middle period works and later works, and gives clues to the deeper stream of Ligeti’s musical evolution as a whole. This will be discussed in greater detail later in this paper.

The idea of a “granulated continuum,” which he refers to specifically in the Chamber Concerto and achieves without giving specific reference in the Second String quartet, seems to stem directly from this work. 28 In his program notes for Poéme Symphonique, Ligeti describes the continuous sound created by the initial number of metronomes. His description of how as the sound thins-“it gradually becomes possible for complex rhythms to be carved out of the now crumbling sound block” -implies compositional process. 29 Indeed, he later takes this self-generating rhythmic structure and does some carving of his own, resulting in the same powerful

27 Vánai, In Conversation with Ligeti, p.17.
28 Ligeti, Chamber Concerto, p. 67.
29 See Ligeti, Poéme Symphonique (Mainz: Schott and Co. 1962).
sounds but with ability to dictate direction, density, and pacing.

The first work in which Ligeti starts intentionally crafting these dense sound blocks is the third movement of his Second String Quartet (1968). Marked \textit{come un meccanismo di precision}, it is a direct extension of the language discovered in \textit{Poéme}, but with fewer voices and more compositional intent. In the notes, he includes that: “written out accellerandos and rallentandos are approximations” and that the large note groupings: “must be played with no accents whatsoever.” Both of these reflected ideas discovered in the metronome work: the indeterminate relationship of certain rhythms, and the lack of any central pulse in these dense textures.

The work begins with all four instruments playing an A-B dyad in eighth notes. Each “bar” (Ligeti indicates that the baring should not be felt, but includes them for the sake of clarity), the instruments ratchet their tempo up a precise amount. These increasing patterns of tuplets create a smooth written-out accelerando (see Figure 1). The first large section of this movement is characterized by shifting, overlapping tempi coupled with registral juxtaposition. There is a notable use of both continuous development and sudden change, and this is where a large distinction from \textit{Poéme Symphonique} is seen. By nature, the metronome work only contains continuous sources of development: rhythmic patterns will slowly emerge, develop, and fade away, and pitch is not a factor. In the string quartet, he makes use of these same ideas of metamorphosis (accelerating chains of rhythmic units, microtonal inflections and glissandi) but contrasts them against sudden change. For example, his dynamic changes throughout this movement are frequently subito.

\footnote{For all following references to this work, see Ligeti \textit{String Quartet no. 2} (Mainz: Schott and Co. 1968).}
These dynamic shifts are often accompanied by sudden changes in register and tempo.

Another interesting aspect of this work that resurfaces in later music is the creation of distinct rhythmic layers through accentuation. In bar 10, the viola’s sudden decrease in tempo and movement to high register are paired with a drastic increase in volume. This septuplet immediately becomes the rhythmic foreground, a distinct difference from the homogeneity of the first nine bars. This is another important difference from the metronome piece; the nature of the metronomes do not allow for dynamic variation and therefore necessitate a balanced volume level, whereas in this work different rhythmic values can hold varying places of importance in the texture. Each additional instrument makes a similar registral/dynamic leap, each taking a place of importance in the listener’s ear in turn. The cello’s snap pizzicato in bar 12 marks a sudden end to this quality and the texture returns to its earlier consistency.

The direct influence of his childhood (and adult) fascination with automata cannot be underestimated. This meccanico movement of the second string quartet is exactly that: a well ticking machine at first, it slowly breaks down more and more until it is nearly defunct. This is achieved by a reverse process of the beginning: The tempo slows through decreasing tuplets,
until all four instruments have returned to a rhythmic unison. Each instrument drops out in turn until only cello is left, then it too fades into nothing. Although there is an attempt to restore order at the end, things do not feel like they are quite back to where they used to be. This movement also reflects his childhood a great deal because in addition to its unmistakable musical effectiveness, it’s also innately playful in nature. These ticking mechanisms are the essence of Ligeti’s musical machinery.

An important aspect of this quartet is its discreet connection to tradition. It is his first instrumental work in more than two movements, and its five movement form seems to have some similarity to the form of Bartók’s middle quartets, although not in true arch form. He himself states that: “the entire string quartet tradition from Beethoven to Webern is there somewhere, even sonata form, although only like an immured corpse.” 31 By this Ligeti is discussing his oblique use of traditional aspects of music. He firmly believed that returning to the past was a dead end, but he enjoyed the idea of putting influences from tradition just below the surface, or even using more obvious references in ironic ways. 32 Ligeti’s relationship to tradition became more defined in the late seventies, and indeed this seems to play one of the major roles in his stylistic evolution.

It should be noted that despite the exclusion of his other important works from this discussion, his approach to rhythm was greatly reflected in other aspects of his music during this period. His honing of “micropolyphony” was quite similar in genesis. Rather than blurring the clarity of pulse and rhythm, he was blurring the edges of sonorities and sound worlds. Works

31 Toop, p. 130.
32 Várnai, In Conversation with Ligeti, p. 32.
such as the *Requiem* (1965) and *Lontano* (1967) made use of massive forces that would create complex sound worlds: traditional aspects of melody and harmony (paralleled in this discussion by pulse and rhythm) were substituted with shifting spectral palettes and malleable textural devices. Both his rhythmic and pitch treatment abolished convention and created a self-contained world that seems to simply float in space.

The year 1969 saw the completion of both *Ramifications* and the organ study *Coulée*. During this time the so-called avant-garde was in turmoil: Stockhausen’s new mystic attitude infuriated the post-war crowd, his friendship with Boulez had gone cold, the German Helmut Lachenmann had steered away from the serial movement of the period, and even Serialism itself was under scrutiny. Ligeti’s constant aloofness from the ideologies of the Darmstadt group, however, helped him cultivate his most important piece of the period, one that would prove to be a turning point from extreme chromaticism and abstract rhythmic formations towards his style that began to crystallize at the end of the following decade.

**The Chamber Concerto (1970)**

Ligeti’s Chamber Concerto for 13 Instruments is well known for being a refined summary of all techniques in his middle period. Although each movement deserves an in-depth look, the third movement is by far the most rhythmically interesting and the greatest demonstration of the flexibility of his fragmentary rhythmic approach of this period. An example of his *meccanico* music, it displays varied technical devices derived from the single technique. In this work, he uses repetition of notes at varying speeds throughout different members of the ensemble, fragmenting the pulse and creating extreme polytempic effects. This appears in a variety of textures and instrumentation, but creates the fundamental basis for the entire
movement and can be explained as follows: each texture in this movement is created through multiple rhythmic layers superimposed over each other at different densities, destroying any traditional sense of pulse. This will be explained more in depth after the movement itself has been examined.

In the opening section (see Fig. 2), Ligeti creates two levels of rhythmic activity that unfold simultaneously. The movement opens with the winds in rapid 32\textsuperscript{nd} notes, entering and dropping out individually, creating a kaleidoscopic collection of staccato repetitions.\(^{33}\)

The individual statement of each note becomes less perceivable, and eventually the ear

\[\text{Movimento preciso e meccanico}\]

(Figure 2) Top: the opening bars of the movement. Bottom: a rhythmic reduction of the rhythmic structure superimposed over the 32\textsuperscript{nd} note grid via sforzando entrances.

