

Essay VIII: a key work in the piano output of Christopher Bochmann

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Abstract

Christopher Bochmann's pianistic language is based on a fairly conventional instrumental technique, inherited from the 19th century pianistic tradition, yet encompassing characteristic features developed by authors associated with the 2nd Viennese School and post-serialism, as well as significant experiences in the fields of free forms and aleatoric music. The permeability to a neoclassical sensibility, probably stimulated by contact with Nadia Boulanger in the formative years, has remained over time and manifests itself from time to time, both in the use of techniques, genres and forms of the past, but also, more comprehensively, in a constant search for balance and proportionality, across all of Bochmann's works. From 1991, the year he composed *Essay VIII*, for solo piano, Bochmann inaugurated his maturity phase, based on what he calls a "unified technique". The significant consistency of his instrumental language from then on results, to a large extent, from the synthesis of previously explored elements that *Essay VIII* operates, as I intend to demonstrate throughout this essay. Furthermore, we shall see how specific traits, not always particularly idiomatic, of Bochmann's pianistic idiom enhance the aural understanding of the compositional principles that structure the work in analysis, and how a successful performance of the work depends largely on the understanding and highlighting, through specific performance practices, of the composer's choices.

Keywords

Christopher Bochmann; contemporary music; piano; *Essay VIII*; Lucas sequence

In a recently published study (Telles, 2018), I have shown that a significant number of Christopher Bochmann's works for solo instruments is dedicated to the piano. As a matter of fact, out of some 60 works in that category, 19 feature the piano as solo

instrument; to those, we should add the extensive didactic collection *O Amanhecer de um novo dia*, as well as a work for piano and orchestra (*Monograph expanded*). Additionally, the piano is often featured in works for different instrumental ensembles, including three works for two pianos and one for two pianos and two percussionists.

Let us consider, for a moment, the output for solo piano and two pianos¹. From a chronological and aesthetical perspective, we may consider three stylistic periods². The first works – *Sonata op. 5*, *Piano Etudes n. 1* and *n. 2*, *Piano Sonata nº 1* – date from Bochmann’s formative years (1967-72); their titles reveal a strong influence from the most characteristic genres of the standard piano repertoire. From 1972 to 1982-83, works such as *Seven Pieces* and *Sonata n. 2* deploy great complexity, notably as regards rhythm, whereas formal experimentation (aleatoric and open forms) is introduced in the *Preludes*, the *Sonata n. 2* and the *Toccata* for two pianos. Other aleatoric elements, as well as controlled improvisations, will be extensively developed in the most experimental years (1982-83; 1986-88).

After a transitional period (1988-91), during which Bochmann tried to conciliate the complexity suggested by works of Pierre Boulez, Luciano Berio and Karlheinz Stockhausen³, and a “free music” inspired by Peter Maxwell Davies and Krzysztof Penderecki (Bochmann: 2014), *Essay VIII* (1991) for solo piano, marks the beginning of his compositional maturity, or, in his own words, the advent of his “unified technique”, one which effectively brings together the two tendencies mentioned above; along with *Monograph* (also for solo piano, 1994), it may be considered a seminal work, in the sense that it systematizes, condenses and develops traits of Bochmann’s musical idiom and instrumental writing which are to be found, in an embryonic state, in previous works, and will be fully realized in later compositions.

Whereas *Essay VIII* is part of a large collection of similar pieces, each devoted to a specific solo instrument⁴, not unlike Luciano Berio’s *Sequenze*⁵, *Monograph* has been followed only by its piano and orchestra counterpart, *Monograph expanded* (written in 2007).

It is significant that both *Essay VIII* and *Monograph* borrow, in their titles, terms derived from literary studies, something to be found nowhere else in Bochmann’s musical output. According to the Lexico Dictionary⁶, the definition of “essay” is: “A short piece of writing on a particular subject.”; as a matter of fact, the composer indicates that his

¹ The works for two pianos will be considered in this essay, given that, in their conception and writing, they suggest a kind of “magnified” piano in which the possibilities of the instrument are multiplied by its plural use.

² Christopher Bochmann has suggested, himself, a stylistic periodization, in interviews he has given:

cf. Martingo: 2011, p. 55-62;

http://mic.pt/dispatcher?where=5&what=2&show=0&peessoa_id=32&lang=PT (last access 29/12/2019).

³ http://mic.pt/dispatcher?where=5&what=2&show=0&peessoa_id=32&lang=PT (last access 29/12/2019).

⁴ From *Essay I*, for solo trombone, written in 1980, up to *Essay XX*, for drum set, composed in 2019; cf. www.christopherbochmann.com (last access 03/01/2020).

⁵ From *Sequenza I*, for flute (1958,) to *Sequenza XIV*, for cello (2002); cf. www.lucianoberio.org (last access 06/01/2020).

⁶ www.lexico.com (Oxford University Press, 2020; last access 13/01/2020).

Essays take the specific characteristics of each instrument as a starting point for the composition, with no conscious effort to explore all of their possibilities neither a specific desire to write virtuosic music (even if, sometimes, that happens as a natural consequence of the process) (Bochmann, 2005). *Essay VIII* assumes, then, the character of a “state of the art” piece, as regards instrumental writing for the piano; it is a short, concise piece of music, organized in five different parts⁷, each of which deploys and develops a particular instrumental issue or texture.

On the other hand, “monograph” corresponds to “A detailed written study of a single specialized subject or an aspect of it.”⁸ The choice of the title is due, according to the composer, to the work’s purpose as a sum of all the pieces [sic] (or techniques, one might assume) that he had been using up to that moment⁹. In a sense, *Monograph* develops even further the systematization process started with *Essay VIII*, and thus closes the time lapse (1991-94) during which the composer has indeed formalized his own pianistic idiom.

Given the groundbreaking character of *Essay VIII*, which certainly redefined the composer’s writing for solo piano, I deemed it pertinent to undertake an in-depth analysis of the instrumental idiom of that particular work.

***Essay VIII* – Form and content as vehicles for pianistic development**

The form and content of *Essay VIII* determine the instrumental writing’s different features, at the same time that their aural comprehension is highlighted by them. In other words, form, content and pianistic idiom are intrinsically related and totally interdependent in *Essay VIII*.

Let us take the overall form of the piece and see how it translates in pianistic terms. As already mentioned, *Essay VIII* is a continuous piece of music, structured in five short parts, or movements, which succeed one another without interruption, as follows:

- ▶ *I. Rapido*
- ▶ *II. L’istesso tempo*
- ▶ *III. Presto possibile*
- ▶ *IV. Tranquillo*
- ▶ *V. Lento*

Each one of these movements deploys a particular type of pianistic writing. From the exacerbated *martellato* of the initial *Rapido*, the composer proceeds to a texture characterized by short repeated note figures (most of them “harmonized” in different ways), punctuated by longer chords of a very definite nature (which we shall consider later on), in the second part; the *Presto possibile* combines complex contrapuntal writing

⁷ Which, for commodity of speech, I will hereafter designate “movements”; in fact, even if these formal units are to be played without interruption, each one of them bears, nevertheless, a specific *tempo* marking.

⁸ www.lexico.com (Oxford University Press, 2020; last access 13/01/2020).

⁹ http://mic.pt/dispatcher?where=5&what=2&show=0&peessoa_id=32&lang=PT (last access 29/12/2019).

with longer sequences of repeated notes, while the *Tranquillo* exhibits polyrhythmic figures, based on the superimposition of even longer repeated note lines, with occasional confrontations of different timbres for the same note, according to the way it is produced (either on the keyboard or inside the piano, on different harmonic nodes). The closing *Lento* shows a profusely ornamented chord line, articulated in phrases which are separated by different harmonic “filters”.

Besides these basic correspondences between the great formal units of the piece and their different instrumental writing configurations, we will find that the pianistic idiom of *Essay VIII* is highly responsive to smaller structural elements and changes, which need to be explained in the light of the musical content of the work. This, in turn, relates very closely to the mathematical principles which dictate several parameters of the composition, from form and proportions to rhythm, as well as horizontal and vertical pitch structures. Dynamics and articulation seem to function as a suitable bridge between the more conceptual elements of the compositional process and their translation into sound and movement, through the pianist’s involvement and performance.

According to Jonathan Cross (2003: 131), “[...] many composers of the twentieth century found numbers and various mathematical models a useful source of compositional material or of processing material.” When considering Arnold Schönberg’s twelve-tone method, the author states: “The rigor, the mathematical logic, of the twelve-note system was, in some senses, a substitute for the logical rules of the tonal system.” (Cross, 2003: 132). Further on, he develops and explains:

Composers of the twentieth century found many ways around this central problem. Some adopted and adapted Schoenberg's method; others, as we shall see, drew on mathematical sources such as set theory, game theory, magic squares, Fibonacci numbers, and so on, to provide them with material or methods of working. Neither the method, nor mathematics, nor any other system, has made the actual act of composition any easier, nor (necessarily) any more mechanical. (Cross: 2003, p. 133).

