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## CONTENTS

**Editorial** ..... **4**

LUKAS LIGETI:
***And now I'm here as his son:*** **remembering György Ligeti as a person, a composer, and a father** ..... **6**

EWA SCHREIBER:
**The structure of thought. On the writings of György Ligeti** ..... **18**

## ANALYTICAL WRITINGS

MARCUS CASTRÉN:
**Aspects of pitch organization in György Ligeti's Piano etude no. 8, Fém** ..... **44**

MANOS PANAYIOTAKIS:
**Aspects of melodic and rhythmical textures in György Ligeti's micro and macro polyphony** ..... **62**

## KEYBOARD MUSIC

ELISA JÄRVI:
**In the penprints of György Ligeti in Basle – historical aspects of performance notes in piano études 1–6** ..... **78**

JAN LEHTOLA:
**György Ligeti and organ music – traditional reformer or revolutionary discoverer? Ligeti's organ music and its influence on organ-playing technique** ..... **95**

## REPORTS

GUADALUPE LÓPEZ-ÍÑIGUEZ:
**Report from the symposium "Transforming musicianship: Understanding 19th-century historical style and its implications for learning", Sibelius Academy, Helsinki, 12 November 2018** ..... **111**

JUHA OJALA:
**An efficient panorama of doctoral research at the Sibelius Academy, Helsinki, 18–19 March 2019** ..... **117**

**Abstracts** ..... **121**

## Editorial

The Conference *György Ligeti Symposium Helsinki 2017* focused on the issues of performance, music-analytical and stylistic approaches to Ligeti's music as well as Ligeti's influence on the music of our time and more. Proposals on other aspects of Ligeti's music were welcomed as well. Alongside scholarly presentations, the organizing committee of the DocMus Doctoral School of the Sibelius Academy, University of the Arts Helsinki encouraged performers to submit proposals for lecture recitals.

The event was organized in collaboration with the contemporary music festival *Musica nova Helsinki 2017,* on 10–11 February 2017.

The Keynote Speakers were professors Jonathan W. Bernard, Fredrik Ullén and Lukas Ligeti. The symposium consisted of twenty lectures altogether, three of which were lecture concerts. In addition to scholarly presentations and lecture recitals, the symposium programme comprised a number of concerts, including the complete cycle of György Ligeti's Piano Etudes as well as contemporary music influenced by Ligeti. An exhibition of Ligeti's connections and visits to Finland was also displayed at the Helsinki Music Centre, illustrated with photos and featuring a lecture that Ligeti gave in 1990 in Helsinki, among others, which was recorded by the Faculty of Musicology, University of Helsinki.

The writings in this issue include five peer-reviewed articles based on the lectures given at the Symposium, a transcription of the Keynote Speech by Lukas Ligeti and two reports of Doctoral School events at the Sibelius Academy.

Composer Lukas Ligeti, as one of the three keynote speakers, shares rather personal insights on his father György Ligeti. Ewa Schreiber's article "The structure of thought: On the writings of György Ligeti" identifies and characterises the key thematic areas in Ligeti's writings and demonstrates their role in his works. In his article "Aspects of Pitch Organization in György Ligeti's Piano Étude No. 8, Fém", Marcus Castrén examines the idea of harmonic families that regulate the pitch organization of the piece. In "Aspects of melodic and rhythmical textures in György Ligeti's micro and macro polyphony", Manos Papayotakis focuses on the exploration of the methods which György Ligeti applied to generate various interactive textures in a number of his works.

Elisa Järvi's "In the penprints of György Ligeti in Basle: Historical Aspects of Performance Notes in Piano Etudes 1–6" discusses the tempo markings and performance instructions in Ligeti's piano etudes and explores differences among editions and manuscripts of Ligeti's works as well as his own corrections and comments. Finally, Jan Lehtola draws a picture of Ligeti as an organ composer in "György Ligeti and organ music: traditional reformer or revolutionary discoverer? Ligeti's organ music and its influence on organ-playing technique".

In addition to the articles from the Ligeti symposium, this issue includes two conference reports. Guadalupe López-Íñiguez's "Transforming Musicianship: Understanding 19th-century Historical Style and its Implications for Learning" covers an event held at the Sibelius Academy on 12 November 2018 to bridge the widely-recognised gap between period and modern instrumentalists on the one hand and scholarship on the other, through spoken presentations and demonstrations on historical instruments. In his report, Juha Ojala introduces the latest event – "Sibelius Academy Research Days" – an annual exhibit of ongoing doctoral projects by doctoral students of the DocMus and MuTri Doctoral Schools.

The editors of this special issue of Trio wish you many captivating moments in reading this publication. The work that has gone into it has been both challenging and rewarding, despite the upheaval to the already-crowded schedules of our daily lives.

Helsinki 27 November 2019

Markus Kuikka and Elisa Järvi

LUKAS LIGETI

# *And now I'm here as his son:* remembering György Ligeti as a person, a composer, and a father

## Introduction

I guess I'm here because my name is Ligeti. But I'm that *other* Ligeti. People ask me all the time if we're *related*. And then there's the problem that in most places, people can't remember my father's first name, or are scared to say it because they're sure they're going to pronounce it wrong. So they ask me if I'm related to Ligeti. I say, "Well, if your name is Smith, are you related to Smith?" Then they ask if I'm related to *the* Ligeti. And I say, hold on, I'm also *the* Ligeti. I'm not any less Ligeti than any other Ligeti. I would even argue that maybe I'm even *more* Ligeti because my grandfather changed the name Auer to Ligeti. In German, "Auer" means something like "coming from a heath" or a "park". Ligeti means something similar in Hungarian; it's not exactly the same thing but quite close. So he Hungarianised the name. So one could say that I'm one more generation in of Ligeti and further away from the Auer, so maybe I'm even *more* Ligeti.

But here now, I'm supposed to talk about my father, and that is the most difficult thing. This is actually only the second time I'm doing anything like this, and I really want to keep it very rare to do this kind of thing, to talk at a musicological symposium about my father, because I'm not a musicologist. I'm very interested in and inspired by the work of musicologists. I would say that a lot of my own music is crucially influenced by ethnomusicological work by other people, and it's also led me to become interested in doing my own ethnomusicological research, which I haven't really started doing yet in a concrete way.

But as much as I am inspired and interested in musicology, I am myself a composer and a drummer. I write scores for other musicians to play, some of which are completely composed down to the last note, while others are also environments for

improvisations. As a player, I'm an improviser, and I'm actually indeed a drummer and not a classical percussionist. I come more from the practical side, even if it has a strong theoretical background. And I'm not a scholar of my father's work.

I really loved my father, and I love his music. Every time I hear his music, which I don't do as often as you might have thought, I think it's really fantastic music, and his writings are fantastic. But at the same time of course, it's difficult to be associated with him all the time. I've come somehow to accept that. At the beginning I really probably would have refused to do something like giving this talk, because at that time, he was still alive. So maybe the fact that I'm standing here has something to do with the fact that he isn't alive. It would have been even stranger to talk about him if he were still alive. At least now when I say weird things about him, he can't defend himself, right?

Certainly, my father's influence on me is very strong, although it's not necessarily strong in the way that most people would think. It's strong in other ways, so I want to talk a little bit about that, too, and a little bit about my own music because it's easier for me to do that, but I don't want to bore anybody.

So, what can I share with you? I'm not going to share analyses of his work, but maybe what I can share are some different perspectives and some interesting insights.

## Being original

A lot of my impressions of my father were not strictly anything in music, but more generally that he was always a very curious person. He wanted to know things, and then create his own thing. It's something that's also very important to me, as an artist: being original and trying to develop things that are not only new to me, but also conceptually new, and bringing something new into the musical discourse as such. I probably came to that interest through my father.

Somehow, my father had this impetus since childhood. Maybe it came from his father, my grandfather, who was an economist. He had a day job working at a bank. The family came from western Hungary, and they moved to Transylvania. My father was born in a small village, Diciosânmartin, which these days is not such a small village anymore. I went there once with my mother and we looked together for the house where my father was born. My mother had been there decades before, and it was strange because we couldn't find it. It then turned out that a big block of apartments had been built around this house, but the house was still there in the courtyard of that block, so it survived, at least until now, or at least until a few years ago. I don't know if it's still there. My father grew up there for his first six years and then went to Cluj, or Kolozsvár.

At night my grandfather was apparently always writing books on economics that he didn't have time to write during the day, as he was working at the bank. Appar-

ently, those were quite innovative books. Unfortunately, I haven't been able to read them because they were never translated. My Hungarian isn't good enough for that, but maybe one day it will be. If I had a chance to spend six months in Hungary, I would probably learn the language fairly well because it's there in my mind somewhere. I guess maybe there was something scientific, something about exploration that was in the family. My grandmother was an ophthalmologist, and she was even one of the first, or maybe the very first female ophthalmologist in Hungary.

From an early age on, my father liked exploring things. He was apparently a naughty child. One story I know was that his mother told him that he had a black soul because he was never doing as he was told. I don't quite know what a black soul is, but then my father somehow found a chicken in the kitchen, and he started opening up, cutting up this chicken, and he found the chicken's gall bladder. He was convinced that this gall bladder, because it was black, must be the chicken's soul and that the chicken also had a black soul. And not only was he very intelligent, he also had a good memory. Apparently, he had a recollection from an extremely early age, when he was just a couple of months old. The house already had electricity, but there was a power outage. As opposed to my house now in Johannesburg, where we have power outages probably about once every three or four days, apparently even back then in Romania, it was a very rare thing. So there was a power outage when he was just a few months old, and his parents lit candles. And then it happened again when he was maybe four or five years old. And they lit candles again, and my father said, "I've seen this light before. Where have I seen this light?" And it turned out that the only time that he would have been able to see that kind of light was during the previous power outage when he was only a few months old. That's quite remarkable.

He was always into learning and knowing and wanted to be a scientist. When he finished high school in 1941, he was not able to get into the university to study science. This was due to the "numerus clausus" for Jews in the World War II years; he was not the best student in his class. So he went to the conservatory instead. By that time, he had already started playing music and composing. He had always wanted to make music, so that's very different from me, but his parents weren't interested in letting him take music lessons. But he had a little brother, five years younger, who was obviously very talented for music. The parents somehow noticed that, and so Gábor got violin lessons. My father said, "Well, if my little brother gets violin lessons, let me play the piano to accompany him," and that's how he started playing.

During the war my father was in a forced labour unit. It's actually very interesting. When I was a kid, maybe five or six or seven years old, he would tell me bedtime stories about his experiences in the forced labour camp. He was somewhere in the area of Szeged, and a part of his forced labour division was segregated from his section, and they were all put on a train. They were transported to the copper mines of Bor, in Serbia, where they all died. Fortunately, my father was not among those that were taken there. And by all these incredible coincidences, he somehow survived in

the forced labour camp until he basically found himself at the eastern front with the Russians approaching and ran away. He walked home to Cluj and found an empty apartment, and eventually his mother returned.

His mother survived Auschwitz because, as a doctor, the Nazis wanted to kill her last, and then the Russians came and freed Auschwitz. She came back, but his father and his brother Gábor never returned from the concentration camp. His brother never coming back was probably the thing that emotionally nagged him most in his life. It was not something that he talked about a lot, but he did tell me stories about this and about what happened in the forced labour camp. It's strange that he was telling me these stories as I was falling asleep as a little kid. He was very objective about these kinds of things. He was telling me about how he would ride between Romania and Hungary on the train, and there was no space to ride inside the train, so he had to get on the roof of the train. So he was there, and you always tried to be at the back of the train because when there were cables crossing the train tracks, the people who were in the front would get beheaded by the cables, so when he saw the heads flying, he knew to duck. He told me these kinds of things in a very objective tone of voice. But at the same time, I think, inside, there were many feelings, especially about his brother. When he was at the end of his life and sick, he would talk more about this and he would often dream of it and have feelings of revenge against the people who killed his father. He was not a vengeful person at all otherwise, but that somehow came out.

The last years were very difficult. He was getting more and more sick, becoming increasingly paralysed due to a neurological issue that was never fully diagnosed. He ultimately lost his ability to hold a pencil and compose, and then also started communicating less and less. It was very strange to see how the disease that ultimately killed him was one that silenced him, first his composing and then his speaking.

When he was already almost unable to talk, during the very last stage, he sometimes would watch TV, and he would just sit there and not say a word, but it was clear that he was understanding what was going on around him. Since we are in Finland, I can tell you that one of the moments that proved this was when my mother, who took fantastic care of him, was sitting with him, and they were watching something on TV. There was a language being spoken, and my mother didn't immediately know what language it was. So she asked my father what it was, because she was used to my father recognising most languages. My father immediately said, "Finnish." Probably he didn't say anything else all day, but that was proof that while he was often unable to communicate, it wasn't that he was losing his mental awareness. He knew exactly what was going on, and I guess that must have made it even more difficult for him.

Luckily, I managed to be with my father when he died, which was obviously not a pleasant moment. I managed to be with him the last two weeks or so of his life, and it made it a little bit more bearable for me than being somewhere far away.

## The person

My father was a very complex person. On the one hand, he was an extreme traditionalist, which is something that I want to speak about a little more. But then, on the other hand, he was a very free spirit, and I think you all know that. He wasn't really a family man in the traditional sense. He was always kind of locked away working on his music, but always really nice when he was around. He was often rather withdrawn and didn't think so much that a child needs rules. When it came to raising his son, he was a free spirit, and he didn't want to impose anything on me at all.

All those who knew my father will agree that he was an extremely communicative person who always liked to talk, and who was not into small talk. I remember that whenever there were guests at the house, my father would show up and immediately start asking difficult questions. What kinds of things are you interested in? Why are you doing this? Things like that. As reclusive as he was in his work, he was always very curious and enjoyed talking with people, both talking and listening.

I think that most people who knew him will confirm that he was not a self-promoter. He was actually somebody who would almost make fun of the hustlers, and he just wanted to make his music. I guess he was one of those rare cases of a person who deserves to be very successful and was very successful. I can name for you many people who would deserve to be very successful and aren't, and I can name many people who I think don't deserve to be very successful and are. But my father was one of those rare cases where that "went right".

## Father and son

I had a very close relationship with my father when I was a little child, maybe until about the age of four or five. As I said, he wasn't such a family man, but at the same time we had kind of a normal relationship between a father and a little son. After that came a period where he was a gone a lot. He soon started teaching in Hamburg, and we became a lot less close during that time. When I was 18 and started making music, our relationship strengthened again. But then it was a very different relationship because at the time, I was already practically a grown-up, and it was kind of a relationship between friends, and he was like an older composer friend.

When people see that I'm my father's son and also a composer, they automatically think that I was brought up from age zero to be a musician or a composer. Or they think that my father forced me, standing behind me with a whip or something, forcing me to play the piano as a child. Nothing is further from the truth. At one point, when I was about nine or ten years old, I did attempt to take some piano lessons, but I quickly decided that reading music is an impossible task, and practising is just out of the question. So I stopped, very soon, and I didn't take any more music

lessons until after I graduated from high school. And I really didn't think much about playing music.

I did, however, sit down at the piano sometimes and improvise, and my father would tell me, "Well, you know, you really seem to be talented for music, so maybe if you want to take piano lessons or something, I'm sure you'd be very good. But if you don't want to do it, that's also fine. I'm not going to force you."

I grew up without rules. Maybe that's why I've become this kind of unruly person, but I didn't want to make music as a child. I don't quite know why that was, but maybe it was because my father was so good at it that I wanted to stay away. Or maybe I always knew in the back of my mind that I would be a musician at some point anyway. Now that I think about it, with my father being a musician and being a composer and being so good at it, I'm sure I thought that I could do that as well, and I could start even later than my father. Maybe that was the reason, because he didn't start with music until he was 14 and I didn't really start until after high school.

When I was about eleven years old, I was always inventing things and making up imaginary places and drawing maps of them. I don't quite know where this comes from, but this is among the many things that I have in common with my father. I'll talk about this a little later. I also made up a Hungarian man, called Hortobágyi István. He was a musician and a musicologist in Hungary but managed to get out of Hungary in the 1970s and ended up getting a job as a soccer player in Malawi in south-eastern Africa. It's a very strange story. I would sometimes record piano improvisations on a tape deck, so I recorded piano solo music by Hortobágyi. With that, I recorded an interview of him by an interviewer who spoke with a British accent, and Hortobágyi is speaking English with a Hungarian accent. Well, the composer György Kurtág happened to come for a visit. He's a close friend of my family. He heard the recording of this interview with Hortobágyi on the tape, and I've been told that for a moment, Kurtág actually thought it was real. He was really interested in the interview. I've been told that hearing this interview somehow opened him up. He was just starting to write Játékok at the time and was feeling hemmed in his composing. Somehow the whole thing freed him, and he started developing his own voice as a composer. Whether this is true or not, I don't know, but that's what I've been told.

A lot of people think that my father was a person who connected me with everyone and made sure that I had a career. But that wasn't his nature. In fact, he was somehow scared to be a door-opener for me in the modest way that he could have done it. I think this was because he had a very strange experience around the year 1989.

I had just started composing, and one of the first pieces I wrote was a percussion quartet called Pattern Transformation. It was the first piece where I started to develop my own voice as a composer. My father saw the piece, and he thought it was really good. Completely unrelated to my piece, he got an inquiry by Josef Häusler

– and I think probably most of you know who he was – saying that there was a commission for a percussion piece for Percussions de Strasbourg. They wanted to give the commission to a young composer, and Häusler asked if my father could recommend a young composer who could write a good piece for a percussion ensemble.

My father thought about this for a moment. He thought that none of his students were particularly specialised in writing for percussion ensembles, but I had just written a piece that he really liked. So he wrote back to Häusler, saying that I don't want this to sound like nepotism, but I could actually recommend my son to do the commission. Häusler answered, saying no. He said that it really would seem like nepotism. Let's not do that. My father became furious. He got extremely angry, and he never spoke to Josef Häusler again. From that time on he never recommended me for anything anymore, because he was convinced it would damage my chances.

I never studied with my father. I never wanted to study with him. It would have seemed very strange for me to do that. I did, however, go to his composition classes sometimes. I was starting to study composition around the time that he was writing the first book of the Piano Etudes. It was also the time that his teaching at the music academy in Hamburg was starting to draw to a close. He retired there maybe in 1988 or 1989. In the mid- to late '80s I would go to Hamburg maybe once a year and sit in on his class. That was a very interesting experience. He wasn't at that time what I would consider a very active teacher. He was just sitting in a circle with his students and talking, and that's what I try to do as well. I'm teaching composition myself now, which is a rather new thing for me to do. I'm in my second year. I'm getting older, so I've become a university professor. It's still a strange feeling for me, but maybe I draw upon seeing my father teach.

At that time, my father and I had a relationship where he was just somebody that I could talk to a lot about conceptual and aesthetic issues. But he was not my teacher by any means. There were certain things that he kept telling me. He was very obsessed with craft. I was not so obsessed with craft at the time. I've become more so. My father and I would talk very candidly about each other's pieces and criticise each other quite a lot. He would always be very open to my criticism, and I hope the other way around as well. Our relationship was like this from the mid- to late '80s on for almost fifteen years. Then, unfortunately, he started getting sick.

## Parallels

There are certain parallels in our life. One thing that a lot of people know is that my father invented a country when he was a little kid, called *Kylwyria*. He had a nanny when he was little, like four years old or so, and she would take him to the movies all the time because she liked going to the movies. When my father's parents weren't around, she would take care of him and they'd go to the movies, and there was a movie apparently called the *Kalvaria of a Mother* (the Ordeals of a Mother). My father liked the word *Kalvaria*, and he took the a-s and replaced two of them with y-s and replaced the v with a w so that the name became *Kylwyria*. Maybe he made up this country as a kind of escape from the competition that his soon-to-be-born or just newly-born brother was giving him – I don't know.

The strange thing is that around the same age, I also made up a country. My mother would sometimes recite a Hungarian poem which was in Latin, and it was a student poem. It ended with *Vivam quoque ita*, which means "I live anyway." Out of this I picked up "quoque ita", and that became *Qwoqwita*, the name of the country that I made up. I also spent my childhood writing encyclopedias. I was very disciplined, writing in alphabetical order and drawing maps of this country. The odd thing is that to the best of my knowledge, and to the best of my parents' knowledge, I did not know about *Kylwyria* at that time. Apparently, I invented this country independently from my father. That was just one example of similar things that happened in our lives. Also, approximately at the age of 30, we both changed cultural areas and countries. Of course in my life, it was a much more peaceful migration, but nevertheless. And then by coincidence at about the same age, we found ourselves suddenly teaching at a university or academy. Strange, interesting and unplanned parallels.

## Identities

My father's identity was complicated in that he was a Hungarian and a Jew but was actually born in Romania. In those days Transylvania kept going back and forth between Hungary and Romania. It was sitting in the same place, but it was constantly switching countries because it was occupied by one and then the other. Eventually my father came to Austria and became an Austrian citizen.

My case is maybe an even more severe case of uprootedness because I was born stateless. I was born in Austria, but Austria doesn't automatically confer citizenship upon you if you are born there, as opposed to some other countries. My parents hadn't received Austrian citizenship yet, so I became an Austrian citizen when I was a little kid. I was basically part of an expatriate family from Hungary that wasn't really Hungarian, and I wasn't Jewish either really because you have to go back, I

don't know how many generations in my family to find a practicing Jew. It was only Hitler who reminded my family that they're Jewish. It's a very typical situation in central Europe, with these assimilated Jews like my family was.

I started learning German from Hungarian speakers, and then I went to America and I came back and went to the American International School and grew up with kids from all over the world but kind of as an American. But then I came to live in America, and I noticed that because I never watched the same TV shows as American kids my age, I was really not American, either. When I'm in Europe, I feel American, and in America, I feel very European. Then I also started spending a lot of time in Africa, and that also had a very very strong effect on me.

Because I've become so Africanised, I like using terminology from Africa, in this case, a term from the Mandé people in the interior of West Africa who have something called *griots*. The griot is a traditional musician and storyteller. They usually are part of families and clans, and I like to say that I am a griot because there's my father and there are also a number of other musicians and other artists in my family. But we're a very special griot clan because instead of retelling the old stories, the specialty of our griot clan is to do something new. So we are the innovation griots, and I really feel that by trying to do something innovative, I'm actually at the same time carrying forth a tradition that comes from my father.

## Influences

In the early '80s, as is quite well documented, my father was given a recording of salsa music by his student Roberto Sierra. That set him off on a path of being interested in Afro-Caribbean and African music. He had already been interested in jazz for a long time. My own interest in African music came in part, but not entirely, through my father. I became interested in African music through swapping cassette tapes with my father, but also through going to lectures by the musicologist Gerhard Kubik. He was teaching in Vienna at the university and was also an influence on my father.

When I started to make music in the mid-1980s, a certain trend was already well under way of becoming more of what it is now, namely that you get exposed to a lot of different types of music. For example, very soon after I started making music, I started listening to African music. So am I based in western art music? Is that my musical home-base? In a certain way it is, because growing up, I heard more of that music than other types of music. But then, when it came to being an active musician, I would say it's not necessarily true. I started with western art music and jazz and rock. But in my case, studying the western art music tradition was not such an obvious thing since I was interested in various types of traditional musics at the same time. Of course I studied harmony and counterpoint and all those very thoroughly in Vienna, but I was questioning it already at that time be-

cause I was hearing a lot of other musics that were based on completely different concepts and principles.

Although my father and I shared many interests, one of them being African music, there were also many differences. For example, he was not very interested in improvisation. That's something that we discussed a lot, and my father felt that improvisation was somehow not as sophisticated a form of music creation. I strongly disagree with this idea. I think it really depends on what your ambitions are. I both compose and improvise. When I compose, I want to create a situation where something, let's say the form, is in a certain way settled to the point where it would be hard to imagine the piece going any other way – at least for me. When I improvise, I'm not interested in that at all. I'm exploring completely different questions. Basically composing is slowly-made decisions, and improvising is quickly-made decisions. But improvising is not *randomly*-made decisions. I'm building upon a huge foundation of experiences and practicing and personal vocabulary that I've developed on my instrument as an improviser. I think both ways can lead to artistically very interesting results.

When I started composing, I wanted to be as far away from the music of my father as possible. As I've gotten a little older, I'm no longer as fearful of making the connection audible. The searching for something original has always been there, and the influence of his music has been there as well. I could show you moments from early pieces of mine that are almost like quotes, not literal quotes but atmospheric quotes from my father's pieces – at least the way I hear it. But I would say that in the last ten years, maybe since my father died, I've also allowed a more audible influence of his music into my own music.

I don't know if the things that I really got from my father were learned during the times that we were talking more often, or whether I learned by osmosis during my childhood, just from hearing him talk to my mother and other people, just hanging around with them.

One thing that I learned from him very strongly was to try to always do the absolute best that I can and to always search to be original. Nowadays, with a lot of younger generation composers, I find that the interest in being original in a deliberate way is not so strong. There are certainly original voices out there. I'm not saying that there aren't, but I'm saying that it is not something that's so much talked about, and for me it's remained a very crucial aspect of what I do.

## Tradition

My father was a person full of contradictions, as we all are, I guess. In a musical conversation, let's say, the contradiction I sensed most strongly was the one between being almost compulsive about being original and being almost compulsive about

being traditional. And of course, in his case, "tradition" meant the western art music tradition. His interests were always evolving, and he was incredibly open-minded. But at the end of his life, the compulsion to tradition became in a certain way overwhelming. But his real interest was still in finding things. He sometimes quoted Mahler as saying that tradition is not worshipping the ashes but passing on the flames. Actually, Mahler didn't invent this quote, but was already quoting someone, I think it was Thomas More, but I'm not exactly sure, and there were also John Denham and Benjamin Franklin and Confucius, as well as others who this quote has been attributed to.

In the beginning of my own career, I was less interested in tradition. But especially since I work with African traditional musicians a lot, I developed a real closeness with the idea of being in a certain tradition. In my case, it's the cosmopolitan tradition, so I have the difficulty of having to learn something about all these different traditions.

As for my father, in his later stages, the conflict between originality and tradition gave him a very hard time composing. I remember very well how he gave himself an awfully hard time with his Piano Concerto, and then even more with his Violin Concerto, and also with the Hamburg Concerto, which I personally find to be the piece where he came to the greatest perfection in the harmonic ideas he was working on, even though it's the least talked about of those three pieces. I wish he could have gone on from there, but it was hard for him to do that because he tried to satisfy these contradictory demands of being so polished as a craftsman yet at the same time doing something new.

## Legacy

My father's work from the 1960s was a final consequence of the language of tonality being disassembled with dodecaphonic and serial music and their consequences. In his music, there was no longer a perceptible rhythm and no longer a perceptible melody, and through the density of events, everything became a tapestry, a very complex tapestry.

I think that the challenge we have today is a little bit different: do we want to come up with new languages in the first place? As composers, we've enjoyed a certain freedom, let's say by *not* being part of a set language. Or, *not* having to deal with a certain question, namely: are we fulfilling the things that convention or tradition demands? In new music, there are so many cliques. We all know that if you write a triad, you're a persona non grata in mainstream European modernism. If you don't have a fixed meter, you're a persona non grata in pop music.

I've managed to become a persona non grata in everything. I've become an outsider, but I like doing my own thing, and I think that's also important about my

father. I think this is an aspect that is neglected when thinking about my father. When he first came to the west, he became very much part of the Darmstadt circle, but it didn't take very long until he started questioning these kinds of stylistic and grammatical rules. Then he became his own clique just in himself. And now I'm here as his son, and I'm often in the position of having to think about, how is my father's music being understood and how is it contextualised today? I'm a little worried, and there's a couple of things that I want to say to the musicologists in this room today because I think that you are people who can help with this since you write about it. There are so many things that are being said about my father, and some of them are "alternative truths".

In general, I feel that my father is being contextualised as standing closer than he actually was to the whole European modernist Darmstadt aesthetic, or that he was working with a Darmstadt aesthetic. There was a composition competition in Berlin some years ago, after my father's death. It was a sort of memorial prize for him, and the panel consisted of people who were firmly ensconced in the post-Darmstadt complexity style. And of course they also chose winners who were firmly ensconced in the post-Darmstadt complexity style. And as a memorial prize, that seemed to me like a misrepresentation, because my father was *not* part of this.

I'm not a professional son. I don't really feel that it's my job to chaperone my father's music. I make my own music, but it's important to me that my father's music is contextualised in the right way. What is important for people to realise is that my father was a maverick outsider, which is an element that I think is often overlooked.

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EWA SCHREIBER

# The structure of thought. On the writings of György Ligeti

It seems common practice today for a researcher of contemporary music to be familiar with statements made by composers. Many researchers are aware of their great importance, as well as their complex relationship with the works of a given composer and his/her social image. In spite of this, particularly in the case of living artists who are active professionally, we still encounter situations where the composers' statements are more readily repeated than subjected to critical analysis. Sometimes they are also reduced to the function of a secondary, supporting source of knowledge about the context in which the works were created, and the creative evolution of the composer in question. However, it is precisely the texts written or spoken by musicians that seem today to be an extremely important subject of research, on par with the works themselves. All the more so since verbal descriptions of music with all their associated specific problems have been the subject of discussion within musicology for a number of decades. However, to come up with a penetrating evaluation of composers' statements requires in-depth and comprehensive knowledge, and sometimes also a degree of temporal distance.

In the context of twentieth-century music, this problem acquires special significance. Ian Pace, drawing on his own experience as a pianist, argues that although we work on the assumption that statements about music must be secondary to the art itself, the written and spoken discourse on contemporary music is today paramount in determining which composers will receive commissions, and which of their works will be performed. "Aesthetic discourse exists whether we like it or not – it is a necessary element within the operation of any developed cultural infrastructure such as is required for the continued existence of artistic activity in a public realm" (Pace 2009, 99). In the case of modernist music the situation becomes even more complicated. The absence of established conventions and expressive categories, and the inadequacy of the available vocabulary, often result in clumsiness and tendentiousness

in the descriptions, or in resorting to the language of marketing. The creation of a differentiating, flexible language capable of describing the subject thus still remains a serious challenge (Pace 2009, 99). It is a challenge not only for music critics, but for composers themselves, since they are often asked to comment on their works.

According to Wolfgang Marx, until the turn of the nineteenth century, talking about music was almost exclusively restricted to composers (Marx 2016, 191). When musical compositions were raised to the rank of works of art, and when musicology became established as an academic discipline, this marked the beginning of rivalry over *Deutungshoheit*, or "interpretative authority". "Who has the final authority over the question of classifying and evaluating contemporary music?" – asks the author– "The composer as its creator, or musicologists as 'experts' on synchronic and diachronic comparative analysis?" (Marx 2016, 192).

In the context of these problems, György Ligeti for a number of reasons represents a special case of a composer who is also a writer. Firstly, he succeeded in creating an individual, suggestive and representational language which, as was noted by Monika Lichtenfeld, clearly stands out from the technical jargon typical of other representatives of the avant-garde during the 1950s (Lichtenfeld 2007, 29).

Secondly, it seems that Ligeti was victorious in the conflict over *Deutungshoheit*, at least during the period which turned out to be decisive in determining the course of his later career. Most frequently it was the composer himself who created and dictated the interpretative categories for his music. Most researchers followed his suggestions, even if they extended or made more precise the concepts he proposed (Wilson 2004, 16). In monographs on Ligeti, both in German and in English, the authors eagerly seize on and expand the metaphorical vocabulary and the manner of presentation proposed by the composer. This is apparent even on superficial reading[1] but is also confirmed by research, such as the quantitative study carried out by Julia Heimerdinger.[2]

Today, more than ten years since Ligeti's death, we find ourselves at an interesting and important point in time. His *oeuvre*, both as composer and writer, now constitutes a closed whole, although the memory of Ligeti remains alive. Researchers now venture to put forward individual interpretations of his works, sometimes diverging from what was proposed by the composer himself. They also explore areas which until now have been regarded as marginal.[3] The researchers themselves rep-

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[1] Richard Steinitz's *Music of the Imagination* (2003) is an excellent example of this.

[2] This author emphasises the fact that there are no major disputes or divergences around one of Ligeti's most representative works, *Atmosphères* (1961), yet the composer had a significant influence on the reception of this work, also through contact with the authors who wrote about him (Cf. Heimerdinger 2014, 143, 146). It was a different matter in the case of *Gesang der Jünglinge* (1956) by Karlheinz Stockhausen or *Le Marteau sans maître* (1954) by Pierre Boulez. We can only guess as to the extent to which the composer's attractive, sociable personality contributed to this homogenous interpretation.

[3] Such as Rachel Beckles Willson's research, inspired by the ideas of Hans Ulrich Gumbrecht, which analyses Ligeti's music in the context of presence and absence (Beckles Willson 2007), while Amy Bauer concentrates on the syndrome of lament (Bauer 2011).

resent various nationalities and cultural backgrounds, and some of them come from the countries where Ligeti spent his childhood and youth.[4] This means that the discourse about the composer is becoming richer and more multifaceted. His drafts and notes are also being intensively researched, and they reveal unknown inspirations and models at the root of the creative process.[5] From the perspective of most recent research, with the numerous identities of the composer fluid and irreducible to each other,[6] Ligeti's personality and achievements turn out to be increasingly complex. On the other hand it is only now, with some distance, that we can more easily see the enormous contribution that Ligeti himself made to the creation of the image of his works, and to assess it properly.

The aim of this text is to identify and characterise the key thematic areas in Ligeti's writings, and to demonstrate their role in shaping and expanding our picture of the composer and his works. The first issue concerns the status of the composer, whose attitude and activities are suggestive of those of a scholar. Ligeti's writings reveal his fascination with science, and his belief in the autonomy of music. Another important thread is the historical placing of Ligeti's work as the composer seems to be very aware of the influences to which he was subject himself. The third element of significance is the references to autobiographical themes, which go far beyond being anecdotal and correspond perfectly to the image of Ligeti's compositions and later inspirations. The special, metaphorised way of describing music based on concrete images and often rooted in childhood memories and phantasies defines the fourth thematic area.