\(^{33}\) For all references to this work, see Ligeti \textit{Chamber Concerto} (Mainz: Schott and Co. 1970).
begins to hear what Ligeti refers to as a “granulated continuum,” where pitches come and go so quickly that the ear begins to hear them as part of a larger unit. Each instrument follows a pitch sequence in a sort of canon that is not strictly rhythmic but that allows the narrow pitch collection to unfold slowly so that a chromatic cluster is developed throughout these six voices. Although the entrances are not at a fixed durational interval, each instrument follows through the entire sequence of notes before the next section arrives.

The sequence of notes is E, F, E flat, D, F sharp, E, C sharp, C, and can be seen initially in the first clarinet part, followed by flute, then second clarinet, then oboe, etc. Instruments begin to play irregular groupings of nine and seven, abandoning the grid-based feel of the opening. In addition to this, Ligeti superimposes a rhythmic structure on top of the turmoil by emphasizing the attack of each instrument returning to the texture. Every time a player drops out during this section, their return is marked by a sforzando attack immediately followed by a pianissimo marking. These entrances create easily heard rhythmic values over the otherwise continuous flow of sound, giving the distinct impression of this rhythmic pattern existing on its own level (demonstrated by the reduction in Figure 2). Eventually strings are added using this same technique, and the winds are filtered out. The rate of the repetitions slow until one can hear each individual note and begin to perceive the polyrhythmic nature of the continuum.

The following section (beginning at measure 12) employs the entire ensemble in indeterminate repetitions of a single pitch, A flat. In contrast to the narrow register of the previous section, it is spread out across three octaves of A flat. As this section evolves, a majority of the instruments slowly glissando downwards in pitch, or in the case of winds and piano, slowly move down by half step. Viola, horn, and bass employ the same technique but moving upwards, slowly condensing back into a narrower range.
Here is another example of the granulated continuum concept, but, due to the indeterminate repetitions, yields a much more continuous sound, rather than the grid-like mechanisms of the previous section (see Figure 3).

This texture recurs later in the work, treated as a background to other events. Beginning with double bass and followed by the rest of the strings, the listener is transported to the third section by way of aggressive snap pizzicati (as if “torn”, Ligeti indicates in the score). Each string player has its own repeating pitch that contributes to the mass of sound; almost as if each instrument were playing quarter notes at different tempi (see Figure 4). Each successive entrance (every player plays at least two separate rhythmic groups) is brought to the fore more than the last, so that each entrance is perceptible and raises the intensity of this disorienting section. The final two entrances belong to the keyboard instruments, whose dense clusters (presented at quintuplets and sextuplets respectively) combine to form a total aggregate, and whose jarring repetition flows seamlessly into a lithe transitory moment in the strings.

This nine-second transition consists of plucked strings arpeggiating as rapidly as possible, creating yet another granular continuum, but this time with only the warm timbre of pizzicato.

(Figure 3) These indeterminate repetitions are played as fast as possible by the entire ensemble, creating a smooth granular sound.
strings. At measure 42, the listener experiences a soft, thinner polytempic section that only consists of four layers of low voices. This sets up for what would be considered the “climax” (although it seems doubtful that Ligeti would have thought of it in this way) of the work in terms of density, register, and dynamics.

At rehearsal marking 46 every instrument except for the four highest strings (which are continuing their arpeggiated figure) abruptly enters at fortissimo, each part with “extremely short and pointed” repetitions at its own tempo. These are not tempos notated with a tempo marking in the traditional sense, but as repeating figures notated through use of irregular tuplets. For example, the oboe has groupings of seven with a note on every third septuplet, causing it to recur on the beat every three beats. To add to this proverbial hailstorm of sharp repetitions, the woodwinds are scored in a chromatic cluster (E-F-F sharp-G). Although they have no fluctuation in dynamics, the ear can hear different patterns emerging through the resultant rhythms created by the figures in this moment. Beneath the shrill woodwinds, the strings re-enter to create even more tempic dissonance, again “as if torn.” Ligeti’s decision to abstain from the more distinct sound of a Bartók pizzicato seems to imply that despite the extreme separation and shortness of each individual line he once again evokes a sound in which the parts were not distinguishable,
but where a greater global sound can be heard. Slowly, all parts are filtered out until only the
shrill whistle of the piccolo and the four highest strings remain. The piccolo too drops out for a
brief moment of pizzicato polyrhythm from the strings before the final bars. The final moments
of the movement consist of only three pitches: D, D flat and E flat (and their enharmonic
equivalents). These are seen as soft trills in the woodwinds, and savagely articulated dyads in the
rest of the ensemble. The celesta gives the final D flat-E flat dyad, signaling the cut-off of the
trilling woodwinds and ending the movement.

This movement has polished examples of some of Ligeti’s most recognizable
characteristics: detailed attention to register, extreme dynamic contrast (as well as much more
subtle dynamic coloration), selective use of timbre, and other defining characteristics. Perhaps
what is most interesting is the consistency of articulation and rhythm in this movement. Given, it
is only one movement of a four movement work, but with the exception of four bars, the entire
work is staccato with very short note durations. This is not a criticism, for it works perfectly and
never once loses its effectiveness throughout the movement. Ligeti once again shows that his
imaginative pairing of different musical parameters and approach to musical strata can continue
to keep his material constantly fresh.

The fascinating rhythmic combinations of this work can be boiled down to one concept:
superimposition of multiple tempi with no central pulse, to be heard as a single sound. How these
superimpositions and tempic dissonance appear are not in fixed ways but on a continuum: At one
end lies complete saturation of rhythmic density, and at the other lies the most minimal rhythmic
iterations possible. This concept is important in understanding both the continuity of Ligeti’s
meccanico works and how he can achieve so many different possible configurations based on
this approach.
One can see the varying uses of rhythmic superimposition throughout the piece; for example, bar 12 consists of every instrument playing indeterminately, creating a granular sound. This is on the denser end of the spectrum, although ironically the greater amount of notes, the more sustained the overall sound is perceived. On the surface this may seem quite different from measure 46; however, the same basic principles apply. The meticulously notated polyrhythms serve to destroy a common pulse in the same way that the indeterminate repetitions near the beginning do. Although towards the sparser end of the rhythmic spectrum, it still retains the tempic dissonance of the early sections.

Turning to measure 42, one can see the indeterminate approach in the higher strings acting as a background to the “larger-grained” polytempic material of the piano, bass, trombone, and horn. Their simultaneous appearance makes plain how different these two resulting sounds are, despite their similar source concept. The distinguishable rhythmic interaction of the low voices is heard over the softer imperceptible rhythmic density. The composer’s ability to stack already-layered textures on top of each other is key to his generation of material and to the continuity of his music. This is an important theme that continues throughout the rest of Ligeti’s life, and will be discussed later in regards to his output towards the end of the century.