In this context, it should be remarked that the Fibonacci series and its related Lucas sequence¹⁰, as well as the famous Golden section, have been extensively used in music, particularly of the 20th and 21st centuries. Mongoven (2015: 1) places the first reference to the Golden section in relationship to music in 1856, alluding to the German philosopher Adolph Zeising; but Hoijer (2015: 12) mentions that “Analyses have been published on works by Beethoven and Bach in which it seems as if Fibonacci numbers and golden proportioned climaxes are apparent, but without evidence that the use of

¹⁰ Both the Fibonacci series and the Lucas sequence are constant-recursive integer sequences that satisfy the recurrence relation, being based on constant coefficients. In very simple terms, each number of each one of those mathematical entities corresponds to the sum of the two previous ones; in the Fibonacci series, the first two terms are 0 and 1, whereas in the Lucas sequence, the first two terms correspond to 2 and 1. Hence, the first 20 numbers of the Fibonacci series are 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584 and 4181, while the first Lucas numbers are 2, 1, 3, 4, 7, 11, 18, 29, 47, 76, 123, 199, 322, 521, 843, 1364, 2207, 3571, 5778, 9349, 15127. Both the Fibonacci series and the Lucas sequence have properties in common; in particular, the ratio between their terms (i.e. the number we obtain by dividing each term by the previous one) progressively approximates Phi, the Golden ratio or section (which corresponds approximately to 1,618); cf. Meinke, 2011: 5-7, 19-20, 25-26.

these techniques was deliberate [...]”. Extensive and groundbreaking studies concerning the use of the Golden section and Fibonacci numbers in the music of Claude Debussy and Béla Bartók have been conducted by Roy Howat (1983) and Ernő Lendvai (1971), respectively, as well as by Garland and Kahn (1995); the same Bartók, as well as Karlheinz Stockhausen, Luigi Nono and Jean-Claude Eloy, among others, are mentioned in Kramer’s (1973) essay, *The Fibonacci series in twentieth-century music*, whereas Casey Mongoven (2015: 3) sets himself to create a “style of music characterized by Fibonacci and the golden ratio”, claiming that:

Many composers of the 20th century used Fibonacci numbers and the golden ratio in their works. None of these composers, however, made them the basis of a style. Creating a style of music characterized by Fibonacci numbers and the golden ratio requires discarding musical traditions and rethinking stylistic elements from the ground up. In this style, mathematical properties of sequences related to the golden ratio and Fibonacci numbers are converted into musical properties. (Mongoven, 2015: 1)

Moreover, Mongoven presents three works of his own composition that are intended to demonstrate the aforementioned style, while adding to the list of composers who have turned to the Fibonacci numbers and the Golden section in their compositional processes names such as Joseph Schillinger, Iannis Xenakis, Luigi Nono, György Ligeti, Ernst Krenek, Brian Ferneyhough and again Karlheinz Stockhausen.

The closely related Lucas sequence has been seldom referred to, for example in Valeria Tsenova’s (2002) work on “Magic numbers in the music of Sofia Gubaidulina”; Lucas sequence is also discussed in length, in connection with Bartók’s sketches and works, in Gareth E. Roberts *From Music to Mathematics: Exploring the Connections* (2016, p. 189). Regarding Bochmann’s works, Benoît Gibson (2018: 117-8) points out that the composer frequently uses number sequences, such as Fibonacci, Lucas and/or others, as a basis for his works; Gibson is particularly concerned with the composer’s *String Trio* (2012), whose durations are determined by the Lucas sequence, a key element in the overall conception of *Essay VIII*, be it on the macro or micro levels of organization, as we shall consider hereafter.

► *I. Rapido*

In the first movement of the piece, two pianistic elements are noticeable: the sole use of *marcato* articulation, with alternating hands and one only finger for each note; and the after-pedaling technique.

The C#4¹¹ may be considered the generating note for the whole work, a choice that appears elsewhere in the composer’s output for the piano¹². From this note, nine musical gestures, which constitute the *Rapido* movement, are generated (cf. Figure 1).

¹¹ In this paper, I use the standard International Pitch Notation, first suggested (as Scientific Pitch Notation) by the Acoustical Society of America; cf. Young, R. W. (1939). “Terminology for Logarithmic Frequency Units”, *Journal of the Acoustical Society of America*, Volume 11, Number 1, July 1939, pages 134–139, doi:10.1121/1.1916017. ISSN: 0001-4966.

¹² The very same note is used as a generator in *Monograph* (1994) and *Music for two pianos II* (2006); in other works, such as *Sonata n. 1* (1971), *Music for two pianos I* (1998) and *Letter III, to José Antônio de Almeida Prado* (2013), the C#4 assumes a very important role, particularly as a closing point, or anchor. Cf. Telles: 2018, p. 70.

Rapido

martellato

a) *fff*

a) From a) to b) on p.5, all the notes should be played with only one finger in each hand with as much hand attenuation as possible. The delay in pressing down the pedal should result in only a hint of the last notes remaining.

Figure 1. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 2-4.

The length of each one of those musical gestures, in regular 32nd notes, follows the first nine terms of the Lucas sequence: 1, 3, 4, 7, 11, 18, 29, 47, 76. In fact, each of those gestures is an expansion of the preceding one, not only in terms of the total number of its constituent notes, but also in terms of the intervallic relationships established. As shown in Figure 2, the second gesture is generated by adding two intervals of a semitone (interval 1) to the generating note, C#4. From then on, each interval between any two notes is expanded to embrace the next Lucas number of semitones, the initial intervals being progressively separated by semitones which are successively treated in the same expanding manner.

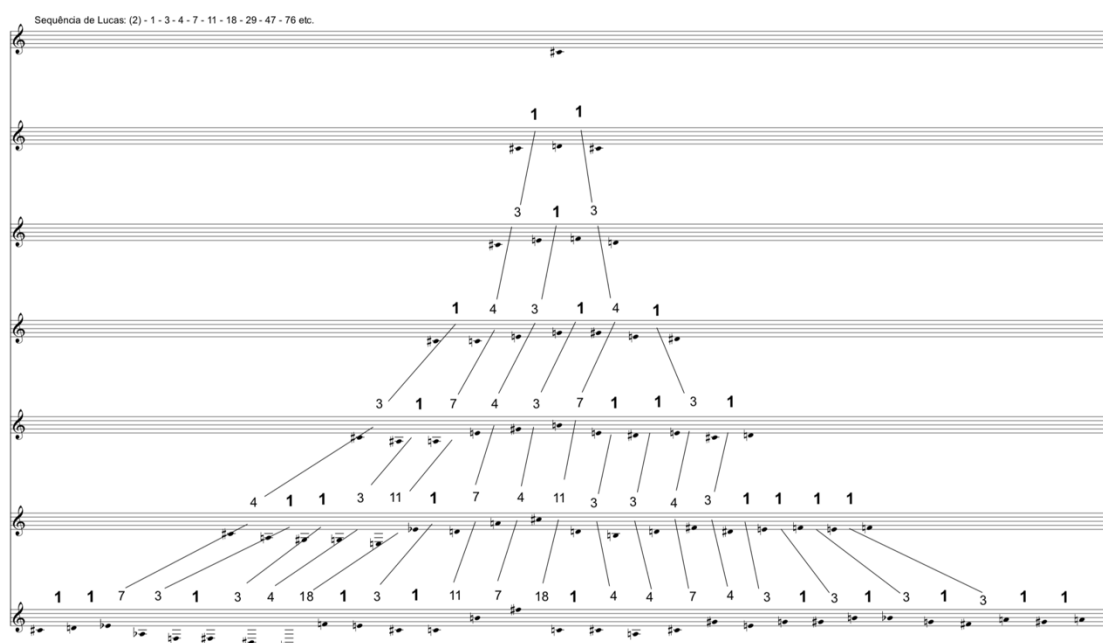


Figure 2. *Essay VIII*, Initial expansion process (I. *Rapido*, musical gestures 1 to 7, p. 2-3)
Source: Bochmann, 2018

Given the compositional process at play, it is of the utmost importance, for the composer as well as for the performer, to enunciate clearly, with absolute precision, each musical gesture, not only as regards the exact number of notes, but also each one of its constituent intervals. To stress this, Bochmann has chosen to employ the *martellato* technique, with alternating hands and one only finger for each note, accompanied by the dynamic nuance *fff*. This procedure produces an exceptionally assertive evidence of the compositional principle adopted, even if in a somewhat perilous way for the pianist. Furthermore, the instrumental writing adopted also accounts for a sense of extreme energy and aggressiveness. Indeed, the *martellato* technique has been used by several 20th and 21st century composers, in order to highlight specific notes and to introduce a percussive element to otherwise pianistic textures; we may find concluding examples of that use (often followed by the silent depressing of the same key/s) in works by K. Stockhausen, B. A. Zimmerman, S. Bussotti, M. Kagel, H. Pousseur (Read, 1993: 208), and also in other works by Christopher

Bochmann, such as *Monograph* (p. 9, also starting from C#4; cf. Figure 3), 2369 - 10.x.09 (p. 1-2), *18 Miniatures* (VI, p. 7) and *Music for two pianos II* (*Toccata*; c. 157-158, for example) (Telles, 2018: 70-1). But, if in the aforementioned works the use of the *martellato* technique is usually restricted to one or a few notes at a time, in *Essay VIII*, as we have seen, it spans much longer uninterrupted successions of as many as 76 notes. That, indeed, is unique in the piano literature, as far as I know; the combination of violent attacks, extremely rapid hand alternation and very ample movements of the upper limbs challenge precision and provoke muscle fatigue, proving to be quite challenging for the pianist.