It should also be emphasised that the analysis concentrates largely on the writings which may appear far removed from Ligeti's compositions and his compositional techniques. These writings include reminiscences, articles devoted to other composers, and reflections on the status of music. This choice was mainly dictated by the fact that Ligeti's writings that have a direct link to the poetics of his works

[4] Publications of such authors as Márton Kerékfy, Anna Dalos or Bianca Ţiplea Temeş can serve as examples here.

[5] The topic of drafts in Ligeti's oeuvre has been systematised by Jonathan W. Bernard, who identified the verbal and graphic elements preceding the musical notation proper in the process of creating a score (Bernard 2011). An example of more in-depth research which takes into account the evidence of the creative process is provided by Benjamin R. Levy's book on the subject of the changes in Ligeti's music from the 1950s and 1960s (Levy 2017).

[6] The most recent collective monograph is titled *György Ligeti's Cultural Identities* (Bauer, Kerékfy 2018); the composer's different identities and the diverse lines of research devoted to them are also discussed by Florian Scheding (Scheding 2014).

are more often the subject of research.[7] While Ligeti is an individual case, the phenomena and strategies discussed here may turn out to be symptomatic for the whole body of contemporary composer-writers.

## The status of the composer, the status of music

"[I] would feel very unhappy if I were a narrow specialist. I have always been very enthusiastic about many different realms of knowledge" (Ligeti 2001, 3). The composer made this admission in his remembrance speech made on being awarded the Kyoto Prize in 2001. In Ligeti's statements his cognitive thirst is presented with great consistency. In his childhood reminiscences we encounter the image of the composer fascinated by geography, drawing maps of non-existent lands and collecting postage stamps (Ligeti 2001, 3–5). With time these early enthusiasms were replaced by a youthful interest in chemistry. Ligeti creates a laboratory at home, carries out experiments, becomes excited over the complex structures of particles and tries to fathom the "mystery of life" (Ligeti 2001, 6). On each occasion the composer also emphasises how talented he is, for example how quickly he learned to read (Ligeti 2001, 3–5). Here, he sums up his plans for the future: "When I was a schoolboy, I dreamt that when I grew up, I would have two professions simultaneously: I would be a natural scientist and a composer" (Ligeti 2001, 1). Ligeti's texts are ambiguous on the question of whether in this way the composer was realising his own ambitions or, rather, his father's.[8] However, life was later to put these dreams to the test. In spite of having passed the exams, Ligeti was prevented from studying mathematics and physics at the Kolozsvár University because of limited access for students of Jewish origin (Ligeti 2001, 11).

In his statements about the role of a composer Ligeti remains faithful to his youthful ambitions: he declares that, despite very different criteria, both scholars and artists are driven by their curiosity (Ligeti 2007l, 123). Music shares with mathematics the important attributes of internal discipline and consistency (Ligeti 2001,

[7] In her monograph, Ingrid Pustijanac devotes a whole chapter to the links between Ligeti's theoretical reflection and his compositional practice, discussing such issues as the question of form in serial music or the problematic of imagined space in music. The author also notes the significant influence of reflection about other composers, mainly Webern and Mahler, on the expansion of conceptual apparatus and compositional techniques of Ligeti himself. See *Intersezioni tra riflessione teorica e pratica compositiva*, in Pustijanac 2013, 225–268. Valuable comments are also to be found in the introduction to Ligeti's writings by their editor, Monika Lichtenfeld (Lichtenfeld 2007), while Wolfgang Marx convincingly describes the motivations which might have prompted the composer to write (Marx 2016).

[8] In a text from 1973, Ligeti explicitly mentions his father's ambitions: "eventuelle Geigenstunden paβten nicht in seinen vorgefaβten Plan, nach dem ich jene wissenschaftliche Karriere verwirklichen sollte, die ihm versagt blieb" ["the possible violin lessons did not fit in with his plans, formulated in advance, according to which I should achieve a career as a scientist which was denied him"]. Ligeti 2007i, 14–15. In a speech from 2001, the composer seems to identify with these plans to a much greater extent. However, on each occasion his statements are full of respect for the memory of his father and a belief in his unfulfilled talents.

9); also, musicians, like scientists, are capable of creating new structures and discovering previously unknown relationships (Ligeti 2007l, 123). "In art […]"– argues Ligeti –"there are no problems, but there are solutions, various representations and their diverse realisations"(2007l, 129). Such declarations bring the composer close to the scientific attitude typical of the Darmstadt avant-garde, in which mathematics and natural and technological sciences occupy a special position in the creative process (Humięcka-Jakubowska 2013, 63). His statements may also be related to the science-oriented theory of music. Joseph Dubiel, when considering the affinity between the roles of composer and theorist, argues that composing is also a testing of particular assumptions:[9] "When you are writing music, you're staking something on your way of hearing. You're *acting* on your perceptions, proposing that the way you hear things hangs together well enough to be accessible to other people – and indeed to be recoverable to yourself" (Dubiel 1999, 275). Distancing himself from the idea of one universally applicable theory, Dubiel mentions more flexible theories, "theories of the composition" which are worked out during the process of composing. The author argues that "A well-considered prediction is apt to anticipate alternative outcomes (as well), naturally, with suppositions about what they would mean; but what is up for testing is always some idea of what *will* come out – in the musical case, of how it *will* sound" (Dubiel 1999, 275). The ultimate purpose, however, is not verification, but to enhance the hearing, even if it takes place as a result of empirical resistance encountered during the music. Open horizons of hearing and thinking thus turn out to be more important than unfulfilled hopes (Dubiel 1999, 274, 277). Julia Heimerdinger's research also confirms that questions of reception (*Wahrnehmung*) and influence on the listener (*Wirkung*) play an extremely important part in Ligeti's commentary on *Atmosphères*. Although the composer was reluctant to use the word "effects", he was fully aware of them (Heimerdinger 2014, 136). He also seems to be open to experience and surprise when he admits: "In my own work I prefer to continuously test again and again my approach to the work, to continuously.modify it, and possibly to reject it and to replace it with a different way of working" (Ligeti 2007l, 129).[10]

Turning to the sciences, the composer defends music's autonomous status. In his text *Apropos Musik und Politik* (1973) the author compares the professional, specialist technical skills of a composer to those of a mathematician. He purposely chooses a scientific field which is far removed from obvious practical applications. Defining the status of mathematics and musical compositions, Ligeti refers to analogous descriptive terms. He presents mathematics as "a structure of thoughts" (Ligeti 1978, 21), and a musical composition as "thought structures closed in themselves or not

[9] Dubiel's text clearly demonstrates that it belongs to the American tradition of music analysis, represented by, e.g., Milton Babbitt and Benjamin Boretz.

[10] "In meiner eigenen Arbeit bevorzuge ich es, Verfahren immer neu zu überprüfen, zu modifizieren, eventuell wegzuwerfen und durch andere Verfahren zu ersetzen."

closed, communicated by means of acoustic signals" (Ligeti 1978, 21). Opposing the demand that music should be socially engaged, he emphasises: "I believe that the mathematician or the composer is actually doing something more worthwhile by concentrating upon his field" (Ligeti 1978, 21). His attitude to socially engaged music and to dreams of "paradise on Earth (for example in Havana)" is ironic (Ligeti 2007j, 66), and his words sound particularly bitter coming from someone who had personal experience of a totalitarian system. According to Frederik Knop, it was precisely his attachment to the sciences and the enthusiasm for current scientific advances that allowed Ligeti to concentrate on objective processes, which transcend the boundaries of national and political divisions. Thus, science with its methodologies and values became a special "site of belonging" for that cosmopolitan composer and enabled him to regain a lost sense of community (Knop 2018, 95).

While rejecting socially engaged music, Ligeti wanted to be seen as someone free of dogma and ideologies. However, the composer had clearly defined political views and expressed them freely. Florian Scheding reminds us that "Ligeti frequently described himself as a political composer, and he certainly took an active political stance in Germany" (Scheding 2014, 217). As an example, Scheding quotes a campaign in Hamburg in 1993 directed against xenophobia. He adds that Ligeti's music, while doing so less openly, also takes a stand in the context of political tensions. Amy Bauer and Márton Kerékfy stress that Ligeti was aware of the argument over the political significance of avant-garde music, which took on different aspects in European and American musicology. The composer saw the inevitable passing of this formation and its vanishing socio-political role; hence with time it became his ambition to fight for a "different modernism", far removed from the earlier utopian postulates (Bauer, Kerékfy 2018, 10).[11]

Reading Ligeti's writings more closely, we will also find in them a number of statements in which the composer rejects justifying his works by referring to scientific principles. When reflecting on the similarity between music and mathematics, he adds: "In spite of this analogy, I reject the 'strictly scientific', pseudoscientific composing as pure ideology" (Ligeti 2007l, 131).[12] In his commentaries on the piano etudes he declares, "In my music you will find neither what is 'scientific' nor what is 'mathematical' but, rather, a combination of construction and poetic–emotional

[11] The argument over the socio-political significance of Ligeti's music continues in contemporary interpretations of his music; the review of Rachel Beckles Willson's book by Lisa Jakelski may serve as an example here. Jakelski, who is against interpreting musical compositions "primarily as alternative documents of political history" points to the fact that interpreting the music of Kurtág and Ligeti in the light of anti-hermeneutic "philosophy of presence" of Hans Ulrich Gumbrecht and Jean-Luc Nancy may also make the reader sceptical. The author's conclusion is that "Beckles Willson's book is at its best when she writes about music and context together, rather than privileging one at the expense of the other" (Jakelski 2011, 130).

[12] "Trotz dieser Parellelität halte ich daran fest, dass ich 'szientifistisches' pseudowissenschaftliches Komponieren als pure Ideologie ablehne".

imagination" (Ligeti 2007f, 290).[13] Finally, in one of his later lectures he states forcefully "Music is not mathematics" (Ligeti 2007e, 138).[14] He is also convinced that music is close to natural languages and has its own history and rules familiar to all users, although it lacks the precision of mathematical formulae.[15]

In spite of his belief in the autonomous status of music, the composer also creates extremely suggestive descriptions of his compositions, a question to be discussed in a later subchapter. However, on every occasion Ligeti prefers the term "associations" to "a programme" (Ligeti 2007m, 168). The use of his compositions in films also points to their evocative potential.

How then are we to understand all the tensions and contradictions between the declarations quoted above?

It seems that they document what Wilson describes as "the rhetoric of autonomy" and Julia Heimerdinger as "negative definition". Ligeti attempts to dissociate himself from politics on the one hand, and from programmatic ideas on the other. He also wants to separate his work from serialism and scientism, even if he owes something to each of these approaches. The need for self-definition, fear of interpretative misunderstandings (Heimerdinger 2014, 143) and the constant drawing of attention to his otherness have a deeper origin, including the composer's status as an émigré (Marx 2016, 193–194).

In spite of this, the composer's writings tend to confirm that he is part of the community of creative artists and researchers. It is not enough for him to observe current discussions concerning the status of music; he also becomes a participant. Monika Lichtenfeld reminds us that during his first years in the West, Ligeti was perceived mainly as a theorist and an intellectual. It was only in the early 1960s that he came to be recognised as the author of such compositions as *Apparitions* (1958–59) and *Atmosphères* (1961) (Lichtenfeld 2007, 11–13). Ligeti had extensive knowledge not only of the compositions of his contemporaries, but also of specialist musicological research (such as ethnomusicology and psychoacoustics). Research by Martin Scherzinger demonstrates the extent to which the intellectual stimuli of ethnomusicological explorations were reflected in the composer's penetrating studies and his own compositions, even if such inspirations did not take account of many cultural contexts and were sometimes treated in a superficial manner by the researchers (Scherzinger 2006). Ligeti refers to the writings of Thrasybulos Georgiades and to the research of Gerhard Kubik and Simha Arom, Jean-Claude Risset and John Chowning. He shows his commitment to Carl Dahlhaus in the memorial text published after the death of the German musicologist. In all of his arguments, Ligeti appears as a talented partner in the discussions and as someone well–estab-

[13] "Auch findet man in meiner Musik weder 'Wissenschaftliches' noch 'Mathematisches' wohl aber eine Verbindung von Konstruktion und poetisch-emotionaler Imagination."

[14] "Musik ist nicht Mathematik.".

[15] Ligeti 2007l, 123. Ligeti 2001, 9–10.

lished in intellectual circles and the community of avant-garde composers.

Science as a source of musical inspiration, described by the composer in his colourful notes to his works, deserves a special commentary. According to Fabien Lévy, during the mid-1960s very similar changes could be observed in the humanities and in music composition. After the long-lasting primacy of structuralism and notions derived from mathematics (especially from the theory of stochastic processes and set theory) such as parameter, system, transformation and formalization, humanities turned to the human subject and its cognitive limitations. Composers also abandoned strict formal rules, turning towards audiences, their possibilities and perceptual needs. For the middle generation this meant moving away from the strict rules dictated by serial music, while the younger one turned towards minimalism and spectralism. The need for scientific justification for these attitudes remained strong, although this time the choice was the less formal sciences, such as physics or psychoacoustics (Lévy 2004, 103–133). Ligeti was inspired most of all by fractal geometry and the chaos theory. He was always interested in determined and undetermined musical processes, micro- and macro-formal relations, transition from order to chaos and vice versa. In a sense, according to the composer, the famous opposition between clocks and clouds derived from the philosophy of Karl Popper permeated his whole work. It is characterised either by shapeless, dense and smooth musical textures or by structures marked by mechanical precision (Ligeti 2007r, 264).

Ligeti's attitude in this case also appears to mark the middle way. It is closer to applied mathematics, as the composer's favourite mathematical models find their equivalents in the models of nature. These models also manifest in complex, colourful visual representations which are highly popular and closely linked to the human sense of beauty (Lindstedt 2009, 170–171).[16] In this way, Ligeti, in accordance with his principles, builds "associations" without an intrusive "programme".

## Place in the history of music

The research of Julia Heimerdinger shows that historical placing (*geschichtliche Verortung*) turns out to be the most important matter in the authorial comments to one of György Ligeti's key works, *Atmosphères* (Heimerdinger 2014, 129).[17] It seems that other writings and statements by the composer have a similar aim, both when Ligeti is interpreting the achievements of selected musicians from the turn of the twentieth century, and when he traces the lines of development of the history of music over whole centuries. The composer seems to be very aware of the

[16] The association between fractal structures and a sense of beauty has been shown by experiments both in the area of music and the visual arts.

[17] The author has in mind particularly influences *(Einflüsse)*, predecessors *(Vorläufer)* and the environment *(Umkreis)*. It is also worth mentioning that Ligeti focused on somewhat different aspects of compositions in his published texts and unpublished drafts (Heimerdinger 2014, 127).

influences to which he was subject himself, while the list of his musical examples stretches from the repertoire of the old masters to music from outside Europe (e.g., from Japan and Africa). A privileged position is given in Ligeti's writings to his direct historical predecessors, such as Béla Bartók or Anton Webern, but also to Claude Debussy, Gustav Mahler, Charles Ives or Igor Stravinsky. There are also shorter references to the Viennese classics and to the masters of early polyphony. An important figure in Ligeti's pedagogical activity was Franz Schubert, although no texts are specifically devoted to him (Lichtenfeld 2007, 19–20). Finally, a separate position in the composer's writings is occupied by his contemporary and fellow countryman, György Kurtág.[18] When discussing compositions by others, and the categories which he intends to apply to his own works, Ligeti gives evidence of his erudition and his musical roots.

The composer reveals his fascination with the cohesion of tonal musical language. It is these reflections which most powerfully reveal his belief in the links between music and language (e.g., in the area of metric divisions) and diverse musical cultures. For Ligeti, Haydn and Mozart are composers "in whom tonality […] appears in perfect balance and in the purest form" (Ligeti 2007l, 127).[19] He also appreciates the elegance and the "supreme subtlety of Mozart's compositional technique" (Ligeti 2007h, 275), particularly in the areas of contrapuntal technique and richness of harmony. He admires Schubert's static moments (*Schwebezustände*) introduced into the directed dynamic of classical forms (Ligeti 2007h, 277).

The composer's memories of the musical fashions of his youth are tinged with nostalgia and irony; he describes how in his works the father figure represented by Bartók was gradually replaced by the figure of Debussy.[20] As a young composer, he was mainly inspired by the Beethovenian concept of form, motivic work and development transmitted in the music of Bartók. Debussy seemed to him old-fashioned because he used thirds, whereas Bartók was much more modern in his use of semitones. This French composer was also devoid of the heroic aura of atonal music (Ligeti 2007l, 128). It was only around 1950, when teaching harmony and counterpoint, that Ligeti came to understand that Debussy did not extend tonality, but simply abandoned it. Under the influence of the music of Java and Bali, he freed himself from closures and leading tones. Here we find again the terms in which he previously described Schubert's music: "The static nature of these forms was in my understanding linked to vibration and irisation"[21] (Ligeti 2007l, 128). Later these terms were to describe the works of Ligeti himself, where the polyphony of the

[18] Rachel Beckles Willson devoted her whole book to precisely this relationship; according to her thesis, the music of Ligeti and Kurtág represents two complementary faces of Hungarian music during the Cold War period (Beckles Willson 2007).

[19] "bei denen die Tonalität […] in der perfektesten Balance und in der reinsten Form erscheinen".

[20] In spite of Ligeti's claims, research shows that his analytical thinking and works were influenced by Bartók's music to a much greater extent than the composer was willing to admit. Cf. Anna Dalos, Peter Edwards 2018.

[21] "Die Statik dieser Formen verband sich in meiner Vorstellung mit Vibration und Irisieren."

old masters was combined with the static form. "The inner vibration arose through interference patterns which resulted from the drifting of voices rubbing thickly against one another" (Ligeti 2007l, 128).[22]

Ligeti was also fascinated by the imagined space of Webern's music, by its construction, poetry and timbre. For him it was Webern who had drawn the ultimate consequences from the work of Schoenberg. The composer unified different dimensions and elements such as melody, harmony, rhythm, dynamics and timbre into one structure. It was supported by a network of rests and changing instrumentation. In such compositions time seems to lose its directionality, and its flow is suspended. "When all development ceases, the time in which such structures play out seems suspended in its course: particular spatial dimensions become much more definite" (Ligeti 2007a, 328).[23] Instead we can observe what Ligeti calls the imagined space, the autonomous cosmos of sound: "By means of such subtle compositional technique Webern makes the forces which maintain this cosmos act only towards the interior; the cosmos as a whole rests upon itself, floating freely in the imagined space described earlier" (Ligeti 2007a, 328).[24] According to Gianmario Borio, the analysis of Webern's works proposed by Ligeti, similarly to the analyses conducted by Henri Pousser, stresses the organisation of sounds in space. In this respect it moves away not only from the polyphonic conception of Webern himself (Borio 2005, 88), but also from the earlier analyses by avant-garde composers, which focused on the use of the series. Ligeti concentrates on the harmonic structure which may arise in conditions of total chromatics and emphasises that removing the differences between the horizontal and vertical dimensions leads to the formation of an imagined space (Borio 2005, 118).

It is worth noting that Ligeti intended to write a book on the music of Anton Webern. Ingrid Pustijanac stresses the fragmentary nature of the discovered archival material but also its extreme relevance to Ligeti's theoretical concerns. She claims that many compositional processes in Ligeti's music (such as the exploration of sound masses in space, expansion and contraction processes, polarization in registral space or staticism) are rooted in the analyses of Bartók's and Webern's compositional technique (Pustijanac 2018, 173).

Ligeti also admires the elegance, the intelligent pastiche and the disposition of time in the music of Igor Stravinsky. He describes the fragmentation of musical processes, the interplay of distance and proximity of Gustav Mahler, and the polymetric blends of Charles Ives. Pustijanac demonstrates that deliberations on the subject

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[22] "Die interne Vibration entstand durch Interferenzmuster aus den Schwebungen der sich dicht gegeneinander reibenden Stimmen."

[23] "Mit der Ausschaltung jeglicher Entwicklung erscheint die Zeit, in der sich solche Strukturen entfalten, in ihrem Ablauf aufgehoben: vorgespielt werden vielmehr bestimmte räumliche Dimensionen".

[24] "Mit den Mittel solch subtiler Satztechnik erreicht Webern, daß die Kräfte, die diesen Kosmos zusammenhalten, ausschließlich nach innen wirken, der Kosmos als Ganzes jedoch in sich selbst ruht, ohne Stützpunkt frei schwebend im zuvor beschriebenen imaginären Raum."

of imagined space in Mahler's music (contrasted with the use of physical space by distributing instruments on a stage), as well as the effects of distancing, or moving closer, or changes in perspective obtained using appropriate instrumental effects, such as a combination of colours or change of dynamics, allowed Ligeti to revitalise his own compositional technique in the mid-1960s (Pustijanac 2013, 262). The author also notes that Mahler's oeuvre was not included in the area of interest typical of the representatives of the avant-garde.

The multiplicity of influences and the ability to combine them creatively can be viewed as a particular manifestation of the composer's sensitivity and his "cosmopolitan" imagination, open to otherness.[25] For example, Ligeti was able to discern kinships between the music of Bartók and Webern in the areas of chromatics and symmetrical centralisation (Ligeti 2007o, 362). He compared the music of Webern and Debussy in respect of the abandonment of thematic work, restrained expression and concentration on single motifs (Ligeti 2007p, 345).

All the analyses reveal a tendency to "historical appropriation", discussed by Gianmario Borio: "Through analysis, unconsciously or purposely, the composer introduces the conceptual apparatus which he had developed, defined and transformed in confrontation with his own material. In this sense the analysis is part of the musical theory of its time, even if in a latent manner" (Borio 2005, 88).[26] And in fact, when describing the works of Webern or Mahler, Ligeti uses a vocabulary which will serve him when describing his own compositions, including such concepts as the metaphor of a web and its transformations – distancing, tensing or tearing.

In his writings the composer reveals a special talent for constructing compact and convincing historical narratives. These are very clearly presented stories, demonstrating his extensive experience as a teacher. Thus, for example, the history of musical grammar sketched by Ligeti journeys from the music of Perotinus and Machaut, through the works of Bach, Haydn, Mozart and Schubert, to Wagner, Debussy and Schönberg (Ligeti 2007l). En route to the creation of tonality dependent on closure, Ligeti ascribes individual discoveries to each of these musicians.

The composer is also very conscious of the historical course of his own creative development. He arranges this history into a particular sequence and knows which works he would like to regard as important. In his narratives we see consistent repetition of the titles *Viziók*, *Apparitions*, *Atmosphères* and *Aventures*. Even from the perspective of an advanced age, Ligeti continues to regard micropolyphony as his most important technique (Ligeti 2001, 18).

The composer is very consistent in focusing on the continuity of changes in his compositional style and on the independence of his creative explorations, playing

[25] The subject of Ligeti's cosmopolitan attitude and imagination is extensively discussed in Bauer, Kerékfy 2018 in the context of contemporary concepts in sociology and cultural studies.

[26] "Par l'analyse, le compositeur utiliseu inconsciemment, ou met en oeuvre intentionnellement, un appareil conceptual qu'il aura développé, défini et transformé dans la confrontation avec son propre matériau. En ce sens, l'analyse fait partie de la théorie musicale de son époque, même si c'est de façon latent."

down the role of external factors. Among other things, he claims that of groundbreaking significance for him was the composition *Musica ricercata* (1951–53), where, regarding all the musical tradition known to him as "irrelevant", the composer decided to radically limit his compositional devices and began experimenting, creating "new music from nothing". Ligeti also emphasises that the processes which led him to compose static sound masses began while he was still in Hungary, in works such as *Viziók* (1956) or *Sötét és Világos* (1956). He argues that his interest in illusory "inherent patterns" began long before he came into contact with African rhythms in the mid-1980s. Evidence for this is supposed to be provided by such works as *Continuum* (1968) or *Monument* (1976). Today, claims of this kind are regarded by researchers with some scepticism, all the more so since references to specific composers or stylistic idioms were often noted in Ligeti's drafts. Martón Kerékfy and Benjamin R. Levy show that *Musica ricercata* remains deeply rooted in the models of the music of Bartók, Sándor Veress and Igor Stravinsky, as well as Hungarian, Romanian and Balkan folk music.[27] Levy emphasises that the experience gained in the electronic music studio at WDR in Cologne, but also the short-lived encounter with the Fluxus movement, marginalised by the composer, had a significant influence on his later compositions.[28] In turn, Martin Scherzinger argues, on the basis of notes for drafts, that even as early as the end of the 1960s Ligeti was inspired by the music of Steve Reich, thus indirectly drawing on African culture (Scherzinger 2006, 256).

According to Peter Burkholder all twentieth-century composers have to square up to the dominance of classical repertory in musical life when they struggle to achieve a permanent place for their own works (Burkholder 1991, 412–413). This relationship has been described in a variety of ways. Some, like Joseph Straus, stress the composers' "fear of influence"; others, such as Karol Berger, perceive the relationship between past and present as more harmonious, pointing to composers who strove to enrich the tradition of artistic music and have entered the musical canon in spite of the apparent signs of cultural crisis. Berger describes György Ligeti, and. those highly regarded by him, György Kurtág and Witold Lutosławski, as modernists, for whom, however, the ideology of "progress" or historical necessity were alien concepts (Berger 2014, 192).

In fact, the most important features of the vision of history adopted by Ligeti are, on the one hand, belief in the gradual character of change and, on the other, admiration for the craft of his predecessors, manifested to a much greater extent than for his contemporaries who were competing with him. His historical narratives seem to confirm his claim that "[t]he renewal of arts consists every time in gradual modifi-

[27] See Levy 2017 and Kerékfy 2008,13–22. A curious fact is that Levy even found a satirical quotation from Wagner's *Lohengrin* in a draft for *Movement X* from *Musica Ricercata* (Levy 2017, 20–22).

[28] See Chapter 2: *Electronic Works* (1957-58) (Levy 2017, 50–84) and Chapter 4: *Fluxus and the absurd* (1961–62) (Levy 2017, 128–162).

cation of that which exists already" (Ligeti 2007l, 129).[29] Great emphasis is always placed on the knowledge of one's craft, formal elegance, sophisticated solutions and striving for perfection: "Traditional techniques should undoubtedly be taught not simply in order to continue the transmitted knowledge, but to be, on the one hand, equally skilled materially, and on the other to raise what is newly shaped to the level of the music of the past" (Ligeti 2007k, 132.)[30] We also learn much about the author from his message to young composers, by that time pronounced from the perspective of the twenty-first century:

> Try to receive the best possible education in traditional harmony and counterpoint, as this forms the basis of compositional craft. A good teacher is important, but you learn the more valuable lessons from reading and playing scores and from listening to music. […] In the end, you must be the one to impose the highest possible standards on your music. (Ligeti 2001, 18)

But with all his respect for the past, Ligeti defends the value of modern music, situated in a niche between popular culture and the prestigious market of classical music. He argues in a kind of mathematical riddle that "[i]ts extent is infinitely small, but the possibilities for its spiritual expansion are infinite" (Ligeti 2007j, 134).[31]

In spite of all the logic of Ligeti's historical syntheses, what is striking is that the composer himself seems to be aware of the provisional and discretionary nature of the lines he has drawn, of the alternative character of the narratives and the perspectives adopted: "This route I have sketched here, 'from Lorrain to Mondrian', is of my own freely chosen design, and other freely chosen links can be demonstrated; what is involved is not historical necessity, but 'moves on the chessboard'" (Ligeti 2007l, 130).[32] The composer is also aware of the various directions which his own works could take. He quotes here his favourite metaphor: "At present I have no firm idea about where this will go. I have no ultimate vision of the future, no general plan. I proceed in the dark from composition to composition, like a blind man in a labyrinth" (Ligeti 2007l, 129).[33]

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[29] "Die Erneuerung der Künste bestand jeweils aus einer graduellen Modifikation des schon Existierenden."

[30] "Traditionelle Techniken soll man gewiß nicht lernen, um das Überlieferte bloß fortzusetzen, sondern einerseits um gleichsam materialkundig zu werden, andererseits um das neu zu Gestaltende auf das Niveau der vorgangenen Musik bringen zu können."

[31] "Ihre Breite ist unendlich klein, ihre geistige Ausbreitungsmöglichkeit aber unendlich weit".

[32] "Dieser Weg 'von Lorrain zu Mondrian', den ich hier skizziert habe, wurde aber von mir ganz willkürlich entworfen, beliebige andere Verkettungen wären aufzeigbar, es geht nicht um historische Notwendigkeit, sondern um 'Schritte auf dem Schachbrett'."

[33] "Nun habe ich keine feste Vorstellung, wohin das tendieren wird: Ich habe keine endgültige Zukunftsvision, keinen Generalplan, sondern taste mich von Werk zu Werk, wie ein Blinder im Labyrinth."

## Memory and autobiography

Awareness of links to the musical tradition and respect for the historical achievements of his predecessors are complemented by the composer's nurturing of the remembrance of his own roots. A typical feature of his writings are recollections of autobiographical threads. This happens with increasing frequency from the 1970s on, when his writing clearly changes character, becomes more retrospective, and reminiscences and summings-up naturally combine with participation in prestige publications or speeches given at award ceremonies (Lichtenfeld 2007, 24).[34] References to his childhood are also to be found in commentaries to his compositions. These descriptions have a powerful effect on the imagination, transporting the reader to the time and space of the world in which the composer spent his childhood. In fact, they also fulfil numerous functions far beyond that of an anecdotal narrative.

A very important feature of the reminiscences recalled by Ligeti is the fact that on the whole, they correspond perfectly to the image of his compositions and later inspirations. Monika Lichtenfeld writes that it is precisely in the reminiscences that we find "gathered together almost all the 'proto-themes' of his artistic cosmos" (Lichtenfeld 2007, 26). The term "proto-themes" conveys very clearly the carefully thought-out framework in which Ligeti placed his stories. Nearly every detail can be successfully linked to the composer's later development. Even as a boy, Ligeti is enchanted by sub-Saharan Africa, and during his first piano exercises he is fascinated by the black keys and "Japanese music", unknown to him at that time (Ligeti 2007i, 13). On the other hand, his interest in organic chemistry focuses on the "complex structure of particles", which may be associated with the privileged role of the concept of structure in the descriptions of his own music at a later stage.

Recalling images from childhood also affects his special way of describing music. Usually it is grounded in the inaccessible, difficult-to-capture sphere of memory or imagination, yet at the same time it is always music being heard, taking place in time. We are dealing here with musical reminiscences on the one hand, which at times acquire fantastical, exaggerated shapes and, on the other, with music imagined by a little boy. Writing about the sounds coming from a nearby inn where Gypsies used to play, Ligeti says: "and this sound pressed, in tatters and terrifyingly, into my child's room, as if somewhere, a long way away, enormous beetles with heavy wings were regularly beating against the wall" (Ligeti 2007i, 12).[35] He tells us about his childhood fantasies: "as a small child, I had always imagined music: when I got up in the morning, washed, brushed my teeth, or when I went to bed at night. To each of these daily duties belonged a different kind of musical ceremony, and these imaginary music pieces didn't change" (Ligeti 2001, 1). Most often Ligeti describes

[34] "[…] hier findet man nahezu sämtliche 'Urthemen' seines künstlerisches Kosmos versammelt."

[35] "[…] und dieser Klang drang in Fetzen und bedrohlich bis in mein Kinderzimmer, als ob irgendwo, in groβer Entfernung, riesige, hartbeflügelte Käfer regelmäβig an eine Wand stieβen."

his imaginings as complete works being realised in time, going so far as to describe precisely their genre or musical influences. Thus, for example the 40-minute journey to his piano lesson was sufficient for him to hear a symphony (Ligeti 2007i, 16).

The reminiscences also tell us about the repertory which shaped him as a composer and about the compositions which could be heard in his closest environment. They reveal in this way not only Ligeti's fascination with recordings, but above all the composer's sensitivity to the surrounding soundscape and awareness of how strongly it influenced his imagination.[36] For Ligeti this is a pretext for describing the community and the culture in which he grew up, the social and historical changes, and the development of the media which took place during his childhood and youth (Ligeti 2007i, 16). As it happens, describing these changes with the help of music turns out to provide a significant commentary on the belief in its autonomy declared elsewhere. A powerful example of such a description is the moment when the composer's father, listening to the news on the radio about the growing political tensions prior to the outbreak of the Second World War, freezes on his chair and the clatter of his typewriter grows silent. This means that he has given up on his writing plans. The composer tells us: "Previously I would almost always fall asleep to the calming sound of the clatter of his typewriter in another room" (Ligeti 2007i, 15).[37] The calming, mechanical sound of the typewriter is replaced by the invasive sound of the radio bringing bad news, and conflict in the external world intrudes into the familiar household reality. The impending threat, both political and existential, has been transformed here into the memory of a sound. We know from Ligeti's statement what tragic fate awaited his father, and how traumatic for him was the loss of the person nearest to him.

We might speculate on how the already-mentioned sensitivity to sound resonated with the musical representation of time, together with its irreversible processes of decomposition in Ligeti's works. Images of mechanical movement, chaos and organic decay were, after all, to become the fundamental authorial metaphors describing musical processes.