Upon first observation, the final seven bars may appear to invalidate the claim of this piece’s conceptual continuity. With closer inspection, however, one can see the same essential components. The distance between these dyads is simply a demonstration of the sparsest use of the repetitions. The pitch content (D flat-E flat) is unchanged, and the duration between each note creates near-repetition, although there is a slight increase in duration between notes as the final bars come to a close.
Despite its complexity in terms of texture, rhythmic activity, and dynamic and registral contrast, this work is extremely unified in terms of its conception. This is a hallmark of Ligeti’s approach, although it is not always easy to perceive at the surface level. In fact, Ligeti’s love for obscurity and ambiguity amplifies the fact that he enjoyed having this level of depth. It is not likely that he would have ever operated in a manner where his ultimate goals in a musical work were highly visible; he preferred deception and illusion, like the “misty” nature of his harmonies and rhythms.\footnote{Häusler,  \textit{In Conversation with Ligeti}, p. 58.} This work can be seen as a summary of his most characteristic techniques developed in the previous decade. Ligeti’s constant desire to search for new ideas made this time in his career a turning point as well: he felt that he had used total chromaticism to its full extent, and as a result began moving in a different direction in terms of harmony and melody as well as rhythm.\footnote{Várnai,  \textit{In Conversation with Ligeti}, p. 30.}

The music of the following years was characterized by a return to melody and an increasing influence of earlier music. To understand this change in sound, one must understand the nature of his influences of this time. During the early 1970s he taught a number of different composition and analysis courses across Europe. In 1972 he traveled to America for the first time for a residency at Stanford University. Here he met John Chowning, a pioneering electronic musician who discovered Frequency Modulation synthesis and whose ideas largely influenced Ligeti.\footnote{Steinitz, p. 191.} It was here that he was first introduced to minimalism. Shortly thereafter he met Steve Reich in Berlin.\footnote{Steinitz, p. 190.} The influence of the American minimalists is fairly obvious in some of his following works, including the reference in the title \textit{Self-portrait with Reich and Riley (and...}
Chopin in the background).

1977 saw the completion of his only opera, *Le Grande Macabre*, which made a marked turn from his avant-garde associations in its use of pastiche, serious and humorous references to music of the past, and clear melodies. Despite its success, the opera’s location in Ligeti’s output caused a creative stall for the rest of the decade. Feeling that he had worn many of his earlier ideas out and already dissatisfied with some of the new techniques employed in the opera, he was unsure in what stylistic direction to proceed. He began sketching a Piano Concerto, but with little to no luck. The one exception to this quiet period came in 1978 when he published two harpsichord works, one of which was a rhythmically intriguing work titled *Hungarian Rock*.

A decade earlier Ligeti had demonstrated his own approach to the stylistic difficulties of the instrument with *Continuum*. Many composers found the instrument’s perceived “monotony and inexpressiveness of sound” not worth consideration, as well as the difficulty of creating a contemporary voice for the instrument, but Ligeti’s use of the harpsichord sparked interest in many of his colleagues following the 1968 premiere of *Continuum*. In an article on the idea of the modern harpsichord, harpsichordist Jane Chapman comments: “Modern harpsichord repertoire has to move away from association with the past - unless the material is carefully handled - otherwise a half-hearted, insincere, in-between, safe kind of music can arise.”

Ligeti’s answer to this is in *Hungarian Rock* is interesting: he employs a formal structure appropriate to the harpsichord’s historical period—a Chaconne—but utilizes modern pitch content and an almost rock-like rhythmic foundation.

39 Chapman, p. 547.
The most important aspect of *Hungarian Rock* with regards to the coming decade is its construction based on a repeating rhythmic pattern. This short work is a Chaconne, the repeated sequence being based on an additive rhythmic grouping of (in eighth notes) 2+2+3+2. This was the first major emergence of a work being driven by a strong pulse, which would soon play a large role in Ligeti’s coming works, particularly for piano. The bass line continues non-stop, providing a solid point of reference against a quirky, almost unrelated right-hand melody. The melody becomes consistently faster and with thicker pitch content, building up to a high point in which tempo suddenly vanishes. The final eight bars consist of a slow rubato melody over held chords, making up the final minute and a half of the five minute work.

Both the title and the spirit of this work show a renewed interest in the culture of his homeland. The perpetual motion up to a cluster-like high point seems reminiscent of the early *Polyphonic Etude*; whether or not he consciously invoked it, it displays the same type of Hungarian character. He had made one trip to Hungary in 1970 to judge a competition (his first visit since the departure of 1956), but the more satisfying homecoming occurred in November of 1979, when a festival of his music was held in Budapest.⁴⁰ Ligeti made the journey and reconnected with local musicians, his homeland, and his musical roots. This seems to have assured the composer that his rekindled interest in the past was the right direction to head in. Interestingly, this fascination with the past and with national identity also pushed Ligeti further from the avant-garde circle’s ideologies. His love for Romantic-era music played a large role in his *Horn Trio* of 1982, and it unsurprisingly put him squarely opposite the avant-garde. His stance was heavily criticized by his contemporaries, and Helmut Lachenmann publicly spoke out

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⁴⁰Steinitz, p. 250.
against him in Hamburg.\textsuperscript{41}

Despite his relative absence from the public eye following his opera, Ligeti had been formulating ideas and absorbing a considerable number of disparate influences. Some were previous influences rediscovered, such as early music from the Western tradition, or discoveries in separate fields, such as the sciences. Others were new, like the music he experienced from the tribes of Central Africa. Another of these new interests, an American composer living in Mexico named Conlon Nancarrow, attracted Ligeti’s attention in 1980.

Nancarrow was a reclusive refugee from the post-World War II anti-communist wave that had migrated to Mexico City. Here he was creating studies for player piano that existed far outside the bounds of any possible human means. Between 1950 and 1968 Nancarrow cultivated this rhythmically complex, polystylistic approach and created the main body of his works.\textsuperscript{42} In the 1970s scores and recordings of his music began to be published, and in 1980 Ligeti happened to purchase a record of some of his player piano works in a record shop in Paris.\textsuperscript{43} These ranged from highly polyrhythmic explorations to ragtime to mathematically conceived structures. The complex and mechanical nature of these works fascinated Ligeti, and indeed two years later Ligeti managed to persuade the host of a music festival to invite Nancarrow as a guest artist. Ligeti stated in a \textit{New York Times} article about Nancarrow that: “the music of Nancarrow is so utterly original, enjoyable, constructive, and at the same time emotional. For me, it is the best music by any living composer of today.”\textsuperscript{44}

\textsuperscript{41} Steinitz, p. 251.
\textsuperscript{42} Ji Won Baik \textit{György Ligeti’s Piano Études: A polyrhythmic study} (Tallahassee: Florida State University, 2009 [Doctoral Thesis]), p. 23.
\textsuperscript{43} Steinitz, p. 269.
Nancarrow’s work and helped expose his music to wider and wider circles of composers and critics.

Another interest of the period was music of the *ars subtilior*. The complex fourteenth century style’s extreme syncopation and complex canons seem to have fallen by the wayside until the middle of the twentieth century, when many new editions of Medieval and Renaissance music were being published. Although Ligeti had a long-standing interest in music of this period, new collections of work allowed him to study it in greater depth.