The figure consists of three musical staves, each representing a different section of the piece. Each staff is labeled 'SP' below it. The first staff shows a transition from *fff* to *mp*. A blue square highlights the initial *fff* notes. The second staff shows a transition from *mp* to *fff*. A blue square highlights the final *fff* notes. The third staff shows a transition from *mp* to *fff*. A blue square highlights the final *fff* notes. The notation includes various dynamics, articulation marks, and a '8va' marking in the first staff.

Figure 3. Bochmann, C. (2010e). *Monograph* (1994). Parede: CIMP / PMIC, p. 9. Examples of short *martellato* technique sections are shown in the blue squares (my edition).

In the *Rapido* movement of *Essay VIII*, each musical gesture we have been considering is a definite entity, corresponding to a specific Lucas number; just as these numbers in their respective mathematical sequence, each gesture is connected to the previous and following ones, in an unfolding development process whose coherence is assured by the

compositional procedure itself. Individuality is, nevertheless, important, and must be preserved. Hence, between each musical gesture, the composer introduces long, unmeasured sounds¹³ produced by the use of the after-pedaling technique, which contrast with the *martellato* sections by their sheer stagnation and immobility; as a consequence, each one of the monodic gestures of pages¹⁴ 1 to 3 ends with a 32nd note tied to a breve, whose duration corresponds to the remaining resonance of the last 32nd note articulated, as captured by the pedal after the fingers have left the keyboard (according to the composer's indication, "The delay in pressing down the pedal should result in only a hint of the last pitch remaining."; Bochmann, 1991: 1). Other examples of the same procedure are to be found later on, in the central movement of the piece (*Presto possibile*). The after-pedaling technique has been extensively used in works such as: *Sonata n. 3*, by Pierre Boulez (1957); *Sequenza IV*, by Luciano Berio (1966); *Klavierstücke VII, VIII and XIX*, by Karlheinz Stockhausen (1952-56); and *Five pieces for piano*, by George Crumb (1962) (Rosenblum: 1993). Bochmann himself has made use of it in his *Seven pieces for piano*, n. 3 (1974), but never again since *Essay VIII* (Telles, 2018: 95-6).

The following three movements of *Essay VIII* make extensive use of repeated notes. This technical feature has been very common in keyboard literature, even before the birth of the piano, as one of several devices recurrently used in order to sustain the sound of any one note and compensate for its naturally quick decay after the initial attack in keyboard mechanisms such as the piano's; as Gyorgy Sandor (1995: 11) puts it:

With all its wealth of sound, the piano still has certain limiting characteristics; for example, its sound fades rapidly. Composers have compensated for this deficiency by developing styles that are typically pianistic, or rather "keyboardistic", since the harpsichord and the clavichord also suffer from the same limitations. Since the duration of any one note is extremely short on these keyboard instruments, the continuity in the sound has to be supplemented by trills, tremolos, repeated notes, arpeggios, filling notes, passage-work, and pedaling. These devices are used both in sustained melodies and in accompanying passages in practically all periods and styles.

In fact, as early as 1797, Johann Peter Milchmeyer, in his *Die wahre Art das Pianoforte zu Spielen*, advises fortepiano players on how to execute repeated notes on their instrument, emphasizing liveliness of movement and lightness of touch (Rosenblum, 1991: 201). From that precept to the 20th and 21st century performance practice which consists in articulating fast and extremely loud repeated notes with alternating hands, in order to ensure the utmost energy and aggressiveness, lies an enormous technical and aesthetic difference.

In Bochmann's output for the piano, repeated notes are very often employed in different ways, creating various experimentation possibilities. *Essay VIII* is an excellent example of that overall tendency; as a matter of fact, repeated notes assume distinct

¹³ These long sounds relate to the generator C#4 in intervals composed of a Lucas number of semitones (1, 2, 4, 11), except in the case of A4 (8 semitones apart from C#4); interestingly enough, this is the only long note, besides C#4, that appears twice. If we consider the intervals between each long note and the following (in semitones), we obtain the Lucas numbers (0)-1-1-1-3-4-(0)-3.

¹⁴ All references to pages concerning *Essay VIII*, throughout this paper, refer to the autograph manuscript.

and very definite purposes, of either harmonic, rhythmic or polyphonic nature, in this particular work:

1. as a structuring principle underlying rapidly changing chords, mostly composed of different combinations of intervals based on Lucas numbers (cf. movement II, *L'istesso tempo*, pages 5 to 7; other examples are to be found in works by the same composer, such as *Letter III, to José Antônio de Almeida Prado* and *Letter IV, to Jean-Sébastien Béreau*).
2. as a way of counting extremely precise durations, in 32nd notes, determined once again by Lucas numbers (cf. movement III, *Presto possibile*, pages 7 to 10; the same procedure may be found in *Music for two pianos II*, as well as in other works by Christopher Bochmann).
3. as a way to create different sound *strata*, based on slow periodic repetitions of different notes, each one in a specific temporal cycle, whose superimposition creates complex polyrhythmic effects (cf. movement IV, *Tranquillo*, pages 10 to 13).

Let us consider each of these movements in detail.

► II. *L'istesso tempo*

The second movement of *Essay VIII* is divided into two sections; the first one occupies page 5 and the two first systems of page 6 of the autograph manuscript, whereas the second one (a transition to the next movement) unfolds from then on to the beginning of the last system of page 7. In the first section, short repeated note figures, some of which are “harmonized”, occupy five subsections of definite duration between five four-note chords of a very peculiar nature. The durations of those chords, in 16th notes, are Lucas numbers, as follows: 1, 3, 4, 7, 11 (cf. Fig. 4).



Fig. 4. Durations (in 32nd notes) of the subsections *a*, *b*, *c*, *d*, and *e*; first section of II. *L'istesso tempo*
Source: Bochmann, 2018 and my own elaboration

The piano writing highlights very precisely the duration of those chords: the first three may be held by the pianists' fingers, with a slight hint of sustaining pedal (mostly for timbral purposes); the longer chords (4th and 5th) are held by the *sostenuto* (or middle) pedal, while the remaining texture is articulated over those durations without conflicting with them. In any case, the pedals must be employed with the utmost rigor in their timely release, a feature that has been overlooked by classic and romantic composers, but progressively called for in works of the 20th and 21st centuries¹⁵. In fact, according to Sandra Rosenblum (1993: 175),

¹⁵ Bochmann has specified very clearly the moments where the sustaining pedal must be released in a number of his piano works, particularly *Monograph*, *Music for two pianos I*, *Music for two pianos II* and *Commentaries on Notations by Pierre Boulez*.

In some pieces by Boulez, and in works by Cage, Berio, Stockhausen, Xenakis, and others, the directions for pedaling are detailed, the results are as important to the sound as are the dynamics and articulation, and a high degree of pedal virtuosity is necessary for a satisfying performance.

The chords themselves are composed of two primary intervals of the same nature (i.e. same number of semitones, based on the Lucas sequence) separated by complementary intervals, based on the same mathematical sequence; as the extension of the primary intervals augments, the size of the secondary ones diminishes, until both converge on intervals composed of 11 semitones (cf. Fig. 5).