It is worth recalling that Ligeti, while distancing himself from programmaticity, admired the awareness of environmental sounds and the ability to transform them musically in the music of Anton Webern, which constituted one of his main points of reference. "Perhaps Webern's extraordinary differentiation of sound colour results from his ability to listen out for the subtlest sounds of nature and shaping the sound

[36] Louise Duchesneau undertook an interesting attempt to recreate the list of recordings to which Ligeti listened at various stages of his life. The author emphasises Ligeti's fascination with phonography, as well as the fact that in many of the composer's drafts we can trace references to the records he knew (Duchesneau 2011).
[37] "früher schlief ich fast immer mit dem beruhigenden Klappern seiner Schreibmaschine aus einem entfernten Zimmer ein".

relationships which had previously remained hidden" (Ligeti 2007p, 345).[38]

In his reminiscences Ligeti consistently avoids pathos and constantly oscillates between various registers of seriousness and comedy. The seriousness of the situation is here linked to focusing on insignificant, prosaic details. We thus learn that during his first visit to the opera Ligeti sat squeezed between elderly ladies, and a cousin fed him morsels of nougat. His musical initiation and lone practising were disturbed by the sight of a figurine of a semi-nude lady catching a butterfly, and the attempt at his first symphony was aimed at drawing the attention of a girl away from his teenage pimples (Ligeti 2007i, 13, 17, 18). When we read Ligeti's texts, full both of irony and warmth, we have the impression of quickly making friends with him, of his being close to us both as a storyteller and as a person.

However, in the final analysis, behind the cheerful, colourful stories we find nostalgia, existential reflection, suffering and fear. Even in childhood death is close enough to touch.[39] Political changes are observed from the perspective of a child, but in the background there is always awareness of the trauma which is to come later. It is also here that we find the greatest contrast between the writings, where the composer talks openly about escaping the Holocaust, and his compositions, where the subject is not taken up directly and where we find only its echoes.[40]

Writing about creative inspiration, Jonathan Harvey argues that we can never learn whether composers tell the truth about themselves, since it is impossible to enter into their inner world (Harvey 1999, xix). Going back to the memories which were to be the beginning of his later creative work, Ligeti brings this inaccessibility even more into focus. Talking about the composer's images of his childhood, Charles Wilson makes the point that:

> The very fact that they cannot be straightforwardly contradicted or gainsaid lends them an authority that claims of a more orthodox technical or historical nature, more readily vulnerable to refutation or challenge, will rarely possess. These autobiographical "alibis" help to dispel the aura of chilly remoteness that normally surrounds avant-garde figures, presenting, by contrast, a friendly and personal image of the composer and a view of the music rich in metaphorical, even quasi-programmatic, content. (Wilson 2004, 14.)

There is another reason why we find it difficult to dispute this vision. The world described by Ligeti no longer exists. It was brutally destroyed by war and genocide. All that is left of it is a myth of childhood, and Ligeti emigrated, leaving the ruins of that world behind. Remembrance of childhood is also a return to the place which has to be pictured anew for the listening strangers and for oneself. In this context,

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[38] "Vielleicht ist Weberns außergewöhnliche Klangfarbendifferenzierung gerade seiner Fähigkeit zu verdanken, die subtilsten Klänge der Natur zu erlauschen und klangliche Beziehungen die bisher verborgen waren, aufzuspüren und zu gestalten."

[39] In Ligeti 2007i, 12 we find a description of the ceremony of the burial of children.

[40] Cf. Scheding 2014. Wolfgang Marx defines the symptoms of cultural trauma in the stylistic features and specific types of expression in Ligeti's music (Marx 2018).

the recurring theme of Kylwiria, his childhood utopia, appears to be yet another important comment on the composer's situation. An attempt to construct something non-existent, so typical of a child, is driven by the need to possess something of one's own that cannot be taken away by anyone.[41]

Wilson suggests that Ligeti's references to his private reminiscences in the public sphere contributed to his self-promotion, even though the composer himself officially distanced himself from the progressive commercialisation of music (Wilson 2004, 20). Marx adds that we may only speculate whether Ligeti was aware of this marketing mechanism, even subconsciously (Marx 2016, 198). On the other hand, Rachel Beckles Willson argues that the composer's attitude has a psychological explanation. After escaping from Hungary, Ligeti purposely distances himself from his experiences, gives them an almost fairytale, stylised form, in order to preserve his privacy in this way: "These examples point to a constant presence of memory, but also a strategy of transforming memory into play. One might go so far as to say that Ligeti avoided taking the memories seriously in public, to avoid become a typical exile, a 'pitiful monument' to his grief" (Beckles Willson 2007, 118).

The tone of a fairy story was not restricted to purely private reminiscences. Ligeti can comment in this manner also on historical reality. The indulgent description of a childish utopia conceals an ironic conception of a "paradise on earth", and with it all the political systems which demonstrated their weakness in the twentieth century: "The legal system and social structure were completely liberal and perfectly just. I didn't bother with illness and death […] It was a kind of 'land of milk and honey' with no government, no money and no criminals" (Ligeti 2001, 3).

In a programme for WDR in 1958, Ligeti outlined the situation of the music of the first half of the twentieth century using a similar device of a fairy story: "In that jungle there were enough paths and hunting grounds […] The children entered an enormous, mysterious Hall filled with surprising, extraordinary toys. It was paradise" (Ligeti 2007d, 79).[42] Among the children were Anton Webern, Alban Berg, Paul Hindemith, Darius Milhaud, and Edgard Varèse.

The paths, one after the other, came to be known and familiar. Not all of them led to the new; some even led back to areas already explored. The explorers who set out in different directions unexpectedly met each other again. The new, shiny toy soon wore out, and the fairytale hall got smaller (Ligeti 2007d, 79–80).[43]

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[41] The attempt to escape into his own world probably was a natural reaction of a child after the birth of his younger brother. Lukas Ligeti gave a similar description during his presentation at György Ligeti Symposium in Helsinki (11 February 2017).

[42] "In diesem Dschungel boten sich für alle genügend Pfade und Jagdreviere […] Die Kinder betraten einen riesigen geheimnisvollen Saal, der mit ungeahntem, wundersamen Spielzeug angefüllt war. Es war ein Paradies."

[43] "Die Wege wurden allmählich nacheinander erkundet. Nicht alle führten zu Neuem, ja manche führten sogar zurück zu schon erforschten Gebieten. Wanderer, die in verschiedene Richtungen gegangen waren, begegneten sich unerwartet wieder. Das neue, glänzende Spielzeug nutzte sich bald ab, und der Märchensaal schrumpfte zusammen."

Echoes of utopia can also be heard in this text. There is talk of authority and its fall, of the tonal empire and regional provinces. The metaphor of a forest, thicket, paths, wandering, labyrinth, usually associated with polyphony, this time serves to outline the alternative paths of the history of music.

## "Konkrete Vorstellungen klingender Musik". Metaphorical description of musical structures

The words "'konkrete' Vorstellungen klingender Musik", which keep appearing in Ligeti's writings (Ligeti 2007i, 16; Ligeti 2001, 1,7), express the main premise behind his description of music. That description is to be concrete, not abstract, and the music itself is to be sounds, not parameters. The composer's drafts indicate that the phase of verbal description also played a very important role in the creative process and preceded the later, graphic stage (drawings, charts and tables) as well as the actual music notation. Ligeti noted in a concise manner the qualities of sound or specific points of reference and sources of inspiration (e.g., Nancarrow, Central African rhythm), most frequently using Hungarian, in contrast to publicly formulated statements in the German language (Bernard 2011, 151).

Although the word "structure" still remains the key concept for Ligeti, one may have the impression that the composer's main aim is to give its description a more accessible, human dimension. The well–known text *Zustände, Ereignisse, Wandlungen. Bemerkungen zu* Apparitions (1967) provides a very good illustration of this. Ligeti begins with a reminiscence full of the fantasy and terror of a childish dream, in which "the whole room was filled with a finely spun but dense and extremely tangled web" (Ligeti 1993, 164). Here we find the key images, such as network (*Netz*) or the tangled web (*Gewebe*). Insects ("moths and beetles of all sorts") not for the last time serve Ligeti to anthropomorphise sounds. After a brief literary description of the dream scenery, the composer moves on to more abstract terms, such as States (*Zustände*), Events (*Ereignisse*), Transformations (*Wandlungen*) or System. He emphasises that none of the configurations of the network will ever be repeated, and the nostalgic experience of transience is integral to the process of transformations: "There was something inexpressibly sad about this process: the hopelessness of elapsing time and of the irretrievable past" (Ligeti 1993, 165). Further on in the text we have an analysis using authorial vocabulary and representations. "In this way arises an unceasing development: the former states and events reciprocally exclude their repeated occurrences, are irretrievable" (Ligeti 1993, 170). It would be difficult to think of a more suggestive description of music as an art form which is realised in time, or simultaneously a more subtle reference to the composer's biography, where the past can never be put right.

Amy Bauer analyses the metaphors used by Ligeti from the perspective of cognitive linguistics and searches for conceptual metaphors which lie at the root of the linguistic expressions. The author argues that they are mainly metaphors of space and movement: "The web itself is understood as a physical space […] Movement through that space manifests as a change in the condition of trapped objects […] The overwhelming sense of entropy stems directly from the association of time with the traversal of a landscape" (Bauer 2011, 37). The described identifications may be described using typical conceptual metaphors, such as TIME IS LANDSCAPE or CHANGE IS MOTION/MOVEMENT. The last, most original, metaphor where the WEB IS PHYSICAL SPACE allows Ligeti to describe the special, organic properties of his composition as well as its multidimensionality.

The composer often uses related spatial and visual metaphors. Alongside the web, we have the metaphor of labyrinth, fabric, surface or mirror image (Kostakeva 1996, 71–77). Bauer stresses the cognitive role of Ligeti's metaphors, which "import the structure of a natural domain to the self-conscious and artificial realm of new music" (Bauer 2004, 132). Disputing the thesis that modern music (in contrast to hierarchically structured tonal music) was inaccessible for the listeners, the author argues that "musical *understanding* for a competent listener, not to mention musical *meaning,* is never restricted to parsing a work's concrete, self-referential details, but relies on conceptual mappings both from other music and other experiential domains" (Bauer 2004, 132). It should be noted that there is nothing exceptional about using metaphors, since many twentieth-century composers used conceptual metaphors, which sometimes formed whole cognitive systems (Schreiber 2016). In fact, they were doing that long before the cognitive theory of metaphor made it an object of interest to musicologists. However, in the case of Ligeti, this involves additional aspects. Firstly, Ligeti finds a special, "personal" justification for his metaphors in the form of synaesthesia. The composer refers to his tendency to combine three kinds of experience: visual, tactile and acoustic. It also affects his reflections on the subject of the interpenetration of the arts in the twentieth century.

Secondly, the metaphors are strikingly multifunctional. They can be interpreted as an allusion to modern science (network and system), but at the same time they bring to mind fairy tale and suggestive contexts (labyrinth). They suggest a rich internal structure, and not just the superficial colourfulness of composition.[44] In this way they express respect for those historical compositional techniques which make it possible to create a complex work. Thus in the final count, metaphors play an evaluating role.

Finally, we come to the author's great verbal profligacy, probably related to his

[44] See Kostakeva 1996, 70–71 Evidence for how much Ligeti valued the term "structure" comes from the fact that in his correspondence with Harald Kaufmann, he suggested that emphasis should be placed on the structural and formal aspects instead of on the concept of colour. This caused the researcher to change the final title of his text from "Klangfarbentextur unter dem Mikroskop. Über das Orchesterstück *Atmosphères* von György Ligeti" to "Strukturen im Strukturlosen. Über György Ligetis *Atmosphères*" (Heimerdinger 2014, 145).

literary passion. Among the authors quoted in Ligeti's writings we find not only those gifted with a rich imagination, but also with linguistic inventiveness: Frigyes Karinthy, Gyula Krúdy, James Joyce, Jules Verne, John Kenats, Eugène Ionesco, Jorge Luis Borges and, and above all Franz Kafka and Lewis Carroll. Referring to his tactile, synaesthetic experiences, Ligeti introduces a whole series of material descriptions. In relation to music he uses such words as "Material" and "klingende Flächen und Massen",[45] which can also fall to pieces (*Fetzen*, *Floskel*, *Splitter*). What is described are both tactile attributes (*körnig*, *brüchig*, *faserig*, *trocken*, *nass*, *schleimig*, *klebrig*, *gallertartig*, *kompakt*), relations between individual elements of a network (*ablösen*, *durchstechen*, *ineinanderfließen*), and various types of processes (*Vorgänge*, *Verschmelzungen*, *Verwandlungen*, *Katastrophen*) (Ligeti 2007m). The key word in Ligeti's writings is "imaginary".

Ligeti also uses descriptions such as mixture and permeability, which originate from chemistry. In his famous article *Wandlungen der musikalischen Form* (1960), he speaks of sculpture, texture and the plasticity of sonic material (Ligeti 2007n, 98) and compares shaping the musical line to moulding plasticine blocks. It is there that he uses the term "permeability" (*Permeabilität)*, referring to the impossibility of identifying interval structures because of their coming together and superimposition.

A thorough analysis of this type of metaphor and its role in the description of music has been proposed by Francesco Spampinato. According to this author, the absence of clear form, rhythm or melodic line results in the impossibility of separating out the figure and the background of perception. The sense of dealing with an inarticulated sound encourages a synaesthetic and holistic reception of music (Spampinato 2008, 157). While music does undergo reification, it takes place at another, higher plane. It is perceived as texture and grain. It becomes a sound body (*corps du son*), characterised by such properties as volume, density, cohesion or roughness (Spampinato 2008, 159).

The basis of this kind of reception is expressed by two conceptual metaphors: PERCEPTION IS PHYSICAL CONTACT and MUSIC/SOUND IS MATERIAL SUBSTANCE. The first assumes that physical contact is the most elementary relationship with the external world (Spampinato 2008, 142). The second relates to experiencing music as moving objects or substances (Spampinato 2008, 144).

Analysing the composer's statements about *Lontano*, Bauer reconstructs numerous metaphors contained in them. She stresses that in the case of these descriptions, it is more appropriate to talk of multiple space mappings, and for this reason she refers to the more complex idea of conceptual blending, which involves more specialised and limited mental spaces instead of vast areas of knowledge represented by a source and target domain (Bauer 2004, 139). The input spaces consist of informa-

[45] It is difficult here to avoid comparisons with the statements of Iannis Xenakis or Pierre Schaeffer. However, in the case of both of these composers, the metaphors were used in a much more technical context.

tion from different cognitive domains. We find among them such diverse spaces as moiré fabric, vast space, illuminated picture, building or organism. The result is a rich blended space filled with selected elements of input spaces, forming a new emergent structure.[46] In Bauer's opinion, the multitude and diversity of metaphors testifies to the richness of the music being described: "I would argue that the richest music would be that which is capable of the widest range of associations. Those associations may arise through cross-domain mappings from one work or genre to another, or through conceptual blends that link one area of sensory and intellectual experience to music" (Bauer 2004, 139).

Robert Adlington does not follow the metaphors proposed by Ligeti himself, but focuses on his own audial experiences. In the fragment *Atmosphères*, he perceives above all an association with vertical movement and accumulating tension (Adlington 2003, 313–314). This work, like the selected compositions of Claude Debussy or Kaija Saariaho, in Adlington's view inclines one to an atypical experience of time. It does not suggest directed movement, but rather different kinds of change – "moving beyond motion".

It is worth noting that the cognitive theory of metaphor, represented in musicological literature mainly by Lawrence Zbikowski, Candace Brower or Janna Saslaw, has been criticised by Michael Spitzer, who points to the considerable, sometimes arbitrary leap of cognitive categories which takes place between the simple schema originating from the body's orientation in space (the so-called image schemata) that lie at the root of conceptual metaphors, and the sophisticated methods of musical analysis. Spitzer draws attention to the fact that when we talk and think about music, we make use of a whole number of concepts with a medium degree of generality, the so-called basic-level categories, which better fulfil their cognitive aims. Among them are such basic concepts as harmony, rhythm, counterpoint or timbre (Spitzer 2004, 10). It seems that Ligeti, as a thorough and mindful analyst, was searching not only for new metaphors, but also for new analytic categories. This can be seen, for example, in his plan of a monograph about Webern, where we find terms such as "temporal form", "chromatic organization", "compositional distribution of tone colours" or "horizontal and vertical density", as well as "relation of structure and experienced time" (Pustijanac 2018, 166), while his authorial analytical concepts include such terms as "micropolyphony", "intervallic seed crystals" or "meccanico-type music". Their success in being adopted as part of research terminology is an indication of their communicative power (Wilson 2004, 13).

[46] The mechanism of conceptual blending in relation to music was described in detail by Lawrence Zbikowski (Zbikowski 2002, 77–94).

## Ligeti's Understatement: Conclusion

"I love allusion, ambiguity, polysemy, false bottom, another level. Many representational associations linked to my music that I talk about, think about, or experience when I imagine my music are also polysemous" (Häusler 1971, 138).[47] This was the composer's comment in an interview with Joseph Häusler. In his compact, witty *Bagatellen*, he adds that above all he values English "understatement" (Ligeti 2007g, 71). While his words are quoted very often, drawing full conclusions from them still remains a serious challenge. The above reflections show that each of Ligeti's texts referred to above contains many suggestions and puzzles which, like his music, require careful and multidimensional interpretation. Thus, even though so much has already been said, we must keep retelling Ligeti's story anew, and keep making new "moves on the chessboard".

The editor of Ligeti's writings draws attention to the fact that the composer's texts clearly evolve. From texts supporting the position of the avant-garde, already written with a degree of critical distance, he moves on to laudations and reminiscences. At one point he declares directly that writing is not necessary and that even the best article will not save a weak composition (Lichtenfeld 2007, 36).[48]

However, all of the issues raised here show that for Ligeti, writing was simply essential. It served as a toolbox of vocabulary and representations which defined his compositions in a unique way. They became a means of defining his self-identity, of working out his own intellectual stance and of constructing an individual vision of the history of music which focuses on those aspects most precious to him. Writing was probably also a way of working through his emotion, of cleansing, of nurturing memories and doing justice to past events.

Many themes remain which deserve to be explored in greater depth. Among them is the thread of soundscape and its influence on Ligeti's creative imagination, a detailed description of historical appropriation and the analytical categories developed by the composer through familiarity with the music of other artists, as well as tracing the role which references to childhood and youth played at various stages of Ligeti's career.

When trying to get to know Ligeti's various identities, his identity as composer–writer seems absolutely essential in this. And if we wish to discover the "thought structures communicated by means of acoustic signals", let us take care to do so in their full abundance.

Translated by Zofia Weaver

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[47] "Ich liebe Anspielungen, Doppeldeutigkeiten, Mehrdeutigkeiten, Doppelbödigkeiten, Hintergründigkeiten. Mehrdeutig sind auch die verschiedenen bildhaften Assoziationen zu meiner Musik, die ich sage und die ich denke oder spüre, während ich mir Musik vorstelle".

[48] It should be stressed that Witold Lutosławski, the most fertile Polish writer-composer from the second half of the twentieth century, made similar statements.

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MARCUS CASTRÉN

# Aspects of pitch organization in György Ligeti's piano etude no. 8, *FÉM*

## Introduction

There doesn't seem to be much of a disagreement about the status of György Ligeti's Piano Etudes: together, the 18 studies constitute a cornerstone of post-World War II piano music.[1]

When examining the particular object of this study, Piano Etude No. 8, *Fém*, composed in 1989 and belonging to Ligeti's Second Book of Piano Etudes, most analysts seem to be first and foremost interested in the rhythmic aspects of the piece.[2] As far as pitch organization is concerned, commentators often content themselves with rather general observations, meaning that relatively little is said in detail about the harmonic construction of *Fém*. An interesting reading of *Fém's* harmonic structure can be found in Polth 2016. He identifies two "whole-tone scales" of perfect fifths.[3] He then suggests, in a centric context, that one of the scales can dominate locally, followed by a modulation-like transition to the domination of the other scale; comparable situations can be observed for the two hands separately, and for the hands taken together (Polth 2016, 130–135). He also discusses *Fém's* relation to tonality and the overtone series. Yu, in turn, examines *Fém* with respect to interval classes 1 and 5 as the most important constructing materials, suggesting that they provide contrasting qualities to the music in various dimensions and levels, ranging from linear to vertical dimensions and small-scale to large-scale entities. As his viewpoint is IC1 and IC5 in all of Ligeti's Piano Etudes, he doesn't provide an extensive analysis of *Fém* (Yu 2014).

[1] For general introductions to the Etudes, see, for example, Toop 1999, 198–208, Steinitz 2011, 236–271 and Podgurski 2013, 19–43. For an introductory discussion on performing the Etudes, see Pace 2012.

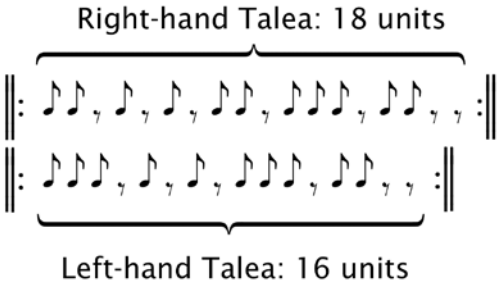
[2] See, for example, Wilson 1992, 66–71; Bauer 1997, 396–403; Bakker 41–81.

[3] Perfect fifths with Ab, Bb, C, D, E and F# as the lower elements form one such scale, while fifths with pcs Eb, F, G, A, B and C# as the lower elements form the other.

In this study, I attempt to examine the pitch organization of *Fém* in a relatively straightforward manner. I start from an all-pervasive aspect of the piece, *parallel fifths*, and study how they might be said to form larger entities in the music, and with what kind of strategies these entities are then used. I try to conduct my discussion without complicated concepts or terminology. The aim is that those without extensive knowledge in post-tonal music theory can also follow the argumentation. I do use some pitch-class set-theoretical concepts but try to keep these at a minimum.

## The two *Taleae*

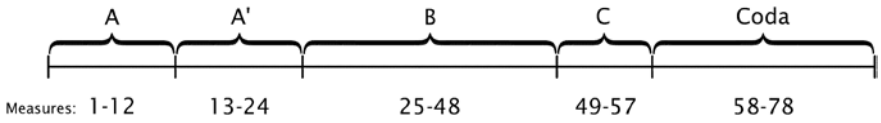
When listening to *Fém*, the aspect most listeners probably pay attention to first is its relentless rhythmic energy. The three-minute piece is governed by two simultaneous and continuously repeated rhythmic patterns, one for the right hand, the other for the left. The patterns evoke the medieval concept of *Talea*, a constant configuration of durations whose repetitions introduce a recognizable element to the piece it is used in. The two *Fém Taleae* are of different lengths, meaning that they coincide at the beginning as pointed out below only after several repetitions (Ex. 1). This results in constantly changing combinations of strong and weak beats, producing a hypnotic kaleidoscope of limping and hacking impulses that seem to be predictable and unpredictable at the same time. The right-hand *Talea* is 18 beats long, the left-hand *Talea* 16 beats. When they begin simultaneously, the next time their starting points coincide is after 8 and 9 instances, respectively.




**Example 1.** The two Taleae of Fém.

The starting points of these 144-beat *complete cycles* often coincide with clear harmonic or registral changes. As a result, it is possible to use them to divide the piece into sections (Ex. 2). Sections A and A' constitute one complete cycle each. They are almost identical, apart from the latter being transposed an octave and a fifth down. B is twice as long as A, introducing changes in the *Taleae*. C, in turn, is a bit shorter

than A, with only six right-hand *Taleae* and the left-hand part deviating strongly from its *Talea* pattern. In the Coda, the two *Taleae* are present in a highly altered form, making it texturally entirely different from the earlier sections.[4]




**Example 2.** *Fém*: the form (After Järvi 2011).

## The two "harmonic families"

As far as pitch organization is concerned, *Fém* contains an element that is as dominant as the *Talea* patterns are in the realm of rhythm, the parallel fifths. In both hands and for most of the piece, these parallel intervals govern the surface of the music, to the extent that they almost seem to melt into the two *Taleae* and constitute two sides of the same coin. The fifths, like the *Taleae*, are no doubt a reflection of the composer's interest in the music of the distant past.[5]

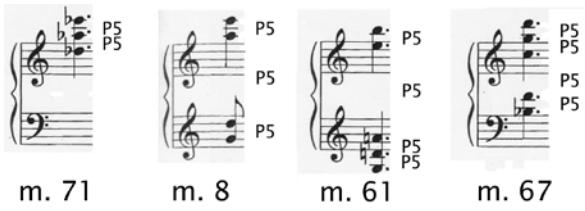
An obvious question arises here: how do the fifths interact with larger-scale harmonic entities, and what might those entities be? My suggestion is this: the fifths, *stacking on top of each other in a few different ways*, form two "harmonic families". These, in turn, are the backbone of the pitch organization. Harmonic Family 1 consists of stacks of perfect fifths (the "Stack-of-Fifths family"). Harmonic Family 2 consists of stacks with alternating perfect fifths and tritones (the "Tritone-Fifth family").[6]

What, then, is the evidence in the music that would support this kind of categorisation? First, we have quite a number of *chords* that provide very "pure" examples, as their interval structures mirror the family definitions exactly. We see a handful of these chords in Examples 3a and 3b.

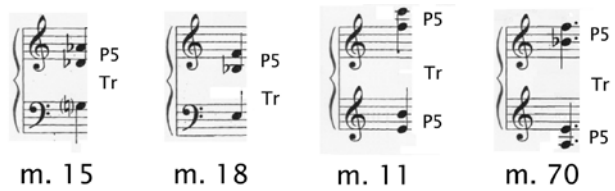
[4] A more complex formal structure is suggested in Wilson 1992, and also in Bakker 2013, 66.

[5] On Ligeti's relation to early music, see, for example, Bauer 1997, 41–96; Searby 2010, 160; Järvi 2011, 17; Steinitz 2011, 30, 104, 143, 145, 151, 267.

[6] Scholars have invested a lot of interest in fifths as important atomistic building blocks in the music of Ligeti and other composers. See, for example, Straus's fascinating study on Stravinsky: pairs of structural fifths, separated by some interval, help to provide far-reaching harmonic observations on a number of Stravinsky's essential works (Straus 2014). As far as interval cycles involving *all* intervals, not just fifths, are concerned, see Straus 2005, 154–157.

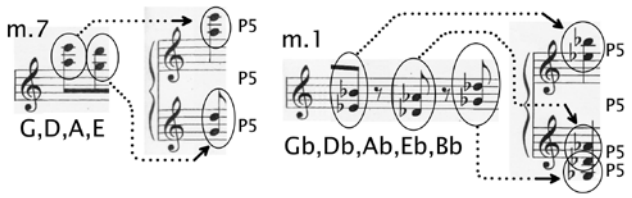



**Example 3a.** Chords consisting of stacked fifths.

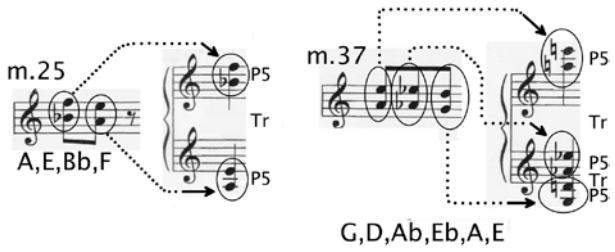



**Example 3b.** Chords with alternating fifths and tritones.

Then we have another category, namely successions that may *not* be in a "pure" interval stack formation, but can be arranged to one by transposing one or more fifths by an octave. See Examples 4a and 4b.[7]




**Example 4a.** Successions of fifths belonging to the Stack-of-Fifths family.




**Example 4b.** Successions of fifths belonging to the Tritone-Fifth family.

[7] In these examples and others to follow, the strings of note names associated with the pitch combinations are given in the "pure" interval stack ordering, to show the family membership in a more obvious manner.

In Ex. 4a, the left-hand case gives us the most common intervallic movement in the entire piece, between two fifths lying a major second apart. By transposing the second fifth an octave lower, we get a four-element stack of fifths. The right-hand case in turn gives a highly typical combination of three fifths. These three can be rearranged to a five-element stack of fifths. And in a similar fashion, the two Ex. 4b examples show how two typical two- and three-element combinations of fifths can be rearranged so that that they form four- and six-element members of the Tritone-Fifth family, respectively. *Fém* is jam-packed with fifth combinations reducible to the two harmonic families.[8]

Formally, let us define that if in a collection of notes the elements can be arranged so that there is a perfect fifth between all pairs of consecutive elements, the collection belongs to the Stack-of-Fifths family.[9] Family members can have from 2 to 12 elements. Correspondingly, if in a collection of notes the elements can be arranged so that in the succession of intervals between pairs of consecutive notes tritones and fifths alternate, the collection belongs to the Tritone-Fifth family. There are two variants of this family, as the first (lowest) interval can always be either a tritone or a fifth.[10] As the smallest family member must contain both a fifth and a tritone between pairs of consecutive elements, family members can have from 3 to 12 elements.

Ordering and registral positioning of the elements is free. The family membership of the collection is preserved even if the elements are not in the "pure" interval stack order. In other words, the collections are not defined to be chords or other pitch-space objects, but *pitch-class sets*.

Some Stack-of-Fifths family members are familiar from traditional music theory. Thus, the five-element family member is the *Pentatonic collection*, and the seven-element member is the *Major collection*. The eight-element family member is often called the *Diatonic Octad Class*.

In order to make the score examples below easier to read, I will use different colours to identify the two harmonic families. A collection of notes marked with *red* means that the collection belongs to the Stack-of-Fifths family (Ex. 5a). Correspondingly, a collection of notes marked with *blue* means that it belongs to the

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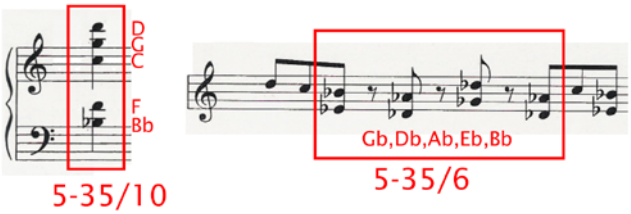
[8] No special analytical position or importance is suggested for the cases shown in examples 3 and 4. They were selected merely to illustrate the family-membership concept.

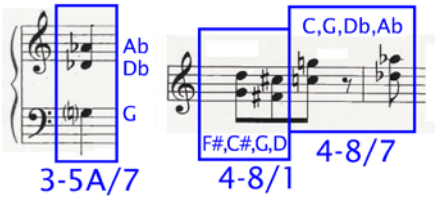
[9] A number of Ligeti studies identify the idea that (at least some of) *Fém*'s harmonic materials are based on stacked perfect fifths, and that the stacks may be rearranged registrally in more compact spacings without losing their status. The studies, however, do not develop this approach systematically. See Steinitz 2011, 258–260; Bakker 2013, 45.

[10] In other words, the interval successions are either of the form 7–6–7–6… or the form 6–7–6–7… In a post-tonal context, intervals are always given in *semitones*, meaning that a fifth spans seven semitones and a tritone six.

Tritone-Fifth family (Ex. 5b). Below the "boxes" representing the segmentations, each collection also gets a name from the *Forte classification*.[11, 12]




**Example 5a.** Stack-of-Fifths family members marked in red.




**Example 5b.** Tritone-Fifth family members marked in blue.

## The *Talea* structure and the harmonic families

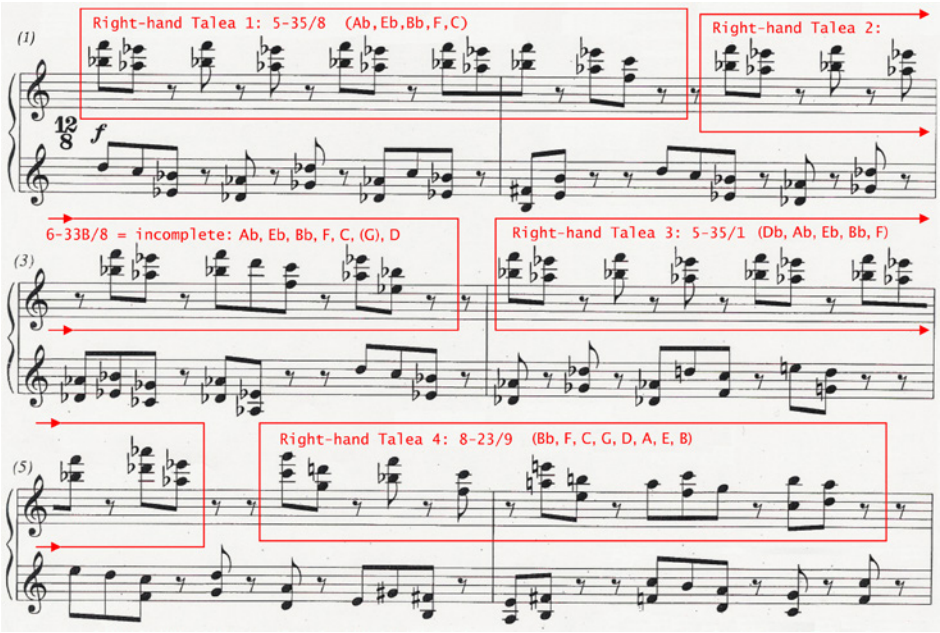
When testing the relevance of the harmonic-family idea, the *Talea* structure provides a natural starting point.

Ex. 6 gives the four first right-hand *Taleae* in bars 1–6. The notes in the first one form the Pentatonic five-element Stack-of-Fifths family member, set class 5–35. The *third* one, in bars 4 and 5, also produces a five-element member, but it is a different set in the class. The pcset of Talea 3 is a T5 transposition, a fourth up or a fifth down, of the Talea 1 pcset. The fourth *Talea*, in bars 5 and 6, is the eight-element family member 8–23, or the Diatonic Octad Class. The second *Talea*, in bars 2 and 3, contains

[11] Forte 1973, 11–13, 179–181. In this study Forte's classification for $T_n/T_nI$-type set-classes is extended so that the two transpositional "halves" of an inversionally non-symmetric $T_n/T_nI$ class get extra labels A and B to distinguish between them. This results in a classification for transpositional set classes. Thus, for example, the leftmost chord in Ex. 5b gets the name 3-5A. For details, see Castrén 1994, 1–2.

