

# Forms of the quartet

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SVEUČILISTE U ZAGREBU MUZIČKA AKADEMIJA  
III ODSJEK

PEDRON ANDREA

# FORMS OF THE QUARTET

DIPLOMSKI RAD



ZAGREB 2021

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# Introduction

The first time I had the chance to listen to the “Quartet from the End of Time” from Oliver Messiaen, I was mesmerized. Beforehand, I had read that he had been deported to a labor camp during World War II – that was already a good insight into what my expectations from his music could be. Then I let the music talk: when it finished, I was left speechless. How could he have been able to compose such a masterpiece using four instruments? The way he was building and destroying the forms of the quartet using such a surgical approach really appealed to me. In fact, it had been rather peculiar to hear a quartet concert right after the beginning of the piece, he put on hold piano, violin and cello and give to the clarinet a solo piece. This to me was really uncommon and surprising, but he won't stop and the piece has different ensemble subdivision in itself. His usage or, better said, disuse of the time signature is a rhythmical concept very fascinating to a percussionist who is used to rely on a solid rhythmical structure. I started to think about the percussion instruments and music which had an enormous and fast development in the 20th century coming from the back of the orchestra to the front of the stage. For me, this concert raised the following questions:

What are the historical milestones for percussion?

Who started to think about percussion as a solo instrument and use it in chamber music and when did this occur?

Historically speaking, what was the evolution of the percussion quartet like?

Which kind of ensemble had been used prior to the quartet?

With these questions in mind, I began my own research about the world of percussion.

## A brief history of the string quartet

The String Quartet is one of the most prestigious genres for a composer. It developed around the year of 1750., thanks to the Austrian composer J. Haydn who wrote sixty-eight quartets in his life. It had been one of the most important forms during the Classicism, even more than Symphony and Piano sonata. Originally, its instrumentation consisted of two violins, one viola and a cello. This kind of composition is one of the most interesting because every instrument is treated as solo instrument, so no voice is accompanying or doubling any other voice.

After Haydn, the two composers from Vienna, W.A. Mozart and L. Beethoven with their quartets astonished the halls of the Austrian capital. When speaking about the string quartets one cannot go on without mentioning Mozart's Quartets dedicated to Haydn. After Haydn heard them, he said to Mozart's father: "Before God, and as an honest man, I tell you that your son is the greatest composer known to me either in person or by name. He has taste, and, what is more, the most profound knowledge of composition." <sup>1</sup>

Another milestone is Beethoven's op 133 "Große Fuge", a composition for string quartet that, in the beginning, received only bad criticism, such as "Incomprehensible, like Chinese" and "a confusion of Babel". It is astonishing to think that he wrote the piece during his last period of life, when he was coming close to becoming completely deaf; nonetheless, he was able to sculpt, according to Stravinsky: "an absolutely contemporary piece of music that will be contemporary forever."<sup>2</sup>

During Romanticism the quartet was, of course, explored by all composers, and some of them also started to change the instruments involved with exchanging the second violin with a wind instrument: clarinet and flute were the most common choice. One last example of quartet that changed the history of music we find in the work of one of the pioneers of expressionism, Arnold Schoenberg. His "String Quartet No.2 Op. 10", is usually seen as one of the composer's first steps outside of tonality. In this composition the composer added a soprano voice and the lyrics are prophetic: "Ich fühle luft von anderem planeten" (*I feel the air of another planet*).

After this brief introduction on the quartets and some of the most important opus written in the history, I will take a step back to have a glance on the history of percussion.

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<sup>1</sup> Irving, 2006

<sup>2</sup> Stravinsky and Craft (1963), p. 24.

# History of percussion

For a historical purpose, it is important to be aware of how percussion instruments developed inside the classical music; which instrument was introduced first and in which manner.

The percussion instruments are maybe, after the voice, the first musical instrument ever to be played by the mankind. Throughout the history, those instruments were usually related to folklore music, and the pagan rituals. That's maybe one of the reasons we couldn't find any percussion instrument in the music of composers such as Vivaldi or Palestrina, composers that were supported by the church.

Sebastian Virdung, a German composer and theorist on music instruments (1511) states: "These are to the taste of such as cause much unrest to pious old people of the earth, to the sick and weakly, the devout in the cloisters, those who have to read, study and pray. And I verily believe that the Devil must have had the devising and making of them, for there is no pleasure or anything about them. If hammering and raising a din be music, then coopers and those who make barrels must be musicians; but that is all nonsense."<sup>3</sup>

That was the function of percussion during the 16th century; in fact they were, including other instruments, used for the purpose of religious ceremonies, military communication and encouragement, and dance. The history of many percussion instruments is very unclear in providing information on where they came from and what was their use. Many of these instruments started to spread all over Europe thanks to the Crusades, such as cymbals from Arabia, kettle drums from Egypt and Arabia. The last instrument is the ancestor of timpani and it was originally played on horseback, most commonly by the aristocrats. The kettledrummer was supposed to announce the high status of his employers by a show of dazzling flourishes and beauty.<sup>4</sup>

The first instruments entering the orchestra were timpani, used for the first time by Jean-Baptiste Lully in "Thésée" (1675) and Henry Purcell in his "Ode for S. Cecilia" (1692)<sup>5</sup>. At their beginning, they were mostly an instrument where the player was improvising or doubling the brass section; it was later that the proper writing and technique were developed. A hundred years from their first ap-

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<sup>3</sup> Virdung, Sebastian *Musica Getutscht*, Basel 1511

<sup>4</sup> James Blades - *The History of Percussion Instruments*

<sup>5</sup> *Development of percussion in the orchestra from 1700 to 1850* - Jeremy Sibson

pearance, a more developed technique in the playing and writing will enable Johann Christian Fischer to write our first concerto - Concerto for Eight Timpani. Nowadays it has become possible for the concerto to be played with five drums because of the development of technique and instrument (pedal timpani).

Unfortunately, after that, for around two centuries the percussion in the orchestra was used solely as an effect: the role of timpani will improve with time, but we will have to wait until Romanticism in order to have a complete percussion section in the orchestra.

## From effect to specific color

In the "9th Symphony" of Beethoven, timpani have reached another level of importance in the orchestra: building on the common use of the instrument as a simple rhythmical reinforcement for the brass, Beethoven gives to the timpani a completely new dimension with more soloist parts and melodic treatment.<sup>6</sup> In Beethoven's masterpiece we will also get the first hint of the concept of percussion section - Triangle, Cymbals and Bass drum, something that wasn't so common to see in the orchestra during that period.

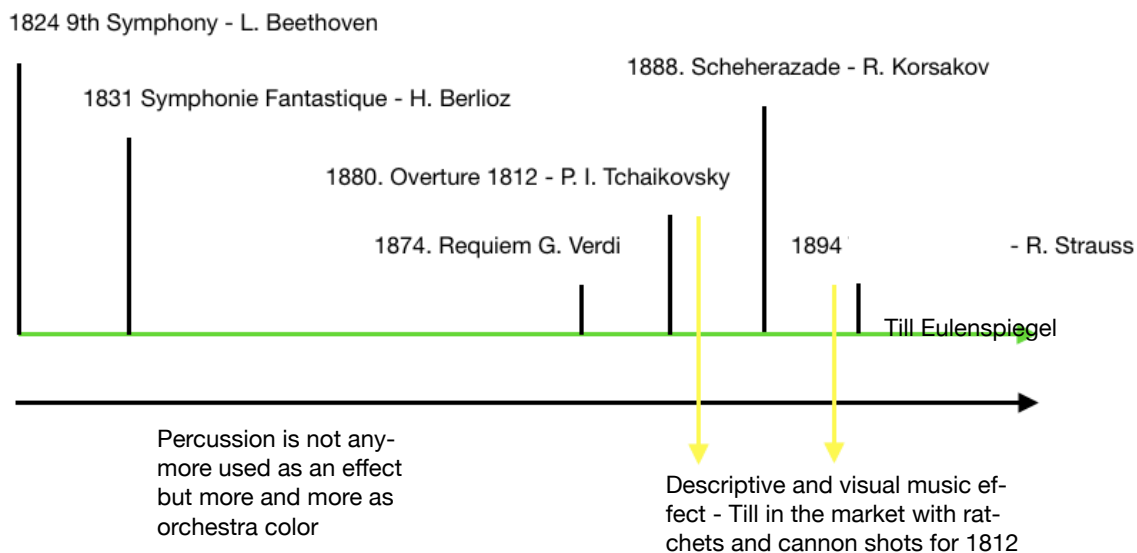
However, it's actually Hector Berlioz in "Symphonie Fantastique" (*Fantastic Symphony*) who will offer a new perspective on the orchestra, from simple effect to specific thematic color. In this piece the composer uses eight timpani, a snare drum, cymbals, bass drum and antique cymbals.<sup>7</sup> The eight timpani played by 2 persons enabled Berlioz to write chords in the timpani (Finale 3rd mov. for example).