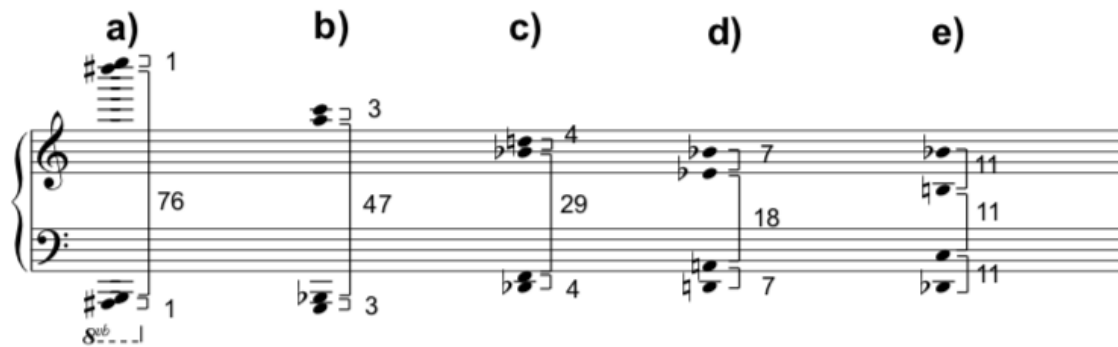


Fig. 5. Chords (and their respective intervals) which open each one of the subsections *a*, *b*, *c*, *d*, and *e*;
C. Bochmann's *Essay VIII*, 2nd movement, section I
Source: Bochmann, 2020 and my own elaboration

From a dynamic standpoint, this interval shrinking process is accompanied by a gradation of nuances that leads from *fff* to *ff*, *f*, *mf* and *mp*. The articulation of these structuring chords, albeit not specifically notated, corresponds to much controlled *tenuto* attacks.

As for the duration of subsections *a*, *b*, *c*, *d* and *e*, it again follows the Lucas sequence, as shown in Figure 6.

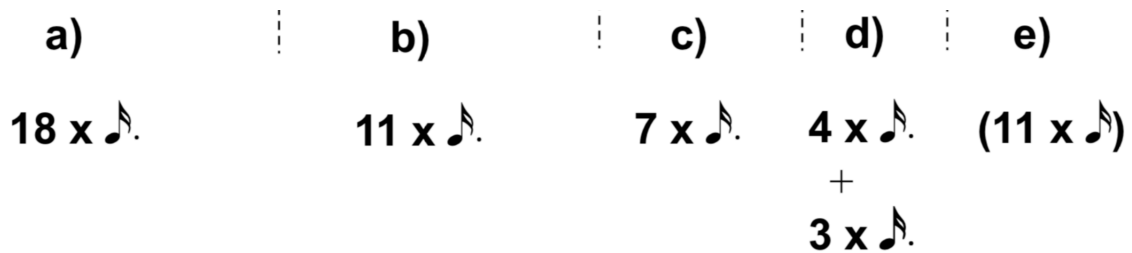


Fig. 6. Durations of subsections *a*, *b*, *c*, *d*, and *e* (in dotted 32nd notes);
C. Bochmann's *Essay VIII*, 2nd movement, section I
Source: Bochmann, 2018 and my own elaboration

As I mentioned before, each of these subsections are containers for the development of rapidly changing chords, unified by repeated notes. These flickering note aggregates are composed mainly of superimposed Lucas intervals (1, 3, 4, 7, 11, 18, 29; i.e. minor 2nd, minor 3rd, major 3rd/diminished 4th, perfect 5th, major 7th, augmented 11th, perfect 18th, etc.), whose performance requires finger and wrist *staccato*. Figure 7 provides a short example of that.



Fig. 7. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 5, 2nd system.

Not surprisingly, the repeated notes themselves are distanced from one another by a number of semitones that corresponds, once more, to the first terms of Lucas sequence (cf. Fig. 8).

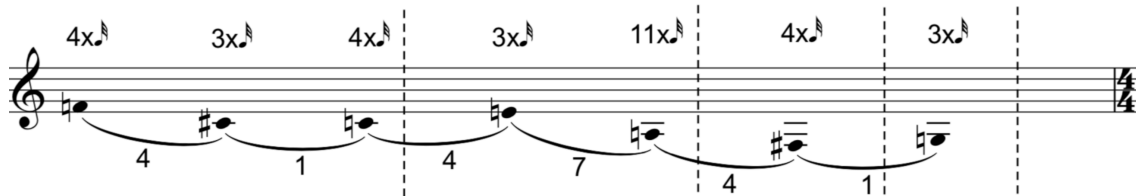


Fig. 8. Repeated notes in each one of the subsections *a*, *b*, *c*, *d*, and *e*;
C. Bochmann's *Essay VIII*, 2nd movement, section I
Source: Bochmann, 2018 and my own elaboration

Particularly challenging for the performer are the kaleidoscopic dynamic nuances of these fast passages, as well as the truly unconventional combination of repeated notes and note aggregates, which prevents the employment of standard repeated note techniques (either with changing fingers on the same note or with alternating hands), sometimes requiring particularly awkward hand positions and movements (cf. highlight in Fig. 9).

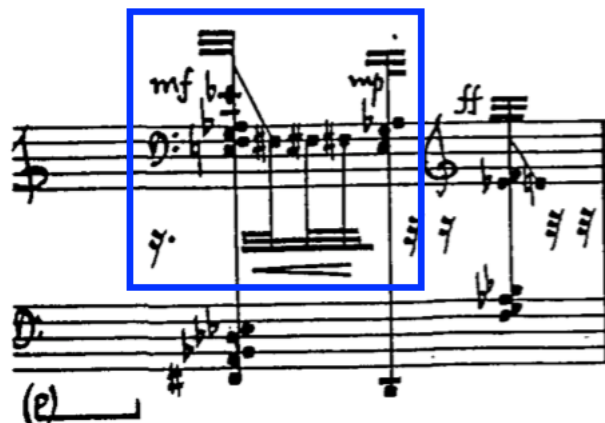


Fig. 9. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 6, 1st measure (the blue square is my own edition).

The second section of movement II is, generally, much quieter. Based mostly on intervallic symmetries and using once again Lucas numbers, with one only exception¹⁶ (3, 4, 7, [10], 11, 18, 29), it displays four subsections, each one of which starts with the enunciation of a rather simple or more complex chord (namely the fourth, which consists of several aggregates joined in one single resonance), with the following intervallic compositions (from lower to higher register):

1 st Chord	18-7-18 semitones
2 nd Chord	11-4-11 semitones
3 rd Chord	18-3-7 semitones
4 th Chord	11-7-11-4-1-4-11-7-11 + 11-11-11-[10] semitones

Table 1. Intervallic composition of the chords at the beginning of each subsection of C. Bochmann's *Essay VIII*, 2nd movement, section II
Source: own elaboration

In between these chords, sparse episodes, mostly composed by the symmetrical articulation of similar Lucas intervals (3, 7, 11, 18 and 29 semitones) within the previous chord's resonance, deploy dynamics comprised between *p* and *ppp* (cf. Fig. 10). Pianistically, these features stimulate an even and symmetrical hand distribution, independently of the register employed (which differs considerably from standard technique, although it is very common in 20th and 21st century works by different composers). On the other hand, very fast and ample movements of the hands are required by the largest intervals, which need to be played both in loud and soft dynamics. These specificities may, of course, prove to be a challenge for the performer, and should be considered in the context of what Laurent Caillet (2007: 62) calls "a new virtuosity"¹⁷.

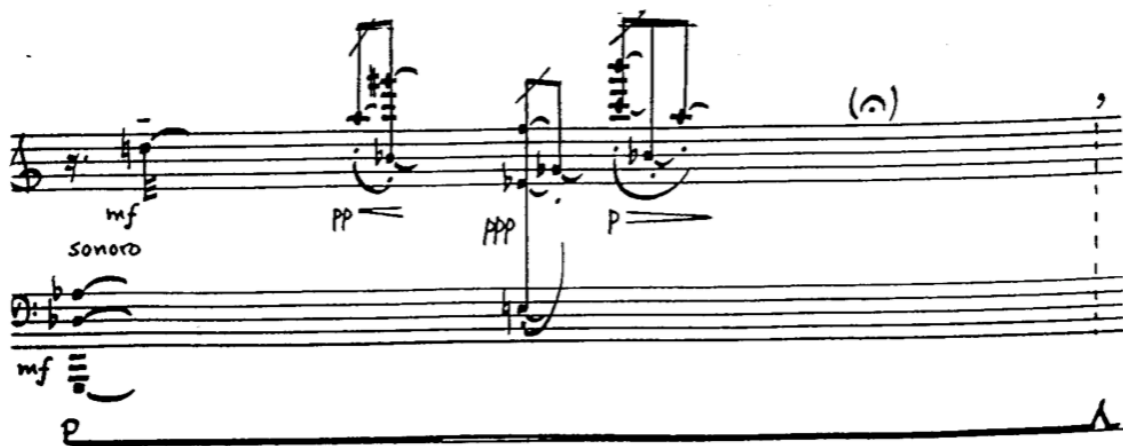


Fig. 10. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 6, 3rd system.