[12] Persons not familiar with this classification can observe only the first number of the Forte name. It tells how many different pitch-classes ("note names") the collection contains. Ex. 5a, for example, has two five-element family members. The second number identifies the collection among other same-sized collections. The third number, not being a part of Forte's nomenclature, identifies the individual member set among all sets that are each other's transpositions. This corresponds to the way in which we in traditional theory identify, for example, C Major, C# Major, D Major, etc. In the numeric notation I use in this study, C = 0, C# = 1, D = 2, ... B = 11.

only six pitch-classes, as it is an incomplete version of the seven-element Stack-of-Fifths member, with a missing G. This is not a mistake but something I will examine in more detail below, in the context of what I call *family-member completion*.



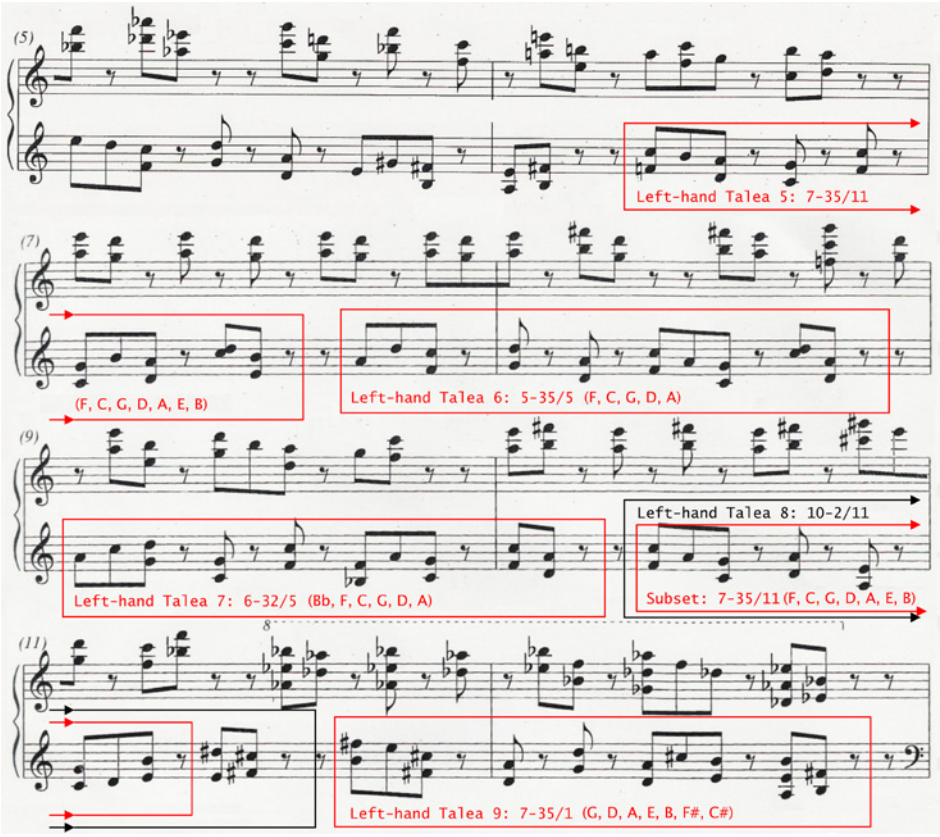

**Example 6.** *Fém*, bars 1–6. Right-hand *Taleae* constituting Stack-of-Fifths Family members © SCHOTT MUSIC, Mainz – Germany.

Ex. 7 identifies the left-hand *Taleae* 5-9, starting from bar 6. The fifth *Talea* is the seven-element Stack-of-Fifths family member, particularly the C Major collection.[13] It is followed by the five-element member (set class 5–35, particularly the F Pentatonic) and the six-element member, set class 6–32. The next, ninth *Talea* is *not* a member of the harmonic family, but, interestingly, it has a very clear subset that is the same seven-element C major collection previously seen. The last *Talea* in the example is again a clear seven-element Stack-of-Fifths family member, this time something that in traditional music theory would be called a D major.[14]

[13] In the expression 7–35/11, the number 11 refers to the first element of the pcset when it is in a so-called *normal order*. Normal ordering is a uniform way to order all pcsets for identification purposes. The pitch-class it designates as the first element may be different from the pc traditional theory would identify as a starting point. Here, the starting point is 11 (B), instead of C, as in traditional theory.

[14] Wilson names *Taleae* 5 and 6 as D Dorian, *Talea* 7 as C Dorian and *Talea* 9 as E Dorian, identifying essentially the same collections as I do here, except that *Talea* 7 doesn't contain the Eb that would actually complete it to C Dorian /Bb Major. Wilson doesn't continue this kind of analysis in any systematic manner. Wilson 1992, 68.

Examples 6 and 7 suggest that in *Fém*, occurrences of Stack-of-Fifths family members may correlate with the *Talea* structure at a high level, but not without deviations. A certain pitch-selectional strategy may supersede an otherwise obvious family-member-per-*Talea* norm, or the composer perhaps just wants to momentarily introduce a disruptive element in an otherwise coherent context, as in the end of the left-hand *Talea* 8 in Ex. 7.

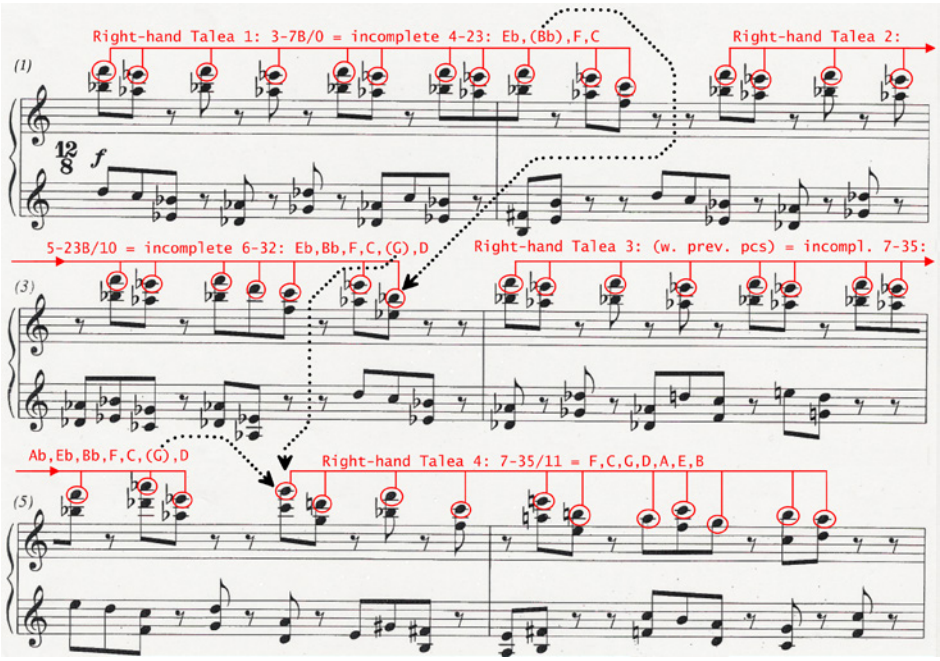



**Example 7.** *Fém*, bars 6–12. Left-hand Taleae constituting Stack-of-Fifths family members. © SCHOTT MUSIC, Mainz – Germany.

## Family-member completion

It seems to me that in *Fém*, there are situations where the composer first creates expectations by introducing an incomplete family member, and then restores the "disturbed balance" by stating the missing element or elements in some prominent manner. This strategy also introduces something the strictly "*Talea*-bound" previous examples did not: family members extending over a single *Talea*.

Ex. 8 is again from the beginning of the piece. This time I'll concentrate only on the top line, marked with red circles. The top line of the first right-hand *Talea* constitutes an incomplete four-element Stack-of-Fifths member, with Bb missing. The Bb does indeed appear a while later, as the last element of the second *Talea* in bar 3 (follow the highest dotted line).




**Example 8.** *Fém*, bars 1–6. Completion of Stack-of-Fifths family members with "missing elements". © SCHOTT MUSIC, Mainz – Germany.

What makes this completion especially interesting is the top line pitch D in the middle of bar 3. It might seem at first that it disturbs the completion scheme of the four-element collection, but what I think it actually does is that before the completion of the first incomplete collection, it elliptically introduces another. The four-element Stack-of-Fifths collection Eb-Bb-F-C is extended by two more elements, G and D, out of which the G is initially missing. The G comes forcefully as the first

element of the fourth right-hand *Talea* in bar 5. Before the G, however, we have the highest note so far, Ab, as the second top-line note in bar 5. It doesn't yet introduce another incomplete collection, but participates by extending the perfect-fifth stack from the "other end". A notion that especially emphasises the G is that while it completes one seven-element Stack-of-Fifths member, it also begins *Talea* 4, which contains another transposition of the same seven-element member.[15]

The situation we saw in Ex. 6, with the entire right-hand part involved, contained what is in my understanding just another variant of this same family-member completion: the second right-hand *Talea* misses a G, and the missing element is stated strongly in the beginning of the fourth *Talea* in bar 5. The five-element family member in *Talea* 3 does not disrupt the "G expectation" as it merely transposes the pitch classes of the *Talea* 1 collection a fifth down.[16]

In an alternative perspective, we might observe the accumulation of right-hand fifths over the opening bars: the initial *Talea* 1 stack of fifths Ab-Eb-Bb-F-C is expanded upwards with (the initially missing) G and D in *Talea* 2; in *Talea* 3, the resulting stack is expanded downwards with Db, and in *Talea* 4 again upwards with A, E and B (besides stating the G, of course). By the end of *Talea* 4 the accumulated stack of fifths contains 11 pitch classes, and the only so far unstated one, F#, comes very prominently in the end of *Talea* 5, as the third beat of bar 8 (see Ex. 9).

## Harmonic families in determining level of dissonance

Ex. 9 identifies another type of case where Stack-of-Fifths family members may span over more than one *Talea*. Without the constraints of the *Talea* structure, it may be at times difficult to assess where one family member changes into the following one, as the two may share common pitches and create a sense of "gliding" from one member to the next. I compare two linear entities, one consisting of the top elements of the right-hand part, the other of the lower elements of the left-hand part. The former is again marked with red circles, the latter with red rectangles. The excerpt contains the same bars as Ex. 7, 5–12.

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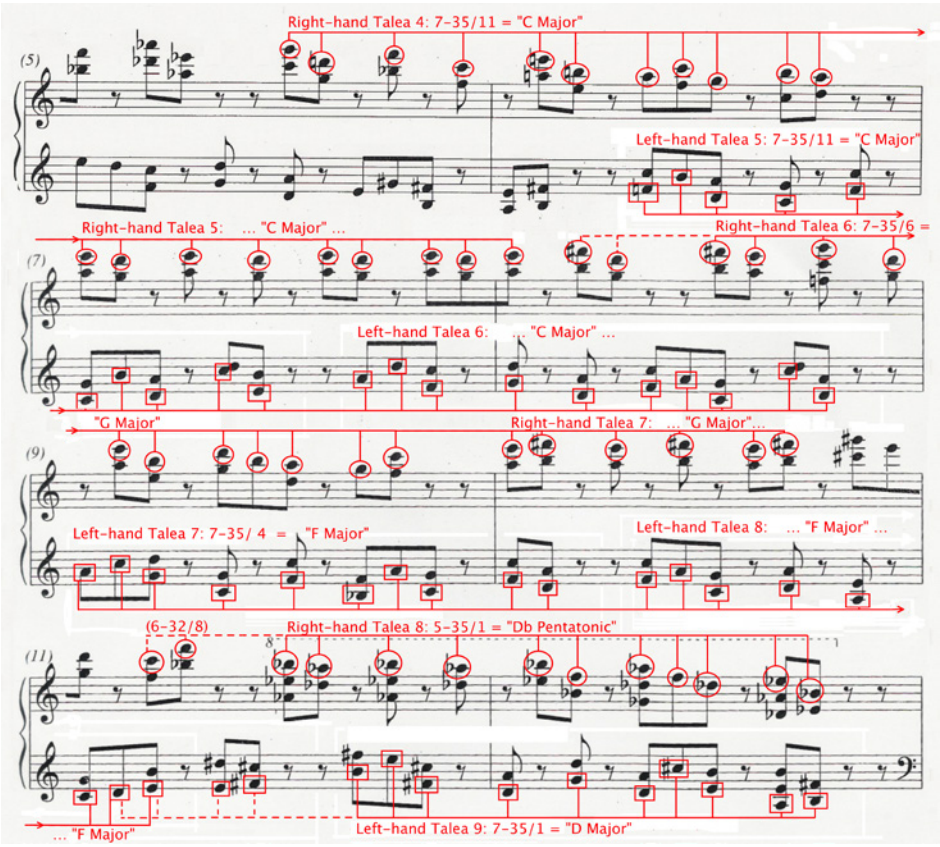
[15] As many scholars have noted, Ligeti composed non-tonal music, but associations with tonal concepts were still relevant to him. Here, concepts such as *suspension*, *resolution* and *modulation* might come to mind. For a thorough discussion on Ligeti's relation with tonality, see Cuciurean 2000; Drott 2003; Malfatti 2004; Searby 2010, 1–27, 151–158; Shaffer 2011; Podgurski 2013; Quinnett 2014; Polth 2016.

[16] In what is possibly another category of incomplete entities, Järvi notes that *Fém* contains chords of stacked fifths with missing elements, such as Gb–Db–(Ab)–(Eb)–Bb–F (Järvi 2011, 51). She also states that there are linear passages with parallel fifths so prevalent that in some cases single notes between them might even be completed into "illusory fifths" in the listener's mind (Ibid., 46–47, 52). Perhaps these various incomplete pitch formations might be a reflection of Ligeti's "Clocks-to-Clouds" thinking, away from perfect structures or entities to imperfect ones, with of the idea of a "scale between precision and imprecision". See Steinitz 2011, 168–169, 231–234.




**Example 9.** Bars 5–12. Long linear segments. © SCHOTT MUSIC, Mainz – Germany.

The top pitches in the right-hand *Talea* 4 and in most of *Talea* 5 (bar 5 to beginning of bar 8) constitute the seven-element Stack-of-Fifths class 7–35, and specifically in that class, the C major collection. In the left-hand *Taleae* 5 and 6, in bars 6–8, the line formed from the lowest elements produces the same pcset. Thus, in most of bar 6 and the entire bar 7, a "white key diatonic" situation is clearly established. This would not change even if we took *all* pitches into account, not just the outer ones.

Then, an interesting thing happens in bars 8–10. The top line introduces a new pitch, F#, in bar 8, and the right-hand *Talea* 6 and the first half of *Talea* 7 consist of pitches producing the G major member set of 7–35. This represents a seven-semitone transposition, T7, up from the previous C Major collection. The left-hand line, in turn, also introduces a new pitch, Bb, in the 7th left-hand Talea in bar 9, producing an F major member set of the set class 7–35. This represents a seven-semitone transposition *down* from the previous C major member set. The uniform initial C Major contents of the two lines are gradually differentiated with fifth-transpositions that introduce new elements as slowly as possible, one at a time. The prevalent element of

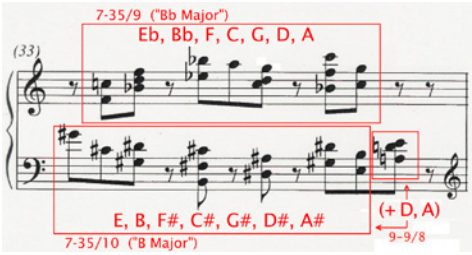
the piece, the fifth, is again reflected also in the transpositional relations between the family members. Furthermore, as the G major and F major collections are T7-transpositions of C-major (up and down), the unions they produce with the latter will also be Stack-of-Fifths family members. The union of C major and G major is the eight-element Stack-of-Fifths member 8–23, the Diatonic Octad Class, and the union of F major and 8–23 produces the nine-element Stack-of-Fifths class 9–9.

Moreover, if we take into consideration all pitches, not only those in the outer lines, we see again that the pc contents of the fragment remain the same: the material from the beginning of bar 6 (or in the right hand already from the beginning of *Talea* 4 in bar 5) until the first half of the right-hand *Talea* 7 in bar 10 is reducible to the nine-element Stack-of-Fifths class 9–9.

The lowest-pitch line of the left-hand *Talea* 9, in bars 11–12 (and also the four previous pitches, marked with dotted lines), produces again the seven-element Stack-of-Fifths class 7–35. This time the member is specifically D major. The top-line pitches in the right-hand *Talea* 8, in turn, starting from bar 11, form the Pentatonic five-element Stack-of-Fifths class 5–35. Interestingly, the collection Db-Eb-F-Ab-Bb is the literal complement of the G major collection of the previous bars. Together with the dyad C-F in the 3rd and 4th beat of bar 11 (see the dotted line), the five-element collection expands into a member of the six-element Stack-of-Fifths class, 6–32. The process away from the diatonic "white-key" situation in bars 6–7 takes another step toward chromaticism, as the union of the D Major and 6–32 collections contain all 12 notes of the chromatic scale. This happens just in time for the beginning of the Section A' that repeats the material of Section A, with an octave-and-a-fifth transposition downwards. I will return to linear entities being reducible to Stack-of-Fifths family members again when discussing the Coda.

So far we have seen both harmonic-family integrity with respect to the *Talea structure* (Examples 6 and 7), and longer, more ambiguous presence of Stack-of-Fifths members over several successive *Taleae* – or between simultaneous *Taleae* in the two hands. Ex. 9, moreover, suggests a process from a relatively consonant situation to an increasingly dissonant one, with the help of family member selection: selecting instances of harmonic-family members with decreasing amount of common elements produces more chromaticism.

Ex. 10 gives an example of a dissonant pc set selection from bar 33, with two simultaneous instances of the seven-element Stack-of-Fifths family member 7–35. In traditional terms we would say that the right-hand part contains Bb Major and the left-hand part B Major. The number of common elements is two (pitch classes 3 and 10, or D#/Eb and A#/Bb), which is the least possible amount between any two Major scales. As Bb Major is the T11 of B Major (a major seventh up from B, or a minor second down), the corresponding elements in the two collections ("roots", "thirds", "fifths", etc.) are always separated by a sharp dissonance, and, consequently, the overall level of dissonance is high.

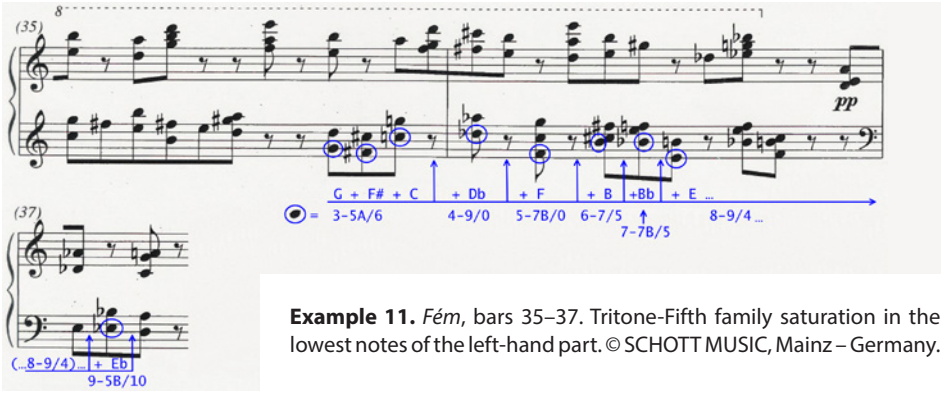



**Example 10.** *Fém*, bar 33. Two simultaneous instances of the seven-element Stack-of-Fifths family member. © SCHOTT MUSIC, Mainz – Germany.

It seems reasonable to assume that with pc set selection strategies such as this, it could have been possible for the composer to control the overall level of dissonance in the music. *Fém* seems to contain a harmonic process from relatively consonant harmonies in the beginning to highly dissonant ones at the end of Section C, and back to slightly milder levels of dissonance again in the Coda.

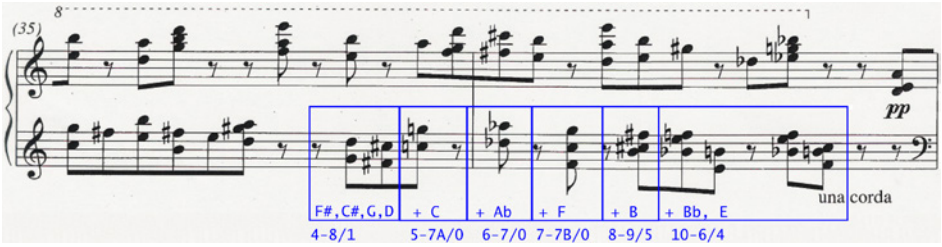
## Harmonic-family saturation

Ex. 11 takes us to bars 35–37, and to the beginning of a left-hand *Talea*. I will first concentrate on the lowest notes only, marked with blue circles. Notes in the first three circles constitute a three-element member of the Tritone-Fifth family (F#-C-G). Adding a fourth element to these three, in the beginning of bar 36, produces a *four*-element family member (F#-C-G-Db). Adding the fifth element, F, produces a *five*-element Tritone-Fifth member (F-C-F#-Db-G), and so on, until we reach a *nine*-element member with the Eb in bar 37 (Eb-Bb-E-B-F-C-F#-Db-G). The few bassline notes without circles do not break the logic as they are merely second instances of pitch-classes already stated before. What we have here is an extremely clear case of what I call *harmonic-family saturation*: we start from small family members, and by introducing new pitch-classes gain larger ones. Such a process can be seen frequently in *Fém*.



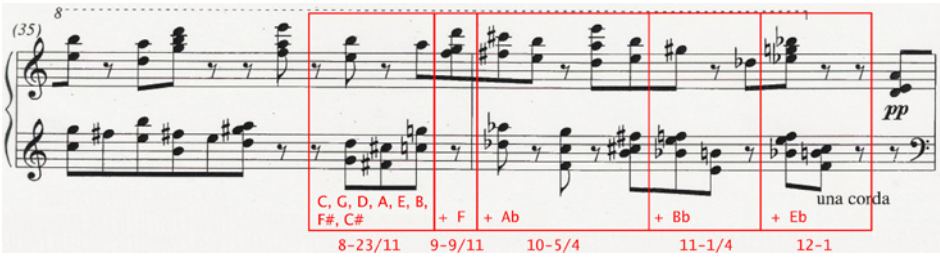

**Example 11.** *Fém*, bars 35–37. Tritone-Fifth family saturation in the lowest notes of the left-hand part. © SCHOTT MUSIC, Mainz – Germany.

In Ex. 12 we have again the bars 35–36, but this time with the left-hand part taken in its entirety. We see a similar saturation process, now from a four-element member up to a ten-element member. The process is interlocked with the previous one but is formed from different combinations of pitch-classes.



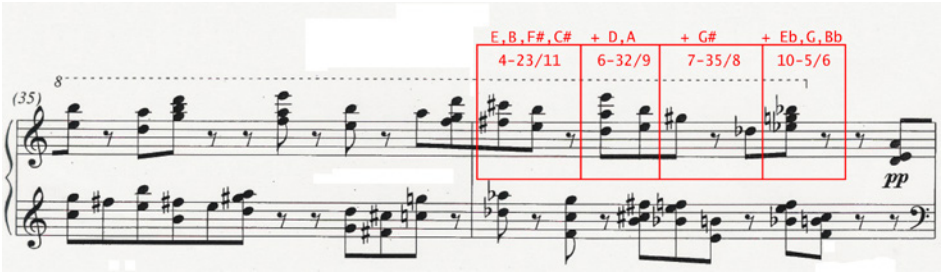

**Example 12.** *Fém*, bars 35–36. Tritone-Fifth family saturation in the left-hand part. © SCHOTT MUSIC, Mainz – Germany.

Ex. 13 gives yet again the same bars, but now the left- and right-hand parts are observed simultaneously. The saturation process is still there to be seen, extending from an eight-element member to a twelve-element member, but, incredibly, it has "changed families", as we are back with the red Stack-of-Fifths family.




**Example 13.** *Fém*, bars 35–36. Stack-of-Fifths family saturation, with both left- and right-hand parts. © SCHOTT MUSIC, Mainz – Germany.

Finally, examining the right-hand part alone, we have a short saturation process, from a four-element member to a ten-element member in bar 36 (Ex. 14).




**Example 14.** *Fém*, bars 35–36. A short Stack-of-Fifths family saturation process in the right-hand part (bar 36). © SCHOTT MUSIC, Mainz – Germany.

All in all, what we have here seems to be a kind of "musical crossword puzzle" that realises referential harmonic entities in many layers and dimensions simultaneously. I don't know if a constellation like this results from deliberate planning or from some intuitive stroke of genius, but I find it nevertheless astonishing.

## The Coda

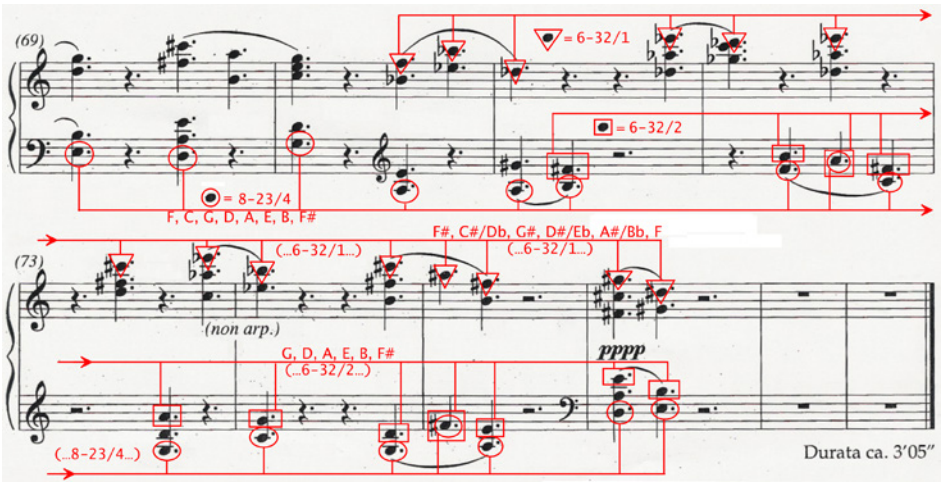
My final example is from the Coda. Initially, the Coda may seem quite enigmatic. The *Taleae* appear to be absent, and there are many chord types that are rare or non-existent in the earlier sections. The *Taleae* are present, however, but in a highly altered form.[17] I return here to a viewpoint we already examined earlier: linear formations spanning over more than one *Talea* and being reducible to harmonic family members.

Ex. 15 gives the last bars of the piece. As both Bakker and Polth note, there are similarities between materials in the end of the A section (bars 11–12; see Ex. 9) and the closing bars.[18] The Coda material is transposed a fifth down. The right-hand *Talea* 8 has its counterpart starting from the end of bar 71, and the 9th left-hand *Talea* has its counterpart starting from bar 72. (Examples 15 and 9). Moreover, besides the two *Taleae*, the beginning of bar 11 bear resemblance with materials in bars 69–70. The correspondence between the two fragments is evident, but not exact..

Ex. 15 shows three linear segments. The highest one, starting from the middle of bar 70 and marked with red triangles, produces the six-element Stack-of-Fifths member 6–32/1. The middle line, starting from bar 71 and marked with red rectan-

[17] See Bakker 2013, 76–80 for an interesting analysis of the rhythmic structure of the conclusion.
[18] Bakker 2013, 80; Polth 2016, 126–127.

gles, produces another transposition of the same six-element member, 6–32/2. The two 6–32 members lie a minor second apart, sharing only one pitch-class (F#) and providing another example of (the intentionally?) wide distribution of pitch-classes, with its potential for controlling the level of dissonance. The eight-bar long bassline, marked with red circles and combining the lowest notes of the left-hand part, produces the eight-element Stack-of-Fifths family member 8–23/4.[19] The three lines seem to produce a sort of curious pseudo-polyphony.




**Example 15.** *Fém*, bars 69–78. Simultaneous linear instances of Stack-of-Fifths family members. © SCHOTT MUSIC, Mainz – Germany.

## Conclusions

As the starting point of this study, I suggested that two "harmonic families" play an important role in the pitch organization of *Fém*. Although the families actually consist of pitch-class sets (registral positioning and order between the elements is free), they can be easily described with the help of chords: one family consists of stacks of pure fifths, the other of stacks of alternating tritones and pure fifths.

I then tried to demonstrate how instances of family members permeate the music in numerous different ways. They may constitute clearly identifiable objects in the music – chords, phrases spanning a *Talea*, almost motive-like patterns of fifths that recur constantly, linear formations, combinations of linear formations – or they

[19] Because the note F in bar 72 does not have an exact counterpart in the corresponding left-hand line in bar 11 (an exact fifth-down transposition would have an E here), the end result is different from its counterpart in bars 11–12, producing the Diatonic Octad Class instead.

may exist as more ambiguous, "cloud-like" entities. Or, a family member may first be given with a missing element, and the completion then realised in some pronounced way that restores the balance, perhaps evoking associations with tonal procedures. An instance of a given family member may be shared by both hands, or the hands may have separate instances of their own. In the latter case, transpositional relations between instances seem to point to the idea of deliberate control of common elements between the instances, and, via this, to the control of the overall level of dissonance in the music. Furthermore, family members may participate in dense saturation processes where new pitches expand smaller family members into larger ones in a stepwise manner.

A logical next step would be to apply the idea of harmonic families to Ligeti's other *Etudes,* examining whether this approach could complement existing observations made by other analysts. Another, more theoretical approach, would be the study of harmonic families in general: what kind of properties could a given family be said to possess in terms of its chordal, linear, polyphonic, etc. potential?

I have the feeling that the observations I have just offered have merely scratched the surface of *Fém*. The harmonic structure of this piece of modest proportions is tremendously rich. It is also elusive: just when you think that you have found regularities or consistencies or logic, something comes up and pulls the rug from under your feet.

The harmonic organization has exactly the same life and vigour and complexity as the more famous and obvious rhythmic parameter does. *Fém* is a small masterpiece, a worthy successor to the grand tradition of the virtuoso piano *etude.*

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MANOS PANAYIOTAKIS

# Aspects of melodic and rhythmical textures in György Ligeti's micro and macro polyphony

## Means of texture organization by twentieth-century composers

Every great composer of the past and present has developed a personal idiom, a pool of characteristics which are evident in their works and which create their compositional identity. These elements of identity – more or less consciously formed by each composer – create an impression of a composer's self on those who perceive each work. We often listen to a particular piece and can correctly guess it is by Bach, Mozart, Beethoven, Messiaen or Stravinsky. This compositional identity is consistently present, thus making one's works identifiable and connected to their creator. It may also be common for the majority of composers, performers and listeners to agree that, for a composer, finding this personal idiom, their personal identity, is the greatest – but the most rewarding – challenge to be faced. In the case of György Ligeti, his compositions are filled with such elements of idiom recognition, including his micro-polyphony and polyrhythmic textures among others, some of which are elaborated here.

During the 1950s a number of European (and later, American) composers chose not to follow the integral serialism or aleatorism, but to establish a new musical style, focused on timbre, harmonic sonorities and the fluctuation of textural densities. In an attempt to determine the characteristics of this, new to the 1950s, compositional approach, the term "sonorism" was introduced by both composers and musicologists, to describe the exploration of new, unconventional sounds and musical textures from traditional instruments, produced by expanding the instrumental potential through extended techniques.

Researcher Danuta Mirka, in her book *The Sonoristic Structuralism of Krzysztof Penderecki*, describes sonorism as an exploration of pure sound values of the musical material (Mirka 2014, 25).

This practice seems to be reflected on different levels in works by composers of the twentieth century. Figure 1 presents four composers who have utilised different media in their individual compositional style to shape and organise the texture of their works within this context.

| Composers | Media |
|---|---|
| Witold **Lutosawski** | Aleatoric counterpoint |
| Krzysztof **Penderecki** | Graphs |
| Iannis **Xenakis** | Stochastic methods |
| György **Ligeti** | Micropolyphony |

**Figure 1.** Media of texture organization per composer.

In Ligeti's music, there are examples of works in which the composer makes use of extended techniques. This is evident, for instance, within two of his masterpieces: in *Apparitions,* where extended instrumental techniques are utilised as a means to organise aspects of articulation, as well as within the breath-tone passage of his *Atmosphères.*

Beyond these examples, there are also cases of works in which Ligeti seems to achieve an "acoustic synthesis" of sound, through techniques which remind these utilised in studio WDR in Cologne, such as "additive synthesis, filtering, and fluctuating color" (phenomenon *Bewegungsfarbe*) (Iverson 2011, 63; Levy 2009, 73). This can be identified particularly in works such as *Lontano, Atmosphères,* or in parts of *Melodien.* There, solid orchestral sonorities seem to be synthesised, and media such as micropolyphony or rhythmical irregularities have a strong presence.

According to Ligeti's own words, as mentioned in the interview collection *Ligeti in Conversation* (1983):

> Technically speaking, I have always approached musical texture through part-writing. Both *Atmosphères* and *Lontano* have a dense canonic structure. But you cannot actually hear the polyphony, the canon. You hear kind of impenetrable texture, something like a very densely woven cobweb…. [*sic*] The polyphonic structure does not come through, you cannot hear it, it remains hidden in a microscopic, underwater world, to us inaudible. (Várnai 1983, 14–15[1])

[1] *Ligeti in Conversation with Péter Várnai, Josef Häusler, Claude Samuel and Himself*, trans. Gabor J. Schabert, Sarah E. Soulsby, Terence Kilmartin and Geoffrey Skelton, London: Eulenburg, 1983.

According to the acclaimed composer's words, György Ligeti's micropolyphony consists of two levels. The inner, inaudible level consists predominantly of sophisticated canonic procedures, gradually unfolding melodic lines and irregular rotations of intervals. The outer, audible level is often perceived as a shape of "clusteroid" moving parts, which form massive harmonic textures. The sound components are obscure and create interwoven sound masses, in the form of a moving cluster of various ranges and densities (Varnai 1983; Bauer 2001). Thus, micropolyphony becomes a powerful textural tool in Ligeti's hands for organising the successions of sonoristic events of this specific kind, and an important characteristic of his compositional style.