Afterwards, basically all romantic composers started to use many different percussion instruments in order to color the sound of the orchestra. We can find rackets in Johann Strauss piece "Till Eulenspiegel", but, no one went further than Tchaikovsky and his "Overture 1812", where he added canons in the score. (Pic.1)

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<sup>6</sup> <https://sites.google.com/site/romanticpercussioncomposition/>

<sup>7</sup> [https://prezi.com/zhnu0\\_mriu05/romantic-era-percussion/](https://prezi.com/zhnu0_mriu05/romantic-era-percussion/)



Pic.

## 20th century and the introduction of Percussion into chamber music

The beginning of the 20th century was one of the turning points for the history of music. Composers were trying to break the old musical forms in several ways. The Second Viennese School led by Schoenberg and his two students Berg and Webern, was trying to destroy the classical harmony and create another harmonic system instead. On the other hand, we had composers that were keeping previous harmonic rules but exploring them at the extreme, like Stravinsky and Bartók. They kept and old harmonic pattern and used folklore themes. However, the composition was brought to another level with a much more complex concept of rhythm and harmony, creating a sense of controlled chaos. However, a more substantial use of percussion took place in the 20th century. Stravinsky's works are a fundamental stepping stone in the percussion repertoire: in "Histoire du soldat" ("The History of the Soldier") (1918), we are, for the first time in history, introduced to a multi-percussion set. Stravinsky claimed that he never heard any jazz or ragtime, music that had been very popular at the time, particularly in Paris where the composer was living for a period. So the decision to use this type of percussion could have been influenced, trying to imitate, or develop a personal style of drum-set as it existed in the ragtime.<sup>8</sup>

Another milestone in Stravinsky's opus is "Les Noces" (*The Wedding*) (1917), a chamber music piece that includes four pianos; voices: soprano, mezzo-soprano, tenor, bass; and a wide percussion

<sup>8</sup> Buja Maureen - How Stravinsky was inspired by ragtime

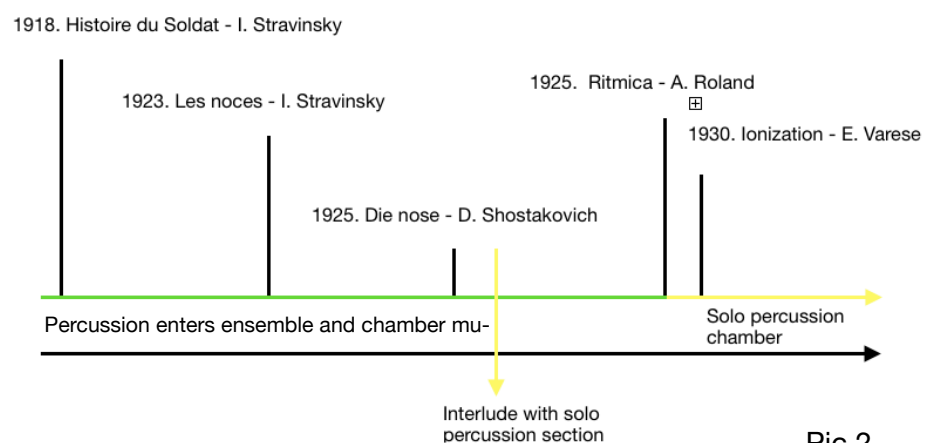


section: timpani, bass drum, tambourine, triangle, cymbals, 2 snare drums, 2 field drums, xylophone, crotales, and chimes. The use of the Xylophone in Stravinsky's literature is peculiar and very advanced, the percussion parts of "Les Noces" is used as material for orchestra auditions, and that goes for "Petrouchka" and "The Firebird" too.

Stravinsky wasn't alone, another Russian composer was using a large amount of percussion. Dmitri Shostakovich wrote many parts for Xylophone in "The Bolt" (1930), "The Golden Age of Polka" (1930) and "Cello concerto #2" (1966). The interlude from the opera "Die nose" (1925) is very interesting because it is written entirely for a percussion section. The instruments used in the opera are: triangle, tambourine, castanets, tom-tom, ratchet, suspended cymbal, crash cymbals, bass drum, snare drum, tam-tam, glockenspiel, tubular bells, xylophone, flexatone (musical saw); and they are played by seven percussionists.

After 1930, we will have the first composition written exclusively for percussion ensemble. Amedeo Roland's *Ritmica* (more precisely Ritmica 5 and 6) is considered as the first piece ever written for percussion ensemble. But we will not have to wait too long for another masterpiece to arrive: from 1929 to 1931, Edgar Varese is writing *Ionization*, a piece for 13 percussionists, a composition that uses polyrhythm, multi-meter, jazz influences and a peculiar instrumentation with: anvils, sirens, slapstick.<sup>9</sup> After this we are on a breaking point:

« noise » is no longer an effect, it is becoming an expression tool in music. (Pic.2)



Pic.2

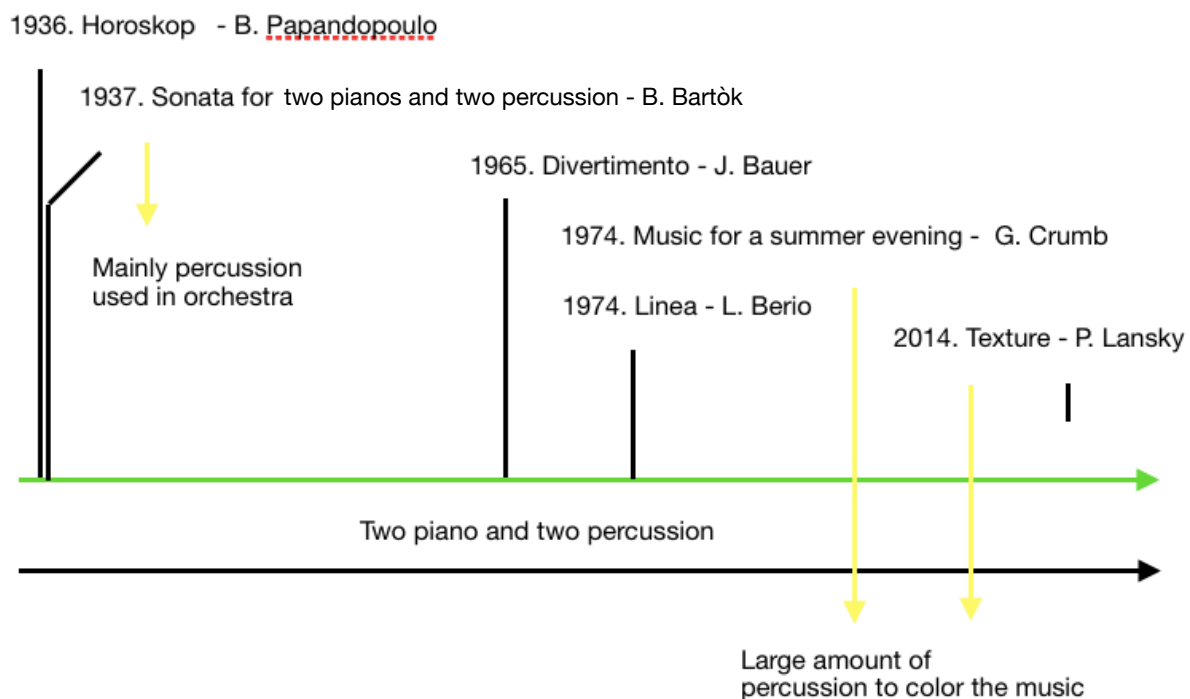
<sup>9</sup> The History and Development of the Percussion Orchestra - Wesley Parker

## A brief introduction on the quartets

In the first 20 years of the 20th century, percussion started to gain a bigger role in the contemporary music composition.