The third and possibly most powerful influence pertaining to rhythm was the music of Central Africa. During this time Ligeti was teaching composition seminars in Hamburg, and two of his students, Roberto Sierra and Manfred Stahnke, were quite knowledgeable in regards to non-Western music and had access to hard-to-find recordings. The polyphonic music of the Banda-Linda tribe in particular was completely new and inspiring to Ligeti’s ear. What Ligeti loved about this music was its rhythmic depth, its constant grounding pulse with different polyrhythms constructed on top of it. His own words describe this best:

> A completely different metric ambiguity occurs in African music. Here there are no measures in the European sense, but instead two rhythmic levels: a ground layer of fast, even pulsations, which are not counted as such but rather felt, and a superimposed, upper layer of occasionally symmetrical, but more often

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45 Steinitz, p. 267.

Particular composers of interest to Ligeti included Machaut, Ciconia, (slightly before the *ars subtilior*) and the complex and experimental nature of the *ars subtilior* composers like Senleches and Rodericus.

46 Toop, p. 185.
asymmetrical patterns of varying length.\textsuperscript{47}

Ligeti actually later contributed a preface to the Israeli musicologist Simha Arom’s \textit{Polyphonies et polyrhythmmes instrumentals d’Afrique Centrale}, explaining the “proximity” between this style of music and his own way of musical thinking.\textsuperscript{48} This material so vastly removed from the everyday music of the Western world continued to provide stimulation to Ligeti for the rest of his life.

In addition to these musical influences, new discoveries in the sciences and mathematics absorbed Ligeti’s interest, as well. His acquaintance, Manfred Eigen, who had previously done pioneering work in high-speed chemical reactions showed him computer-generated fractal pictures from the University of Bremen. New studies in order and disorder (already a favored musical topic of the composer) began to take off and the science of Chaos Theory became hugely important.\textsuperscript{49} A quote by the British mathematician Ian Stewart on Chaos Theory seems to touch eerily close to Ligeti’s own approach to music; “Chaos is apparently complicated, apparently patternless behavior that actually has a simple, deterministic explanation.”\textsuperscript{50} Although Ligeti was not conscious of this field in 1969, the complex surface level of the \textit{Chamber Concerto} and its derivation from a simple concept fits this explanation neatly.

It was in this highly-stimulated mindset that Ligeti completed his first book of etudes for solo piano. Premiered over the course of three concerts in 1985, the work consists of six pieces. Each work is quite different but displays his most recent influences in a variety of ways. The most important for the discussion of the new musical aspects is his approach to rhythm and

\textsuperscript{48} Toop, p. 185.
\textsuperscript{49} For further reading see Manfred Schroeder \textit{Fractals, Chaos, Power Laws} (New York: W.H. Freeman, 1991).
\textsuperscript{50} Steinitz, p. 273-74.
pulse. Drawing from the *aksak* rhythms of his native Hungary, Ligeti began to create a strongly pulsed music with shifting accentuation.

The concept of the *aksak* rhythm is not a new one: writings from as early as the Fourth century BC identify this strange Balkan rhythm. Musicologists beginning with Bartók in the first decade of the twentieth century started to investigate these unique rhythmic structures. They consist of additive groups of note-values such as three/two/two, which happens to be one of the most common forms of the *aksak* rhythm. These small groupings of rhythmic cells are frequently interchanged, resulting in an unpredictable chain of accented groupings. Ligeti’s love for chaos and unpredictability, his search for a new musical idiom, and his renewed interest in folk music all made this rhythmic realm ideal for his new experiments.

The first etude in his new collection of works, *Désordre*, is a prime example of this. The work begins with accented groupings of three, five, three, five, five, three, and seven/eight. On the grouping of seven/eight, the right hand plays a grouping of seven, and the left hand plays a grouping of eight. The entire pattern is repeated but this time with the left hand one eight note behind the right hand, causing an eighth note delay in accentuation (see Figure 5). This entire process occurs again, causing a two eighth note delay. In this way an apparent transition from chaos to disorder occurs, a notion reinforced by the work’s title (in English: *Disorder*). Clearly the composer’s love for uneven patterns is still present, but this time as a way to reinforce allocation of pulse rather than destroy it. All of these pattern-based occurrences are happening on

52 Fracile, p. 200.
53 For all references to *Désordre*, see Ligeti, *Études pour piano, premier livre* (Mainz: Schott and Co. 1985).
an eighth note grid, rather than his music from earlier decades where moments of rhythmic
dissonance occur in-between the basic pulse units. This gradual dislocation reappears in the
piano concerto, and this interesting connection will be discussed later.

(Figure 5) The opening bars of Désordre. Ligeti includes dotted lines to show the delay between the
two hands, as well as offsetting the solid bar lines to show this.

Another work from this book that demonstrates the use of aksak patterns is Fanfares.

Based on a recurring three/two/three pattern, the work makes use of triadic figures that pass by at
high speeds. As part of Ligeti’s new approach to tonality, he is using traditional chord figures
juxtaposed in unexpected ways against a moving line. The moto perpetuo line is unceasing
throughout the entire piece, and even retaining the same three/two/three grouping (see fig. 6).

(Figure 6) One of the most basic examples of Ligeti’s use of aksak rhythms, from Fanfares.

The foreground line occasionally blurs the divisions, creating different perceived groupings
above the running line, but the driving accentuation of the aksak remains undeterred until the
final two chords. This concept of perpetual motion plays an important role in the first, third, and
fifth movements of the piano concerto, as well as the second book of etudes. Although in a much
different manner than his works of the decades previous, the listener can still hear machines at
play throughout different moments of Ligeti’s compositions.

The Piano Concerto (1988)

Throughout this entire compositional period of the etudes, and including the Horn Trio, Ligeti had been sketching ideas for a piano concerto. Although he first approached the idea in 1980, it was several years before he was able to find a path down which to move forward. In 1986 three movements were complete, and it received a premiere performance in Graz with Anthony di Bonaventura on piano and his brother Mario conducting. This was well received, but Ligeti felt that the form was imbalanced and incomplete. Over the following two years he completed two more movements, and in February of 1988 it was performed in its entirety by the same sibling duo in Austria. This work is still a landmark in Ligeti’s later career, and is by far one of his most well-known creations.

A staple of the composer’s later output, the Piano Concerto embodies both Ligeti’s stratified textural approach and his rigorous control over fundamental musical building blocks. It is a great measuring stick of his personal evolution when seen in light of the Chamber Concerto. Both works have similar instrumentation, similar ensemble size, and in both cases an inclination towards virtuosity. Despite their clear differences, they also have many similar musical qualities, which will be discussed shortly. For the sake of clarity this discussion will be limited to the first movement of the Piano Concerto.

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54 Richart, p. 31.
The greatest difference in these two works is their conception of rhythm. In the Chamber Concerto the pulse is an imaginary entity, given for the conductor to synchronize the ensemble. It plays no role in the function of the music itself. In the Piano Concerto, the pulse is the lifeblood of the entire movement. There is one rhythmic grouping that underlies almost the entire work, and in eighth note groupings it can be seen as 3+3+2+3+3+4+2+2+2+2+4+2+2+2. This pulse-based conception of rhythm opens doors to several traditional concepts such as syncopation, polyrhythm, and direct and indirect relation to the “groove.” For a majority of this movement, he employs several different levels of rhythms existing simultaneously, much like the Chamber Concerto, but the rhythmic foundation that is provided places everything else in a context that is based on the pulse-pattern.