The second movement of *Essay VIII* ends with a very interesting pedal effect, which I have previously called "resonance filtering" (cf. Telles, 2018: 98-99; cf. Fig. 11); through it, the composer reduces a larger primary harmonic field to a second, more reduced one, composed of only some of the resonances comprised in the primary harmonic field. This

¹⁶ Indicated in square brackets.

¹⁷ My translation, from the original "Une nouvelle virtuosité s'impose".

effect, obtained by silently depressing the keys of the secondary harmonic field during the resonance of first one, followed by a progressive raising of the sustaining pedal, occurs in Bochmann's *1st Sonata, Seven Pieces and Essay VIII*; in the last case, it assumes particular importance in the fifth and last movement, as we shall see.

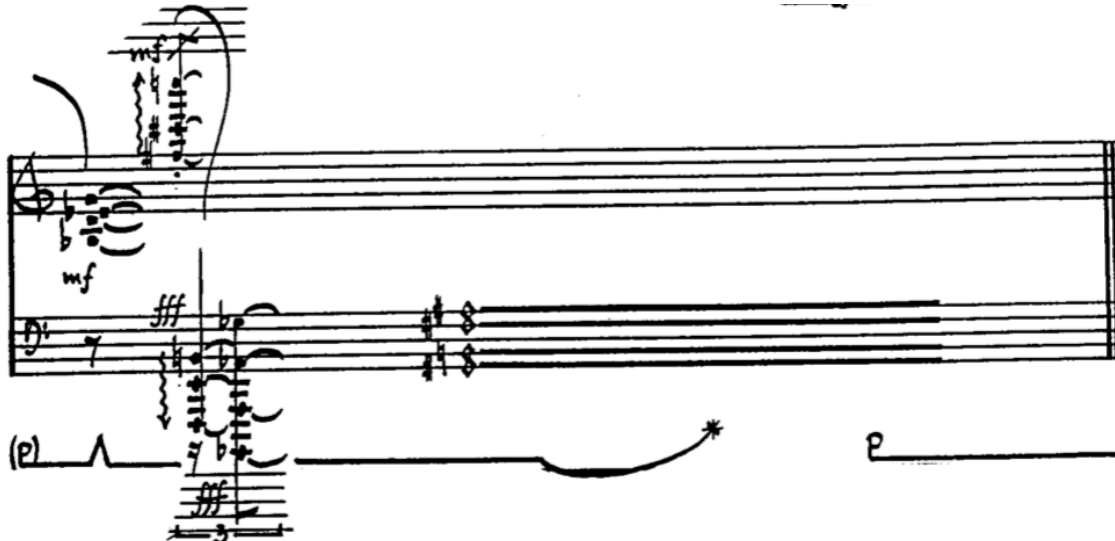


Fig. 11. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 7, 2nd system.

This resonance filtering process brings into evidence a very distinct Lucas harmony, made up of a combination of intervals of 3, 4, 7 and 11 semitones (cf. Fig. 12):

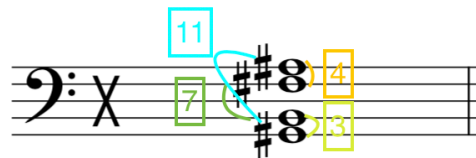


Fig. 12. Intervallic scheme concerning the filtered resonance which occurs in C. Bochmann's *Essay VIII*, 2nd movement (p. 7, 2nd system)
Source: own elaboration.

► *III. Presto possibile*

In the third movement, from the last system of page 7 to the last system of page 10, measures of regular 8th note beats (in all but one case, indicated below in square brackets) alternate¹⁸ with irregular groups of repeated notes on the generator pitch C#4, followed in some cases by long sounds (breves) produced by the after-pedaling effect characteristic of the first movement. In fact, the third movement suggests a *legato* horizontal movement not yet explored in the piece, while retaining characteristic elements of both previous movements, which it therefore synthetizes.

Let us focus, for now, on the measures of regular 8th note beats; they bear the following proportions (number of beats per measure): 7-11-11-[6.5]-2-3-2-1-4-11. These measures are characterized by a continuous melismatic texture, in 32nd notes, based on

¹⁸ With a greater or lesser degree of superimposition, of one or two 32nd notes.

Lucas intervals (primarily of 1, 3, 4, 7 and 11 semitones¹⁹), onto which vertical aggregates similar to those found in movement II, mostly based on the same Lucas numbers, are superimposed.

The interspersed groups of repeated notes bear the following numbers of reiterations: 7-18-11-7-11-4-18-3-29. As mentioned before, here the repetition of notes seems to serve a very definite rhythmic purpose, namely counting precise durations based on certain Lucas numbers of very short units (32nd notes, in this particular case).

If we attempt to summarize the alternating pattern between 8th note pulsed measures, irregular 32nd repeated note utterances and free durations represented by breves, we obtain the following chart:

Beats per measure (8 th note pulse)	7			11		11		2		3		2		1		4			11
Repeated note events (in 32 nd notes)		7			18		11		11		4		18		3		29		
"ghost sounds" C#4			1						1					1					1

Table 2. Formal scheme concerning C. Bochmann's *Essay VIII*, 3rd movement

Source: own elaboration

As becomes evident, performance issues are mostly of a rhythmic nature, residing in a constant shift between arithmetic divisions of time (in the pulsed measures), additive rhythm (in the repeated note sections) and non-measured time lapses (in the breve interruptions); dealing alternatively with these three paradigms in such a short and fast-moving music fragment constitutes one of the manifold aspects of the "rhythmic virtuosity" (Caillet, 2007: 64) that contemporary piano writing and performance calls for.

The changes in texture, as well as the general dynamic level (much lower than in the previous movements, mostly *pp*) and the lesser frequency of short note aggregates, together with the transmutation of the repeated C#4 pattern into a C#4-D4 trill in the last measure of this movement, provide a smoothing effect, as if to symbolize diminishing energy and aggressiveness at this point of *Essay VIII*²⁰; additionally, it must be noted that, in Bochmann's works, alternating two notes a semitone apart is a common procedure designed to emphasize that basic interval of his own compositional system, and indeed of most 20th and 21st century music, whereas trills composed of two notes separated by a whole tone are extremely rare in his output (Bochmann, 2014).

¹⁹ Greater intervals, such as the ones comprising 18 and 29 semitones, are seldom found in this movement (cf. at the very end of the 2nd system in page 8 [29 semitones] and the very last interval of the third movement, in the 3rd system of page 10 [18 semitones]).

²⁰ The composer acknowledges that "*Essay VIII* can be divided into two basic parts: one violent and virtuosic; the other calm and resonant." (Bochmann, 2005).

Interestingly enough, if we consider that this turning point (namely the last measure of movement III) occurs at the end of page ten, in a work whose manuscript occupies a total of 17 pages²¹, we may note that the ratio between the longer part (up to this point) and the shorter part (from here on) equals 1.428, a number which is roughly close to the Golden section (1.618). However, if we consider not the number of manuscript pages, but the durations of each movement²², we observe that the first three movements have similar durations of about one minute each (1,13''; 0,57'' and 1', respectively), whereas the duration of movements IV and V is close to two and a half minutes each (2'16'' and 2'32'', to be precise). Therefore, the total duration of the piece up until the last measure of the third movement equals around three minutes, while the duration after that point totalizes almost five minutes (4'48''); the ratio between those two parts (of which the shortest lies before the longest, contrarily to what is most common in musical forms of different styles and periods) equals 1.666, a number extremely close to the Golden section. Again, a slight instrumental idiom change (namely from repeated notes to a spelled-out trill), which might in other contexts be considered ornamental, serves the most important purpose of forming the work's turning point (a sort of reversed climax) audible.

► *IV. Tranquillo*

As I already mentioned, one of the fourth movement's main features is the occurrence of polyrhythmic elements based on the slow repetition of particular pitches in different registers. These occurrences, which take place throughout pages 10 to 12 of the autograph manuscript, are punctuated by the reiteration of the last bass note of each one of them as a harmonic extracted from a specific string inside the piano (cf. Fig. 13)

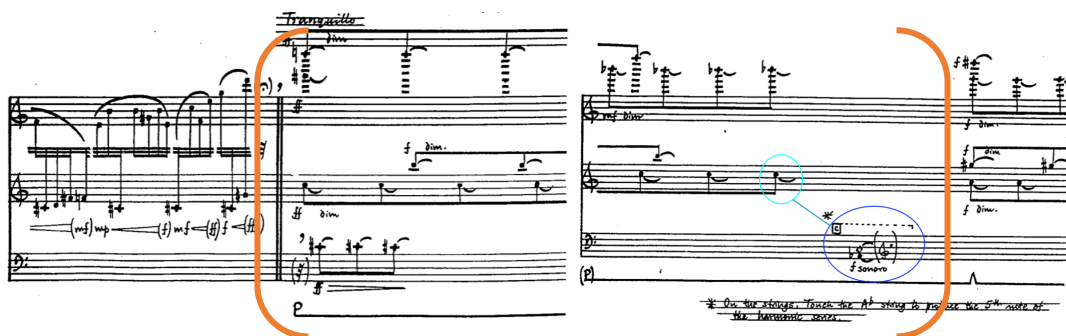


Fig. 13. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 10, 3rd system and p. 11, 1st system; colored circles and brackets are my own edition.