In the subsequent sections, aspects of Ligeti's organization of polyphonic textures will be examined through specific examples of three works from the composer's different compositional periods. These works have been selected with a view to exploring and highlighting specific tools with which the composer seems to manipulate aspects of texture, pitch and rhythm in his structures. More specifically, starting within a context of orchestral instrumentation, harmonic and melodic elements from *Melodien* will be explored, focusing on the interaction between melodic lines, which generate dense, textural surfaces. Following this, a discussion is attempted in relation to the organization of rhythmical elements as these evolve within a gradual opening of the musical space, by examining the opening of the third movement of the *Chamber Concerto*. Finally, relevant aspects of rhythmic structure and melodic contours are addressed, within the single-instrument context of the *Touches Bloquées* piano étude. The analysis of the extracts presented bears no generalization purposes, as it is acknowledged that the specific examples cannot justify broad generalizations about Ligeti's practice.

## Exploration of harmonic and melodic elements in Ligeti's *Melodien*

The orchestral work *Melodien* was composed in 1971 and is one of the most representative examples of Ligeti's writing. It is a pivotal work between the sound clouds and the triadic organization, followed in his later works, such as the *Horn Trio*, composed in 1982 (Searby 2001). For a post-1950s contemporary composer, the melodic shaping seems to have been the "forbidden fruit" of modern music. Unlike his previous works such as *Lontano* and *Atmosphères*, in which Ligeti uses canonic procedures to shape their texture, this process does not seem to be applied in *Melodien* (Reiprich 1978; Bernard 1999; Bauer 2001). In this particular work, Ligeti seems to shape his melodic lines through different ways of utilization and organization of intervals.

At the beginning of the work, rapid, superimposed waves of ascending gestures, which are primarily chromatic, are presented by the majority of the instruments

(Baca-Lobera 1991). The simultaneous sound of these ascending gestures seems to form a melodic and harmonic grid of horizontal and vertical major and minor seconds, which might be perceived as a moving cluster.

Taking a closer look at the beginning of the previously-mentioned ascending gestures of individual instruments, various pitches are used as their starting points. From a macro-structural point of view, the isolation of the starting pitches of each gesture seems to create a melodic contour for individual instruments, which constitutes the melodic "spine" of the first part (bars 1–10).

The figure below illustrates the sequence of pitches utilised as starting points for each gesture within the Flute part, as found in bars 1 to 6. The solid-line circles include pitches which appear for the first time, while pitches which appear for the second time are placed within dashed circles.

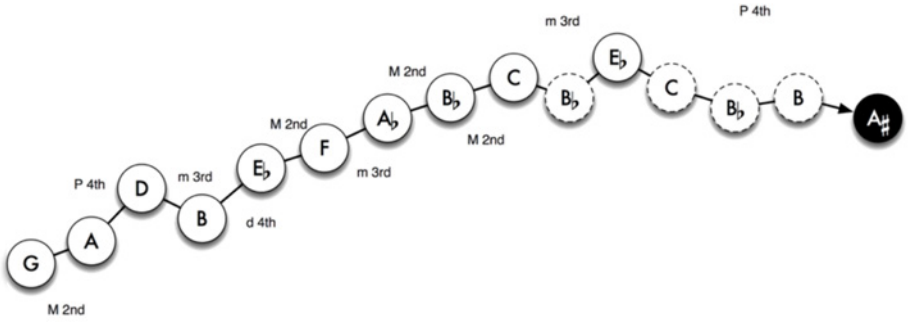


**Figure 2.** Melodic shape created by the sequence of pitches.

The final pitch mentioned in Figure 2 (A sharp) is persistently repeated throughout bars 4–6, leading to bar 7, where the dematerialization of the overall instrumental texture of this section begins. The intervals mentioned between pitches which are introduced for the first time indicate the shape of this specific melodic contour, suggesting the direction of the flute sound waves in this section. It is worth mentioning that the listener's perception of the melody might not necessarily occur through the contour created by the individual pitches used as starting points. In contrast, the main audible melodic element of this section might be perceived more clearly through the overall shape of the melodic contour. Therefore, what might be perceived in place of a melody could be the overall direction of the ascending sound waves, as this is shaped by the sequence of the starting pitches.

In the next section (bars 11–30), Ligeti organises his sound clouds by gradually unfolding a melodic line through additive repetition, in 57 distinct steps. Beginning from bar 14, the pattern of $F_5$ and $A_5$ appears in the Piccolo part, which is repeated continuously and gradually expanded by adding further pitches to the initial two-note material. The same idea is applied to various instruments following the Piccolo

throughout this section. The melodic lines are rhythmically organised with triplets, quintuplets, sextuplets and septuplets, along with syncopations in the Violin 2 part, which suggests four subdivisions per beat. The simultaneous sound of the combined rhythms from the melodic lines of all instruments generates complex rhythmical irregularities, which create the impression of a harmonic texture produced by the vertical sonority of the individual melodic lines.

Figure 3 below represents the first four steps of this melodic compositional process, indicating the enrichment of the primary material of $F_5$ and $A_5$ as found in bars 14–18 of the Piccolo part. At the same time, harmonic possibilities for each step seem to be implied. Therefore, each step of the following figure might be viewed both as melodic and harmonic musical material.

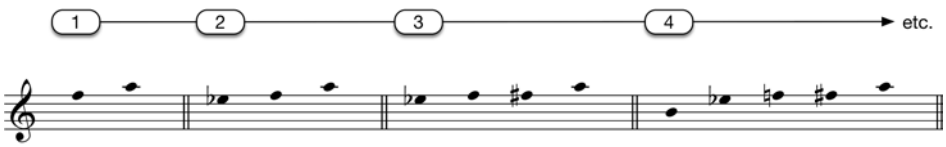


**Figure 3.** The four steps of unfolding melody in bars 14–30.

Similar melodic shaping can be found in Ligeti's *Ten Pieces for Wind Quintet* (1968), where three different melodic lines are developed by the Flute, the Clarinet and the Bassoon (Clendinning 1993). A similar process of melodic material enrichment is presented in Figure 4, which shows the melodic progression for the Flute part, as identified within the first four bars from the eighth movement of the *Ten Pieces*.

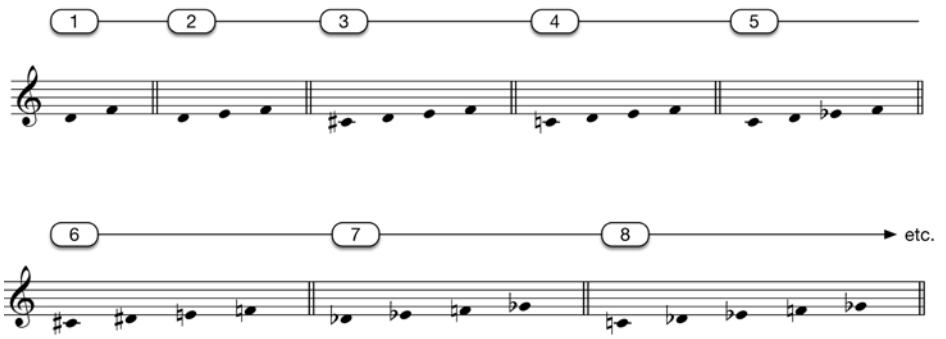


**Figure 4.** Enrichment of Flute melodic material in Movement 8 of *Ten Pieces for Wind Quintet* (bars 1–4).

On another level, along similar lines, this idea of gradual melodic development can be traced in works by Steve Reich and other minimalists, who use what often seems to be minimum compositional material in order to develop a melodic concept in a progressive manner. Relevant examples for reference might include Terry Riley's *In C* (1964), Steve Reich's *Vermont Counterpoint* (1982) and *Eight Lines* (1983).

In bars 46–56 of *Melodien*, Ligeti expands the two initial textures described above by using arpeggiated patterns. Examining the parts where these patterns are more prominent indicates ways in which Ligeti seems to shape the density, the intensity and the mobility of the texture in this section by developing the range of the various sonic events. Starting from bar 46 with the Viola, a rather newly introduced arpeggio-style material of three notes ($F_3$, $G_3$ and $B_3$) is presented. This idea appears consecutively from various instruments in every bar, creating the impression that this developing pattern passes from one instrument to another. The following table illustrates the beginning points (with bar number) of this idea, as presented by each instrument.

| **Bar Number** | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Instrument** | Vla. | Pno.<br>Vibr. | Vla.<br>Vln. II | Bsn. | Cl.<br>Pno.<br>Vibr.<br>Vlc. | Cl.<br>Bsn.<br>Tpt. | Vibr.<br>Pno.<br>Vla.<br>Vlc. | Cl.<br>Cb. | Cl.<br>Pno.<br>Hrn. | Ob.<br>Bsn.<br>Fl.<br>Tba.<br>Vlc. | Vla.<br>Cb. |

**Table 1.** Introduction of arpeggiated pattern per instrument(s), per bar.

As shown in Figure 5, the initial range of this motive is quite limited when introduced by the viola, while the overall, expanded, range of the arpeggiated texture appears in bar 55, by the flute and the contrabass.

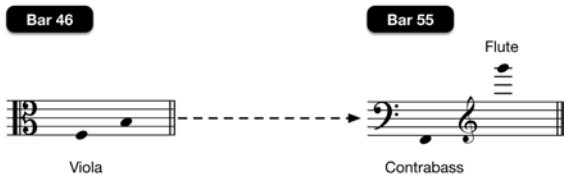


**Figure 5.** Expansion of the range of the arpeggiated patterns (bars 46–56).

This idea of the arpeggiated movement can be located again in bar 70, where the vibraphone introduces another similar element with an even more limited range ($B_3$ and $C_4$ sharp). The initial range reaches its peak in bar 83 ($C_4$ – $G_5$), while similar patterns are successively introduced through various instruments: for example, the

violoncello starts with a persistent $C_4$, progressively expanding to the range of $A_2$ flat – $E_4$ flat, in bar 80. This material is gradually developed and expanded dramatically by the entire orchestra, reaching its widest orchestral range in bar 91, within a low dynamics environment (*p* to *ppp)*. The following figure presents the range of the initial pitches (a) as introduced by the vibraphone in bar 70, along with the expanded orchestral range (b) as encountered at its peak point in bar 91 by the violoncello ($E_3$, lowest pitch) and the piano ($C_8$, highest pitch):

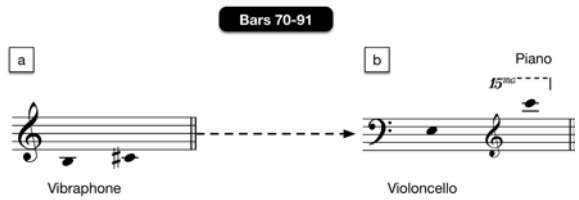


**Figure 6.** Expansion of the range of the arpeggiated patterns (bars 70–91).

The final section with arpeggiated texture begins from all the strings simultaneously (bar 107), with the exception of the Contrabass, which maintains a sustained harmonic. The reappearance of this idea in bar 107 seems to signify a change of the texture, which becomes more mobile, in contrast to the sustained pitches of the previous section (bars 96–106). In this case, the arpeggiated movements of each individual instrument appear significantly broad right from the first bar of the section (bar 107). More specifically, the initial range of each string instrument is presented in the following figure (Figure 7), along with the overall range of the arpeggiated texture of the whole string ensemble within this section.

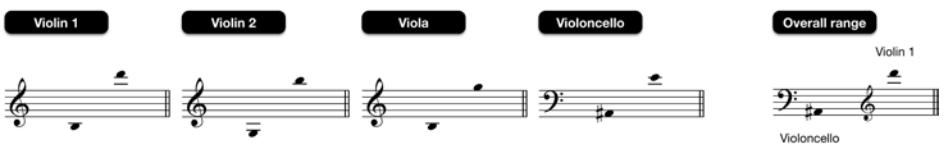


**Figure 7.** Individual string instruments and overall range of the arpeggiated patterns in bars 107–109.

In the entire arpeggiated section, the interwoven arpeggiated patterns seem to create polyrhythmic textures as well as horizontal melodic lines, which result from the alternation of the presented pitches. In this context, melody does not appear in its traditional form, but seems to emerge more from the listener's individual interpretations of the perceived pitches.

## Exploration of rhythmic elements in Ligeti's *Chamber Concerto* and *Touches Bloquées*

In addition to the above–mentioned specific melodic writing, a significant percentage of the effect of the Ligetian micropolyphony can be attributed to the use of polyrhythmic patterns. Ligeti often creates a polyrhythmic canvas, on which all the other elements of the work will be developed. The opening of the third movement of the *Chamber Concerto* (1969–1970) and the third Étude of the First Book, *Touches Bloquées* (1985) might serve as representative examples of Ligeti's imaginative writing, which is often used to create multiplex polyrhythmic patterns in order to enrich the resultant rhythms.

### *Chamber Concerto* (1969–1971)

In the third movement of his *Chamber Concerto*, the composer seems to structure a polyrhythmic and multi–timbral first part. The overall texture in the beginning of this movement consists of repeated pitches for each instrument. Among the repeated pitches, accents (sfz) appear at various points within bars, including both downbeats and upbeats. This practice generates a texture characterised by complex rhythmic sequences which are determined by each accented beat. The figure below highlights the entry point of each instrument and the duration of each repeated pattern, counted in demi–semi–quavers. The red colour represents sound, indicating the number of repeated pitches per instrument, while the number of rests is represented in yellow. This provides a general impression of the horizontal alternation of pitches and rests, as well as the vertical interaction of these through different instrumental timbres.

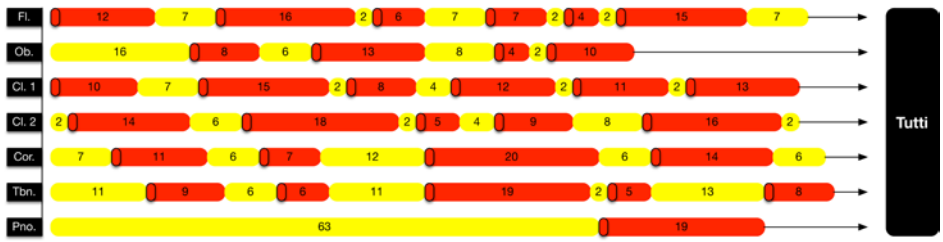


**Figure 8.** Durations of repeated pitches and rests in the opening of *Chamber Concerto*.

The upper part of the next figure provides an optical illustration of the rhythmic macro-structure in the opening of the third movement, by isolating the specific place of each sforzando, as previously presented in Figure 8. This can summarise

the rhythmical irregularities occurring from the accented pitches, thus forming the polyrhythmic texture of the beginning section. In addition, the bottom part of the figure depicts the melodic contour which is generated from the melodic expansion of pitch $E_4$, supporting the rhythmic material. This contour is first introduced by the winds, brass and keyboards and later reappears by the pizzicato strings at the end of the section.

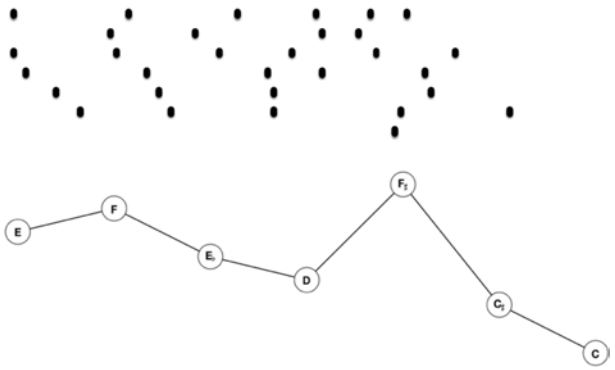


**Figure 9.** Visualization of rhythm created by sfz entries in the opening of *Chamber Concerto* (Movement 3).

### *Étude No. 3, Book I,* Touches Bloquées *(1985)*

Although Ligeti used polyrhythmic elements in his music since his early compositional period, his interest in this practice seems to have become more prominent during the 1980s. Medieval music, African rhythms, as well as composers Colon Nancarrow and Roberto Sierra contributed to his inspiration in relation to polyrhythmic writing (Toop 1999).

In his third Étude from Book I, Ligeti uses a very inventive and effective way in piano writing to achieve numerous rapid upbeats and rests with high rhythmic accuracy. The performer is asked to play numerous rapid alterations between sonorous pitches and silent notes of equal values (quavers and silent quavers), creating the effect of sounds and rests. To achieve this to the highest level of rhythmic accuracy, Ligeti has utilised the technique of silent key pressing: the performer silently blocks specific keys as indicated by the composer, and presses them along with the non-blocked keys, which creates the effect of highly accurate rhythmic sequences of values and rests.

More specifically, *Touches Bloquées* has a simple ternary form, A–B–A1 (bars 1–71; bars 72–91; bars 92–115 respectively), where individual quavers or groups of quavers dominate the rhythmic structure of the work. The rhythmical texture of

the Étude is based on a continuous quaver pulse which is interrupted by rests in the texture, created by the blocked keys. Pairs of audible and inaudible quavers create a repeated effect of alternating sound and silence, which is prominent in the first part of the work. The succession of these sonorous or soundless elements occasionally appears as gestures of two, three, four or five quaver or silent quaver groups. The appearance of the above groups shapes the characteristic rhythmic irregularity of the work, since elements of this idea are also evident in the next parts. The following extract from the score (Figure 10) presents an example of such gestures in the left hand part, indicating the number of audible, slurred quavers per group, as found in bars 26–33:

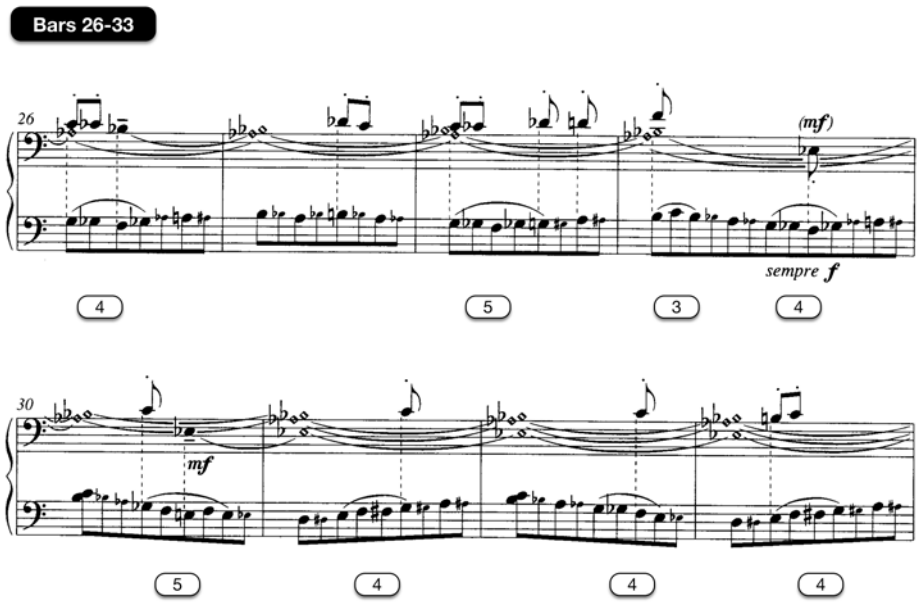


**Figure 10.** Number of audible quavers per slurred group (bars 26–33).

Figure 11 below illustrates the sequence of two-, three-, four- and five-quaver groups, as these appear from bar 2 to bar 71 along the first part (A) of the piece, representing the polyrhythmic structure of the sound material. These gestures are occasionally interrupted by single, double or triple (found only in bars 50 and 51) silent quavers, alternating with single audible quavers. The indication "Bars 26–33" refers to the score extract, presented in Figure 10 above. Finally, the complementary table (Table 2) summarises the same information, namely the number of audible quavers per group, also including the bars in which these are located. Bars marked with * indicate groups of quavers which are shared between these specific bars.

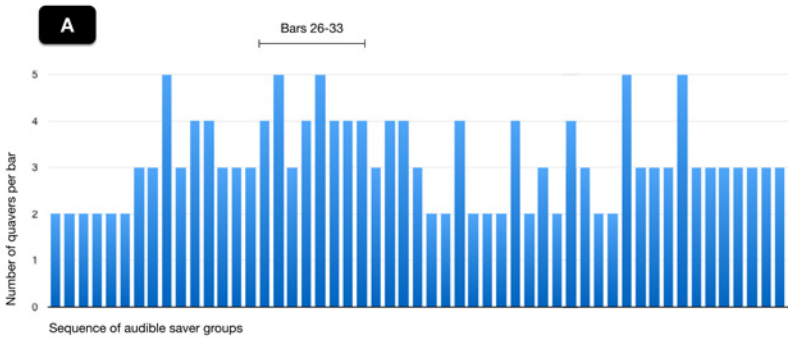


**Figure 11.** Sequence of audible quaver groups and number of quavers per slurred group in part A (bars 2–71).

| Bar Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quavers per group | - | 2 | - | 2 | - | 2 | - | 2 | - | 2 | - | 2 | - | 3 | 3 | - | 5 | 3 | 4 | - | 4 | - | 3 |

| Bar Number | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 37-38* | 38 | 38-39* | 39 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quavers per group | 3 | 3 | 4 | - | 5 | 3,4 | 5 | 4 | 4 | 4 | 3,4 | 4 | 3,2 | 2 | 4 | 2 | 2 | 2 |

| Bar Number | 39-40* | 40 | 41 | 42 | 42-43* | 43 | 43-44* | 44-45* | 45 | 46 | 46-47* | 47 | 47-48* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quavers per group | 4 | 2,3 | 2,4 | 3 | 2 | 2 | 5 | 3 | 3 | 3 | 5 | 3 | 3 |

| Bar Number | 48 | 48-49* | 49 | 49-50* | 50 | 50-51* | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quavers per group | 3 | 3 | 3 | 3 | 3 | 2 | 3,4 | 2 | 2 | 2 | 2 | 2,2 | 2 | 3,2 | - | 2 |

| Bar Number | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Quavers per group | 2 | 2 | 2 | 3,2,2 | 2,2 | 3 | 2 | 2 | 2 | 2 | 2,3 |

**Table 2.** – Number of quavers per groups within bars of part A (bars 1–71).

From a macro-structural perspective, various observations can be made in relation to the shaping of melodic contours throughout the first part of the étude. In the first 14 bars, the melodic material seems to be developed in an ascending manner above a repeated $B_3$ pitch. This melodic course is demonstrated in Figure 12:

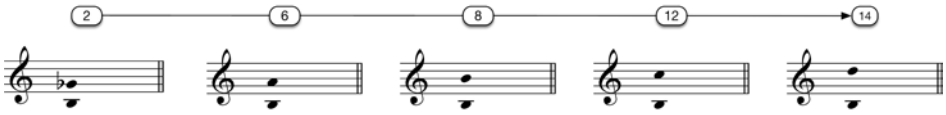


**Figure 12.** Illustration of the ascending development within bars 2–14.

Along similar lines, from bar 15 to the very end of section A (bar 71), a large-scale descending melodic contour seems to evolve gradually, reaching the very end of the lowest piano register. Figure 13 shows this progressive descending movement, indicating the specific bars in which each lower pitch is first encountered:

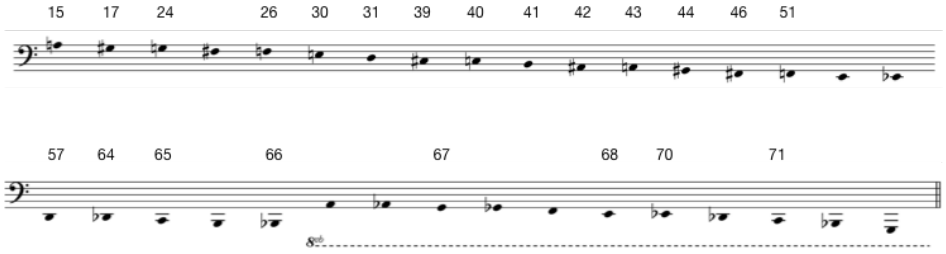


**Figure 13.** Illustration of the descending development within bars 15–71.

The same groups of audible quavers seem to be applied in the structure of the middle part (B) of the work. Non legato quavers (as indicated in bar 72) are grouped into two, three, four and five per bar, through the notated barlines. These sonorous groups are used throughout this part, while no silent quavers are present. Therefore, the rhythmic complexity of this part seems to occur through the alternation of a diverse number of quavers in each bar. As depicted in Figure 14, this is evident in bars 79–82, for example, in which a successive sequence of uneven groups of two, five, three and two quavers per bar is observed; further to this, another complex rhythmical sequence takes place in bars 86–91, with an order of two, five, two, three, five and five quavers per bar. Thus, an intricate, irregular, dense rhythmic texture is created, forming the most intense part of the Étude. An illustration of the rhythmical texture of this, purely sonorous, section is attempted in the subsequent figure, which depicts the number of sounding quavers within each bar of part B, in their order of appearance.

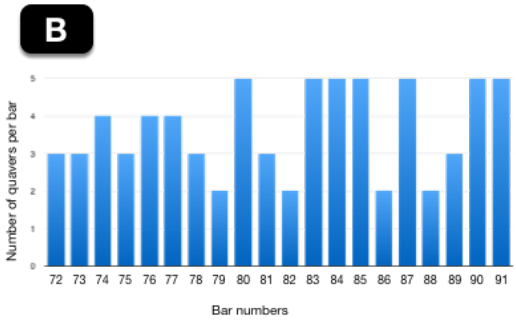


**Figure 14.** Number of sounding quavers per bar in part B (bars 72–91).

In part A1 the same rhythmic complexity is maintained. Again, the sound material is organised through groups of one to five slurred quavers, which are interrupted by single silent quavers. Single silent quavers are evident from bars 92–99, while from bar 100 onwards groups of silent quavers also appear. Although the idea of grouping silent quavers was also introduced in A, with up to three successive silent quavers, this idea is further developed here, eventually dominating the final part of the work. Larger groups of quavers (4, 5 and 6) appear more often than the previous rather smaller groups of 2 and 3, particularly from bar 106 onwards. The number of silent quavers in each group gradually builds, reaching its peak in the final bar, with a group of 20 silent quavers. Thus, the gradual expansion of silence leads to an effect of "dematerialization" of both pitch and rhythm. This process is illustrated in the two following figures: Figure 15 shows the number of sounding quavers in each group in order of appearance, as divided by the silent quavers; Figure 16 represents the development of the silent quavers appearance, illustrating the increase in the frequency of silent quavers, produced by gradually blocking more keys. This time, the peak of the graph represents silence instead of sound, creating the impression of a reverse climax of tension, through an irregular fade out to complete silence.

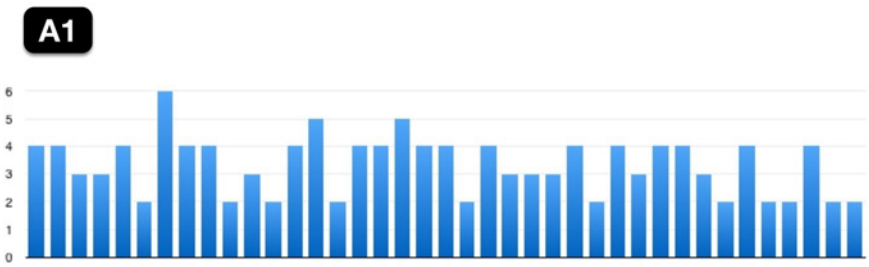


**Figure 15.** Number of sounding quavers in each group in part A1, in order of appearance (bars 92–115).

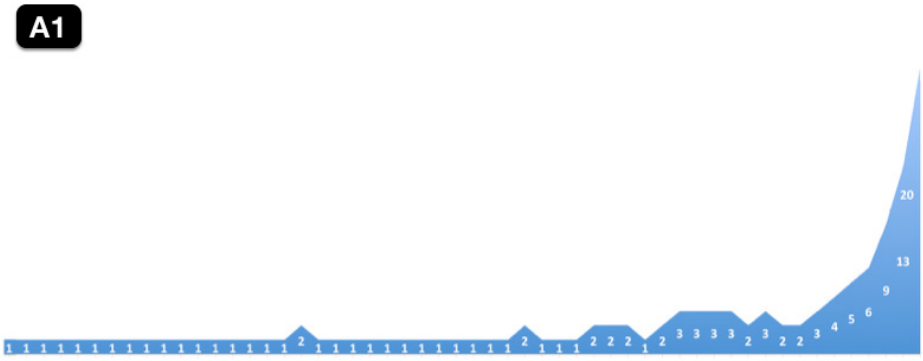


**Figure 16.** Succession of grouped silent quavers in part A1 (bars 92–115).

Finally, the following table summarises the course of audible and silent quavers, as these alternate within each bar of the final part of the étude. The number of audible and silent quavers has been noted in their order of appearance within each bar. A progressive increase of silent gestures can be observed, both in terms of frequency of appearance, as well as in terms of duration through the utilization of larger groups of blocked notes, which is combined with a simultaneous decrease of the audible elements.

| **Bar Number** | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Number of audible quavers** | 4 | 4 | 3,3 | 4,2,1 | 6,1 | 4 | 4,1,2 | 3,2,4 | 5,1,2 | 2,4 | 4,5 | 1,4,4,2 |
| **Number of silent quavers** | 1 | 1 | 1,1 | 1,1,1 | 1,1 | 1 | 1,1,1 | 1,1,1 | 1,2,1 | 1,1 | 1,1 | 1,1,1,1 |

| **Bar Number** | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Number of audible quavers** | 4,1,3,3 | 3,4,2,1 | 4,3,4,4 | 3,2 | 4,2 | 2,4 | 1,1,2 | 2,1 | 1,1 | 1 | 1 | 1 |
| **Number of silent quavers** | 1,1,1,2 | 1,1,1,2 | 2,2,1,2 | 3,3 | 3,3 | 2,3 | 2,2,3 | 4,5 | 6,9 | 13 | 20 | - |

**Table 3.** – Summary of alternating audible and silent quavers per bar, in section A1 (bars, 92–115).

## Summary

In conclusion, stylistic characteristics of Ligeti's compositional idiom have been discussed through the examination of parts of these three very different works from different periods of the composer's creation. Aspects of his polyphonic writing have been discussed, focusing on melodic shaping, harmonic elements and polyrhythmic textures. Through this approach towards these specific works, his textures seem to consist of more abstract sound clouds, such as in *Melodien*, of mechanical patterns of complex rhythm, found in both the *Chamber Concerto* and the *Touches Bloquées Étude*, which are often achieved by inventive methods, such as through the blocked piano keys or the accents of specific beats of repeated tones. In addition, the macrostructure of the inner, micro-polyphonic and polyrhythmic layers seems to indicate extra melodic contours, mostly perceived as movements of the generated sound clouds. Undoubtedly, these are only some of the many compositional tools that have shaped Ligeti's idiomatic language, which is an inspiration to subsequent generations of composers, bringing forward inventive ways for the organization of texture and extending the possibilities of the orchestral sound.

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ELISA JÄRVI

# In the penprints of György Ligeti in Basle – historical aspects of performance notes in piano études 1–6

## The Ligeti Collection at the Paul Sacher Foundation

The Paul Sacher Foundation in Basle is a treasure trove for the contemporary music researcher. An extensive collection of material related to twentieth-century composers can be found in the archives. The Foundation has exclusive rights to the manuscripts and sketches of György Ligeti, as well as other material related to or owned by him. However, several of the sketches were donated for auction during his lifetime. For example, eight sketches for the piano études ended up in the Northwestern University Library in Illinois (Steinitz 2011, 171).

Visitors at the archives are kindly received, but they are expected to strictly adhere to the Foundation's rules. For example, although it would make work easier, photocopies and cell phone photos may not be taken of the materials, but researchers may take notes with pencil. Patience and concentration are needed, especially when deciphering handwritten, multicoloured sketches.

I visited Basle for the first time while I was working on my artistic doctoral thesis. At that time I was searching for answers to questions concerning Ligeti's piano music. I focused on Ligeti's eighth piano étude, Fém, which I looked at from several perspectives. During the process, it became obvious to me that Ligeti had invested much painstaking time and effort editing, finishing and formulating the performance notes (Järvi 2011, 116–117).

After Ligeti's death, and starting even in the years before, the music in his and in his acquaintances' possession was gradually transferred to Basle to complete the archive collection. The archive material includes scores and preliminary prints containing revisions and notes made by the composer himself. In this article, I refer

mainly to the scores which Ligeti's longtime secretary, Louise Duchesneau, sent to the Foundation in 2009. Fortunately, I was still able at that time to view the original scores, drafts, and manuscripts. Nowadays most of the material has been microfilmed, and viewing archival material up close is no longer possible.

## Piano études: The sheet music

Ligeti's *Études for solo piano* are published in three volumes. The first book (1985) contains six études, the second volume (1988–1994) contains eight études, and the third volume (1995–2001) four études. All three volumes are printed by the Schott publishing company (Ligeti 1997, 1998, 2005). Prior to the first computer-engraved publication of the first collection, a facsimile edition was released (Ligeti 1986). The first page of this edition bears an inscription in Ligeti's own hand: "*Die vorliegende Fassung stellt eine vorläufige Fassung der Etüden dar. György Ligeti*".[1]

In some libraries a rare unpublished photocopy of the manuscript of the second volume can be found. It contains études from number 7 to 15 and also includes *White on White,* which was intended for the third volume (Ligeti 1997?). This "preliminary facsimile score" is a photocopy of the final manuscript in A3 format. It has a yellow paper cover and a white label stating "*Unveröffentlichtes Manuskript. Mainz: Schott*". Two copies of this score, which probably date from 1997, can be accessed in the library at the Sibelius Academy. Two reprints have been made of the computer-engraved second volume. In spite of tiny differences, all three editions have the same year of publication, 1998, and Schott code number ED 8654. In my doctoral thesis (Järvi 2011, 74–75) I approached the eighth piano étude *Fém* from a historical perspective and pointed out some differences between these editions and the facsimile edition.