The first three sections of this movement are constructed based off of increasing repetitions of the pattern: the first section is eleven repetitions of the pattern, the second is thirteen, and the third is fifteen. In each of these sections, different mixed consorts identify with different levels of rhythmic activity. In keeping with Ligeti’s fluid treatment of texture, however, some instruments fluctuate between different groupings. The most driving of these groups is piano and percussion, which for a large part carry the underlying aksak sequence described above.

The movement opens with piano and percussion providing the rhythmic foundation of the work, given in eighth notes in a 12/8 time signature. The percussion is not playing the rhythm with the piano in toto, but aligning with accents in the piano part. Above this is a syncopated construction of pizzicato string notes (all strings but bass), given in 4/4. An interesting

55 For all references to this work, see Ligeti, Piano Concerto (Mainz: Schott and Co. 1988).
observation that can be drawn from these simultaneous time signatures is how this work is felt in a metrical sense: the rhythmic implications of these metrical frames can be felt throughout the movement.

Although simple, this initial section is clearly stratified; first in two layers, then at measure 13 in three. The third group is woodwinds, and their horizontal legato line is a hemiola figure based on dotted eighth notes in 4/4, creating another sense of syncopation over the piano/percussion foundation. The fourth group arrives at letter C, and in its first iteration is solo horn with wide, expressive intervals in an a-periodic rhythm; a largely lyrical role that contrasts the repetitive nature of the other parts. These four rhythmic entities make up almost the entire movement, with few exceptions. One such outlier is eighth note ostinati (in 4/4), which appear first in high woodwinds and, later, in strings. However, this can be seen as a variation or “filling-out” of the syncopated string figures seen at the beginning of the movement: Ligeti’s tendency to develop larger concepts out of small molecular structures speaks to this. The first section culminates in a piano and percussion climax in the upper register of the former, instantly giving way to a single cycle through the rhythmic pattern in the lowest register of the piano. This transitory moment then takes the listener into the second large section (letter F in the score), defined by the piano’s metrical switch to 4/4.

At this sudden metrical shift, the piano continues on at a rapid speed, but this time in 4/4, with the bassoon taking over the aksak pattern. The bassoon is soon joined by flute, clarinet, and percussion, and the rhythm maintains its importance in the overall texture. However, the rest of the orchestra is imbued with all four rhythmic structures at once, and the aksak is passed around between different members of the orchestra, pushed to the background, but never quite out of sight. The texture thins with the dense sounds of the orchestra diminishing into silence, leaving
piano and percussion, the piano returning to the rhythmic foundation and the percussion performing the initial syncopated role based on quarter note values. Ligeti quickly brings back a dense texture utilizing all of the previous rhythmic possibilities, this time with rhythmic

![Musical notation](image-url)

(Figures 7-10) The four motives of the Piano Concerto, from top: The *aksak* rhythm in percussion and piano (12/8), the syncopated string gesture (4/4), the expressivo horn line (4/4), and the hemiola dotted eighth figure (4/4).

go groupings spread across instrument families, creating a dense layer of syncopation over the ground provided by piano and percussion. After a total of thirteen repetitions of the *aksak,*
extremely heavy pizzicati (reminiscent of moments from the Chamber Concerto), lead to another explosive focal point that results in a soft piano/percussion moment.

The following section begins again with ten bars of piano and percussion but with a twist: the piano is now displaying a different aksak rhythm in eighth notes based on 4/4. This results in a slower piano version of the stumbling rhythms, its legato style creating a cascading background figure. The percussion continues on with the original underlying aksak pattern; here Ligeti is varying one of his basic musical layers and pitting them against each other, as if it is an ordered system headed for chaos. During this brief ritornello in measure 64, the two hands of the piano become offset by an eighth note, similar to Désordre. This creates yet another level of interaction, making three distinct roles based on a single rhythmic concept simply happening at different speeds and locations. Here the original aksak concept begins to splinter into multiple possibilities, reflecting in many ways the fragmentary variations of a single concept employed in the Chamber Concerto.

Piccolo soon replaces the percussion, and for the first time the original aksak takes a prominent foreground role as clarinet and high strings join at bar 76. Following a short segment of the expressive horn line, all voices join with an aksak variation, demonstrating Ligeti’s ability to develop a major section of the work exclusively from one of the original rhythmic layers. Even the constant streams in the piano work stem from a visibly aksak-based structure imposed by the accented chords. This moment gives validity to the large-scale importance of the original aksak: not only does it underlie the whole movement, it is varied and used to create an extremely effective high point of polyphony without needing any of the other rhythmic structures employed throughout the work.
The following section dissolves into a few bars of solo piano. This again uses the offset aksak of Désordre, with a rhythmic pattern of 3+2+3+4+3+2+2+2+4 and the left hand offset by an eighth note. It avoids heavy accentuation (similar to the beginning of the previous section) which creates a smoother feel and less tension than the strongly accented character of the beginning. This is met with a section of this new rhythmic sequence (3+2+3+4) but in 4/4 based eighth notes from the woodwinds and strings. The rest of the work consists of all instruments on either a 4/4 based or 12/8 based aksak pattern (many switch back and forth between the two), creating a thick contrapuntal texture of these repeating patterns. In the final five bars the strings revert to the hemiola figure (in 4/4), culminating in a jarring final sonority that decrescendos into silence as the piano sweeps chromatically upward to a sudden break, leaving only a low double bass. This signals the end of the movement.

One of the most powerful things that Ligeti achieves rhythmically in this movement is the variety created through the aksak. For any given combination of the rhythmic cells (2, 3, 4), it can exist in 4/4 eighth note values, or in 12/8 eighth note values. As these signatures are treated with similar large-beat values rather than similar eighth note values, the 12/8 eighth notes have a 3:2 value against the 4/4 eight notes. This is only one way in which he varies this technique. He also frequently displaces the same rhythm by an eighth note (or in some cases three or four eighth notes), will superimpose different aksak groupings over each other, or in many cases will use a combination of these means. More importantly, any of the displacement or note-grouping variation techniques can also be used at the “other” note-value level, essentially taking any of

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56 For the sake of clarity, any rhythm referenced as “4/4 based” means eighth notes derived from 4/4 (therefore eight eighth notes to a bar) and “12/8 based” meaning derived from 12/8 (therefore 12 eighth notes to a bar).
these variations from 4/4 eighth notes to 12/8 eighth notes and vice versa. The striking similarity to the third movement of the *Chamber Concerto* in this regard is unmistakable. Each work is largely rooted in a single technique that has an unlimited potential for variation on multiple levels. This connection will be explored momentarily.

The formal structure of this movement is, in typical Ligeti fashion, constructed of layers of different meanings and concepts. On one level, it is clearly divided into the groups discussed above on a basis of dynamic and registral direction and expression (bars 1-28, 28-61, 61-97, 97-129). However there is a more continuous arc based on the concept of order and disorder, which has two elements working in different directions.