One of the first works that used percussion in a quartet is maybe Bela Bartók's "Sonata for two pianos and percussion" (1937). The composer will not go too far from the usual use of percussion in orchestra. Later, Bartók will adapt the piece for two pianos, two percussionists and orchestra which will be explained later.

This ensemble will become a standard set up: two pianos and two percussionists. Of course, composers will differ from one another (language, style, etc), but what differs the most are the percussion settings and the color they add to the ensemble. We can see that difference in the two pieces composed in the same year (1974) but from different composers; George Crumb with "Music for a summer evening", and Luciano Berio with "Linea". In Berio's quartet the percussion set up is minimalistic as is the music, reduced to marimba and vibraphone, meanwhile Crumb's percussion set up is very big; I will discuss the details of this composition further. (Pic.3)



Pic.3

## What if all the voices were percussive instruments?

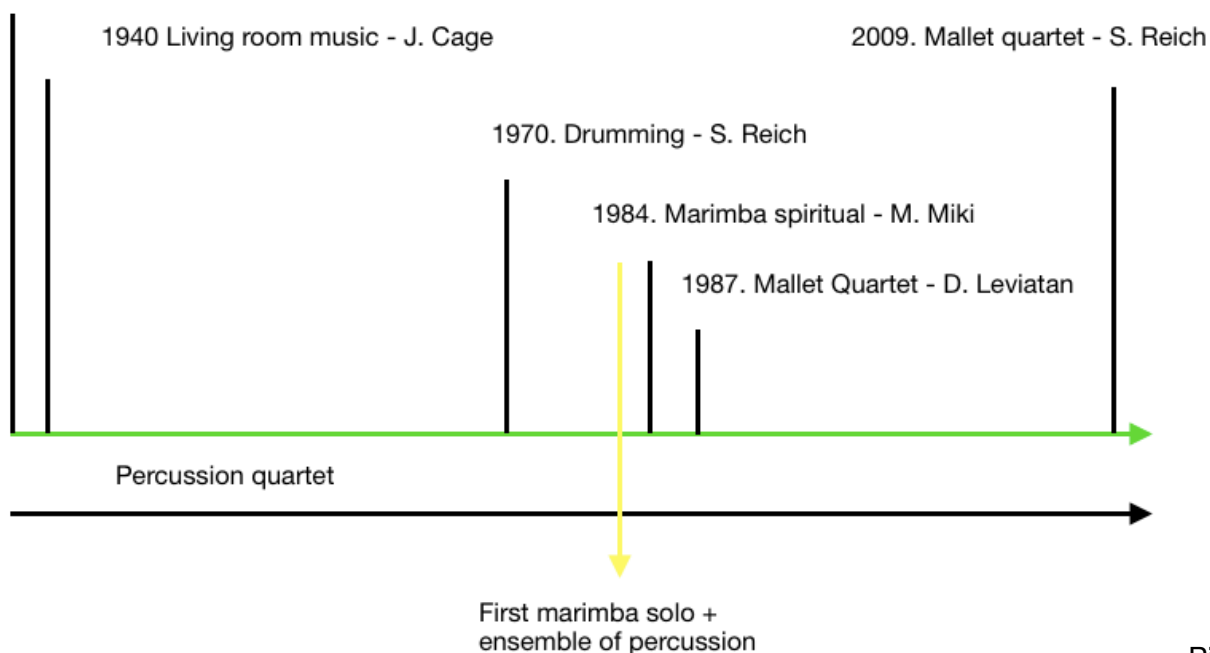
The ensembles above made use of two pianos and two percussionists, but we also saw another line of composers that wrote exclusively for percussion like Amedeo Roland and his “Ritmica” and Edgar Varèse with “Ionization”.

So who was the first who tried to write for percussion quartet? One of the first examples here is from Lou Harrison’s “5th symphony” (1939). What could be considered as an honor is when a piece for percussion ensemble is called symphony. We will go to take a look at this composition later on, but unluckily the honor I have mentioned earlier, might disappoint us due to the simplicity of treatment of percussion instruments in the piece.

If we were to think about the masterpiece in the domain of percussion quartet, the first in line could be “Second Construction” and “Third Construction” from John Cage (1940/41). Here instead of a quartet where the full sound is developed with strings we have a revolution: everything is organized according to the colors of percussion instruments, and not just the usual ones, but objects like cans, sea shells, log drums, bongos, congas and much more. (Pic.4)

1939. 5th symphony - L. Harrison

1939 Third Construction - J. Cage



Pic. 4

# FORMS OF THE QUARTET

## The three types of percussion quartets

What came first? The egg or the chicken? If we are talking about percussion, it is not difficult to determine which type of ensemble came first. We could find three types of percussion quartets:

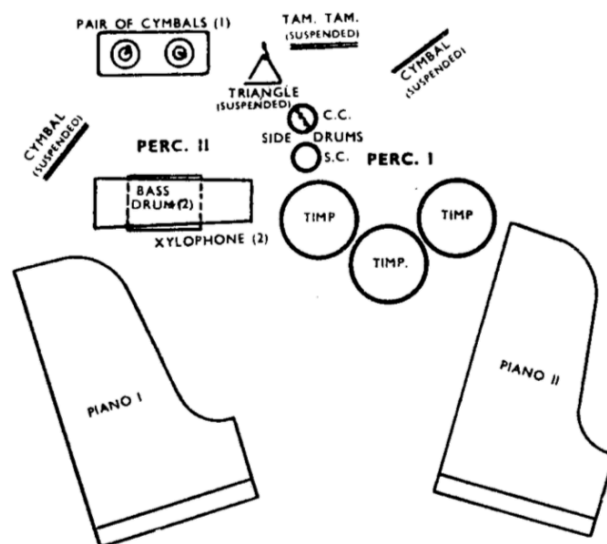
- Two Pianos and (Two) Percussion or Piano/Percussion Quartet
- Percussion Quartet
- Mixed Quartet with Percussion

The first to appear was the setup of two pianos and percussion, in 1937 with Bela Bartok's Sonata. However, there is some unclarity about a probably earlier piece - "Horoskop" by Boris Papandopulo. In fact it was written in 1936 and premiered in the same year in Belgrade, however there is no certainty that the piece had been performed with two percussionists at this early stage.

In the period between 1939 and 1941 we saw the first quartet exclusively for percussion in Lou Harrison's 5th symphony and John Cage's 1st, 2nd and 3rd Construction.

## Two piano and percussion

When Bela Bartok got the commission by the International society of Contemporary music of Basel in 1937, the composer decided to create a project that he had in his mind for 10 years; a sonata for Piano and Percussions. In order to have a bigger palette of sounds he decided to add a second piano to the ensemble. The piece was premiered in Basel in 1938, with the composer and his wife on the pianos, meanwhile the percussionists were



Pic.5

Fritz Schiesser and Philipp Rühling. The composer wrote an extensive introduction about how to set the instruments on the stage (Pic.5). The percussion instruments were supposed to be

placed in the middle of the two pianos as demonstrated in the picture on the previous page. This suggests a rather advanced knowledge from the composer in the field of percussion: the set up in fact is a really delicate and thoughtful part of our job, and whenever a composer tells you how to do it, that means that he already thought about the disposition, a little thing that could make our job easier. The percussion set up is composed of: 3 Timpani, Xylophone, one snare drum with snares on, and a second one without snares, a suspended Cymbal, a pair of cymbals, bass drum, triangle and tam-tam.