The four études belonging to the third set of piano études were first published separately, in 1995, 1997, 1998, 2001, as copies of the manuscript. They were published as a single computer-engraved volume in 2005 (Schott ED 8541; Ligeti 2005).

## From chaos to chronometer

*"Das Endprodukt muß sauber sein und so verarbeitet sein, wie ein guter Uhrmacher ein Präzisionschronometer macht. […] Aber vorher ist Schmutz und Chaos. Und ich brauche das.*[2] (Ligeti 1996.)

[1] This is a preliminary print of the piano études. György Ligeti.
[2] The final product must be as clean and well-crafted as a good, accurate chronometer. But before that is dirt and chaos, and I need that.

Ligeti's composing process while working on the piano études, from sketches to the finished work, developed as follows:

1) *Skizze* (sketch; delicate, hurried handwriting; also written notes, charts or numbers)[3]
2) *Reinschrift* (final manuscript handwritten with soft pencil)
3) *Reinschrift, Probedruck* (photocopy of the final manuscript, in A3 format)[4]
4) *Faksimile-Ausgabe* (facsimile edition by Schott, ED 7428; Ligeti 1986)
5) Final edition (computer-engraved Schott publication, ED 7989; Ligeti 1997)

The first three categories correspond to the German-language indexing terminology used by the Sacher Foundation (SGLM 2016). The terminology used in categories 4) and 5) is used by Schott in their publications. Both the facsimile edition and the computer-engraved edition are referred to as *Reinschrift, Musikdruck* in the Sacher Foundation archive catalogue.

I focused on the "from chaos to reflection" aspect of Ligeti's composition process, examining the multicoloured drafts and original manuscripts of the études in the archives, as well as the preliminary copies of the manuscripts. I also studied the facsimile editions that were in Ligeti's possession (Schott ED 7428), to which he had added comments and corrections.

Ligeti's own markings can be divided into two categories: a) careful corrections that the composer intended to be read by others, and b) narrowly-spaced and unclear handwritten notes and observations which he jotted down for his own use. The annotations falling into the first category most probably served as corrections of errors in the printed scores, or as wishes for further revisions. He often marked these passages with a clear "X" in the margin. According to the archival sources, pianists Pierre-Laurent Aimard and Florent Boffard also helped the composer by sending him suggestions for corrections (PSSb).[5]

Notes and comments belonging to the latter category seem to have been written extremely quickly in the margin, using whatever language that first sprang to mind – probably while Ligeti was listening to a musician playing.

Both kinds of markings prove that the composer chose words and expressions with great care for his performance notes. He seems also to have changed his mind several times when, for example, choosing the correct tempo marking. Fortunately,

[3] Ligeti's sketches can be subdivided into five basic types: jottings, drawings, charts, tables, musical notation (see, e.g. Bernard 2011, 149–159).

[4] The copies are faded, greenish-brown and almost A3 size. The paper is rough, yellowing and of poor quality. The first and third pages are marked with a bluish stamp: "© B. Schott's Söhne, Mainz. Unveröffentlichtes Manuskript. Nur für den persönlichen Gebrauch. Not for sale".

[5] Recently Aimard has contributed to the contemporary music online-project "Explore the Score" by Klavier-Festival Ruhr. He discusses études, 2, 8, 12 and 13 from a performer's point of view and also tells about his cooperation with Ligeti (Stiftung Klavier-Festival Ruhr).

he used coloured pencils or coloured felt-tip pens, making it possible for the researcher to work out the chronological order of the modifications.

## Solving the time puzzle

In this article, I introduce and discuss the most significant modifications to the performance notes and performance instructions in the first volume of piano études. I compare differences between the first preliminary copies of the manuscript (*Probedruck*) from 1985, the facsimile edition (Schott ED 7428) from 1986 and the final edition (Schott ED 7989) published in 1997. I also present the composer's own markings and comments. It is possible, even probable, that Ligeti's own markings and corrections date from the years following publication, although he was still taking notes and adding comments using a preliminary copy of the études, perhaps while working with musicians. Many of these markings are not found in the final edition.

It is not my intention to point out printing errors in this article. Rather, I wish to give the reader a glimpse into the history of the études and to demonstrate how the performance instructions have evolved. It is still possible that the published scores lack corrections that Ligeti intended for print. Examining and comparing the various versions helps to illuminate what the composer was trying to achieve and what manner of interpretation he may have had in mind. I have ignored some linguistic errors which Schott corrected in later editions. Hence, the main focus is the performance notes and tempo markings and how they evolved over time. I have reproduced Ligeti's expressions in the German language according to the grammatical rules in that language. Sometimes Ligeti writes words using capital letters and sometimes nouns in lowercase letters. This is irrelevant. The composer's handwriting occasionally demands interpretation on the part of the reader.

Lengthy sentences in the German language are translated in the footnotes. Commonly-used phrases in German, French or Italian, e.g. *kein Pedal*, do not require translation. Ligeti's own expressions are written in italics but without quotation marks, except in cases where quotation marks have been added by the composer himself, such as *"lontano"*.

For the sake of clarity, the information is presented in bullet-point style, so that the reader can easily see and compare specific facts and figures referring to a certain bar. The presentation also indicates which markings did not, for one reason or another, make it to the published editions.

## Diamond grinding: Modifications and comments in the performance notes

My review is based on the following preliminary prints and facsimile editions. I refer to the specific proof sheets, volumes and personal copies in question with a letter-number combination in parentheses, e.g. (A1) or (B2). I include information concerning the actual location of the original materials in the archival folders. The materials are clearly labelled, and the information is based on the 2013 archive register (PSSa & PSSb). Nowadays the Ligeti collection is accessible digitally in the form of computer scans at the Paul Sacher Foundation. The inventory catalogue was compiled and published in 2016 (SGLM 2016).

**(A1)** Probedruck, containing etudes I–III.
*Location: SGL Ligeti Mappe 3/3 2008 11/04 / HZ paper folder 2 "Rs. (Probedruck) von Nr. 1–3". (PSSb.)*
**(A2)** Probedruck, etudes I–VI.
*Location: SGL Ligeti Mappe 3/3 2008 11/04 / HZ paper folder 1 "Rs. (Probedruck) von Nr. 1–6". (PSSb.)*
**(A3)** Probedruck, etude VI.
*Location: SGL Ligeti, Mappe 3/3 paper folder 4. (PSSb.)*
**(A4)** Fotokopie und Korrekturen, etudes I–III / V–VI. Large A3-format copies of the manuscript. *Location: SGL Ligeti, Mappe 2/3 paper folder 3 "Fotokopie und Korrekturen nr 1–3 / 5–6." (PSSa.)*
**(B1)** Facsimile edition (ED 7428), etudes I–VI.
*Location: SGL Ligeti, Mappe 2/3 paper folder 1 "Etüden (Kl; Buch 1; 1985) Reinschrift. Musikdruck: Faksimile mit hss. Korrekturen und anderen Eintragungen von György Ligeti". (PSSa.)*
**(B2)** Facsimile edition (ED 7428), etudes I–VI. Markings only in etudes I and II.
*Location: SGL Ligeti Mappe 3/3 2008 11/04 / HZ, paper folder 5 "Rs. (Musikdruck: Faks)". (PSSb.)*
**(B3)** A copy of the facsimile edition, etude No. I as loose paper sheets.
*Location: SGL Ligeti Mappe 3/3, paper folder 3 "Rs. (Probedruck) von Nr. 1". (PSSb.)*

The études' titles are followed by the titles and tempo markings as they appeared in the published editions of 1986 and 1997.

**Meaning of the symbols:**
→ = The previous marking or digit is replaced with the new version after the arrow.
Sometimes there is a continual chain of modifications and arrows. In the case of metronome markings, for example, the most recent marking is in bold type.

□ = The marking or comment appears in the latest publication of the first book of piano études ED-7989 (1997), but is not printed in the facsimile edition ED-7428 (1986).

■ = The marking or comment does not appear in either of the editions.

**I *Désordre*** - *Molto vivace, vigoroso, molto ritmico* 𝅗𝅥 = 63(1986)
- *Molto vivace, vigoroso, molto ritmico* 𝅗𝅥 = 76[ca. 2´20´´] (1997)

**(A1)** 𝅗𝅥 = ( ♪ = ), no duration indicated
■ Pedalling: *fast kein Ped*

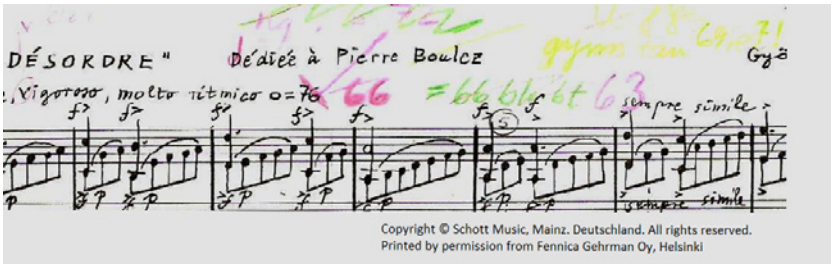
**(A2)** Still no metronome marking indicated; duration 2´30´´
■ Ligeti's handwriting with red pencil: *Senza ped*
■ Around bar 70: at the dynamic indication *crescendo poco a poco* … an additional performance suggestion: *poco a poco ein wenig Pedal (stets sehr sparsam) wechseln bei jeder Abfahrt -------- ped stets sehr sparsam (al fine)*

**(A4)**
■ *Molto vivace,vigoroso, molto ritmico* → ***Presto, vigoroso, molto ritmico***
■ *Akzent*[e] *stark hervorheben den Rest* [im] *Hintergrund.*[6] As well as this, an arrow indicating the middle voices with a delicately-written suggestion in pencil: überall pp.
■ The last dynamic markings of the final performance instruction corrected: *Allmähliches crescendo […], die Achtel-Figuren allmählich **pp**, dann **mp**.*

**(B1)** 𝅗𝅥 = 76 → 66 → 72 → 66 (bleibt) → **63** (See Ex.1.)
At the top of the page, faint, coloured pencil markings *69, 71;* these were later crossed out.
Duration: *max.* 2´30´´ → 2´40´´ → ***2´20´´***

Other markings:
□ *Stets sehr sparsamer Gebrauch […] → Stets sparsamer Gebrauch des Pedals*
□ *Melodie in beiden Händen legato*
□ Some linguistic clarifications (bar ~113), e.g. *bis Ende → bis zum Schluss der Etüde*

[6] Accents clearly emphasised, the rest in the background.




**Example 1.** Comments and modifications of the metronome marking for the first étude *Désordre* in the facsimile edition. (Markings handcopied by the author, PSSb.)

**(B2)**
Ligeti has added some structural and analytical remarks, such as "the right hand cycle 26 notes and the left hand cycle 33 notes". Nonetheless, these observations are not related to performance notes.

**(B3)**
■ Ligeti (presumably) indicated some bar numbers separately for each hand. The bar numbers are indicated every few bars, in particular at the beginning of every rhythmical pattern, as in bars 1, 5, and 9. The bar numbers clearly indicate at which point the right-hand and left-hand bar units are no longer synchronised. For instance, at right hand bar 33, the left-hand bar number notated directly beneath it is not bar 33, but bar 32. Likewise, at bar units 57 and 55, the two hands already have a discrepancy of two bars. Both of the published editions lack the bar numbers in *Désordre*.

**II** ***Cordes vides*** – *Andantino con moto, molto tenero* ♪ = 120 [2´30´´] (1986)
***Cordes à vide*** – *Andantino rubato, molto tenero* ♪ =96 [2´45´´] (1997)

**(A1)** ♪ = 120, duration 2´30´´

**Agogics:**
■ Before *espr*[*essivo*] written in blue pencil: *molto*
■ Bar 28: *rall*[*entando*], returning to *a tempo* on the second crotchet of bar 29

**Dynamics:**
■ Wedge-like crescendo on the first slur and diminuendo on the second slur both in the left [!] and right hand parts and suggestion *nach Gefühl*[7].

[7] with feeling

■ Bars 11–12, 13–14 and 17: even softer dynamic indication ***ppp*** for the vertical fifths, returning to pianissimo *pp* at the linear fifths. At the end of bar 14 *sempre pp* is crossed out, only ***pp*** remains.
□ Starting end of bar 21: accent on every quaver in the right hand part
■ Bar 28 upper voice: *Melodie heraus*
■ End of bar 29: each of the last three notes in the left-hand part has an accent in parentheses.
□ Bars 34, 35 and 36: new dynamic markings for the right hand *p* → ***mp***, *pp* → ***p*** and *ppp* → ***pp***
■ Bar 32: left hand softer *ppp* → ***pppp***
■ *una corda (al fine)* indication from bar 34 shifted to end of bar 35 for E–A in the right hand

Apparently, before the computer-engraved edition was published, Ligeti had wished to differentiate between the right and left hands by indicating differing dynamic levels and balance instructions: the right-hand part louder and the left hand softer.

**Pedalling:**
■ Beginning: indications modified: *(con ped)* is partly and *(viel ped)* entirely crossed out → ***(ped)*** remains
■ Last bar: *ped* and stroke-like indication above the bar, rising gradually towards the end of the bar___/ .

**(A2)** ♪ = 120, duration 2´30´´

**Markings with red pencil:**
■ Beginning: *(viel Pedal)* → ***(con ped.)***
■ At the barline separating bars 11–12 and 13–14 and also in bar 17 below the vertical fifths *„lontano"* in quotation marks.

**Dynamics:**
□ At the top of the page crescendo/diminuendo wedges and a note in Hungarian < > *kidolgoz*[8]
The first bar contains no dynamic wedges.
□ Bar 12: dynamic wedges in the right hand < > above the beamed triplet
■ At the barline between bars 20–21: *(p)* → ***mp***
□ Starting middle of bar 21: accents in parentheses in the right-hand part (>) and *sim[ile]*
■ Bar 28: upper voices accentuated in both hands, and added indication *rilievo*

[8] to be worked on

□ Bars 30 and 31: more dynamic contrasts: right hand *pp* and left hand *mp*
■ Bar 34: markings *una corda* and *(eco I)* crossed out.
■ Bar 35: right hand *(eco II.)* → ***(eco I.)***
□ Bar 34–36: modifications in dynamic markings in the right hand: *p* → ***mp***, *pp* → ***p***, *ppp* → ***pp***
■ Bar 35: A diminuendo in the left hand starting from the indication *dim. main gauche* in bar 35, to *pppp dim.* in bar 36

**Written with a brown felt-tip pen on the same score:**
■ Bars 11–12, 13–14 and 17: below the vertical fifths *una corda,* as well as the indication *"lontano"* by the first fifths until *tre corde*
■ Bar 28: The indication *rilievo* referring to the upper voices in both hands

**(A4)**
■ Above the title of the étude are unclear markings written with a fine-tip pen and an arrow pointing to the first note. *Akzente immer deutlich hervorheben, das Sonstige fliessend und im Hintergrund*[9]
< > *espr…*

**Pedalling:**
■ At the beginning *(viel Pedal)* crossed out → ***(con ped.)*** left
■ Between bars 11–12, 13–14 and 16–17: ***Ped*** ⎵⎸ so that the pianissimo vertical fifths are held under one pedal

**Changes in octave registers:**
□ Bar 33 left-hand part: *8 bassa ab d* = the left hand plays an octave lower than notated, starting from D natural
■ Bar 34*: bleiben 8 bassa* = left hand remains in the lower register, unlike what appears in the published score

**Other markings:**
■ Bar 19: on the third quaver in the left hand ($F^1$): *noch Bass[schlüssel]*, on the first vertical fifth in the right hand (B flat – F) *ab hier* 𝄞 (i.e. treble clef). This comment above the stave appears to be a mistake, due to its perfunctory writing style and content. If the bass clef (*Bassschlüssel*) were still valid, the progression of ascending fifths would be broken and the right hand would have to play the unrelated pitch A beneath the left hand part, instead of F.

■ Bars 34–35, after the *(eco I.)* in the right-hand part: *(ma in rilievo, cantabile)*

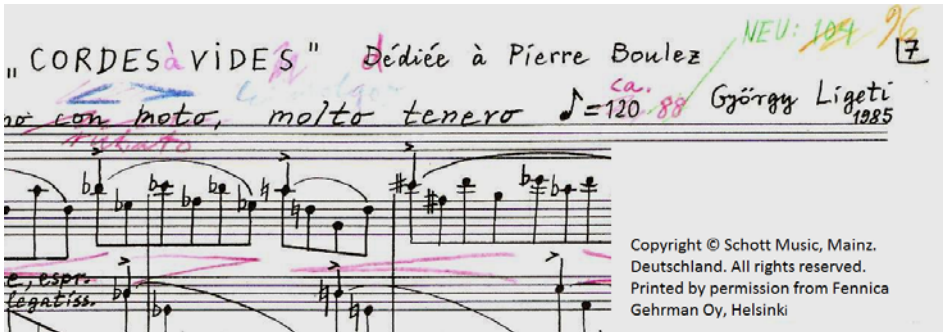
[9] Accents clearly emphasised, the rest flowing and in the background.

**(B1)** ♪ = 120 → ca.120 → 88 → NEU:104 → **96** (See Example 2.)
Duration: 2´30´´ → 2´45´´ → ca.2´55´´ → 2´40´´ +end → ***2´45´´***

□ Title:*"Cordes vides"* → ***"Cordes à vide"***
□ *Andantino con moto, molto tenero* → ***Andantino con rubato, molto tenero***
■ *(con ped.) (viel Pedal)* → ***(viel Pedal)***
□ crescendo/diminuendo wedges < > follow the phrasing
□ Bars 11–17: additional markings *una corda* and *tre corde*
■ Bar 21: an arrow indicates that the wedges have moved above the right hand part...
□ Bar 21 right hand and bar 24 left hand: accents on every quaver
□ Bar 25: *poco stringendo* . . . ..end of bar 26: *a tempo*
□ Bar 28: poco stringendo . . . ..end of bar 32: *a tempo*
□ Bar 29 left hand: *p, die linke Hand hervorheben* → ***mp, in rilievo***
□ Bars 34, 35, 36 changes in dynamics in the right hand: *p* → ***mp***, *pp* → ***p***, *ppp* → ***pp***
■ Bar 36: *una corda* added to the *pp* dynamic marking

Consequently, the dynamic levels have evolved in such a way that the two hands are differentiated. The longer notes are prominent and have a greater importance. These meticulous markings in coloured-pencil were clearly intended for the Schott publication ED 7989.

**(B2)** ♪ = 120 → 88 → 84 → **92** (No other hand-written comments.)




**Example 2.** Changes and corrections for the second étude in the facsimile edition. (Handcopied by the author, PSSb.)

**III *Touches bloquées*** - *Presto possibile, sempre molto ritmico* (1986)
- *Vivacissimo, sempre molto ritmico*[10] [ca. 1´40] (1997)

**(A1)** No tempo indication, no duration

**Pedalling:**
■ Below the first stave: with blue pencil *absolut;* emphasising the printed suggestion *senza ped.*

**(A2)** No metronome marking, duration: 2´

**Tempo:**.
The word *Presto* in the performance notes is accompanied by an arrow pointing towards the enquiring note *Metr[…]?.* Probably Ligeti was considering various metronome indications at this stage.

**Dynamics:**
■ Accents, written in coloured pencil, added to the first notes of bars 6, 8, and 12, at the beginning of every slur in the right hand. The same applies to the second quaver in bar 14. Similar accents are written above the top notes of the chords in bars 46 (G flat), 49 (G flat) and 51 (B flat and E flat).

■ Crescendo/diminuendo wedges notated in bars 83 and 84, after which is written *etc*. The same crescendo/diminuendo pattern would therefore continue in the powerful octave-passages, separated by breath marks.

■ Crescendo in bars 98–100 is made even more effective by adding one *f* to each dynamic marking: left hand ***fff,*** right hand ***ff***.

**Pedalling:**
■ Bar 73: *poco ped*
■ Bar 92: *senza ped*

**Other markings:**
■ An arrow pointing to the barline between bars 71 and 72, and, unclearly written *ohne Zäsur weiter*

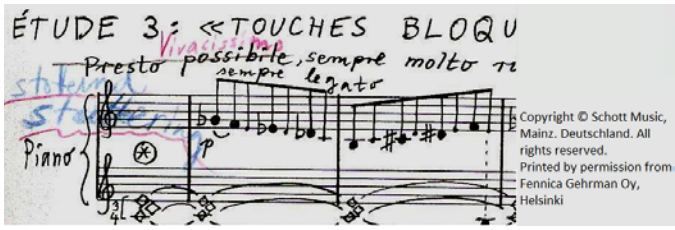
**(A4)**
Above the title, unclear writing: überall stacc leise[…]

[10] Études No. 3, 17 and 18 are published without any metronome marking.

**Corrections to dynamic markings in coloured pencil:**
□ Bar 3: *p* → ***pp***
■ Bar 24, right hand: *(mf)* → ***(mp)***
■ Bar 60, right hand: *p* → ***pp***: left hand: ***p sempre***
■ Bar 96, right hand: ***mp*** → ***p***

**(B1)** Duration: 1´30´´ → **1´40´´**

□ *Presto possibile, sempre […]* → ***Vivacissimo, sempre […]***
□ Underlined description in coloured pencil: *stotternd, stuttering*
□ Several linguistic corrections to the performance notes in German
□ Bar 72: *poco meno presto* → ***feroce impetuoso***
□ Bar 92: (*Presto possibile)* → ***(Vivacissimo)***




**Example 3.** Ligeti´s own corrections for *Touches bloquées* in the first facsimile edition. (Handcopied by the author.)

**IV *Fanfares*** - *Vivacissimo molto ritmico, con allegria e slancio* 𝅗𝅥 = 63 [3´25´´] (1986)
- *Vivacissimo molto ritmico, con allegria e slancio* 𝅗𝅥 = 63 [3´20´´] (1997)

**(A2)** 𝅗𝅥 = 63, duration: 3´

■ Bar 1: *una corda*
■ Bar 54: *tre corde*

**(B1)**
Duration: 3´25´´ → 3´20´´ → ***NEU*** *3´30´´* and ***NEU*** *3´20´´– 3´30´´*

□ Dynamic wedges < > added in purple pencil to bars 22–23, 25, 41–42, 68–69, 70–73, etc. That indication is still in the middle of the stave, and later on it was moved above the right-hand part.

***V Arc-en-ciel*** *- Andante molto rubato, con eleganza, with swing* ♪ = ca.56 [2´45´´](1986)
*- Andante con eleganza, with swing* ♪ = ca. 84 [3´45´´] (1997)

**(A2)** ♪ = ca. 54–55 → ca. 54 → **ca 50**, duration: *2´45´´*

**Tempo and agogics:**
■ End of bar 6: *(pocchissi[mo] rall[entando])*
■ Bar 7: *a tempo*
■ Bar 8: *pocchissimo accel[erando]*
■ Bar 9: *a tempo*
■ Bar 10: *(pochissim. rall~~)* and on the last accentuated chord *a tempo*
■ End of bar 16: the right-hand part *cantabile*, in the middle of the stave *molto espress*
■ Bar 22: after *a tempo* the instruction: *(poco meno mosso als Haupttempo)*

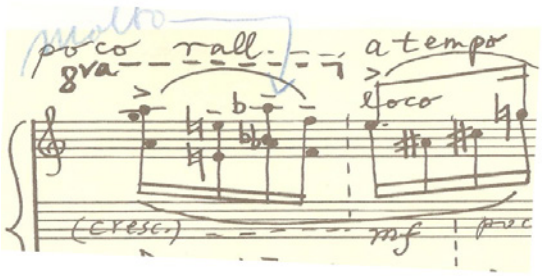
These markings do not appear in the published editions.

It may be that Ligeti had written these comments on the preliminary print, even though another, more up-to-date publication already existed. He may also have accepted several distinctive ways to perform *rubato*, and, in the end, decided on the performance instruction: *schwankendes Tempo.*[11]
**(A4)** ♪ = 96 → **100** *(aber nur im Durchschnitt) sehr frei im [T]empo!*
Duration: written in pencil at the end of the composition: *ca 3´*

**Agogic markings:**
■ Bar 13: The first *a tempo* marking crossed out with blue pencil. Thus *accelerando* would be followed by a short *allargando* until *a tempo* at the last crotchet of the bar.
■ Bar 17: Above A flat the word *molto* written in blue pencil. Apparently, Ligeti wanted to emphasise the *rallentando*. The marking could also be understood as a suggestion to pay attention to the top voice (Ex. 4.).

**Other remarks:**
■ Bar 19 left hand: written in blue pencil *quasi lontano* → ***wie aus der Ferne***

[11] fluctuating tempo.

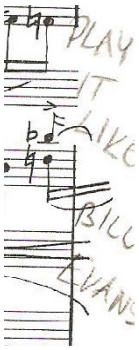





**Example 4.** Detail of the performance notes in bar 17 of the fifth étude. (Marking handcopied by the author.)

**(B1)** ♪ = ca.56 → 84 → 86 → 96 → **84;5 ?**[12]
In the right margin: ***♪ 96 is tempo***
Duration: *Durata ca 2´45* → ca 3´30´´ – 3´40´´ → ca 3´35´´ → 3´40´´
→ ***Dauer: ca. 3´45´´***

**Interpretation:**
■ In the right margin *Play it like Bill Evans* (Ex. 5.)
□ *Andante molto rubato, con eleganza, with swing* → ***Andante, con eleganza, with swing***
□ Additionally, handwritten at the bottom of the page is the same instruction in German as in the final edition, as follows: *Varying tempo: The metronome mark represents an average, the semiquaver movement fluctuating freely around this average tempo, as in jazz.*






**Example 5.** Performance instructions in the margin "♪ 96 is tempo" and "Play it like Bill Evans" for the fifth étude. (Marking handcopied by the author.)

**Corrections:**
■ Bar 1: the B flat on the second beat also belongs to the top voice.
□ Bar 2: quotation marks added
■ Bar 5: F6 also belongs to the top voice.

[12] Tempo markings of 84 and above: presumably referring to a semiquaver.

**VI *Automne à Varsovie*** – *Presto cantabile, molto ritmico e flessibile*
♩= 144 [ca. 3´30´´] (1986)
– *Presto cantabile, molto ritmico e flessibile*
♩= 132 [ca. 4´20´´] (1997)

**(A2)** ♩ = 144, duration: 3´30´´

**(A3)** Durata: durata ca. 3´30´´

**Other markings:**
■ This print gives the number 4 as the serial number. That was crossed out and the number 6 was later added with a black marker.
■ At the top of the first page written in large letters and with unclear but firm handwriting:
*Da[s] gan[ze] Stück ohne Pausen (keine Zäsur) – ausser'*
*Akzent bleibt ohne Pause*
*keine Akzente*
■ Bars 8–9: right hand C sharp sustained over the bar line, the legato slur continues until the accentuated A flat.
■ Bar 98: *ohne jeglich[e] Zäsur*
The following markings were written on the same score in a lighter and more rapid style. They were probably made at another time, perhaps during a rehearsal session.
■ At the top of the (first?) page: *Anfang mehr AKZ[ente]*
■ Bar 108: above the stave: *allmählich*
■ Bars 109–110: above the stave: *allarg[ando] all[mählich]*
■ Bars 112–113: written above the stave: *meno mosso unisono Melodie genauso laut wie die Akkorde*

**(A4)** Page 37, bar 110: Two ambiguous notes in pencil: *für Takthälfte andere Punkte als für Koordination*[13] and another, even more cryptic message: *allgeme… gehel… hum… …illogish.*
The last computer-engraved edition has left out the synchronised barlines.

**(B1)** ♩= 144 → **132**, duration 3´30´´ → 4´25´´ → Dauer **ca. 4´20´´**

[13] Different kinds of dots for the bar-halves than for co-ordination.

## The penprints disappear

The source material substantiates the long and painstaking work process involved in Ligeti's piano études. There is a substantial number of markings and corrections referring particularly to the musical interpretation. In general, many of the added indications sharpen and brighten the first-written expressions, such as contrasting dynamics, tempo changes and articulation. The composer also seems to have been extremely careful with placing the indications clearly in the perfect spot on the score.

The grinding of the markings and the performance indications (and their nuances) continued in Ligeti's mind even after the collection had already been printed. The interpretation of the works and the formulating of the performance notes were clearly of great importance to him.

The composer or publisher likely needed to get the music on the market as soon as possible after the first concert performance. In the latest edition, minor errors have been corrected, and some changes and additions have been made to performance notes. However, some of the markings Ligeti had added to his own copy of the music seem to be corrections and suggestions for further amendments, but they didn't appear in the final edition.

According to the sources, Ligeti changed his mind about the tempo several times and attached great importance to the nuances in the written performance notes. It remains open whether more corrections and comments were intended to be published than are seen nowadays in the available editions. Perhaps the busy composer did not participate in the publishing process of the computer-engraved edition in 1997. It is also possible that the publisher did not consider a new edition necessary, or – more likely – a new revised edition is still unfinished and awaiting publication.

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JAN LEHTOLA

# György Ligeti – traditional reformer or revolutionary discoverer? Ligeti's organ music and its influence on organ-playing technique

*The organ attracted my interest on the one hand because of its astonishing richness of hitherto unexplored tone colours and possibilities; on the other hand, in particular, because of its weakness – its clumsiness, its stiffness and jerkiness. This instrument is like a massive artificial leg. It fascinated me to discover how one could learn to walk again with this mechanical limb.*
*(György Ligeti, quoted by Röhring 1997, 6–7)*

## Introduction

György Ligeti (1923–2006) was a reformer of organ music, even though he was not an organist himself – and maybe exactly for that reason.[1] My experience of composers is that the most innovative ones are those who do not know all the difficulties or who have no experience of the organ as an organist. Because Ligeti didn't have much experience with traditional organ-playing techniques, as far as articulation in all its dimensions goes with different approaches through historical performance practice, he could begin his work from a clean slate. However, he did use all manner of touch, developed new playing skills and invented new methods of registration, which gave his music wonderful new colours and timbres. And, as we can see in his organ études, by writing minimalistic music before minimalism even came into being, Ligeti was also a remarkable reformer.

[1] Actually, Ligeti did have some experience on organ. Ligeti studied composition with Ferenc Farkas in Klozsvár Conservatory. To gain more practical experience, he studied piano but also took up organ and cello (Marshall 2012, 264).

I here discuss the relationship between tradition and reformation in terms of playing techniques in Ligeti's music. By studying his organ music, I will show Ligeti's radicalism in terms of being a developer of registration practice and playing technique. I shall speculate as to whether Ligeti was a reformer of tradition or a revolutionary discoverer.

Ligeti composed three different pieces for organ: an early *Ricercare,* the massive *Volumina* and *Zwei Etüden,* two spectacular études. I will focus here on the last two: *Volumina* and the études. They are both revolutionary in a way because they do not respect tradition. They are also exceptional compositions because both of them are analogous with either orchestra or instrumental pieces which Ligeti was writing at the same time. After *Atmosphères* (1961) Ligeti started to work on *Volumina*, and after *Lontano* (1967) he worked on *Harmonies*. In both cases, the later work simplifies the earlier piece's composition techniques. Furthermore, they both need professional organ registrants. The registrant actually has a more important role in the performance than the organist him or herself. *Volumina* and *Zwei Etüden* are studies in composing technique for the composer, but they are also all études in playing technique. Both pieces are paradoxical because the notation is extremely detailed, which demands precise playing as well. On the other hand, the sound achieved is so flexible that mistakes are almost unnoticeable, even though they may be fatal.

The main question of this article is: How have Ligeti's monumental *Volumina* and challenging *Zwei Etüden* changed the performance practice and playing technique of new organ music? We can find interesting compositions from many different countries which have obviously been written with a Ligetian atmosphere. Isang Yun's *Tuyaux sonores* (1968), Roman Haubenstock-Ramati's *Shapes I* (1976) and Bengt Hambræus's *Extempore* (1969–75) were notated in graphic notation, and they seem to be a direct continuation of Ligeti's *Volumina*. Ligeti's influence was also noticed in Finland, where Jouko Linjama (b. 1934) and Erkki Salmenhaara (1941–2002) were the pioneers of avant-garde. Linjama had had contact with Ligeti through the *Ung Nordic Musik* Festival in Stockholm in 1962 (Linjama 2012, 83). Erkki Salmenhaara studied under the guidance of Ligeti in Vienna in the 1960s (Aho 2001, 79), and his *Toccata* (1966) has some improvisatorial cluster techniques.

The earlier research which I draw from mainly consists of Richard Toop's biography of Ligeti (Toop 1999), the booklet text of the recording of Hans-Ola Ericsson written by Klaus Röhring (1997), and an article by Bernhard Haas (2014). Toop's biography gives valuable information about the background history of how the compositions were born. Hans-Ola Ericsson has masterfully recorded all of Ligeti's organ music, and the booklet text in his recording gives a coherent picture of the problems in performing Ligeti's music. Bernhard Haas' article discusses the general atmosphere of the musical life of Germany in the 1960s. Daniela Philippi's book (Philippi 2002) on new organ music is also an important research document which has focused specifically on the style of music during Ligeti's lifetime. There are also several other

articles which can roughly be divided into historical sources and articles made by organists who have performed Ligeti's music. Historical sources include Ligeti's own writings in 1968 and 1996. The views of performers can be investigated in the articles by Zsigmond Szathmáry (1987) and Kimberly Marshall (2012). Martin Herchenröder, himself an organist, has published a detailed analysis of all of Ligeti's organ music (1999). Janet Owen Thomas (1983) provides some of the earliest research of Ligeti's organ music. Most of these articles include the same background history of Ligeti's organ music, but some of them offer interesting new details. Furthermore, Michael Hicks has written an interesting article on the differences between études *Continuum and Coulée* from the perspective of composition technique (1993).