The first element is that of motivic deployment and unity (or lack thereof). The beginning of the work quickly displays several motivic ideas, and by bar 22 every idea that is used in the movement has entered the texture. These ideas are used in a very stratified manner at first, where each instrument typically sticks to its own basic motive. As the piece progresses however, the hemiola figure is seen less and less, as is the expressive horn line. After bar 61, even the syncopated 4/4 figure (first seen in the strings during the opening bars of the piece) melds into the *aksak* concept, taking on the irregular groupings of the piano part but in 4/4. By the final section of the movement, the entire texture is saturated with the *aksak* motive as the work closes. From the standpoint of order and disorder (which was something that was surely never far from Ligeti’s mind), it makes an overall transition from motivic disorder to order, resulting in the unified motivic system of the closing.

The second element is that of rhythmic disorder (or displacement). The piece begins with each motive in a pure statement of its identity. The texture is clear, and any motive that is
doubled is in exact rhythmic unison, making it easy to detect each different idea. The relatively static role of each instrument at this time helps as well: the piano and percussion remain with the aksak, the strings remain on plucked syncopated eighths, and the winds play the hemiola figure. As the piece progresses, certain instruments begin to trade off roles, with percussion and bassoon at times taking the rhythmic pattern while the piano moves to an elaborated version. At measure 61, one begins to see overlap and dislocation: the percussion continues on with the original rhythmic pattern, whereas the piano takes the slightly slower 4/4 based variation. Three bars later, the left hand becomes dislocated backwards by an eighth note, creating a tight canon with the right hand. This results in three different processes; the right hand sequence, the left hand sequence (these are offset but both 4/4 based), and the original rhythmic pattern in 12/8 based rhythm. As high woodwinds take over the aksak pattern, the percussion begins interjecting short fragments of the 12/8 version of the rhythm. Towards the end of the work (beginning at m. 103) instruments begin to canonize different versions of the aksak, with some voices in different eighth note values. The final bars are saturated with displaced examples of the persistent rhythmic motive, culminating with a sudden decrescendo leaving only bass.

It should not be assumed that, due to these underlying processes, there are no exceptions to this rule or that the gradual consolidation of motivic material means that once one motive disappears from the texture it is gone forever. On the contrary, certain parts are quite “regressive” in regards to the claim of increasing displacement of rhythmic patterns. The same can be said for the transition from motivic order to disorder: many ritornello-like moments in the music display only a single motive, only to return to a more complex texture seconds later. What is important, however, is that the overall transition of these elements is unmistakable. Ligeti had already demonstrated in Désordre the possibilities of chaos spinning out of slight variations in
initial conditions, and that he was consciously conceiving of this in a similar vein is clear. The nature of these multiple processes unfolding in a chaotic manner is not far removed from the house of clocks a much younger Ligeti once read about on a hot summer day.

Ligeti’s career did not end here: in the following decade he completed a set of madrigals for the King’s Singers, a five movement concerto for violin, a viola sonata, and two more books of etudes. The end of the decade saw a concerto for four natural horns, the *Hamburg Concerto*, and a difficult beginning of a long and arduous recording project of Ligeti’s works. In 2000, he completed the song cycle for percussion quartet and mezzo-soprano *Síppal, dobbal, nádihegedüvel*. In 2001 he travelled to Japan, where he was presented with the Kyoto Prize for Arts and Philosophy, one of the highest honors possible in that nation. The next couple years he spent contemplating the possibilities of an opera based on Lewis Carroll’s *Through the Looking Glass*, but never really got the project off the ground. By this time, however, Ligeti was more and more frequently plagued with medical problems that prevented him from attending to his work. On June 12, 2006, Ligeti passed away in Vienna.

By the time of his death, Ligeti’s music was already widely popular in contemporary circles, exemplified by the monumental and financially demanding recording project that occupied much of the last decade of his life. However, in the years since his death the appeal of his music has done nothing but grow in many different circles of the musical community. A simple glance at his publisher’s website shows over twenty performances of his works in the

57 Toop, p. 210-222.
58 Steinitz, p. 361-62.
coming two weeks at the time of this article’s composition.\textsuperscript{60} There are certainly outside factors that would influence this fact, such as orchestral/ensemble politics, a growing movement in support of new music, and the general greater public visibility of his music of late, among other things. However, the attractiveness of his works stems by and large from the basic qualities of their compositional nature, and from the wide variety of his work.

Perhaps the most striking contrast of Ligeti’s middle period works and his late period works lies in the concept of pulse. Despite the fact that the idea of pulse only plays one of many roles in the complex nature of personal style, it is fundamentally linked to all other aspects of a musical work. Ligeti’s music frequently displays musical decisions as a direct result of what is happening rhythmically. His middle period works are largely pulse-less, and other musical parameters play a role in this. Interestingly, Ligeti’s absence of pulse is rarely the result of a drone-like texture, but in fact from a combination of extremely active individual components, what the composer refers to as a “granulated continuum.”\textsuperscript{61} This is frequently reflected harmonically in his micropolyphony, or in his use of total chromatic saturation.

The composer’s music of this period is characterized by obscurity and ambiguity. In his own words he often references “seeing and hearing it through a curtain or as if it were all enveloped in a mist.”\textsuperscript{62} A prime example of this from a harmonic perspective is the Kyrie from the Requiem. The difficulty of the vocal parts results in deviations from the notated pitch that result in microtonality (something the composer encouraged), and in an interview with Péter Vármai he references these “dirty patches” and their importance to the sound of the work. The

\textsuperscript{60} Schott Music Online (http://www.schott-music.com/shop/persons/featured/gyoergy-ligeti/performances).
\textsuperscript{61} Ligeti, \textit{Chamber Concerto}, p. 67.
\textsuperscript{62} Häusler, \textit{In Conversation with Ligeti}, p. 58.
The concept of dissonance itself is based in an idea of tension and lack of clarity. The fundamental driver for these different aspects in Ligeti’s music is the treatment of pulse.

The lack of pulse is created through either sustained tones, as in the case of *Atmosphéres*, or short repeated pulses, such as in the *Chamber Concerto*. Microtonality is made up of notes that are “in between” traditional pitches, much in the way that the rhythms Ligeti tends to use exist in between standard units of periodicity. The removal of pulse was necessary in order to abandon the need for direction in his music, and Ligeti similarly had to create a chromatic blanket of sound rather than a harmonic structure that could imply motion: because so much music in the Western tradition based direction and time on harmony, he had to create a harmonic stasis that could match the motionless rhythmic aspects. Thus his decision to create “static music” (described below) was conceived in a concept of time, which then informed other aspects of the style.

In the 1950s Ligeti gained his interest in wanting to create a slowly evolving music, but the possibility had not occurred to him of avoiding the use of metrical organization. His own words describe this best:

I first began to think about a kind of static music you find in *Atmosphéres* and *Apparitions* in 1950; music wholly enclosed within itself, free of tunes, in which there are separate parts but they are not discernible, music that would change through gradual transformation almost as if it changed its color from the inside.  

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63 Häusler, *In Conversation with Ligeti*, p. 53.  
64 Várnai, *In Conversation with Ligeti*, p. 33.
His abolishing of pulse was born from this idea of a suspended, timeless musical aesthetic. The cloudy micropolyphonic textures and the jagged mechanisms of this time both gave an overall effect of stasis, rather than a frantic race towards a destination displayed in his later works.