His use of those instruments did not differ significantly from composers like Stravinsky, Shostakovich and Gershwin: however, Bartok imagined a small set up consisting more instruments for each player. Of course the first use of multi percussion set up can be found in “L’histoire du soldat”, but Stravinsky didn’t use keyboards in that piece.



Pic.6

The Sonata is divided in three movements; Assai lento, Allegro molto, Lento, ma non troppo, Allegro non troppo. The first movement starts in a very slow and dark atmosphere that slowly and gradually leads to the “Allegro molto”. It opens with a timpani roll, followed by an unanimated piano. In this very beginning the eerie atmosphere is broken when two strokes of cymbals wake up the pianos and transform their static eight notes into some more shaking tremolo or fast arpeggios.



Pic.7

After this, the two pianos will start a long “a poco a poco accelerando” that will lead us to the first main theme of the movement. In the end of the accelerando, the role of the two percussionists will be fundamental, a trial and polyrhythmic exchange that will lead us to the Allegro section. As we

can see, it starts fracturing the 9/8 pattern mainly with the timpani, which, after a break on the down beat played on the bass drum, have a more dense eight note pattern (Pic.7). Leading to the bar 28 where we can find a conversation between timpani and piano, always written in 9/8, but truly divided in 3/4+3/8.

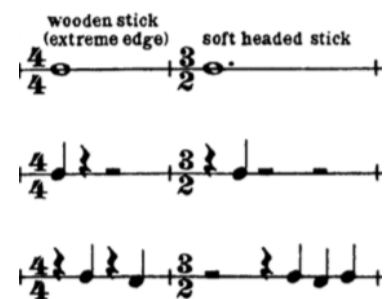
This will lead us to the allegro part. The most interesting part of this theme is the lack of downbeat: this idea is based on the connection of the two that I have explained earlier, 1/8+4/4 and 3/4+3/8. Here the timpani will have to change the bass note every two bars in order to accompany the piano with a melodic line. This advanced idea of tuning therefore was not so uncommon for his time: it had already been done by composers such as Strauss in “Die Rosenkavalier”, “Salome”, etc or Stravinski in “Le Sacre du printemps”.

This two bar theme will be the main element of this part. Later on, the second percussionist will emphasize it by playing the piano rhythm on the snare meanwhile he holds a roll on the bass drum, for then going to jump on the Xylophone. Another interesting part is the one that follows in



Pic.8, where two players change instruments three times in less than 10 bars. The first percussionist plays: timpani, snare, timpani, meanwhile the second percussionist is on snare and bass drum, Xylophone, snare drum.

The second movement, Lento ma non troppo, opens with a delicate sequence on cymbals and two snare drums (Pic.9), one with snare on and the other with snare off. What is interesting here is the innovative and really thoughtful way of writing for the instrument. Both of the players have to follow a very specific way of playing: the use mallets for mallets on cymbals is specified, as is the spot where to play, the same applies to the snare drum. This shows again the composer’s amazing knowledge of per-



Pic.9

cussion instruments and different techniques combined in order to create a bigger palette of sound. After a solo introduction by percussion, the piano enters with a hallucinating theme that for me personally gives the impression of being on a ship, floating in uncertainty. The introduction of the main thematic material of the movement follows. The musical material in quintuplets will be used both on the piano and on percussion instruments (Timpani). The composer will not do this

only for the coloring, but also to emphasize the climax of the crescendo, where the quintuplets are played on the Xylophone, changing to a bit darker and mysterious atmosphere.

The third movement, *Allegro non troppo*, starts with the two pianos holding the harmony in order for Xylophone and timpani to be in the centre of attention (Pic.10). The first brilliant and bright theme is, in fact, on the Xylophone: timpani will just intervene between one phrase and another in order to break the continuity of the xylophone. After the first exposition, the theme will be passed to one of the pianos, and afterwards the theme will be heavily elaborated and disrupted throughout the movement.

Pic.10

Pic.11

Xylophone will be the real protagonist of the movement, but the exit and end of the piece is entrusted to the snare drum, with a sympathetic caricature of a military drum that will fade out the music. (Pic.11)

## Who brought it to the next level?

### Two drastically different points of view : Berio and Crumb

After Bartok, no one wrote any music for this peculiar ensemble until 1974. In these 37 years the development of the percussion instrument will shed new light on pieces for percussion. During that year, two composers decided to write for this ensemble: Luciano Berio and George Crumb.

Luciano Berio wrote “Linea”: with its use of vibraphone and marimba, the piece aims to achieve the homogeneity of the string quartet, where three different instruments maintain their identities but also melt together in order to create a unique sound.<sup>10</sup>

Linea contains thirteen numbers, played without interruption:

*Manège I* – *Entrée I* – *Ensemble I* – *Manège II* – *Ensemble II* – *Manège III* –  
*Ensemble III* – *Entrée II* – *Coda I* – *Allegro* – *Coda II* – *Ensemble IV* – *Notturmo*

There are the differences between each section, but each type has certain features.

If we look closely, the “*Manège*” (in french: carousel, something redundant), is the melodic line of the piece, where every instrument will play in unison line at the beginning of each section, and the affinity between the three of them is really easily distinguished. (Pic.12)

The “*Entrée*” and the “*Coda*” are not the main material of the piece, but are mostly used with a transitional. The Ensemble sections are involving a bigger independence of the voice: even if we can see a similar style of writing between the instruments, in these sections the unison effect we had before will diffuse into a more organized chaos. (Pic.13)

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<sup>10</sup>YARN-WIRE.10.10.2015.PROGRAM



a vittoria ottolenghi

**linea**  
per due pianoforti, vibrafono e marimba (1973)

**manège I**

luciano berio  
(1925)

Musical score for Manège I, measures 82-92. The score is for four instruments: Vibrafono, Pianoforte I, Pianoforte II, and Marimba. The tempo is marked as quarter note = 92. The music features a rhythmic pattern of eighth notes with various accents and dynamics, including *ppp*, *p*, *f*, and *mf*. The Vibrafono part includes a series of circles with a cross inside, likely indicating mallet positions. The piano parts feature triplets and sixteenth-note patterns.

**manège II**

14

Musical score for Manège II, measures 96-106. The score is for four instruments: Vibrafono (Vibr.), Pianoforte I (Pf. I), Pianoforte II (Pf. II), and Marimba (Mar.). The tempo is marked as quarter note = 96. The music is more complex, featuring dynamic markings such as *pp*, *p*, *f*, *mf*, and *ppp*. It includes various rhythmic patterns, including triplets and sixteenth-note runs. The Vibrafono part has a series of circles with a cross inside. The piano parts feature intricate rhythmic patterns and dynamics.

**manège III**

19

Musical score for Manège III, measures 60-65. The score is for four instruments: Vibrafono (Vibr.), Pianoforte I (Pf. I), Pianoforte II (Pf. II), and Marimba (Mar.). The tempo is marked as quarter note = 60. The music is characterized by a slower tempo and features dynamic markings such as *pp*, *p*, and *ppp*. It includes various rhythmic patterns, including triplets and sixteenth-note runs. The Vibrafono part has a series of circles with a cross inside. The piano parts feature intricate rhythmic patterns and dynamics.

Pic.12



Technically speaking, it is an advanced piece for its really contemporary style of writing. Regarding percussion, it is written for two mallets, only rarely three mallets are required (mostly for rolled chords).

This was the first piece for chamber music where we could find marimba and vibraphone. This instrumentation, although simple, helped the sound fusion between percussion and piano, still keeping the voices of the each instrument well articulated.