After explaining the background history of Ligeti's organ compositions in order to lay the groundwork for a discussion of the relationship between tradition and reformation in terms of playing techniques in Ligeti's music, I ask how the performance of Ligeti's monumental *Volumina* changed performance practice of new organ music. This question has thus far attracted little scholarly attention. The attempt is to reveal the means through which Ligeti devised the production of a new kind of sound on an old, traditional instrument. I investigate both sound production and playing techniques typical of Ligeti's music, and hence combine sound ideals and playing techniques.

## Organ compositions

Ligeti composed his first organ piece, the *Hommage a Frescobaldi – Ricercata per organo,* in 1953, but the piece was not published until 1990. He used a modified version of Girolamo Frescobaldi's (1583–1643) *Ricercare cromatico post il Credo* from Messa della Madonna. In Frescobaldi's original version, the theme has six notes which are shared in two groups: three descending and three ascending notes. Ligeti uses the same tendency, but he has expanded it in both directions, ultimately to 13 notes in his own theme (Szathmáry 1987, 219–220).

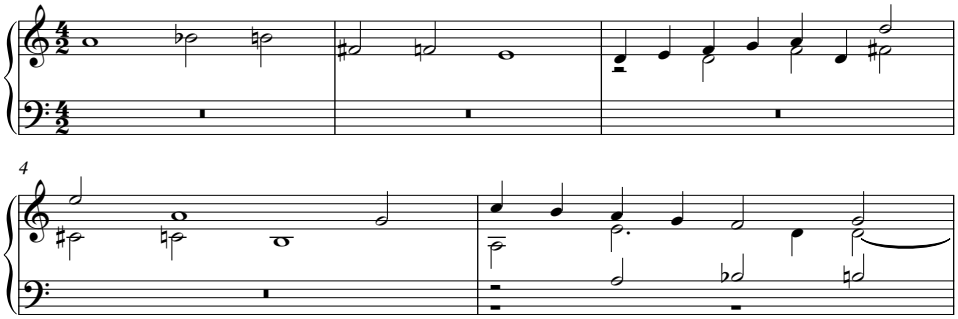
The Frescobaldi piece was composed for a meantone-temperament organ, but apparently Ligeti wanted his own piece to be played on one of equal temperaments. However, Ligeti's music is completely different in comparison to the Frescobaldi work: it is like a static, chromatic study of the organ foundation stops and their timbre.[2] The notation is normal and the music is more or less the normal modernism of the 1950s with a twelve-tone technique. Interestingly, the *Ricercare* combines traditional polyphonic technique with the new 12-tone method, which makes a new kind of style possible (Philippi 2002, 188).

The ambitus of the piece is challenging since the composer demands $c^7$ on the manuals and $f\#^4$ on the pedal. These are not traditional on modern European organs,

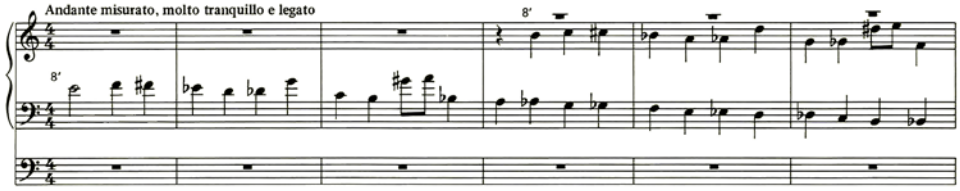
[2] The foundation stops are Flutes and Principals 16', 8', 4' and 2'.

which go to $g^6$ on the manuals and $f^4$ on the pedals, but in the United States and in large European concert halls, one can find them on several instruments. These notes could possibly be played by changing the octaves in particular places, even though this would be very complex and require good preplanning.

Ligeti's use of Frescobaldi's piece in this new context is revolutionary. The goal is not to have a *mimesis* as in a traditional ricercare, but to have a study of layers of tones. The result is like a new harmonic network. Also, the use of high pitches is somewhat different to that employed previously. Now, in Ligeti's *Ricercare*, the individual 2' and 1' stops[3] have their own independent and equal role among the other foundation stops, whereas before they were mostly used in combination with the other foundation stops.



**Example 1.** Girolamo Frescobaldi: *Ricercare cromatico post il Credo*, bars 1–5.




**Example 2.** György Ligeti: *Ricercare*, bars 1–6.

Some years later Ligeti wrote his most revolutionary composition, *Volumina*, which amongst all organ compositions is not only a masterpiece of the organ repertoire in particular, but also an outstanding representative of organised chaos and richness of colours in the new music genre in general. *Volumina* was composed in 1961/62, and Ligeti revised it in 1966. As we shall see later, the piece is different from almost

[3] A 2' stop sounds two octaves higher than played and 1' stop three octaves higher. They are rarely used alone; instead, they are used with other lower foundation stops.

any earlier work for the organ. It has had a two-pronged effect: it marks the end of traditional organ history but is also at the same time a new beginning in the entire history of organ music. In other words, *Volumina* is like a *cæsura*. Ligeti himself said that it is a "radical" work (Röhring 1997, 6). In other words, it is a piece which no longer respects the manner of playing we have been used to but starts to revolutionise the whole institution of organ music by getting to the heart of the matter in terms of organ sound, sonority, dynamics, form, notation, playing techniques and even performance practise (Röhring 1997, 6–7).

*Volumina* was part of a project organised by Radio Bremen, which commissioned three pieces. The concert was scheduled to be broadcast on May 4th 1962. The other two pieces were Bengt Hambræus's *Interferenzen* and Mauricio Kagel's *Improvisation ajoutée*. These three pieces were the very first to illustrate so-called "Klangfarbenmaschine" – "timbre-machine" – and all of them were radical because they were not ordinary church music (Haas 2014, 289). In the 1960s, Germany's organ music was still full of preludes and fugues, choral partitas, fantasias and choral preludes. The climate of church music was more or less conservative (Haas 2014, 318). Composers such as Helmut Bornefeld, Hugo Distler, Ernst Pepping, Siegfried Reda and Johann Nepomuk David took their models from baroque music (Szathmáry 1987, 213). On the other hand, compared to the situation in France, the development was more gradual and continuous after the World Wars, and Olivier Messiaen, the greatest figure of 20th-century organ music, wrote new music much earlier than many other composers in any other country in the world. The reason for this was that the others continued to try to hold onto the serialistic technique (Haas 2014, 318).

Ligeti had already composed his *Apparitions* in 1958/59 and *Atmosphères* for large orchestra in 1961, and devised similar timbre inventions for both, which he again used in *Volumina*. There is a clear parallelism between *Atmosphères* and *Volumina.* According to Toop (1999, 90), *Volumina* is like a "photographic negative" of *Atmosphères*, which is quite understandable; even though they are both continuous cluster pieces – one is for large orchestra, the other for a soloist – and they sound similar, the ways and means to produce the result are different. *Atmosphères* starts with a broad cluster, but softly, while the work for organ begins thunderously. *Atmosphères* is meticulously notated, but *Volumina* only very loosely. Both have the same kind of strategies, such as the extrapolation of pentatonic and diatonic clusters from chromatic clusters. In *Volumina*, Ligeti needed to imitate the cluster style he used in *Atmosphères* on a single instrument and for a single player (Toop 1999, 89–93).

Ligeti explained his use of clusters when he spoke of "neutralised and eliminated harmonies" (Röhring 1997, 6). There was a precise meaning to the use of clusters because through them he destroyed intervallic relationships. Through this, chromaticism and minor seconds have ceased to be an element of harmony (Röhring 1997, 6–7). Toop has explained that "*Volumina* casts doubt on his later denial of shock tactics." He writes that "extremes tend to shock, and in terms of the early 1960s, there

could be nothing more extreme than the opening of *Volumina*, where the organist plays a massive, extremely loud cluster involving every note on the instrument" literally by laying by his body on the keys (Toop 1999, 89–93).

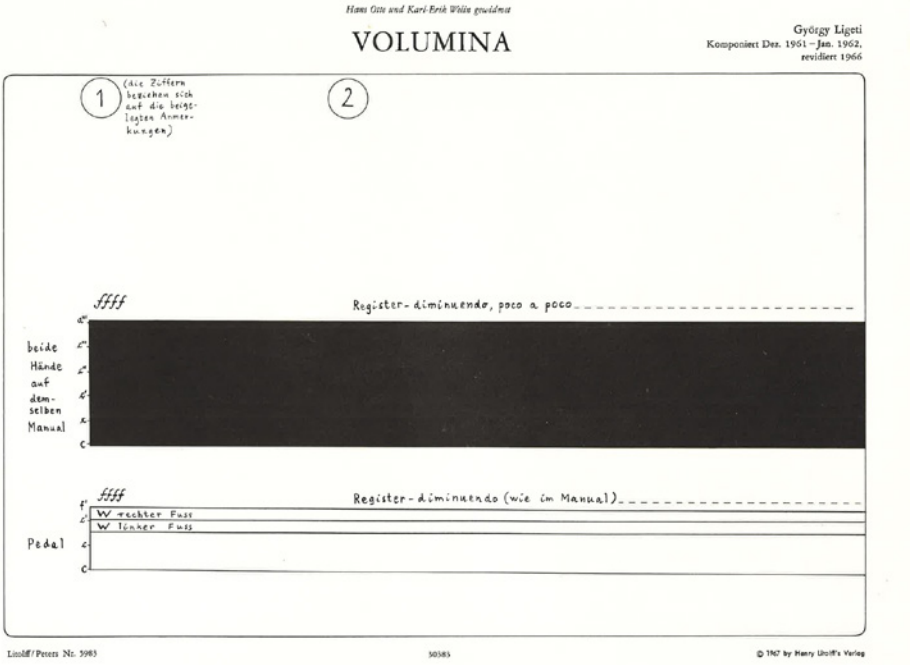
*Volumina* had a special space in the mind of Ligeti because it was his first "real" commission (Toop 1999, 90). During the time he composed the piece, Ligeti stayed in Stockholm. The most important figure in opening the doors to a new direction was the Swedish composer Bengt Hambræus, who was an organist and who had worked at the electronic studios in Cologne a couple of years before Ligeti. Hambræus was a revolutionary himself and prominent pioneer. He was the man who established the organ as a potentially up-to-date avant-garde instrument since the radical, serial *Livre d'Orgue* (1952) by Olivier Messiaen. Hambræus had established new ground for Ligeti, and his works *Doppelrohr II* and *Konstellationer* are living examples of something very new. *Doppelrohr II* was inspired by the innovative organ stops designed by Rössler, and at the very end of the 1950s, Hambræus wrote a series of pieces called *Konstellationer* for organ and organ sound transformed on tape (Toop 1999, 89–90).

Besides Hambræus, the Swedish organist Karl-Erik Welin was another important personality behind Ligeti's innovations. Welin was young and brave, and he was something of a laboratory for Ligeti and his musical innovations. Welin's positive and encouraging atmosphere might well have contributed to Ligeti's wanting to try something new (Toop 1999, 89–93).

*Volumina* is an interesting example of chaos and organised sound; it is a radical piece without melodies. The title Volumina describes the piece itself: volumes, which imply density and sound; on the other hand, it also means a series of clusters, which gradually change from one to another (Thomas 1983, 319). There aren't even any individual notes but rather a cumulative mass effect. The piece is free in the traditional meaning and it is static, with no different movements, parts or even rests. *Volumina* is like one single arc from the beginning to the very end. Behind the arc is a passacaglia, one of Ligeti's favourite forms (Haas 2014, 289). The main factor of *Volumina's* musical language is the notation, which is totally graphic, without any conventional notation (Haas 2014, 289). It was Hambræus's *Konstellationer* which inspired Ligeti to use the new playing technique with its possibilities for structuring and articulation of clusters in his compositions (Ligeti 1996, 311).

Kagel had also used this technique already in his compositions, but *Volumina* was the very first piece which was thoroughly notated in this special way (Haas 2014, 289). Ligeti came to be fascinated by this means of notation through the influence of John Cage (Toop 1999, 89–93). The notation looks free but is actually extremely precise: Ligeti wrote a long and a detailed preface and explained all of the gestures in the music and how they should be performed. The graphic notation goes systematically from left to right, and the pitches of the tones are given (Haas 2014, 289). Furthermore, the performance is not possible without two registration assistants,

whose presence is obvious. Because the organist's hands are busy with all gestures and manners of playing the clusters, he or she needs extra hands to make all the changes of sound. A closer look may demonstrate that the other hands are as essential to the performance as the organist's. Even the actual notes do not have the same importance as they do in the traditional notation (Toop 1999, 89–93).




**Example 3.** György Ligeti: *Volumina*, page 1.

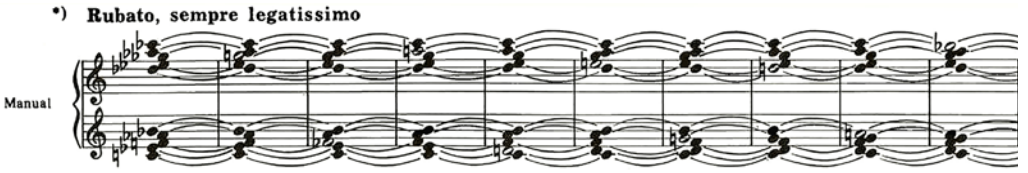
Ligeti had very little experience of his own on the organ. When he finished *Volumina* in Vienna, he tried out the piece on a mechanical-action chamber organ in the Vienna Conservatory. That was how he first tested the continuum of clusters and sound effects. Everything went well, but later there were more difficulties than one may wish or imagine (Toop 1999, 89–93). The first interpreter, Karl-Erik Welin, tried out the opening of *Volumina* in a rehearsal on the Göteborg Concert Hall organ (Marshall 2012, 276), but the organ didn't behave as expected; electrical circuits were overloaded, smoke poured out of the pipes, and there was a stench of burning rubber. Various lead and tin components had melted. It was discovered that someone had made a running repair to one of the fuses by using a sewing needle instead of fuse wire! When the news of a smoking organ reached Bremen, the church council withdrew permission for the concert and for the broadcast. A little earlier, Hans

Otte's *Alpha Omega*, which involved dancers, had already been concern enough for the church council. For that reason, there was no "broadcast première" in Bremen; instead, it was recorded in the Johanniskyrkan in Stockholm and later broadcast on the radio as a premiere. Welin had already made the tape for it, and the case was almost finished. I say "almost" because the recording of Welin was too short. Ligeti found this out just a few minutes before the broadcast (Toop 1999, 89–93). Finally, some days later, the real premiere with the correct length of piece took place on the organ in the Westerkerk in Amsterdam. (Marshall 2012, 276.)

Some years after *Volumina's* second version, Ligeti wrote two organ études, *Harmonies* (1967) and *Coulée* (1969). Actually, Ligeti's plan was to write four études, but he gave up on this because he had heard of similar experiments by other composers such as Kagel. One was planned to use only the wind-chest itself and unpitched wind-sounds. The other was to consist of a single note held down while stops were changed by one assistant while another assistant was within the organ itself, manipulaing the pipes to alter the sound qualities (Thomas 1983, 319). Both pieces had, in the same way as *Volumina*, another composition behind them, and in the études, Ligeti again tried to transfer to the organ something he had already invented. Ligeti worked in 1967 on *Lontano,* which is an enormously sophisticated work and in which all the details are precisely marked. At the same time, he worked on the first organ étude *Harmonies*, and if one compares the scores, it is hard to believe that the composer of both pieces is the same. Interestingly, the pieces sound almost the same but the result has been achieved by entirely different means: full symphony orchestra versus one organist. If *Lontano* is meticulously notated, *Harmonies* is the polar opposite. It has 231 chords with no precise rhythmical character. This is pointed out by the indication *rubato, sempre legatissimo,* which gives the performers the freedom to do whatever they want with the rhythm: to extend the individual chords or to abbreviate and summarise them, all the while avoiding any kind of uniformity or similarity (Toop 1999, 120). The *rubato* is very important since Ligeti wants no element of metre or periodicity (Thomas 1983, 321). There is not even any evidence of the need for virtuoso technique, so I have wondered what makes this an "étude"? Toop has written that "maybe it is a 'composer's study': a study in composing with deliberately restricted means" (Toop 1999, 120). In his *Requiem* (1965), Ligeti used a complex micropolyphony and may have been very conscious of the need to set rules and limitations for himself. In *Harmonies,* the intention is absolutely the reverse: to see how meaningfully the musical process can be extracted from almost absurd constraints (Toop 1999, 120).

As previously stated, there are 231 chords and 231 bars in *Harmonies*. Each chord has ten notes, so all ten fingers are in use all of the time. Each chord differs from the previous one only in that one finger has been moved up or down a semitone, usually but not always alternating between hands. The whole piece uses only manuals except at the very end, where the pedal plays three bars of low c with low 32' and 16' regis-

ters. As in *Volumina*, the piece needs registration assistants, because Ligeti demands registration changes constantly throughout the piece from the beginning to the very end. For sound, Ligeti also asks for "pallid, very alien, 'decaying' colours, 'artificial consumptiveness'", achieved through reduced wind pressure (Toop 1999, 120). The sound and the pitches should be constantly waving up and down. Toop has compared the étude to an exercise in subverting harmony (Toop 1999, 120–121). Ligeti reportedly told Hans-Ola Ericsson that the ever-changing wind pressure creates an intention "like a Camembert cheese that is three years too old" (Röhring 1997, 5–6).

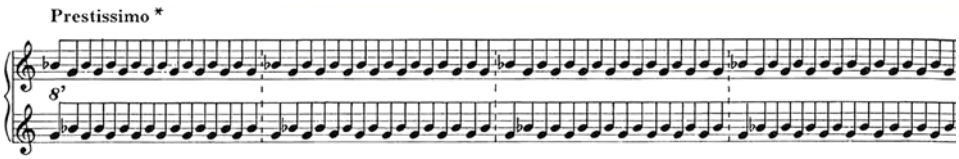



**Example 4.** György Ligeti: *Harmonies,* bars 1–10.

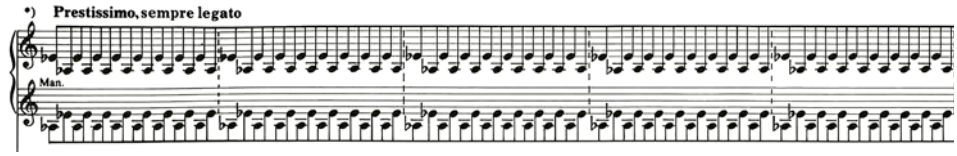
Two years later Ligeti wrote his second étude for organ, *Coulée*, and once again, behind the piece, there is another work, this time for harpsichord. *Coulée* looks like a transcription of Ligeti's own harpsichord piece *Continuum,* which is one of his best-known works. But as Michael Hicks has pointed out, *Continuum* and *Coulée* are two independent pieces which have quite different starting points in harmony and form (Hicks 1993, 172–190). In *Continuum*, Ligeti's motivation for writing his next work for solo keyboard was to write it "in the spirit of the instrument", "a continuous sound that would have to consist of innumerable thin slices of salami". On some occasions, he compared the effect to the wheels of a railway engine, which seems to stay unchanged once a certain speed has been reached, or even, viewed through another train window, to turn backwards. Ligeti insisted on writing a continuous kind of music for an instrument such as a harpsichord – music with speeds at such an extreme that separate repeated notes seem to fuse into a single line (Toop 1999, 121). *Continuum* represents a distinct category in Ligeti's works and consists of patterns "like a precision mechanism", as he said himself (Hicks 1993, 172).

The tempo marking is *prestissimo*; therefore, to achieve a continuous effect, the tempo must be extremely fast and the hands need to remain almost glued to the keyboard throughout (Toop 1999, 121–122). The result is cross-rhythms, micropolyphony or "sound-mass" in which rhythm does not come from the succession of notes of fingers playing. The actual rhythm is a pulsation that emerges from the distribution of the notes, from the frequency of their repetitions (Hicks 1993, 173). The piece is like one big arch from the beginning to the end. According to Ligeti (1969, 5), the duration of the piece cannot be more than three and a half minutes. The piece is divided into two larger parts: in the first part, the hands remain in overlapping registers, and in the second, they gradually drift apart (Toop 1999, 121–122).

*Coulée* was inspired by *Continuum*; only the interval in the beginning is different: there is a minor third in *Continuum* and a perfect fifth in *Coulée*. Actually, this difference is most radical between these two pieces. According to Hicks, *Coulée's* opening interval turns out not to be a partition-interval as in *Continuum,* but a boundary-interval, which is then partitioned (Hicks 1993, 181).[4] Both pieces open with single intervals, both have the obvious features of "mistiness" and "clearing up", both have moments of inversional symmetry and both reach their highest pitch at the end. Yet, while *Continuum* has a strong sense of progression, *Coulée* seems convoluted. The one clearly drives toward cadences and evident formal thresholds, while the other suggests near continuous elision (Hicks 1993, 181). The form of *Coulée* looks even more "continuous" than that of *Continuum* because there are no punctuating "interval signals", and the registration doesn't change until the last part of the piece, where both hands gradually drift up to the very top of the instrument and suddenly break off. This is a kind of classical Ligeti manner, as if the hands have fallen off the top of the keyboard. The most significant difference between *Continuum* and *Coulée* might also be the use of the organ pedals, which are present throughout except for the very end of the piece. In the beginning, the pedals are used like a resonance of the keyboard part, but on the second page, after about one minute, the pedal sounds form a very slow-moving, low chorale layer (Toop 1999, 125–126).




**Example 5.** György Ligeti: *Continuum*, beginning.




**Example 6.** György Ligeti: *Coulée,* beginning.

The literature of organ concert études is rather limited. There are a few examples of études by Hermann Kretzschmar (1848–1924), Karl Hoyer (1891–1936) and Jean Langlais (1907–1991). Ligeti's pieces are also more for concert purposes than just technical études. Maybe the demand of high technical ability has justified the name of étude.

[4] According to Hicks, the intervals seem to play at least four roles in the construction and blurring of signals: boundary intervals, partition intervals, projection intervals and blur intervals (Hicks 1993, 174).

## A Reformer of playing technique

### Score and notation

I expect that readers will know the traditional way of writing music: pitches, rhythms, tempo and length of the tones are given precisely. In his organ works, Ligeti did everything in contrast to tradition (except for the *Ricercare* of 1953).

In *Volumina*, let us start from the individual notes: there are no individual notes, no rhythms or pitches. Ligeti determines the scope of the manuals as C–$a^6$ and in the pedals C–$f\#^4$. In some places, he restricts the scope of clusters, but in most places, he gives absolute freedom to the player. The result is a continuously changing sound mass, which is produced by a new playing technique: large, broad clusters are played with the elbows, the lower arms and the hands, and different parts of fingers. The palms of the hands glide across keys and the manuals, keys are struck with the fists, and fast finger tremolos fly over the keys. Even the feet must master the technique of glissandos and clusters.

This way of playing has combined with the new registration practise, which must produce the "Klangfarbenmaschine". Ligeti has included detailed instructions in his preface as to how various registrations are added or taken away to give different sonorities and colours, which are transformed and varied as in a kaleidoscope. Musical coherence depends on the imagination of registration because it is in seamless cooperation with the manner on the keyboards, especially by means of the motion of the clusters themselves, which build up or wither away and provide rapid internal movements, for instance trills or tremolos. Half-pulled-out stops are called for, if the registration gives that possibility. The wind pressure may also be altered, and the motor may be switched on or off (Röhring 1997, 6–7).

The result is a sort of organised chaos, which is produced by one player, while in the pieces for orchestra, the result is achieved by many players. I wonder what kind of notation a composer would need to use if all of the individual notes or rhythms had been notated exactly? I dare say that the result would have been almost impossible to play. It goes without saying that an extremely complex, exact score would be a great inconvenience if the same results could be achieved just as well through carefully-guided and circumscribed improvisation (Toop 1999, 89–93). By new, graphic notation and flexibility of registration, Ligeti has achieved a human way of producing complex music creating the fascinating result of a new kind of sound. The result is almost like electronic music, but produced by a real acoustic instrument.

Graphic notation makes it possible to give an impression of the average range and kind of activity, especially in the situation of an organ in a reverberant acoustic; while playing clusters, the exact pitches are largely inaudible anyway.

It is amazing that the études, which were written just after the new version of *Volumina* in 1967 and 1969, are parallel works with *Volumina*. Even though they have

been notated in the traditional way with notes without graphic notation, the result is more or less similar to that of *Volumina*. In *Harmonies,* the weaving of arhythmical chords creates a sound wall; a similar sound wall is created in *Coulée* by extremely fast speed. Both *Harmonies* and *Coulée* are harmonic studies by the composer, but on the other hand, they are also real études for organ. Both pieces study clusters: the first étude consists of static chords and the second, broken chords. Both études demand relaxation and independence of the fingers. They are also études of balance between speed and clarity.

**Registration**

For new ideas of registration practice, I have already discussed the *Ricercare*. The use of high pitches was something entirely new. Now, in Ligeti's *Ricercare*, the individual 2' and 1' stops have their own independent and equal roles among other foundation stops, while in earlier organ music, they were mostly added to the other foundation stops.

In *Harmonies*, Ligeti wrote that the whole piece is "soft to very soft". This special registration is not the only thing which is needed but also, "denaturing the sound is best achieved by *greatly reduced wind pressure*" (Ligeti 1969, 4). He gives five different ways to do that:

> a. by using a weaker motor, like that of a vacuum cleaner, inserting the hose into the reservoir
>
> b. by adjusting the valve in the chief wind-receiver between the fan and the reservoir (for example, detaching the rope holding the valve or reducing the play of the valve so that the flow of air from the fan to reservoir is impeded)
>
> c. by opening the wind-chest
>
> d. by reducing the rotation speed of the fan by loading the circuit (installing an adjustable resistance in the circuit, for instance)
>
> e. by removing some low pipes from a pedal reed register; the relevant stop is drawn and the relevant pedals are held down throughout the piece, so that some of the wind escapes (other notes of this register cannot be used during the piece!) (Ligeti 1969, 4).

It is quite obvious that all of these instructions depend on the type of organ. In many cases the changing of the wind supply is not possible without partially destroying the organ in some way. However, the preface gives a good picture of what kind of functions Ligeti hoped for. The traditional, straight organ sound was really something that was not expected. The performer needs to keep in mind Ligeti's advice for

"pale, strange and vitiated" tone colours (Ligeti 1969, 4) when the registration for performance is being planned.

For the registration itself, Ligeti (1969, 4) asked that "the timbre alterations always take place imperceptibly and apparently continuously". To achieve this, a special registrant is needed all the time during the performance. On mechanical organs, half-drawn stops are welcome, as are half-depressed keys (Ligeti 1969, 4). All of these remarks were totally new in organ literature and in performance practise.

Ligeti's pieces have been recorded on large organs: Hans-Ola Ericsson (b. 1958) played them on the *Grönlund organ* in Luleå Cathedral and Gerd Zacher (1929–2014) on the *Schuke organ* in Lutherkirche in Hamburg-Wellingsbüttel.[5,6] Ericsson made his recording under the guidance of Ligeti, and that gives a certain value to the result. Gerd Zacher is the organist to whom Ligeti dedicated the *Harmonies,* and his recording was made in the church where Zsigmond Szathmáry (b. 1939), one of the honoured performers of Ligeti's music, played a great number of organ pieces in the avant-garde style. In any case, Ligeti didn't have any special organ type in mind. His focus was on elements which have nothing to do with the features of traditional organ types. That means that his music is playable on many different organs, even on a historical baroque organ. The compass of these is often much shorter than in a normal concert or church organ.[7] For that reason, the études can be transposed an octave lower. For this purpose, Ligeti gave special instruction in preparing the registration for *Coulée*:

> Right hand: Hohlflöte 4', Gemshorn 8', Bourdon 16'
>
> Left hand: Spitzflöte 4', Rankett 16'
>
> Pedal: beginning: Gedackt 8'.

For *Coulée* he also gave two other examples of registration: one for soft and light registration with 8' and 2' and another, louder registration with principals, mixtures and reed stops. Karl-Erik Welin also played the piece with simply a registration of high aliquots alone. The result was "denatured, astringent and hollow", which seems to be as valid as the other registration (Ligeti 1969, 5).

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[5] Gerd Zacher recorded *Volumina* and *Harmonies* in 1968 in Hamburg. Deutsche Grammophon 00289 477 6443.

[6] Hans-Ola Ericsson recorded *Volumina*, *Etudes* in Piteå in 1991–1997, Bis-509.

[7] The pedal's highest notes would be $d^4$ or $e^4$ and manual's $d^6$.

## Conclusions

In this article I have drawn a picture of Ligeti as an organ composer, and we have seen the means by which he produced a new kind of sound on an old, traditional instrument. This is something unique: an avant-garde composer becomes interested in an instrument which has a repertoire going back to the 15th century. In discussing the relationship between tradition and reformation in terms of playing techniques in Ligeti's music, we have seen that Ligeti did not respect tradition in organ playing. Actually, for him there was no traditional way of playing the organ. If we do not count his early piece, *Ricercare*, he was quite revolutionary. In *Volumina* there is not one single note which should be played in a normal way, that is, is by pressing the key down with the finger and then releasing it by lifting the key back up to the normal position. Ligeti's view of organ-playing in *Volumina* was for instance by the use of the palms in gliding across keys and the manuals. By using graphic notation, he could best achieve freedom for the player, and the result of integrating a new playing technique with a new kind of notation made the organ more like a timbre-machine than a hymn or fugue producer. The practice of registration also found a new level in Ligeti's inventions. *Volumina* is full of untraditional instructions, such as "bei mechanischer Registratur: verschiedene Registerknöpfe",[8] "Register-diminuendo und graduelle Aufhellung des Klangs",[9] "Gradueller Klangfarbenwechsel auf dem Manual" (Ligeti 1967).[10] For Ligeti this liturgical instrument was anything but holy. He dared to revolutionise the use of this totally traditional instrument, which, given its location in a most traditional space – a church – gave it a sort of immunity.

The main question of this article was how Ligeti's *Volumina* and *Zwei Etüden* have changed performance practice and playing techniques of new organ music. *Volumina* was a ground-breaking work for organ, equivalent to Stravinsky's *The Rite of Spring* in 1913 for orchestra. The importance of these two works by Ligeti is the production of sound instead of the individual texture of notes. After *Volumina* was composed many composers adopted its graphic notation as a principle of notation in their own compositions. Ligeti himself achieved the cluster effect apart from notation.

György Ligeti's legacy in organ composition is enormous. After the massive revolution of *Volumina* and *Zwei Etüden,* organ-playing as a whole and especially the manner of composing for organ took a new direction. One could not imagine the organ pieces by Xavier Darasse, Morton Feldman, Brian Ferneyhough, Mauricio Kagel, Iannis Xenakis, Isang Yun and many others without Ligeti's remarkable example.

In Finland, the younger generation followed Ligeti's work closely. Erkki Salmenhaara moved to Vienna after his studies in Finland in 1963 and studied under the guidance of Ligeti (Aho 2011, 79). In particular, Salmenhaara's *Toccata* (1966)

[8] In case of mechanical stops: different stops.
[9] Diminuendo with the stops and gradual brightening of the sound.
[10] Gradual change of tone colour on the manual.

for organ uses graphic notation, which was certainly influenced by Ligeti's example.

By studying Ligeti's organ music, we can also learn a new aesthetic way of understanding music in general. Rules of performance practice in historical organ music are often strict and confusing in the same way as Ligeti's remarks about playing his music, in which we usually try to do the best we can without the certainty of whether we are achieving the result which the composer wanted or not. Ligeti's goal through his notation and remarks was an experience in sound. Maybe it could be the same with the other older composers as well. In turn, Ligeti's prefaces for his organ pieces and remarks on the performance in the score are performance practice in our time, and we should appreciate it as much as we do historical performance practices.

Ligeti was certainly a revolutionary discoverer. He revolutionised everything from organ composition to playing. His influence has not yet reached organ building, but I am sure the time for this is still awaiting us. He made many good suggestions for extra facilities which could improve the organ for modern music. The organ is still a fascinating instrument for which new composers are continuously writing new music. This is no doubt a result of Ligeti's fine example. When will the next Ligeti turn up?

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GUADALUPE LÓPEZ-ÍÑIGUEZ

# Report from the symposium "Transforming musicianship: Understanding 19th-century historical style and its implications for learning", Sibelius Academy, Helsinki, 12 November 2018[1]

*I think it's much more important to be us than to achieve historical verisimilitude. Historical verisimilitude is just correctness, and correctness is a very paltry virtue. Correctness is the kind of virtue you demand of students, not of artists.*
*(Taruskin, 1992)*

The symposium started with welcoming words by the author of this report, Dr. López-Íñiguez, followed by an introduction to the speakers and to the symposium's topic, where López-Íñiguez dove into the main aspects of the historical style of the repertoire during the long 19th century. She addressed the importance of using historical instruments (whether copies or originals) to perform these repertoires due to their qualities of expression, colour range and articulation, which are the most easily heard and clearest to perceive for the listener – particularly the fortepianos and romantic pianos, and the set-up of string instruments with their corresponding transitional and classical-romantic bows. She also mentioned the difficulties of accessing such instruments for most music students and musicians (although fortunately, this is not a problem at the Sibelius Academy), and the costs behind the logistics of

[1] Funding and acknowledgements: This report is framed within the current postdoctoral research project of the author, funded by the Academy of Finland (Reference 315378, Council for Culture and Society, 2018–2021), and her previous artistic research, funded by the Kone Foundation (2016–2018). The symposium was hosted by the Center for Educational Research and Academic Development in the Arts (CERADA) and co-organised by the Uniarts Center for Artistic Research (CfAR) and Oxford University's Faculty of Music. The symposium took place on Monday 12 November 2018 at Wegelius Hall, Sibelius Academy, from 9:30am to 1pm. Participation was free of charge, and the symposium language was English.

performing on historical instruments (e.g. transportation, tuning and maintenance of keyboards, appropriate halls).