The idea of direction and drive came back in full force in Ligeti’s later works, and with it came his changing ideas of tonality and texture. If his works of the sixties were characterized by their shrouded nature, his later works are characterized by their relative clarity. However, this clarity was not exactly as it seemed: Ligeti’s new goal was the idea of illusion, and to have what appears as commonplace musical entities provide illusory and paradoxical roles. His new employment of pulse helped create this.

Use of rapid aksak patterns meant that Ligeti would need faster changing harmonic concepts: clearly the slow changes of Lontano or Atmosphéres would not fit in this new groove-based style. One way he decided to deal with this was to use traditional chord structures such as major and minor triads, but in such a quick and unusual deployment over the aksak that they would be perceived as a sort of “consonant atonality,” such as in Fanfares.\(^5\) Another illusion he employs is in Désordre: the offsetting of the hands creates illusory rhythms that are created from one basic rhythmic pattern. Sections of the Piano Concerto make use of augmentation of the rhythmic pattern to create competing voices but are always grounded in the basic pulse. All of these techniques are inspired by the additive rhythmic structures and the grid-based approach that Ligeti found so compelling.

\(^5\) Steinitz, p. 291.
Although Ligeti’s transition from total chromaticism and rhythmic ambiguity to a rhythmically charged music with more traditional harmonic sounds seemed to many at the time to be a drastic about-face, it now appears upon reflection to have been inevitable. Ligeti’s distaste for musical stagnancy ensured that his depletion of middle period stylistic resources would eventually necessitate a new direction. He had already abandoned a strictly static music, and more concrete musical shapes were beginning to appear in his works. The influence of musical periodicity in the American minimalist school and the polyrhythms of Nancarrow and the Banda-Linda tribe took their hold, and his refusal to repeat himself encouraged this decision. The musical public’s uproar over this stylistic turn surely must have amused Ligeti, for his love of surface level illusion hiding deeper currents played strongly here: despite his new use of musical materials, his composition style and techniques remained the same.

One of the most consistent aspects of Ligeti’s entire output is the relationship of voices, of stratification and superimposition. Even at the young age of twenty, his *Polyphonic Study* displays this characteristic in his music; four independent voices seemingly oblivious of each other, whose unavoidable interaction creates a net-structure that is impossible for a listener to ignore. His *meccanico* music’s construction is that of several individuals (in this case playing staccato repetitions) laid over one another to create a collection of mechanisms forming a greater identity. The mistiness of his micropolyphony is created in precisely the same manner.

Small melodic cells, worked out in a strict manner (similar in nature if not in result to the masters of Renaissance polyphony) and treated canonically are the basis for Ligeti’s micropolyphony. The conflict of these carefully written figures results in the sound one hears in works such *Lontano, Apparitions, Atmosphéres*, and parts of the *Requiem*, among others. This
slight displacement of canonic subjects is a harmonic use for the same technique he applies to rhythm in his meccanico works.

His later works frequently make use of superimposition of strata over a rhythmic grid in multiple layers, creating again a greater entity similar in nature to that of the meccanico or micropolyphonic music. The one notable exception here is what basic unit the relationships are tied to: in his middle period, it is the imaginary pulse (seen only in the notated music itself) that each instrument relates to, which results in the pulse-less nature of the music. In his later works, it is the basic rhythmic grid that each voice is superimposed over, creating the basic pulse-structure of this music. The single technique of layering similar but non-identical lines is the basis for each, but resulting in quite different musical results. This stratified nature of relationship in Ligeti’s music is usually a rhythm-based phenomenon; as a result moments of rhythmic unison are striking due to their rarity. The density of the layers often varies, and ranges from near-imperceptibility to clear, easily heard interaction. Although through the dense nature of some moments of Ligeti’s music it may be hard for a listener to perceive the individual lines, the contribution of each layer is vital to the resultant sound. Ligeti states:

As an example I should like to make this comparison: only a very small part of an iceberg is visible, the largest part being hidden under the water. But what the iceberg looks like, how it moves, how it is affected by various currents in the ocean, all these things are determined not only by the visible, but also by the invisible part. That is why I call my method of composing and notating uneconomical, indeed somewhat prodigal. I specify many details that are not in
themselves audible. But the fact that I have specified these details is essential for the general result.  

A good example of his stratification technique is in his piano music. In the Piano Concerto for example, the hands begin with different key signatures, and with the foremost melodic aspects notated on a separate staff to emphasize the need for clarity. The hands are frequently dislocated rhythmically; an effective rhythmic technique but also equally difficult from the standpoint of performance. In Désordre, the right hand plays only white notes, while the left hand only plays black notes. Almost every piano etude has a demonstration of this, and the basic anatomical idea of two hands is integral in how Ligeti deploys ideas.

Although the concept of “layering” is not unique to Ligeti’s work by any means, the way in which he employs layers is exceptional. The beauty of this is the multiple worlds that result. Each instrument or line could often exist on its own, in some cases even as a fragment of seemingly diatonic music. The interaction and net result of these lines are clearly the focus, and the ways in which smaller parts combine to create a whole is an important part of the very fabric of this music that is so unique.

Beyond a doubt, the most important and effective aspect of Ligeti’s compositional style is its conceptual unity. Despite the active and sometimes seemingly schizophrenic nature of much of his music, it is almost always based on a single concept (or related group of concepts). His ability to spin these small-grained ideas out into vast webs of relationship is one of his music’s most endearing qualities, and indeed is one of the most important ideas seen in the twentieth century. Ligeti’s interest in fractals is ironic due to the nature of their accurate

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metaphor for his music even before the theory was developed. A description of fractals from Ji Won Baik’s PhD dissertation states:

A fractal is a geometric figure in which a single motif is repeated in a continuously decreasing scale. When examining just a small part of a fractal, the smaller part looks similar to or exactly like the whole fractal. Therefore, almost all fractals are at least partially “self-similar”. 67

Although Ligeti’s works are clearly not identical at the macro level as they are at the basic motivic level, they are created at the macro level through careful placement and adjustment of these musical grains. In the third movement of the Chamber Concerto for example, the idea of staccato repetition of a single note provided the rhythmic basis for the entire movement. The amount of augmentation, diminution, and displacement of this idea of course is where Ligeti’s brilliance shines.

An example of rhythm’s unique role in this is in his micropolyphony. Although it is perceived as a misty or cloudy entity, it is not the pitch material that provides this experience, but the rhythmic deployment of the parts. The effectiveness of micropolyphony comes from Ligeti’s use of canon, which is an inherently duration-based technique. He achieves great ends through minimal means: his canons in micropolyphony are typically a single motive, slightly varied and displaced throughout the ensemble. Even the definition of polyphony itself implies rhythmic deployment. 68

68 In The Musical Times article The Evolution of Polyphony, polyphony (in reference to the polyphony of the early Renaissance) is described as: “a term applied, by modern musical historians, to a certain species of
Ligeti’s later music again features focused use of relatively few materials. Rather than creating structures entirely through an addition of grain-like motives, he often takes a rhythmic phrase as a starting point and extrapolates material based on it. For example, the piano etude *Désordre* features a single rhythmic pattern that is continually being displaced. This provides the basic material for the entire etude, and form is defined by the amount of displacement and its relative stability and instability (in other words how long a particular degree of displacement lasts). It goes without saying that Ligeti goes much deeper than this simplification, adding his trademark flair for registral extremes and varying dynamic contours, but the foundation for this technique is undeniable.