²¹ Calculating this ratio through the number of pages of the work provides only a roughly approximate result; yet, the composer has not always clearly indicated measures, which could otherwise have produced a more accurate calculation; on the other hand, the variety of rhythmic systems and paradigms used throughout *Essay VIII* prevents us from taking any global count of rhythmic figures as a starting point for this purpose.

²² I considered my own recording of the piece, included in the album *Fragments de Mémoire: Ana Telles | Ensemble DME, with Lara Rainho, Luís Gomes & Jaime Reis. Works by C. Bochmann and J. S. Béreau*. For the time being, this is the only studio recording of the piece.

Even if other works of Bochmann’s composition include extended techniques and the use of the piano’s interior²³ (as do so many other works by 20th and 21st century composers), the dialogue between a note produced at the keyboard and its counterpart, generated directly on the strings, is a unique feature in his output, and one which opens up particularly interesting timbral and tuning possibilities. The latter are especially noteworthy, as it is most unusual to explore different tunings in the same piece for the piano, considering the very nature of that instrument²⁴.

As for the polyrhythmic elements themselves, there are three of them. Lucas numbers are present: 1) in the number of layers of repeated notes; 2) in the number of repeated notes in each layer; and 3) in the intervals between different layers. Let us consider Fig. 12 as an example: we observe six layers, on the following notes (from bass to top): C#4, C5, B5, F#6, Bb6, F7. The writing itself, as well as the registers employed, suggest a hand-distribution which entrusts the three lower layers to the left hand and the remaining three layers to the right hand; again, Lucas numbers are present in the arrangement of three plus three, and not any combination of six, repeated note layers; similar arrangements will follow, in the remaining polyrhythmic elements to be presented. Once again, the composer uses specific pianistic means to make evident, at least for the performer, the compositional procedure at play.

The intervals (in semitones) between these notes are composed of Lucas numbers 11, 11, 7, 4 and 7; if we consider the alternate pitch pairs C5 and F#6, B5 and Bb6, F#6 and F7, their respective intervals comprise 18, 11 and again 11 semitones. The number of articulations of each pitch is as follows:

Pitch	Number of articulations
F7	4
Bb6	4
F#6	1
B5	3
C5	7
C#4	3

Table 3. Number of articulations of each repeated note in the first polyrhythmic element of C. Bochmann’s *Essay VIII*, 4th movement (p. 10-11)
Source: own elaboration

The second polyrhythmic element comprises four layers (two in the right hand plus two in the left hand), on A4, G#5, G6 and F#7, these pitches being equidistant (11 semitones) from one another. Their periodic repetitions are equally ruled by the Lucas sequence:

²³ *Seven Pieces Seven Pieces* is not the only, but certainly the most complex and detailed example of that.

²⁴ Different tuning experiences at the piano, such as the ones explored in microtonal repertoire, require previous and uniform adjustments to the whole instrument. As Polish composer and scholar Krzysztof Gawlas (2019) puts it: “The evolution of the piano created an instrument, designed specifically for playing music based on 12 tone chromatic system. It is very convenient for the musicians creating in tonal, chromatic or other twelve-tone-based styles, but for some searching beyond that system this was and still is a big limitation.”

Pitch	Number of articulations
F#7	1
G6	4
G#5	3
A4	7

Table 4. Number of articulations of each repeated note in the second polyrhythmic element (p. 11) of C. Bochmann's *Essay VIII*, 4th movement
Source: own elaboration

The third polyrhythmic element consists of three layers (two on the right hand plus one on the left hand), on F4, B5 and Bb6, these pitches being separated by 18 and 11 semitones, respectively. Their periodic repetitions are once again ruled by Lucas numbers:

Pitch	Number of utterances
Bb6	7
B5	4
F4	3

Table 5. Number of utterances of each repeated note in the third polyrhythmic element (p. 11) of C. Bochmann's *Essay VIII*, 4th movement
Source: own elaboration

Before the third repeated note polyrhythmic element, an unmeasured chord figure is introduced (at the very end of the second system on page 11 of the autograph manuscript); three other similar aggregates are presented after the same repeated note polyrhythmic element, namely on systems 1 and 2 of the following page. These aggregates are made up of different combinations of intervals based on Lucas numbers (cf. Fig. 14).

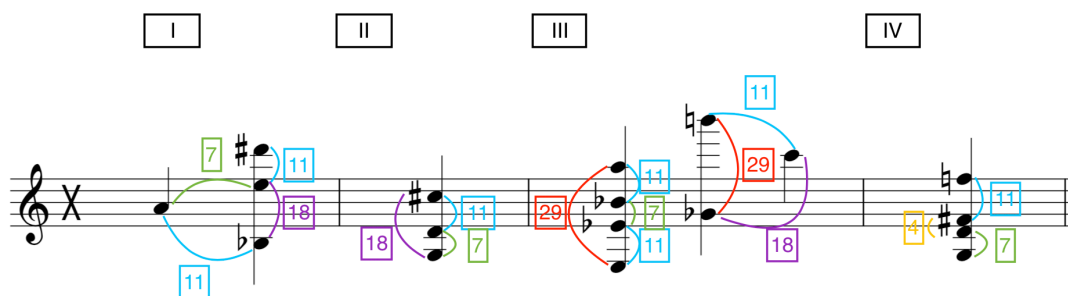


Fig. 14. Intervallic scheme of the four unmeasured chord figures that occur in C. Bochmann's *Essay VIII*, from p. 11 (2nd system) to p. 12 (2nd system)
Source: own elaboration.

Interestingly enough, each one of these intervals appears a certain number of times, according once more to the Lucas sequence, as follows:

Intervals (in semitones)	Number of occurrences
4	1
7	4
11	7
18	3
29	2

Table 6. Intervallic composition of the chord aggregates in C. Bochmann's *Essay VIII*, 4th movement (p. 11-12)
Source: own elaboration

At this point, after the deployment of three repeated note polyrhythmic elements and four unmeasured chord figures, a climactic utterance (in *ff*) of the generator note C#4 marks the Golden ratio of this particular movement of *Essay VIII*. Indeed, if we consider that the movement in question unfolds in approximately eight systems (between the end of page 10 and the 2nd system of page 13), this C#4 occurs precisely when five systems have been developed, and before the three last systems. If, on the other hand, we take into account the duration of this movement²⁵, this C#4 occurs precisely halfway through, dividing the piece into two almost equal parts of 1'07'' and 1'08''.

Either way, there is no doubt that this particular note operates a very significant turning point in the fourth movement, underlined by the radical dynamic and articulation change at that very moment. Thereafter, three repeated note sequences and one single articulation of the same note (C#4) are generated, not on the keyboard, but on the corresponding harmonic nodes of different lower strings of the piano (namely F#2, C#2, A1 and again C#2). As one would expect, the number of articulations in each one of these sequences follows the Lucas series.

C#4 sequences (harmonics)	Number of articulations
1 st	7
2 nd	4
3 rd	3
4 th	1

Table 7. Number of articulations of C#4 harmonics in C. Bochmann's *Essay VIII*, 4th movement (p. 12-13)
Source: own elaboration

Interspersed with these repeated note sequences, a contrasting movement unfolds, underlined by progressively softer dynamics (*mf*, *mp*, *p*, *pp*, *ppp*) (cf. Fig. 15).

²⁵ Cf. note 21.

The image displays three systems of handwritten musical notation. The first system, labeled 'p. 12', consists of a treble clef staff and a bass clef staff. In the treble staff, a circled interval is marked with a red circle. A bracketed passage in the treble staff is marked with an orange bracket. The bass staff has a bracketed passage marked with an orange bracket. The second system, labeled 'p. 13', also has a treble and bass staff. A bracketed passage in the treble staff is marked with an orange bracket. The bass staff has a bracketed passage marked with an orange bracket. The third system, also labeled 'p. 13', has a treble and bass staff. A bracketed passage in the treble staff is marked with an orange bracket. The bass staff has a bracketed passage marked with an orange bracket. The score includes various dynamic markings such as *f*, *mf*, *mp*, *p*, *pp*, and *f dim*. There are also some markings like *8^a* and *8^a* in the treble staff of the second system.