After her opening statement, López-Íñiguez continued with her own talk, "Why Do I Play 19th Century Music on Period Instruments? On Agency, Creativity, and Motivation", which drew upon her personal experiences as a professional musician engaging with period instruments. This particular talk addressed how the learning practices associated with historically informed performance have the potential to inspire, motivate, and influence creative agency. López-Íñiguez critically expressed her ideas on the lack of constructivist training in the pedagogical context of higher music education that takes into account the technical aesthetics and reading of scores particular to this repertoire. She shared a few personal experiences in relation to her training as a modern cellist, to express that very little of what is known about 19th century historical style is reflected in the teaching of instrumental teachers and professional musicians (in line with e.g. Brown 1991, 2010; Haylock 2004; Holden 2012; Pickles 2016; Taruskin 1995).

In that regard, López-Íñiguez stated that the strong conservatoire tradition, with its dominating transmissive teaching practices aimed at isolated specializations, leads music students and musicians to canonise the way that music should be performed, thus affecting our creativity, autonomy, motivation, and artistic ownership. This is because the most valued performances in classical music often "[fall] within well-established traditions" (González-Moreno 2014, 88), with the result that performers are less likely to develop a "sense of exploration, spontaneity and creativity" (ibid., 89) such as that seen in jazz. Following Taruskin (1992), López-Íñiguez finished her talk by describing how performance practice helped her build her own musical identity from a clean starting point as someone not wanting to explicitly fit into any ready-made models of "correctness", and believing that our interpretation of history is subjective and relative in any case.

After López-Íñiguez's introduction and presentation, it was time for the first keynote speaker of the symposium, Claire Holden, a period instrument violinist who plays regularly with the Orchestra of the Age of Enlightenment, and is Principal Investigator of a five-year project funded by the British Arts and Humanities Research Council entitled Transforming C19 HIP.[2] This project seeks to reveal why historical performance scholarship has had such limited influence on professional performance, and aims to bridge the widely-recognised gap between performers and scholars. Holden's talk, entitled "The Long and Short of it: Bowing and Articulation in Beethoven's Symphonies", considered approaches to articulation in Beethoven's music. It answered questions related to how our playing might be influenced by our understanding of Beethoven's use of metre and the juxtaposition of long and short elements in his music, and what clues we might discern from the text.

Quoting Haynes (2007) on the challenge of achieving the so-called *Romantic*

[2] https://c19hip.web.ox.ac.uk/home

*style*, Holden expressed the difficulties of reawakening Romanticist practices by relying exclusively on, for example, the instruments, the score, or the treatises. Thus, Holden presented the audience with the interesting idea that, as German-speaking Europe was arguably the centre of philology in the nineteenth century (Benes 2008), if one expresses her will to understand the style of 19th-century music written by, for example, Beethoven, one must understand the philology (and therefore the style of recitation) behind German grammar study (Marchand 1996). Starting with poetic examples drawn from Goethe's metrical virtuosity (taken from Williams 2002), Holden then explored Beethoven's symphonies to connect the idea of metre and philology.

For this, the following examples from Beethoven's works were described to the audience: 1) Symphony No.7 Op.92 1st movement, bars 63–67; 2) Symphony No.3 Op.55 Finale, bars 254–6; 3) Symphony No.8 Op. 93, bars 28–38; 4) Op.93, bars 100–104; 5) Violin Sonata Op.47 No.9, bars 523–553; 6) Op. 47, bars 79–94; and 7) Violin Sonata Op. 30 No.2 Finale, bars 58–79. To conclude her keynote presentation, Holden suggested critical approaches to Urtext editions, taking the perspective that they did not incorporate such understanding of metre as was presented in her keynote. For this particular issue, Holden illustrated the differences between Beethoven Op.47 1st movement, bars 88–106 (copyist's manuscript) and bars 89–101 (Henle Urtext).

Dr. Tuija Hakkila was the third speaker of the day, with a talk entitled "Making the Score Come Alive: Reading and Understanding 19th-Century Piano Scores". The talk reflected on musical issues such as accentuation, tempo fluctuation, and flexibility of phrasing. Hakkila began by introducing Czerny's (1839) ideas on the major changes that happened in piano compositions during the 19th century, and therefore also in the styles of playing (i.e. Hummel, Ries, Thalberg, Chopin, and Liszt).

Hakkila continued by enlightening the audience on the mechanical/building aspects of the four different fortepianos and romantic pianos present in Wegelius hall, including their technical, colour, volume, range, and expressive potential and the differences among them. The instruments available to Hakkila in the hall represent different compositional stages during the long 19th century and included: 1) a copy of a Clementi fortepiano from c.1790 currently owned by fortepianist Olga Witthauer, and acquired thanks to funds from the Finnish Cultural Foundation; 2) a copy of a Conrad Graf piano from c.1820 built by Rodney Regier (Freeport, Maine, US) in the 1990s; and 3) an original Érard piano from the 1880s built in Paris. Of these four instruments, the last three are owned by the Sibelius Academy, and the first two were brought to Wegelius hall specifically for the symposium. Piano tuner Pekka Savolainen was in charge of tuning all the instruments and ensuring their maintenance for the symposium. Hakkila used the instruments to perform interpretations of piano solo fragments from Beethoven, Mozart, Chopin, and Schubert.

Hakkila also introduced a particular reference that played an important role in developing her understanding of the interpretation of the main accentuation markings in 19th-century piano music: Mathis Lussy's (1874) ideas on musical expression in relation to accents, nuances, and tempo for vocal and instrumental music, particularly the concepts of Thésis, Arsis, and Ictus in contrast to Anacrusis and Endings. In that regard, Hakkila has applied the readings of main accentuation symbols in her own artistic practice as follows: 1) < > (*messa di voce*) understood as a melodic marking, 2) *fp* as more melodic than the previous; 3) ^ as a rhythmic aspect; 4) ´ as a more rhythmical aspect than the previous; 5) *sf* as a pathetic element; 6) > as a more pathetic element than the previous; and 7) *f* as an acoustic marking. After this, Hakkila played some music samples by pianists Arthur Rubinstein and Aleksander Michałowski via Spotify, to show how these aspects are considered by different musicians.

The last speaker of the day, also acting as a keynote, was musicologist, cellist, and conductor Dr. George Kennaway, who has been a member of CHASE (Collection of Historical Annotated String Editions, centred at the University of Leeds),[3] and whose PhD, directed by Dr. Clive Brown, serves as the basis for the book *Playing the Cello, 1780–1930* (Kennaway 2014). In his keynote presentation, entitled "Sliding, on Thin Ice, to Some Conclusions – Fundamental Aspects of Cello Performance in the 19th Century", Kennaway addressed specifically cello-related issues of performance practice, and looked at the performing editions of Friedrich Grützmacher, 19th-century ideas about posture, and the interpretation of bowing indications.

In particular, Kennaway highlighted some of the main topics included in his innovative study of nineteenth-century cellists and cello playing (see Kennaway 2014). Kennaway started by critically addressing the misuse of concepts such as "authenticity" and "historically informed performance" in relation to 19th-century historical style for the lay audience, to directly engage with an open-minded explanation of several aspects included in his book, such as the fundamentals of posture, bow-hold, and left- and right-hand actions (including *vibrato*), or the inclusion of the endpin.

Kennaway continued by explaining that illustrations and descriptions in treatises must be treated with care by professional musicians engaging in 19th-century performance practice, particularly in relation to controversial matters such as portamento and vibrato, as we must acknowledge that there were many different practices among musicians co-existing at that time, and especially as we have no sound recordings from those performers. At the end of his presentation, Kennaway played some singing tracks from his wonderful collection of LPs to demonstrate the use of *portamento* (shifting) in the early 20th century, and continued by performing on a classical cello by Claude Pierray (Paris, 1725), set in the style of the early 19th century and with a transitional bow by André Klaassen (Zutphen, 2015) (provided for him by López-Íñiguez), some excerpts from the second movement of the Schumann cello

[3] http://chase.leeds.ac.uk/

concerto after the edition by Friedrich Grützmacher, which includes several examples of interesting fingerings, bow-strokes, and use of *portamentos*.

Overall, the symposium was very positively received by the audience, a significant portion of which was comprised of staff and students from the Sibelius Academy's Early Music Department and DocMus Doctoral School, and after all of the talks and keynotes, the speakers came together for a panel discussion during the last thirty minutes of the event. The panel was presented with several interesting questions by the public, particularly those related to the use of temperaments, performing pitches, and *tempo* markings in the long 19th century – all controversial aspects which could be approached as a starting point by reading Haynes (2002) and Brown (1991, 2004). All of the speakers agreed, very much in line with Brown (2010), that recent research has helped us move forward in our understanding of 19th-century music historical style, but we still know much less than we would like to. Before the end of the symposium, López-Íñiguez introduced the audience to a Facebook group called Historical Performance Research[4], which currently has over 7,000 active followers, as a suggestion for those who want to further explore the symposium topics and avail themselves of peer support.

[4] https://www.facebook.com/groups/performancepractice/

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JUHA OJALA

# A Concise Panorama of Doctoral Research at the Sibelius Academy

On 18 and 19 March 2019, the fourth edition of the Sibelius Academy Research Days descended on the halls of Helsinki Music Centre in downtown Helsinki. The event was organised by the students of both DocMus and MuTri Doctoral Schools and laid out an array of close to twenty research presentations in a variety of formats, mostly by the doctoral students. Without parallel sessions, the event presented a substantial cross-section of ongoing doctoral projects. The event also provided the nearly one hundred participants with a glimpse into research pursued by the faculty and provided researchers with career support.

At the end of the first day, an all-female panel – as it happened – shared their insights on internationalization and career coaching of doctoral and postdoctoral researchers. Saara Harjula from the Helsinki EU Office cracked the nutshell of funding opportunities from the European Union, which expanded to a discussion of the variety of European networks by prof. Tanja Johansson. Postdoc researcher Guadalupe López-Íñiguez and doctoral researcher Sanna Kivijärvi shared their experiences of other funding agencies (such as Fulbright, Kone Foundation and the Academy of Finland), emphasizing the researcher's own activity and diligence: keeping your eyes and ears open, learning from others, using your chances or moving on, being frank with your questions, working hard and planning well ahead, even including up to twenty-year plans. Doctoral researcher Eveliina Sumelius-Lindblom related to the audience her approach to combining artistic and scientific research (and personal life), followed by the panel's concluding advice on researcher mobilization and alternative plans. One of the questions from the audience brought up an important but, until now, little-known fact: starting in fall 2019, there will be a music research minor available to master's students, bridging the gap to research studies at the doctoral level.

However, the main focus was on the presentations of current research. The only keynote of the short conference was presented by Tanja Johansson, professor of arts management and director of the MuTri Doctoral School: an identity perspective

to managing joint ventures in performing arts, based on her accumulated research. This solid and clear lecture served as a welcome display of research in arts management, perhaps too often left to the margins by music practitioners, regardless of the fact that, for instance, joint ventures such as studied here (e.g. Harpa in Reykjavík, Lincoln Center in New York, or Helsinki Music Centre) constitute much of the working environment and context for musicians.

The heart of the conference was the impressive selection of presentations by doctoral students on a variety of topics, delivered in different formats: two traditional 30-minute conference papers, nine shorter 15-minute spotlights, four 30-minute lecture recitals, and one 30-minute extended demonstration lecture, the format of which I discovered was suggested by the presenters. No posters were presented in this edition of the Research Days, but the audience was able to get acquainted with Dominik Schlienger's installation using interactive techniques for acoustic localization and positioning. This blend of formats ably conveyed what seemed best suited for each presentation.

The days began with an efficient spotlighting of five ongoing doctoral projects, varying from the issues of negotiating democracy in popular music education (by Minja Koskela) to the temporal and cultural distances to "desire" in early 17th-century Italian music (by Marianna Henriksson), and from children narrating the meanings they give to singing (by Analia Capponi-Savolainen) to the domestication of Finnish popular music concerts from the 1960s to the 1980s (by Mikael Huhtamäki) and to a thematised cross-section of post-tonal guitar music by professional Finnish composers (by Jyrki Myllärinen).

On the second day, another set of four spotlights was delivered, spanning from Selim Palmgren's exposé on the tradition of Finnish piano music (by Henrik Järvi) to the analysis of the "immoral" in Ann-Elise Hannikainen's piano concerto and her first performance of that piece (by Markus Virtanen), and from learning the Finnish language through choral music (by Johanna Lehtinen-Schnabel) to "awareness-raising" through choral music in the Finnish public radio of the 1930s (by Inari Tilli).

The varied topics are, of course, associated with varied research tasks, methods and channels of reporting – different strands of scientific and artistic research in music. While there were differences in how well the presentations took advantage of or complied with customary, even traditional, procedures of delivery, the tight juxtaposition of the presentations positively highlighted, in my opinion, the parallel aspects of research. It may be worthwhile to underscore here how, regardless of the audience, they are likely to be interested in 1) *what* exactly is being studied, and *why*; 2) *how* current research relates to previous research; 3) *how* this particular topic in this particular context is being studied; 4) *what* the (projected) *outcome* will be; and 5) *what* the *ramifications* of the study might be. (This of course holds for all formats, and not only the spotlights.) No researcher communicating their work can take it for granted that the audience is already aware of these; those who best connect with

the audience in their delivery not only pay due attention to these parameters, but might even do so with good humour, as we were able to do at this conference.

Opening the second day, the solidly-delivered conference papers by Inkeri Jaakkola and Johanna Talasniemi focused on the opera *The Damask Drum* by Paavo Heininen and the history of soprano Aulikki Rautawaara's concert repertoire, respectively, reflecting significant parts of the scientific profile of the academy, particularly in classical music.

Unfortunately, the performer of the first lecture recital had to cancel, and the audience needed to settle for recorded sound. The second-day lecture recitals did however include live performances in addition to verbal presentations and recordings. Regardless, all four attested to the power of communicating research through multiple channels, with verbal reflections complemented by examples of artistic praxis, or rather *vice versa*: is new knowledge striven for and consequently communicated in the artistic doctorates not only secondarily expressed verbally, but primarily embodied in the actual practices of music?

In fact, the role of embodiment was largely the topic of Jarkko Hartikainen's presentation, here in the context of the composer's praxis and its communication with the performer. The other three lecture recitals, with live performances by artist-researchers, likewise dependably delivered on the second day. These included Ilkka Heinonen's project on *jouhikko,* the Finnish bowed lyre, as a case of the transition of cultural phenomena across contexts (here across Hispanic Baroque and Finnish folk music); Naiara de la Puente's project on how the bellows are used for breathing in contemporary accordion music; and Sebastian Silén's project (performed with Martin Malmgren) on studying, recording and – due to somewhat unforeseen turns – also extensively editing the works for violin and piano by Fredrik Pacius and Robert Kajanus, violinist-composers (among their other roles) and contemporaries of Jean Sibelius.

Finally, concluding the second-day presentations proper, composer Miika Hyytiäinen and singer Lisa Fornhammar exhibited the dimensions of their collaboration, the former focusing on composition in experimental music theatre and translation between composers and singers, the latter on collaborative practices in higher vocal music education in a contemporary context. By refining their own professionalism in creative ways and working together across traditional paths (and the two doctoral schools), each has manifested in e.g. promising tools for mapping the singers' voice, and means for graphical notation, both working towards better communication and understanding between composer and performer.

The SibA Research Days were a concise panorama (mainly) of the research projects of the doctoral students, both artistic and scientific, at the Sibelius Academy of the University of the Arts Helsinki. The organization of the event was on a par with standard national and international conferences, including the welcoming atmosphere. In particular, this is thanks to the organisers (Olga Heikkilä, Samuli Korka-

lainen, Sirkku Rintamäki and Pia Siirala, together with Hanna Ojamo and Eveliina Sumelius-Lindblom), session chairs and technical support, all taken care of by student forces. As a doctoral conference, the SibA Research Days have evolved into a balanced set of presentations, in terms of topics, schedules, formats, venues, and stages of projects, which together keep the audience engaged. The conference offers valuable experience for the participants of engaging in presenting and communicating their own research and everything that comes with it – whether artistic or scientific. It also hosts opportunities for others to get acquainted with and follow the course of individual doctoral projects, and for mutual support and insightful comments. Naturally, any series of conferences needs to consider what might be subject to change and improvement from edition to edition. This time, perhaps the panel and the workshop, both with well-set goals, did not quite reach the audience in the best possible way, partly due to the timing. Perhaps faculty and postdoctoral project researchers might also be more accessible, although there are also other channels available to that end, and it may be that with increased focus in that direction – or the inclusion of other academies of UniArts – such a change might unnecessarily alter the identity and function of the conference. All in all then, I trust the Research Days left audience members, including me, with a sense of appreciation and inspiration, and looking forward to the next edition.

Abstracts

Lukas Ligeti
**The Flame in my Hands**

I am a composer and improvisor with an unusual background: my father was György Ligeti. My last name, while only six letters long, tends to lead people to a complicated multitude of preconceived notions and assumptions about my upbringing, advantages, challenges, and even about what my music might actually sound like. These assumptions are almost invariably false.

I am not a music theorist or historian and do not intend to give a musicological analysis of my father's work. But I can illuminate his thinking and interests from the perspective of someone who knew him in a way no musicologist did, and try to trace the experiences and events that triggered some of his unique thoughts and ideas. I will also elaborate on what I hope to have learned from my father, how he has influenced me, and how our interests as musicians are similar and how they differ.

I am an independent artist, not a "professional son". Nonetheless, apart from creating my own music, it is important to me that my father's work continues to be appreciated and that it is understood and contextualised in ways he wanted it to be. That sometimes makes me ask myself what my father would do were he alive and active today. The hypothetical, extrapolative answers I arrive at are not necessarily identical with my own views, and once again, I will try to explain how I see these similarities and differences and in what ways they are cultural, generational, etc.

My father was always a passionate defender of freedom, democracy, and individual creativity. This is one aspect of his legacy I am committed to cultivating and carrying on in my own work. I will share some of my ideas for how music might move forward and what artistic and other challenges lie ahead for me personally, and for new music in general.

About the author: Lukas Ligeti's music ranges from the through-composed to the free-improvised and is informed by a unique approach to rhythm and a special interest in intercultural collaboration.

His compositions have been commissioned by Bang on a Can, the Kronos Quartet, Ensemble Modern, the American Composers Orchestra, the Vienna Festival, MDR-Symphonieorchester, Goethe Institute, Armitage Gone! Dance, and many others. He was recently artist-in-residence at the Museum of the History of Polish Jews in Warsaw; currently, he is working on a piece for the joint forces of eighth blackbird and the Amadinda Percussion Group. As a drummer, he has worked with John Zorn, Marilyn Crispell, Gary Lucas, John Tchicai, Henry Kaiser, Elliott

Sharp, Bill Laswell, Jon Rose, Miya Masaoka, Benoît Delbecq, Michael Manring, Tarek Atoui, Thollem McDonas, etc., and co-leads the trio Hypercolor with Eyal Maoz and James Ilgenfritz. He has given solo electronic percussion concerts on four continents. Active in experimental collaboration in Africa for more than 20 years, he co-founded the ensemble Beta Foly in Côte d'Ivoire and co-leads Burkina Electric, the first electronica band from Burkina Faso.

Lukas studied composition at the University of Music and Performing Arts in Vienna, Austria, his city of birth. He was a visiting scholar at Stanford University and subsequently lived in New York City from 1998 until 2015, when he joined the faculty of Integrated Composition, Improvisation and Technology, an innovative graduate program at the University of California, Irvine. He now divides his time between Southern California and South Africa, where he is completing a PhD at the University of the Witwatersrand in Johannesburg. Among other priseus, he received, in 2010, the CalArts Alpert Award in Music. www.lukasligeti.com.

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Marcus Castrén

**Aspects of Pitch Organization in György Ligeti's Piano Étude No. 8, *Fém***

György Ligeti's Piano Étude No. 8, Fém, is governed by two simultaneous and continuously repeated rhythmic patterns, one of which is for the right hand, the other for the left one. The patterns evoke the medieval concept of Talea, a constant configuration of durations whose repetitions introduce a recognizable element to the piece it is used in. The two Fém taleae are of different lengths, meaning that their starting points coincide only after several cycles.

As far as pitch organisation is concerned, *Fém* contains an element that is as dominant as the *Talea* patterns are in the realm of rhythm, namely, parallel fifths. It is the purpose of this study to examine how the fifths, and harmonic materials derived from them, govern the pitch organisation of the piece.

It is suggested that the fifths form two distinct "harmonic families". The first one contains collections of notes where the elements can be arranged so that there is a perfect fifth between all pairs of consecutive elements. "Family members" can contain from 2 to 12 elements. The second family contains collections of notes where the elements can be arranged so that in the succession of intervals between pairs of consecutive notes, tritones and fifths alternate. Family members can contain from 3 to 12 elements. Furthermore, the ordering and registral positioning of the elements is free: the family membership of the collection is preserved even if the elements are not in a "pure" interval stack order – the collections are not defined to be chords or other pitch-space objects, but *pitch-class sets*.
It is then examined how the two harmonic families can be utilised in articulating elements of the pitch organization. Among the viewpoints are the relations between the *Taleae* and the harmonic families, the transpositional relations between family members in control-

ling the level of dissonance, harmonic-family saturation, completion strategies of incomplete family members, and simultaneous linear instances of family members.
The study uses both traditional and pcset-theoretical terminology.

About the author: Marcus Castrén studied at the Sibelius Academy and at Indiana University, Bloomington, finishing his doctorate at the Sibelius Academy in the year 1994. He has been teaching, among other subjects, music theory, analysis and academic writing at the Sibelius Academy ever since, first as a Senior Assistant and then as the Professor of Music Research. He downshifted himself to the position of a part-time teacher in 2015. As a music theorist, his main interest is in pitch-class set theory and its computer applications.

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Elisa Järvi
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**In the penprints of György Ligeti in Basle – Historical Aspects on Performance Notes in Piano Etudes 1–6**

The article is a discussion on tempo markings and performance notes in the first volume of the piano études by György Ligeti. It draws attention to certain differences between the manuscript, the preliminary facsimile editions and the final edition by Schott. It also highlights various post-publication corrections, comments and notes written by Ligeti on the sheet music in his possession. According to the sources, Ligeti changed his mind about the tempo several times and attached great importance to the nuances in the written performance notes. It remains open whether he had intended more corrections and comments to be published than are seen nowadays in the available editions. The information is based on unpublished material and archive sources at the Paul Sacher Foundation in Basle.

About the author: Finnish pianist Elisa Järvi completed her artistic doctoral studies at the Sibelius Academy DocMus Department in Helsinki. Her written thesis and book discusses the rhythmic and metrical aspects of Piano Etude No. 8 by György Ligeti. Her artistic doctoral project focused on the oldest and the newest music written for the piano. She also studied in London and Cologne where she completed her *Konzertexamen*. Ms. Järvi is currently working as a part-time piano teacher and post doctoral researcher at the Sibelius Academy and studying musicology at the University of Helsinki. Together with Finnish composer Sampo Haapamäki she recently developed a new kind of quarter-tone piano. She is an active performer of contemporary music, and also combines contemporary music with performances of earlier works, including works written for the fortepiano. She has performed extensively throughout Europe as a chamber musician, and engagements have taken her to Japan and the United States. Her debut album *Aufforderung zum Tanz* (Fuga 9370) features dances and compositions with dance influences by classical and contemporary composers.

Jan Lehtola

**György Ligeti and organ music – traditional reformer or revolutionary discoverer? Ligeti's organ music and its influence to the playing technique of organ.**

The article draws a picture of György Ligeti as an organ composer and it shows the means, which he came up with to produce a new kind of sound on an old, traditional instrument. The aim here is to talk about the relationship between tradition and reformation in terms of playing techniques in Ligeti's organ music. Because Ligeti didn't have much experience with traditional organ playing techniques, as far as articulation in all its dimensions goes, with different approaches through historical performance practice, he could begin his work from a clean table. However, he did use all manner of touch, developed new playing skills and invented new ways of registration, which gave his music new wonderful colours and timbres. Ligeti composed three different pieces for organ: an early *Ricercare*, the massive *Volumina* and two spectacular études. The article will focus here merely on the last two: the *Volumina* and the *Zwei Etüden*. They are both revolutionary in a way because they don't respect tradition. They are also exceptional compositions, because they are both analogous with either orchestra or instrumental pieces, which Ligeti was writing at the same time. Furthermore, they both need professional organ registrants. The registrant actually has a more important role in the performance than the organist him or herself. If we don't count his early piece, *Ricercare*, he was quite revolutionary. In *Volumina* there is not even a single note, which should be played in a normal way, but Ligeti's organ playing in it is for instance the use of palms of the hands in gliding across keys and the manuals. By using graphic notation he could best achieve freedom for the player, and the result of the integration of a new playing technique with a new kind of notation made the organ like a timbre-machine. The practice of registration also found a new level in the inventions of Ligeti. György Ligeti's heritage in organ composition is enormous. After the massive revolution of *Volumina* and *Zwei Etüden* organ playing as a whole and especially the way of composing for organ took a new direction. One could not imagine many contemporary pieces without Ligeti's example.

About the author: Jan Lehtola studied the organ in Helsinki (with Olli Porthan and Kari Jussila), in Amsterdam (with Jacques van Oortrmerssen and Jean Boyer), in Stuttgart (with Ludger Lohmann), in Lyon (with Louis Robilliard) and in Paris (with Naji Hakim). He graduated from the Church Music Department of the Sibelius Academy, gaining his diploma with distinction in 1998. In 2000 he gave his Sibelius Academy debut recital in Kallio Church, Helsinki, and in 2005 received a Doctorate for his dissertation on Oskar Merikanto as a transmitter of European influences to Finland. The doctoral degree included a serie of five concerts and a book. Jan Lehtola has been a Lecturer in Organ Music at the Sibelius Academy, University of the Arts, Helsinki, since 2007. He is playing recitals and as a soloist with orchestras in Europe, Russia and the United States.

Manos Panayiotakis

**Aspects of melodic and rhythmical textures in György Ligeti's micro and macro polyphony**

The subject of this article falls within my previous musicological research on contemporary era and is focused on the exploration of the methods which György Ligeti applied on a number of his chamber, orchestral and solo works, to generate various, previously unheard, interactive textures. Although Ligeti's aesthetic trajectory is differentiated from his contemporaries "pure" sonoristic composers (Penderecki, Lachenmann, Sciarrino and others), his polyphonically constructed textures often create diversiform sonoristic environments, based more on melodic and rhythmic material and less on timbral extension for each particular musical instrument.

In addition to Ligeti's orchestral masterpieces, the works *Ramifications* (1968–69), *Chamber Concerto* (1969–70), *Melodien* (1971), and *Piano Etudes No. 3* and *No. 4* from the first book (1985) are some representative examples of the above aesthetic direction.
Through analysis of particular extracts from the above-mentioned works, this paper will attempt to demonstrate a number of applied compositional principles, in order to explore both the micro- and macro-structure of "Ligetian" micropolyphonic textures.
In addition, innovative, sophisticated techniques, such as the blocked keys in *Etude No. 3* and the repetition of pitches combined with *sfz-p subito* dynamics in the *Chamber Concerto*'s second movement, have been proved to be strong tools in the attempt to achieve rhythmical complexity, characterised by ultimate levels of rhythmic accuracy.
Various pitch (or pitch-class) sets and intervallic ratios are often used as starting points for the generation of multi-layer canonic textures and imitative passages. Both the horizontal (melodic) and the vertical (harmonic) organisation of the pitch material form structures of linear sonic events, which in turn consist of multiple interactive, polyrhythmic gestures.

Ligeti's distinguishable polyrhythmical, sonoristic, effect often occurs from several types of linear and non-linear arithmetic series and sets which will be analysed and examined.
In summary, based on particular extracts of the works mentioned above, this paper will focus on:

- How Ligeti's micropolyphonic techniques create a variety of sonoristic textures and
- How Ligeti's micropolyphony forms sophisticated macro-polyphonic structures
- Arithmetic series which dominate the rhythmical construction of these works and on ways they affect the overall textural plan of each work.

About the author: Manos Panayiotakis is a Greek composer, flutist and Teaching Fellow at the Department of Music Technology and Acoustics Engineering of Technical University of Crete. He studied musicology at the University of Athens and composition with

Theodore Antoniou at "Musical Horizons" conservatory. He studied composition (MA, PhD) with Thomas Simaku at the University of York, funded by State Scholarships Foundation. He has collaborated with performers, ensembles and choreographers in Greece, UK, USA, Italy, Germany and Austria. His work *Illustration* was conducted by Gunther Schuller at the ALEA III Workshop in Boston, while *Talus* was awarded the first priseu at Volos Composition Competition and published by Berben publications in Ancona. Finally, "Echosymplokon" was performed at the ISCM festival in Vienna 2013, by Webern Symphony Orchestra. He has taught in the Department of Music of the Aristotle University and his publications include papers on contemporary music in Lithuania, Serbia, Finland, Ireland, Greece and Cyprus.

Several of his works have been recorded by the University of Athens choir and his solo flute work *Along the Cygnus Wall* was released by Sarton records in Warsaw, performed by Iwona Glinka. Recently, he published his workbook on music theory *Learning Music* in collaboration with Elena Perisynaki.

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**The structure of thought. On the writings of György Ligeti**

The aim of this text is to identify and characterise the key thematic areas in Ligeti's writings, and to demonstrate their role in the shaping and expanding of our picture of the composer and his works. The analysis concentrates largely on the writings which may appear far removed from Ligeti's compositions and his compositional techniques. These writings include reminiscences, articles devoted to other composers, and reflections on the status of music. They present a number of issues which are significant in relation to all of Ligeti's works. The first issue concerns the status of the composer, whose attitude and activities are suggestive of those of a scholar. They reveal Ligeti's fascination with science, and his belief in the autonomy of music. Another important thread is the historical placing of Ligeti's work. When discussing the works of others the composer seems to be very aware of the influences to which he was subject himself. A privileged position is given in Ligeti's writings to his direct historical predecessors, such as Béla Bartók or Anton Webern, but also to Claude Debussy, Gustav Mahler, Charles Ives or Igor Stravinsky. The third element of significance are the references to autobiographical themes, which go far beyond being anecdotal. On the whole they correspond perfectly to the image of Ligeti's compositions and later inspirations. Recalling images from childhood also affects the composer's special way of describing music. Usually it is grounded in the inaccessible, difficult to capture sphere of memory or imagination, yet at the same time it is always music being heard, taking place in time. This special, metaphorised way of describing music defines the

fourth thematic area. The composer most often uses visual and spatial metaphors, especially the metaphor of labyrinth, fabric, web, surface or mirror image. Ligeti finds a special, "personal" justification for his metaphors in the form of synaesthesia. The metaphors are also strikingly multifunctional.

A detailed discussion of all these issues leads to the conclusion that for Ligeti writing was simply essential. It served as a toolbox of vocabulary and representations which defined his compositions in a unique way. It became a means of defining his self-identity, of working out his own intellectual stance and of constructing an individual vision of the history of music which focuses on those aspects most precious to him. Writing was probably also a way of working through his emotions, of cleansing, of nurturing memories and doing justice to past events.

While Ligeti is an individual case, the phenomena and strategies discussed here may turn out to be symptomatic for the whole body of contemporary composer-writers.

About the author: Ewa Schreiber is a musicologist and music critic, assistant professor at the Department of Musicology of Adam Mickiewicz University in Poznań (Poland). She graduated from musicology and philosophy at Adam Mickiewicz University in 2005 and defended her PhD dissertation in musicology in 2011. Her main scientific interests are: the aesthetics of music (the theory of tropes, such as irony and metaphor, applied to music and musicological discourse) and the writings of contemporary composers (including Elliott Carter, Jonathan Harvey, Helmut Lachenmann, György Ligeti and Witold Lutosławski). She is also interested in the creative output of young generation in Poland. In 2012 she published her book *Muzyka i metafora. Koncepcje kompozytorskie Pierre'a Schaeffera, Raymonda Murraya Schafera i Gérarda Griseya* [*Music and Metaphor. The Compositional Thought of Pierre Schaeffer, Raymond Murray Schafer and Gérard Grisey*] (The National Centre for Culture, Warsaw).

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Guadalupe López-Íñiguez

**Report from the symposium "Transforming Musicianship: Understanding C19th Historical Style and its Implications for Learning", Sibelius Academy, Helsinki, 12th of November 2018**

The orchestral and chamber music of the 19th Century includes some of the most widely performed and well known pieces of classical music, and yet most professional performances of this repertoire have been relatively uninformed by what is known about actual 19th Century historical style. Thus, this symposium offered research-based insights on the technical and performative aesthetics of this repertoire, by bridging the widely-recognised gap between period and modern instrumentalists and scholarship through spoken presentations and demonstrations on historical instruments.

About the author: Guadalupe López-Íñiguez is a Spanish cellist and interdisciplinary researcher based in Finland, working currently as an Adjunct Professor (Docent) of Music Education at the Sibelius Academy and as a Postdoctoral Researcher at the Center for Educational Research and Academic Development in the Arts (CERADA-Uniarts).

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Abstract

**A Concise Panorama of Doctoral Research at the Sibelius Academy**

This is a review of the fourth annual exhibition of the Sibelius Academy Research Days, held in March 2019 and organized by the students of both the two artistic and research doctoral schools of the academy. A welcoming atmosphere laid the foundation for a two-day panorama of presentations of research projects across a wide spectrum of topics given by the artistic and scientific groups of doctoral students in a variety of formats, from concise spotlights to extended demonstration lectures. Other presentations included a faculty keynote address and a panel on internationalization and career coaching.

About the author: Juha Ojala, Ph.D., M.M., is currently serving as professor of music performance research at the DocMus Doctoral School of the Sibelius Academy, University of the Arts, Helsinki. His main research interests are in music performance and composition, music education, experience, communication and signification.