## What if we used piano like a percussion instrument?

Talking of “Music for a summer evening (Macrocosmos III)” by George Crumb there is a completely different perspective and use of instruments.

The list of percussion is enormous:

### Perc I

3 jap temple bells  
Small tamTam tam  
Glass wind chimes  
Claves (play on bass drum)  
3 wood blocks  
Xylophone  
Sleigh-bells  
Large sus cymbals  
Large tam tam  
Crotales  
32”timpani (will be prepared with crotali)  
Glockenspiel  
Slide whistle  
Sus metal Thunder sheet  
Sing  
Asses jawbone (vibra-slap)  
African log drum  
Alto recorder  
2 tom toms  
Sistrum  
A tibetan prayer stones

### Perc II

Large sus gym  
vibraphone  
2 maracas  
Bamboo wind chimes  
5 temple blocks  
Slide whistle  
Tubular bells  
2 tam tams  
Sing (Wind sound vocally reproduced) or groaning  
2 tom toms  
Sizzle cym  
Jug (bend pitch)  
Bongos  
Bell tree  
Xylophone

### Piano I

Guiro

### Piano 2

The composition is divided into five movements. The first, the third and the fifth are scored for the whole ensemble and they represent the full body of the work, meanwhile the “Wanderer Fantasy” (mostly for two pianos alone) and "Myth” (for percussion instruments) are considered as an intermezzo in between the main pieces.

In the collection, each of the three movements has a subtitle that inspired Crumb during the composing process. “Nocturnal sound” quotes Quasimodo: “Odo risonanze effimere, oblio di piena notte nell'acqua stellata” (“I hear ephemeral echoes, oblivion of full night in the starred water”); “The Advent” is associated with a passage from Pascal: “Le silence éternel des espaces infinis m'effraie” (“The eternal silence of infinite space terrifies me”); and the last movement, “Music of the Starry Night”, cites these transcendently beautiful images of Rilke: “Und in den Nächten fällt die schwere Erde aus allen Sternen in die Einsamkeit. Wir alle fallen. Und doch ist Einer, welcher dieses Fallen unendlich sanft in seinen Händen hält” (“And in the nights the heavy earth is falling from all the stars down into loneliness. We are all falling. And yet there is One who holds this falling endlessly gently in His hands.”) <sup>11</sup>

The number of new colors we found in this opus is incredible, but not solely thanks to the amount of percussion and effects the composer uses, but also for his usage of the two pianos. In fact, the two keyboards will have a more percussive role.

The last movement, “Music of the starry night”.

The pianist will be asked to cover the instrument’s strings with a paper sheet in order to add a surrealistic distortion of the piano sound.

The percussionist’s role is also peculiar: not only for the huge amount of instruments, but also for the playing of the slide whistle, singing, whistling, imitating of groaning sounds. The kaleidoscopic palette of Crumb is enriched with various percussive effects, such as the prepared timpani that he will use with crotali and cymbal, or playing the bass drum with claves, the several types of: bell tree, glass tree, sleigh bells.

Even though it was already a quite established way of writing at the time, it is really interesting to take a look at the score in order to understand how Crumb organized and indicated the entrances,

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<sup>11</sup> Music for a Summer Evening - program notes (George Crumb)

helping the musicians to follow and realize what he had in mind. On the first page of the score we can understand clearly his concept: the musicians have a lot of freedom in interpreting the several cells they are due to play. For instance, the two percussionists will have to wait that the first piano completes his signals and then play their rhythm, then again the piano takes over with three more phrases, to be followed by the first percussionist with a small intervention on maracas, then second piano, first piano, etc. (Pic.14)

Pic.14

Furthermore, the entrances are very clearly notated with a couple of systems: the composer makes use of arrows when he wishes to indicate the verticality of the music, in order to point to the musicians where is the exact sixteen note where they have to enter.

(Pic.15)

Pic.15

Also, if he wants to switch to another instrument in the middle of the phrase, he will notate the break that's should be on the two phrases. (Pic.16)

The image displays a complex musical score for four instruments: Piano I, Piano II, Percussion I (Perc. I), and Percussion II (Perc. II). The score is written in a single system with multiple staves. Piano I and Piano II parts feature dense, rhythmic textures with various dynamic markings such as *pp*, *mp*, *f*, *ff*, and *pp sub.*. Above the piano staves, there are performance instructions: "(quasi pressando sempre)", "[glissando over all plates with 2 soft mallets]", and "[pizzco on vowels precisely with clavest]". A tempo marking "poco accel." is also present. The Percussion parts include specific instructions: "(Perc. I) 3 wood blocks" and "(Perc. II) 5 Temple blocks". The score is filled with intricate rhythmic patterns, including triplets and complex groupings, with numerous accents and dynamic changes throughout.

Pic.16

Meanwhile, Berio uses the similarity between the keyboards, so percussion is used to merge with and thicken the piano sound. Here the two pianos are no longer used as a harmonic and melodic instrument: instead, they are treated as percussive instruments.

Even if the instrumentation is not only for percussion, we could consider this piece as a bridge that will lead us to the next topic of this thesis, the percussion quartet.

# THE ORIGIN OF PERCUSSION QUARTET ENSEMBLE

## Lou Harrison, A failed first attempt

The percussion quartet has its origins in 1939: the two main figures that gave birth to it are: Lou Harrison with the “Fifth Symphony” and John Cage with the 2nd and 3rd construction.

A young Lou Harrison wrote his “Fifth symphony” during the time he was mentored by Henry Cowell and John Cage. After this collaboration, he upgraded his percussive music with concerts for solo violin and percussion quartet, organ and quartet and a suite for five percussionists. (Pic.17)

The image shows a page of a musical score titled "FIFTH SIMFONY For Percussion Quartet" by Lou Harrison. The score is for four percussionists, labeled I through IV. The tempo is marked "Vigorous" with a quarter note equal to 132. The instruments are: I (Tom Tom), II (Sistrum), III (Temple Block), and IV (Muted Gong). The score shows rhythmic patterns for each instrument, with dynamics like "f" and "Sus. Gong".

Pic.17

This work is a true first attempt of writing solely for percussion, and its biggest flaw is the rhythmic boredom; the piece lasts for 15 minutes and is entirely made of quarter notes and eighth notes. The use of the instrument is pretty common and not demanding any peculiar skills. However, looking into Lou Harrison’s bibliography this piece is not even reported, which could mean it was probably just a study when he was a student of Cage and Cowell.

## The origins of Cage's Constructions

Around 1940 many composers were exploring the percussion instruments in all their aspects. One of the most important to our repertoire development is for sure John Cage: in the ten years between 1935 and 1945 he will write around 15 pieces for a percussion ensemble<sup>12</sup>. In the beginning of 1930 the young composer was still studying under Henry Cowell. Later on, he was taught by Arnold Schoenberg. During this period he admitted “I have no feeling for harmony”. This might be the reason of him shifting his focus from harmony and tonality to noise and exploration of sound against silence.

“That was very important to me, to hear through him [Henry Cowell] music from all the various cultures; and they sounded different. Sound became important to me—and noise is so rich in terms of sound.”<sup>13</sup>

The first piece of the fifteen he wrote during this decade is Quartet (1935). This piece is a first attempt of a composer to write for percussion, which is visible from it not being as structured as expected, particularly by him not specifying any percussion instrument. What he was trying to do is to suggest to the performer to explore and experiment with the sound in a creative way.

*“For someone interested in noise, like myself, if you start from the beginning of my work, after I studied with Schoenberg, I began by hitting things in the environment. I wanted to find a way of making music that was free of the theory of harmony, of tonality; and so I had to find a way of composing with noise. And I came to the conclusion that the important aspect, or as we would say in the twelve--tone language, the important parameter of sound, is not frequency but rather duration, because duration is open to noise, as well as to what has been called musical”.*

However, it is maybe this research that lasted 5 years that led him to write the three constructions. For the sake of this discussion, I am going to focus on the “Third Construction”, since the first one is written for a sextet, and the second one is not for a percussion quartet only (since it has a prepared piano played by one of the musicians, and the writing for percussion is not as innovative as in the third one).