Fig. 15. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 12, 2nd and 3rd systems and p. 13, 1st system; colored circles and brackets are my own edition.

This contrasting movement is composed of intervals symmetrical around the C#4, which gradually enlarge at first, but appear condensed to the minimum unit at the very end of this procedure (Cf. Fig. 16).

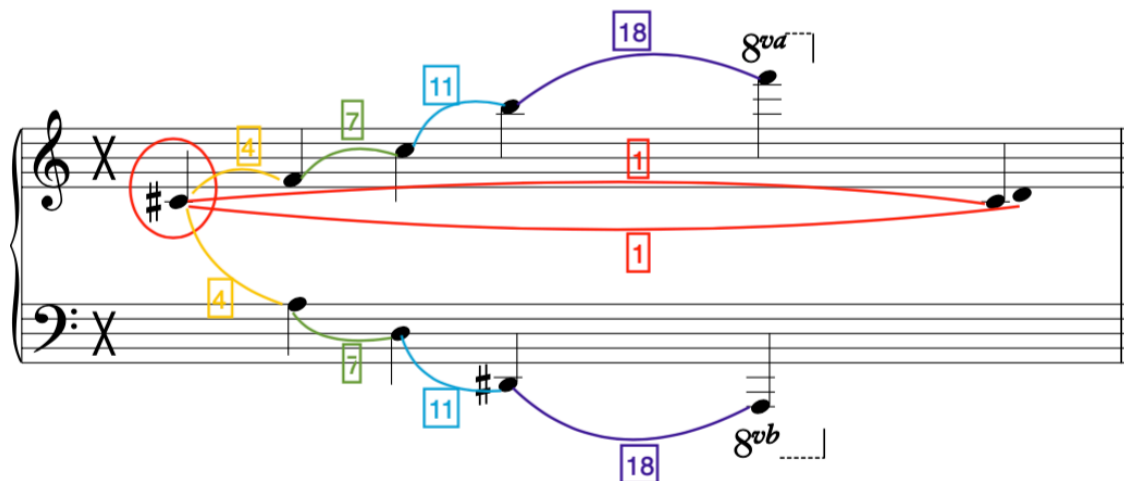


Fig. 16. Intervallic scheme concerning the symmetrical contrary movement which occurs in C. Bochmann's *Essay VIII*, from p. 12 (2nd system) to p. 13 (1st system)
Source: own elaboration.

From the climactic C#4 to this point, we may observe a kind of formal symmetry, based on Lucas numbers: the first part presents four repeated note patterns and three interval-based aggregates, whereas the second presents three repeated notes patterns and four interval-based episodes. The last system of this movement provides a coda in which a new pianistic action, namely patting the strings with the palm of the hand, is introduced; this action is followed by a filtering of resonances, operated by the silent depressing of certain keys and the consequent release and re-enforcing of the sustaining pedal, such as the one we found at the end of the second movement and will be extensively explored in the fifth and last. Once again, as happened at the end of movement II, this filtering process makes audible a very specific Lucas chord:



Fig. 17. Intervallic scheme concerning the filtered resonance which occurs in C. Bochmann's *Essay VIII*, 4th movement (p. 13, 2nd system)
Source: own elaboration.

Before the end of the movement, a new harmonic is enunciated (C5, produced on the Ab2 strings); it is 11 semitones distant from the generator C#4.

► *V. Lento*

In the *Lento* movement of *Essay VIII*, we must distinguish the texture that unfolds between the last system of page 13 and the beginning of the second system of page 16, on the one hand, and the Coda that proceeds from there to the end of the work, on page 17, on the other. As we will consider later on, this Coda is more of a conclusion to the whole *Essay VIII* than merely an ending to its last movement.

The first of these formal units is characterized by the coexistence of: 1) a central measured line, which may be considered the core of the movement and comprises individual notes, harmonic intervals and more complex aggregates that may add up to as much as seven notes at a time (cf. Fig. 16, in light blue rectangles); 2) a florid, melismatic layer, which consists of simple or complex non-measured *appoggiaturas*, placed either before or after the notes or aggregates of the main line; and 3) measured silences, “inhabited” by resonances made evident by a filtering process such as the one observed at the end of movements II and IV described above²⁶ (cf. Fig. 18, in red rectangles).

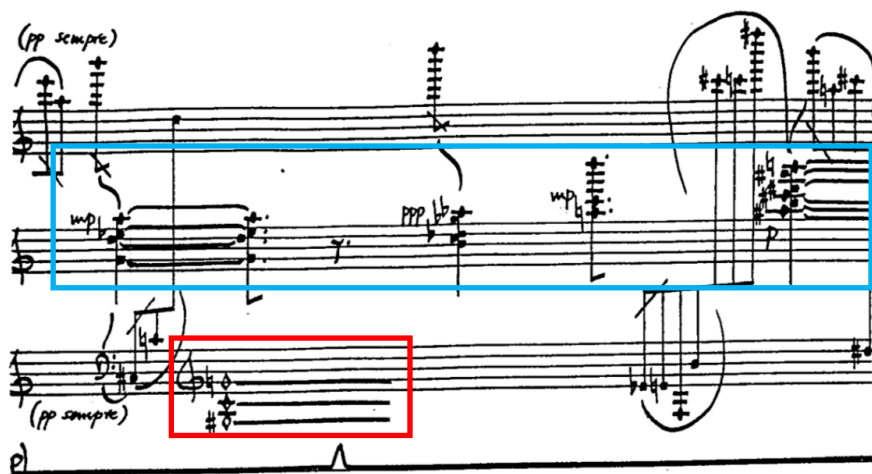
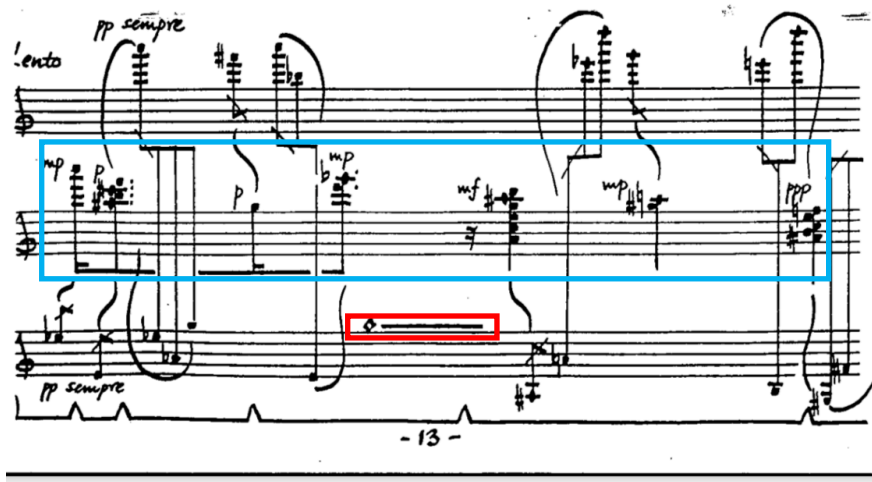


Fig. 18. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 13, 3rd system and p. 14, 1st system; colored rectangles are my own edition.

As regards the overall form of the first part of this movement, we may consider six sections (*a, b, c, d, e, f*); all but the last transition between these sections (from *e* to *f*) is operated by one of the “measured silences” to which I alluded in the previous paragraph; their respective duration increases progressively, according to the unfolding of the Lucas sequence. There is no silence in the transition between sections *e* and *f*; in this case, the transition is marked by a *ff marcatisimo* articulation of the generator note

²⁶ P. 13-14.

C#4, preceded by an *appoggiatura* A3 (4 semitones apart). As for the note durations inside each section, they again follow the Lucas sequence, as shown in the synoptic table below:

Formal sections	Transitions between formal sections	Note duration sequences (in 16th notes)	Silence durations (in 16th notes)
<i>a</i>		1 3 1 3	
	<i>a - b</i>		1
<i>b</i>		4 4 4 7	
	<i>b - c</i>		3
<i>c</i>		4 3 7	
	<i>c - d</i>		4
<i>d</i>		7 3 4 4 1 3 7	
	<i>d - e</i>		7
<i>e</i>		4 7 4 3 1	
	<i>e - f</i>		non-measured C#4 (with A3 <i>appoggiatura</i>)
<i>f</i>		3 1 7 4 3 1 7	
	<i>f - Coda</i>		11
<i>Coda</i>			non-measured

Table 8. Formal scheme concerning C. Bochmann's *Essay VIII*, 5th movement (p. 13-17)

Source: own elaboration

Most intervals deployed either in the aggregates of the core line, in their surrounding *appoggiaturas* or in the filtered resonances are equally based on Lucas numbers, in a complex web of intervallic relationships making extensive use of the relatively large 18 and 29 semitone distances between two notes. As a consequence, the whole register of the piano is explored in a very demanding way for the performer, who needs to combine metric and non-measured times (cf. core line vs. *appoggiaturas*), which induces significant cognitive stress, while dealing with very fast and large horizontal movements of the arms, which constitutes a physical challenge.