In the *Piano Concerto*, as discussed earlier, Ligeti makes use of only four motives in the first movement. The relationship of the parts allows for much variety, including multiple layers of syncopation, dynamic contrasts, and polyrhythms. The fact that so much can be achieved through these four motives—and by the end of the movement just two motives—is a testament to his ingenuity and developmental abilities. His facility in continually providing fresh and interesting material from small source material is reminiscent of some of his musical influences from the greater Western tradition. Beethoven for example, by whom Ligeti was largely influenced throughout his career, was a master of motivic development. His Fifth symphony is a classic example of nearly endless permutation of a single motive. Part of what made Beethoven’s music attractive to so many throughout the ages is its conceptual unity. Ligeti’s music demonstrates this same internal continuity, while still displaying a genuinely new style and

unaccompanied vocal music in which each voice is made to sing a melody of its own; the various parts being bound together in obedience to the laws of counterpoint into an harmonious whole, wherein it is impossible to decide which voice has the most important task allotted to it, since all are equally necessary to the general effect.”
musical palette. This musical coherence is what has helped define Ligeti as one of the most important figures of the twentieth century.

It is no secret that the twentieth century was a time of turmoil for the Western tradition of art music. Although much is discussed about the direction of tonality, little is said about the deeper compositional difficulty this provided, that of musical syntax. Several composers took the route of Serialism, thinking it would soon prove to be the successor to tonality. What many did not realize was that Serialism was a tool for composing, not style of music. This is of course why there are plenty of magnificent serial composers and plenty of poor serial composers, much as there are plenty of magnificent tonal composers and plenty of poor ones as well. The Twentieth century was a time for experimentation, and much of it was quite successful and musically viable. However, many composers did not develop a syntactical approach and merely went from one possibility to the next, constantly searching for new approaches. This is not to say that this is not good music: quite to the contrary, some of the finest music of the Western tradition comes from this period. However, lack of an underlying unifying element (even if that element is randomness or disorder in and of itself) makes music unpredictable, and provides difficulty in gaining acceptance from a public audience.

This is what Ligeti’s body of work contains that makes it so fresh, so unique, and yet one of the most widely accepted new styles of our time. It is clearly not a defined system, as Ligeti hated the idea of being musically dogmatic. It is simply a concept of relationship: music of earlier centuries found its grounding point in tonality; Ligeti’s music is grounded in itself, in its fractal relationship to the whole. It’s for this reason that all periods of Ligeti’s output have seen more and more performances of late. Why else would his more chromatic and abrasive middle period works be seeing equal performance to his later works? One would think the more tonally
accessible nature of his later music would appeal to a wider audience. However, the inner continuity of his music has helped win the hearts of some of the more conservative members of the musical community, opening ears to some of the beautiful sonorous possibilities of highly chromatic music.

Ligeti was not alone in the search for a new sense of musical continuity. One of his early influences in the West, Karlheinz Stockhausen, was extremely interested in the idea of “integration.” Stockhausen believed that the listener perceived music as a whole, rather than as a sum of the individual parts. As a result of this, he sought to bring all parameters of composition under control and to be able to create a unified approach to composing. He was particularly interested in the relationship of a repeated pulse and a perceived pitch, where the latter could be achieved by speeding up the repeated pulse until it was faster than 16 cycles per second. To Stockhausen this was a clear example of unification; pitch and rhythm were in fact different points on a sliding scale. In fact, he took this a step farther, and discussed all elements of music on a time scale, with form at one end and timbre at the other, something he called the “unified time domain.”

This holds surprising similarities to Ligeti’s approach to global composition. Where Ligeti and Stockhausen largely differed was simply in their approach to composing the music. When these two composers met in the fifties, Stockhausen was obsessed with integral Serialism. His belief was that by relating all properties of the music to a single row or process, he could

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71 For further reading, see Michael Clarke “Extending Contacts: The Concept of Unity in Computer Music.”
achieve that sense of unity that he desired. Ligeti on the other hand, found this to be boring and far too systematic, and soon struck out for his own more organic sense of musical unity. Although these composers disagreed on the method, they both found a sense of musical unification to be paramount in a post-tonal world. Not surprisingly, they both happen to be two of the most influential composers of the latter half of the century.

György Ligeti is a unique character in the history of Twentieth century music. His lifelong avoidance of systemic thinking, surely a result of his tumultuous upbringing in Soviet Hungary, set him apart from the serial trend that played such a large role in the latter half of the century. His need to find something musically new set him apart from the nostalgic Neo-Romantic trend which, ironically, came about as a reaction to the aforementioned Serialist movement. His approach to composing was that of a humble person who liked to create music, rather than to be an icon or a star. Paradoxically, this lack of aspiration to greatness allowed him to rise to the top of the composition scene in the first place.

The difficulty that music critics face in finding a compositional “school” in which to place Ligeti speaks volumes about the uniqueness of his music. This is not uniqueness for its own sake—something Ligeti disapproved of—but rather because of his need to create something new as an artist, and because of how he imagined that sense of “new.” His contribution to the era was not an attempt at accumulating a following and creating a new brand of music, but a highly unique style demonstrating that pre-existing techniques just need to be looked at in new ways. In his own words: “One often arrives at something qualitatively new by uniting two already known
but separate domains”.  

That Ligeti was influenced by the past, by these already-known domains, is no secret. His ability to draw from musical toolkits across centuries and employ them in a unique manner is what makes his music unmistakably new. For example, Ligeti loved the polyphonic music of Ockeghem, but freed the tightly knit canons from their rhythmic requirements and placed them in a floating space to create micropolyphony. His interest in the music of the Banda-Linda tribe connected with his fascination for patterns and illusion, and he took their cohesive rhythmic style and used it as the basis for extremely complex syncopation and superimposition. His main tendency in reusing existing techniques was to free them from their rhythmic rules, and bend the relationships of duration to his own needs.

These techniques were often used in multiples: in the case of his meccanico music, this meant multiple canons of varying speeds placed over one another. In his later music, this meant multiple layers of Balkan aksak rhythms placed in relation to a primary pulse character. As described earlier, the idea of stratification is quite similar throughout all of Ligeti’s works, but the driving nature of the pulsed music sets it apart from the earlier pulse-less music despite their similar nature.

One of the most important lessons to be learned from Ligeti’s compositions is the nature of the musical conception, the continuity previously discussed. Although no composer should follow another’s footsteps too far (Ligeti felt this necessity acutely), his tendency to develop large-scale structures from small-grained origins can be an important lesson to future composers. This approach is no established method or system, but an organic intuitive process that ensures

unity within a musical work. Ligeti of course did not invent this idea of generation from a basic source, for one can find examples of this in the music of the Romantic masters, in polyphonic African music, in Renaissance music such as the head motive masses of Josquin, and many, many others. Instead, he took this already known domain and united it with fresh musical ideas and an incredibly wide-reaching palette of traditions. As a result, Ligeti’s work stands apart as an example of the new possibilities of compositional construction in today’s musical world.
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