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<sup>12</sup> The early percussion music of John cage - Barry Michael Williams

<sup>13</sup> Kostelanetz, *Conversing with Cage*, 39.



The “Third Construction” is a quartet for percussion. Cage gave a basic set up to each player: three drums, five tin cans, a shaker (that will vary from player to player), and a clave. Apart from that every player has some peculiar instrument;

Player I: Maracas, log drum (teponaxtle) and a large china

Player II: 2 cowbells, lions roar

Player III: quijadas (vibraslap), cricket callers, seashell conch

Player IV: wooden ratchet, bass roar. (Pic.18)

Every player has a very particular instrument and that could be considered as the signature sound of each set up. Apart from this very specific idea of instrumentation, Cage did not specify the tuning or the nature of the drums (tom toms or bongos or congas), neither did he specify a particular kind of cans, so the ensemble has some freedom in this area.

The three constructions follow a new compositional technique created by Cage, something that can replace the harmonic progression of a traditional sonata form. He aimed to create an infrastructure that could be used for non pitched percussion instruments. This structure will later be known as “Micro/Macrocosmic Structure”, a structure where, if we zoom from the bigger picture to a smaller one, we will find the same correlations in the individual parts. The third construction is more elaborate than the first two, since, in the first and the second he used a structure of sixteen bars, meanwhile in the third he used a twenty-four bars structure.<sup>14</sup>

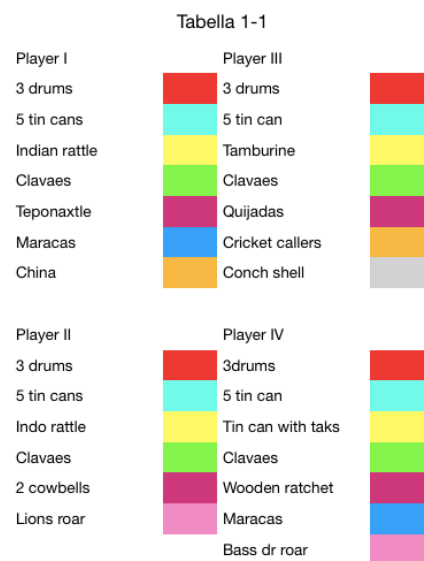
Cage was following the subsequent numerical subdivision;

Player I: (2;8;2;4;5;3)

Player II: (5;3;2;8;2;4)

Player III: (3;2;8;2;4;5)

Player IV: (8;2;4;5;3;2)



Pic.18

14. <http://themusicsalon.blogspot.com/2013/02/john-cage-third-construction-1941.html>

If we look into the score, we will notice that every phrase of each player follows this rule.



Pic.19

In order to provide a clearer vision on the macrostructure I drew a scheme where all four players are listed and the intervals in which they play each instrument. (Pic.19)

If we could follow this tab while playing the piece, we would be able to understand each entrance of every player. Even more fascinating is the possibility of zooming out in order to see how he orchestrates the sections and how he decides to use warmer colors (drums or teponaxtle) against colder sounds (cans, maracas, shaker), or makes a fusion between the two etc.

If we take a closer look into the parts, we come across some very interesting new ideas. Each player has three toms and five cans but the composer uses different sonorities for each instrument (Center/Rim) and notates it with six notes in the toms and ten notes in the cans. (Pic.20)

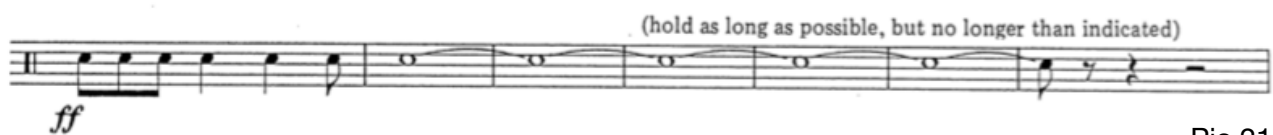


Pic.

Cage also provided a lot of instructions for the different ways of striking the instruments. For example, the piece starts with the second player on drums, and he asks the player to “play with finger”. Actually, almost half of the time, the drums will be played with fingers: only at letter E the second player will find the indication “with timpani sticks”. more interesting instructions include:

- in the first part, the player has to play the temponaxtle with a rubber stick on RH, and with fingers on LH. In another part with fingers alone
- in letter N, the fourth player has a drum phrase that needs to be played with a maraca on RH and fingers on LH, later on, in the same letter the maraca will be left out to be followed by hands only section on the drums.
- in letter S, the third player will have to play the drums with the cricket callers,

One of the most peculiar instruments to be used is the the seashell conch. It is written for the third player, and used with a redundant signal: each time the shell enters, he will play this phrase. Here we have a “funny” but very precise indication, “Hold as long as possible but no longer than indicated” (Pic.21).

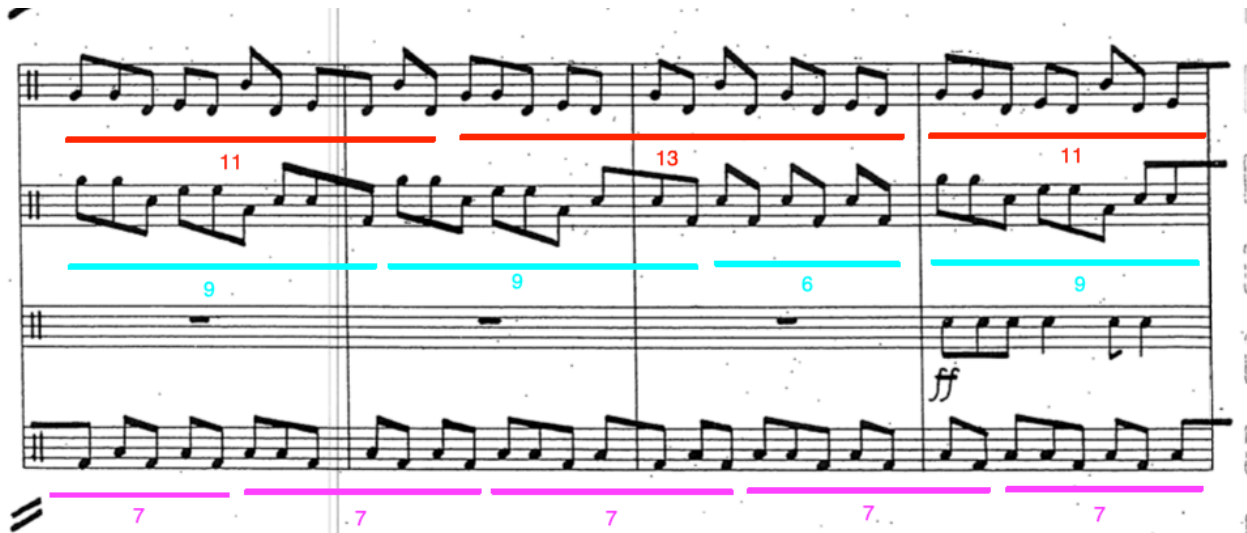


Pic.21

This shows us a very precise intention of the composer, but also an understanding that he is dealing with percussionist, that after six minute of playing could be a little short on breath.

Lastly, one of the most interesting things is his choice of using a 2/2 time signature throughout the piece. This choice could lead us back to the “root square technique” mentioned on the previous page, but it might also be due to the meter, metrically speaking, not being important and actually, the four different parts can overlap different signatures.

Here we have a fast example of what was previously stated: the player I, alternating phrases of 11/8 and 13/8, meanwhile the player II plays 9/8 pattern, irregularly broken by 6/8 phrases. A more stable part is the IV player with a 7/8 pattern. All this metrical instability is to accompany the third player with the shell signal. (Pic.22)



Pic.22

In conclusion, John Cage received a lot of heavy criticism due to his unorthodox education, but one cannot deny that he was able to provide us with some unbelievable milestones: The Third Construction is one of those. The micro/macrostructure that follows every part, the new colors that he created, the polymeter that he uses throughout the piece are the methods that helped the percussion instrument to enter the chamber music and inspire other composers to write percussion quartets.

# PERCUSSION QUARTET IN CROATIA

I would like to conclude my thesis with a tribute to the country where I am studying and analyze two quartets from Igor Kuljerić.

The composer will introduce percussion instrument in his chamber music in 1988 with the piece “Toccata”, for vibraphone and piano<sup>15</sup>. In the two following years he will write two pieces for quartet, “Chaconne”(1990) for percussion quartet, and Waltz (D9-G9) (1989), for clarinet, piano, vibraphone and marimba.

Igor Kuljerić has a very unique style of writing, merging parts that are extremely detailed, against some completely free improvisation. When this technique is used on its extreme then for the listeners is very difficult to separate who is following the score, against who is freely improvising, leading to a very “hic et nunc” musical moments.

## Chaconne

Chaconne was commissioned by the percussion Ensemble “Supercussion” (Igor Lešnik, Ivana Kuljerić, Ema Tonžetić and Elvira Happ) in 1990.

The percussion set up is finely described by the composer and it requires:

Marimba

Vibraphone

Glockenspiel

Tubular bell (Bb)

Two sets of woodblocks

Four tam-tam

Four different size cymbals

Castagnette

Crotales

Two wooden toy

Wind chimes

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<sup>15</sup> <https://www.igorkuljeric.com/chamber-music-about>

## Sleigh bells

The set up its built around the two main keyboard instruments, which are shared by the players.

Player I and II are sharing the vibraphone, player III and IV are sharing the marimba.

The piece starts with a very dreamy glockenspiel suddenly interrupted by a nervous improvisation on the woodblocks. The beginning is very free in interpretation, with the glockenspiel speeding up and already two solo improvisation on the woodblocks.

The piece follows the time signature is 4/4, but in order to make things more unstable the woodblock, which keeps the main pattern of the first part, is playing a pattern of 3/4+3/8. The 3/4 bar has a very mechanical eight note pattern and every two repetition it will increase the speed from eight note, to sixteen, triplets and at last thirty-two. But its the 3/8 bar or rest that is disrupting the rhythmical stability of the pattern and giving to the section a way



The image shows a musical score for a woodblock part. It is marked 'Tempo I' and 'p' (piano). The score consists of four staves. The first staff has a circled '11' above it. The second staff has a circled '3' above it. The third staff has a circled 'p' below it. The fourth staff has a circled 'p' below it. The music is in 4/4 time and features a complex, accelerating rhythmic pattern.

Pic.23

more mantric sound (Pic.23). Over this woodblock stable pattern the other players are mainly playing a very detailed written improvisation on tam-tams and cymbals.

After a while the player I and II will move on the vibraphone in order to make the fade in to the second musical idea of this section.

From bar 41 the main voice will shift to the player I on the vibraphone. This section is a very long written polyrhythmic accelerando that will happen between the I and



The image shows a musical score for a polyrhythmic accelerando section. It consists of two staves. The top staff has a circled '56' above it. The bottom staff has a circled 'mp' below it. The music is in 4/4 time and features a complex, accelerating polyrhythmic pattern.

Pic.24

IV player (Pic.24). The conversation starts with two against three, and we will never have two voices playing the same rhythm.

This building up and increasing situation will lead us to the first unison of the piece, here the rhythm between the players is the same, while the chords are « fighting » each other.

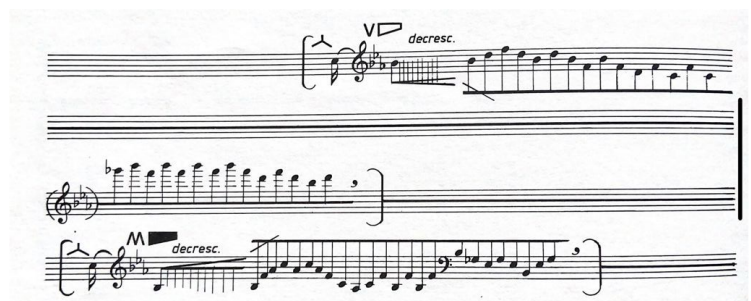
It is simple to see for instance the player III playing the Bb/F, F- sequence while the IV player plays F-, Bb/F. Same pattern is played on the vibraphone, while player I is playing Bb/F, F-7 (7th on the bass) and the other player has F-7, Bb/F. (Pic.25)



Pic.25

After this unison part the piece will change a lot and we will have a completely new section. Here we will find the two players on marimba playing a unison pattern, and the other two are improvising on castagnettes and woodblocks.

In order to switch from one part to the other, the composer used a very interesting technique, in bar 90 in fact he will give to each player a different musical material and each player is free to improvise on it. (Pic.26)



Pic.26

The section that follows uses the same rhythm against a different harmonical structure. The chords used in this part are also on the same order as the unison in the previous part.

The last part of the piece, has a very dense material, all the players are playing over a Eb melodic minor, but on a different speed, creating again a polirhythmical structure (Pic.27). « The cherry on the cake » of this part is the small fugato part. That will be the theme that will lead us to the end of the



Pic.27

piece. In fact, while all the players are improvising, the III player will play for the last time the fugue motive on glockenspiel. (Pic.28)

In conclusion, I find “Chaconne” a very interesting piece in many aspects. The rhythmical structure is very stable, but at the same time very free and full of displaced rhythm. The colors that Kuljerić created throughout the piece are very interesting and full of innovation.

The image displays a musical score for a piece titled "Chaconne" by Dario Kuljerić. The score is arranged in two systems, each containing four staves. The top staff of each system is marked "Sua" and contains a melodic line with a steady eighth-note rhythm. The second staff in each system features a more complex rhythmic pattern, starting with a dynamic marking of "mp" (mezzo-piano). The third and fourth staves in each system provide harmonic support with various rhythmic textures, including triplets and sixteenth-note patterns. The key signature is one flat (B-flat), and the time signature is 4/4. The notation includes various articulations and dynamic markings throughout.

Pic.28



## MIXED INSTRUMENTS AND PERCUSSIONS

In this research I have spoken about quartets that are written for two pianos and percussion or for solo percussion ensemble. It is very difficult in fact to find some composition that implies the use of winds or strings. One example I found in the process of writing this thesis is “Waltz (D9-G9)” from Igor Kuljeric.

The piece was commissioned by Zagreb Music Biennale and premiered on 1991 by the Zeitgeist Ensemble, the ensemble is Heather Barringer (percussion), Dr. Patti Cudd (percussion), Pat O’Keefe (woodwinds) and Nicola Melville (piano and synthesizer).<sup>16</sup>

*"Zeitgeist's mission is to bring newly created music to life with performances that engage and stimulate. A quartet of musicians animated by a spirit of adventure and collaboration, Zeitgeist presents works of substance with passion and integrity, and strives to forge new links between musicians and music lovers through concerts, commissions, recordings, and dialogue with our audiences."*

The ensemble is very active, and after 30 years of works they have a pretty important library with a lot of new works that are worth to take a look at.

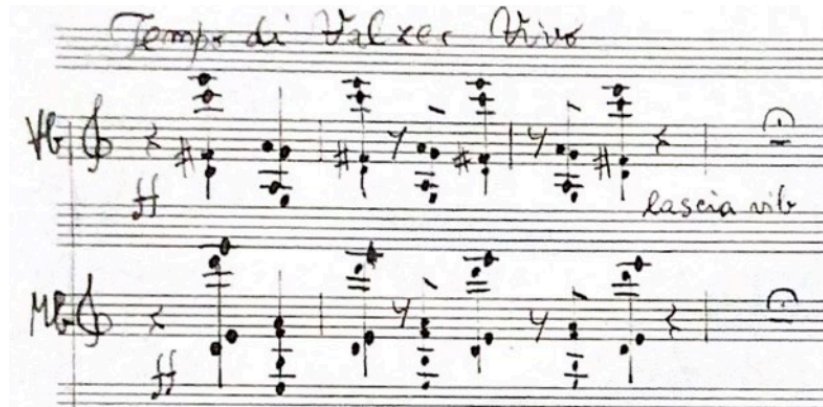
“Waltz (D9-G9) is a very unique piece of music.

*“Waltz as a document of the "disintegration aesthetics", which, drastically combined through tradition, also relies on the "objectivity aesthetics" (Stravinsky's neoclacissism is the ground, launching Kuljeric's Waltz into the unknown, which is so unknown that one can hardly discern a waltz!)...An eye-catching feature of Waltz is a relation between compositional-technical procedures and the sonority determined by the line-up. The composer himself defines the compositional-technical procedures as a shift of the "known" and "exhausted" cores of sound associations into "different" spatial relations and contexts. (from a comment on the premiere at the 1989 Biennale)<sup>17</sup>*

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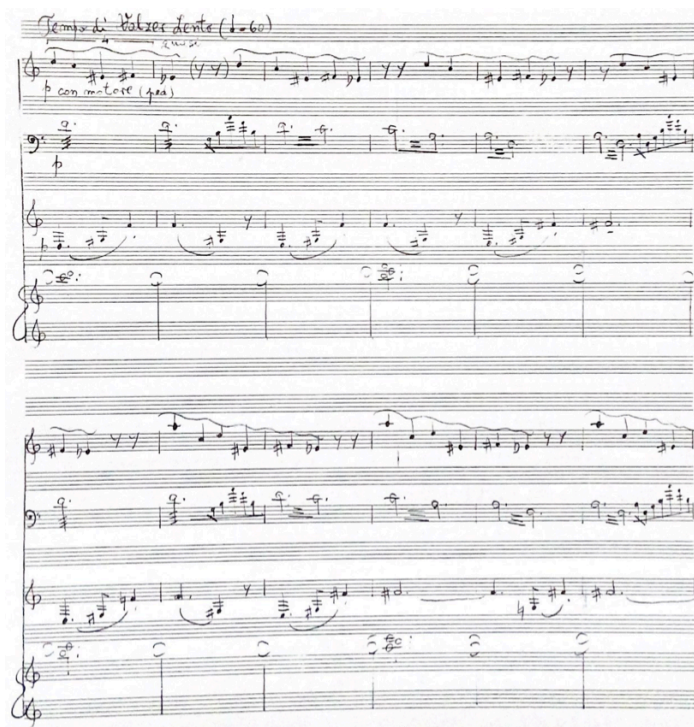
<sup>16</sup> <http://www.zeitgeistnewmusic.org/personnel.html>

<sup>17</sup> <https://www.igorkuljeric.com/waltz-d9-g9-about>



Pic.29

The piece starts with very percussive piano chords, but is also very slow and static. The pedal is always down in order to let ring and create the atmosphere. In contraposition of the piano we have



Pic.30

marimba and vibraphone, playing a phrase in unison. The piece has a very long introduction, and it will take its time to set the proper atmosphere before the beginning of the real Waltz. (Pic.29)

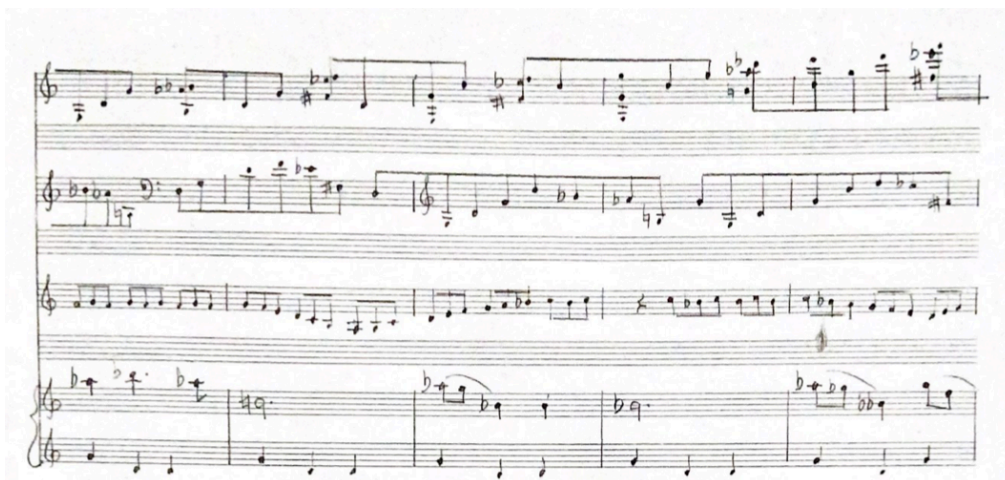
The main voice in the « Waltz » part of the piece is taken by the woodwinds. In fact the “Tempo di Valzer Lento” will be repeated three times and every time the woodwind player will change instrument, the first time Bass clarinet, second time Sax alto, third time Sax soprano in Eb.

This is a very specific decision of the composer, which reduces the possibility of performance.

Anyhow, a very interesting point of the composition is the big amount of written freedom for some instruments counterpointing the Waltz clock work played by others. We can see this in many parts of the piece. (Pic.30)

For example in the “Tempo di Valzer Lento”, the clarinet has a stable melody and the vibraphone is playing a repetitive melody but in quadruplets, so meanwhile the clarinet is supposed to play at 60 bpm, the vibraphone should play more or less at 80 bpm.

Another very interesting part is “tutti, quasi un carillon” where the pianist has to play a synthesizer with carillon sound, and he is the stable figure of the section, meanwhile the other players play a very intricate and long pattern. Each one of them will start with a polyrhythmic figure and then speed it up, for instance vibraphone starts with quadruplets and speeds up to quintuplets, jus to end in septuplets. (Pic.31)



Pic.31

It is a very technical moment for marimba, vibraphone and clarinet. For instance marimba has a pattern of 10 notes each bar in a speed of 180 bpm for quarter note. This makes the piece very hard to be as close as it could be to the written score.

Another two interesting and uncommon sections in the piece are in the picture.



Pic.32



Pic.33

These are two different part of the piece but with some similarity in the sound result. The first one has a stable rhythm the marimba, while the piano and clarinet are playing something that seems as a free improvisation. (Pic.32)

The second one is perhaps even more extreme, in fact in the first one at least we had the marimba keeping the pulse, here even that is missing. (Pic.33)

I believe that Kuljerić was, as Messiaen did with the “Quartet for the end of time”, trying to play with the perception of the pulse. In each section we could hear a stable melody that will be taken over by another instrument playing in another time, or pulse, like if they were in two different rooms playing two different pieces.

## CONCLUSION

I have learned a lot about percussion and quartet and have enjoyed my journey through the history. I believe that the “Third Construction” by John Cage is probably one of the finest pieces of art that have been created for our instruments. Like there won't be anything that could be compared to Bach's “Cello Six Suite”, I believe that the Second and Third Construction are pieces far more interesting than many things written afterwards. It is mesmerizing that already in 1940 someone was able to create such a great palette of new sounds. Adding a really complex structure (micro/macro-cosmic structure) to a really common time signature and creating some really intricate polyrhythm. I think that nowadays we have plenty of works for percussion quartet that won't even go close to such a masterpiece.

For me the search for some open, or as I called them, mixed percussion quartet was very interesting, but unluckily I got really disappointed on the results of my research.

In fact there aren't many pieces written, as there aren't a lot of ensemble that join different families of instruments together. Zeitgeist Ensemble is a really unique example of research and persistency of a goal that lasted for about 30 years.

As a percussionist, I think this should be encouraged during our studies in order to broaden our horizons and be able to collaborate with many different instruments.

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