The contours of the core line are significantly ruled by Lucas numbers, in semitones; noteworthy is also the composition of the filtered resonances, to be found in pages 14 and 15 (cf. Fig. 19).

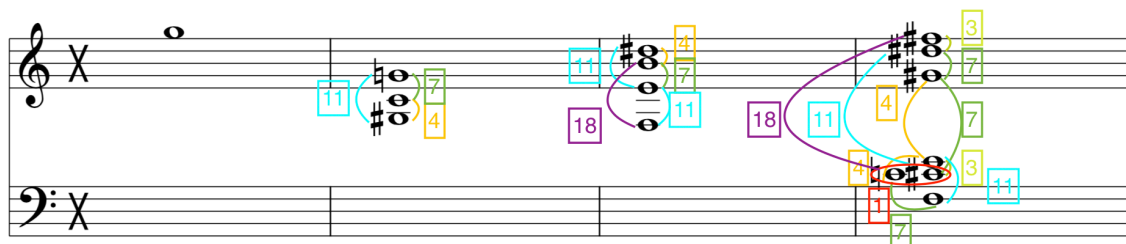


Fig. 19. Intervallic scheme concerning the filtered resonances which occur in C. Bochmann's *Essay VIII*, from p. 13 (3rd system) to p. 15 (1st system)

Source: own elaboration.

As we can see, the number of occurrences of each interval is equally ruled by the Lucas sequence, according to a very thoughtful densification and expansion scheme, as may be noted in the table below:

Intervals (in semitones)	Number of occurrences in each chord
1	0-0-1
3	0-0-2
4	1-1-2
7	1-1-3
11	1-2-2
18	0-1-1

Table 9. Number of occurrences of different Lucas number intervals in the filtered resonances of C. Bochmann's *Essay VIII*, 5th movement (p. 14-15)
Source: own elaboration

The Coda, which starts on the second system of page 16 and unfolds until the end, may be seen, as I suggested above, not only as a conclusion to the fifth movement, but indeed to the whole work. As a matter of fact, it is totally based on the generator pitch C#4; while it recapitulates elements of the last movement, namely, the *appoggiatura*-like textures (2nd system of page 16; cf. Fig. 20) and three chords based on much the same intervals as the three filtered resonances discussed above (3rd system of page 16, cf. Fig. 21), it ends with a development of the characteristics textures of movement I and IV (cf. Fig. 22).

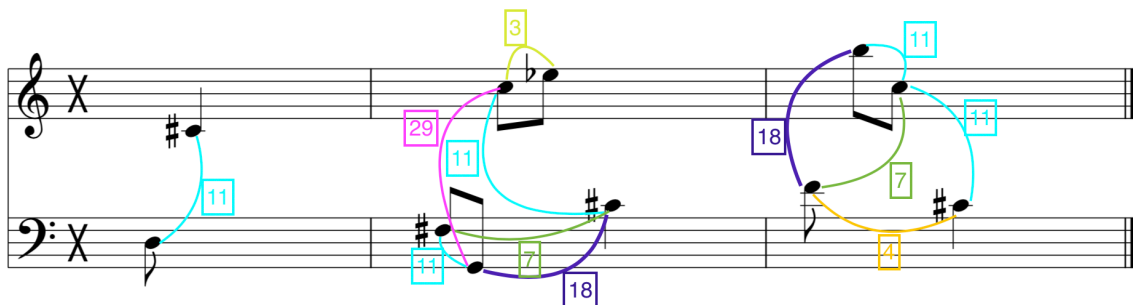


Fig. 20. Intervallic scheme of the *appoggiatura*-like passage which occurs in C. Bochmann's *Essay VIII*, p. 16 (2nd system).
Source: own elaboration.

As we may notice, the intervals used are very much the same as those of Fig. 19; their distribution within the three aggregates (see table below) follows a somewhat comparable scheme, but this time the second (and not the third) occurrence is the largest and most complex (including a 29 semitones interval that had not been contemplated in the filtered resonances passage).

Intervals (in semitones)	Number of occurrences in each chord
1	0-0-0
3	0-1-0
4	0-0-1
7	0-1-1
11	1-2-2
18	0-1-1
29	0-1-0

Table 10. Number of occurrences of different Lucas number intervals in the *appoggiatura*-like textures of C. Bochmann's *Essay VIII*, 5th movement (2nd system of page 16)

Source: own elaboration

As becomes obvious, the intervallic composition of the three chords presented in the 3rd system of page 16 resembles very much that of the succession of filtered resonances in the first part of the movement.

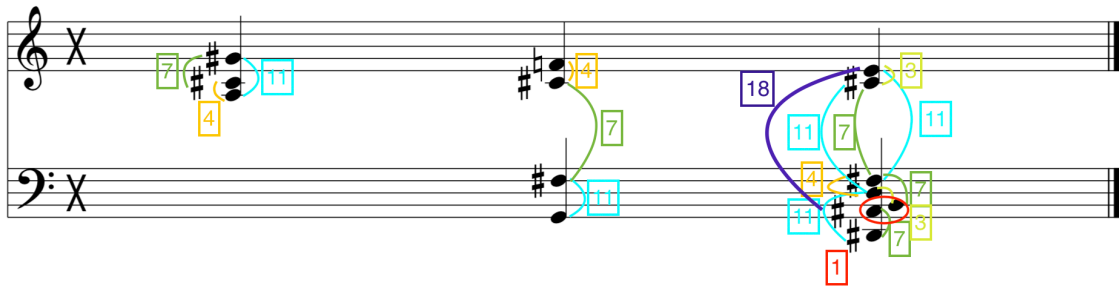


Fig. 21. Intervallic scheme concerning the chord passage which occurs in C. Bochmann's *Essay VIII*, p. 16 (3rd system).

Source: own elaboration.

In particular, the number and distribution of the 1, 3 and 7 semitones intervals is identical in both cases.

Intervals (in semitones)	Number of occurrences in each chord
1	0-0-1
3	0-0-2
4	1-1-1
7	1-1-3
11	1-1-3
18	0-0-1

Table 11. Number of occurrences of different Lucas number intervals in the succession of three chords, C. Bochmann's *Essay VIII*, 5th movement (3rd system of page 16)

Source: own elaboration

The extremely soft dynamics required for the interpretation of these three chords (*pppp*, with *una corda* pedal) seems to emphasize their kinship with the aforementioned filtered resonances which, by nature, are hardly perceptible and almost ghostly.

Figure 22 (below) allows for a syncretic view of the Coda that brings *Essay VIII* to a close.

The figure displays four systems of musical notation for the Coda of *Essay VIII*. Each system consists of a grand staff (treble and bass clefs) and a piano part below. The systems are annotated with colored boxes and brackets, and descriptive text:

- System 1 (p. 16, 2nd system):** A pink box highlights the right half of the system. The piano part has dynamics *mf*, *mf*, *mp*, *mf*, and *mf*. The text below reads "appoggiatura-like texture (cf. mov. V)".
- System 2 (p. 17, 1st system):** A pink box highlights the first three measures, with dynamics *pppp*, *pppp*, and *pppp*. A blue bracket highlights the final measure with dynamics *pp* and *mp*. The text below reads "Chords (cf. mov. V)".
- System 3 (p. 17, 2nd system):** A blue bracket highlights the entire system. The text above reads "reminiscence of mov. I".
- System 4 (p. 17, 2nd system):** A blue bracket highlights the first two measures, and a purple box highlights the rest of the system. The piano part has dynamics *f*, *p*, and *ppp*. The text above reads "reminiscence of mov. IV".

Fig. 22. Bochmann, C. (1991). *Essay VIII*. Manuscript autograph, p. 16, 2nd and 3rd systems, p. 17, 1st and 2nd systems; colored rectangles and brackets are my own edition.

Concluding remarks

Essay VIII is an extraordinarily terse work of music, in which different characteristic pianistic features reinforce and underline the compositional principles adopted. From a structural standpoint, we have seen that the composer consciously intended to create two distinct sub-units: one “violent and virtuosic [composed of movements I, II and III], the other resonant and calm [movements IV and V]” (Bochmann, 2005). Accordingly, the articulation and sound-producing modes of the three first movements evolve from extreme energy and aggressiveness to a progressively smoother ambience, from the initial *martellato* “ferocious rapid articulations” (Bochmann, 2005) to the second movement’s characteristic *staccato* figures, and on to the *legato* lines (interspersed with *staccato* repeated notes) of the third movement. As we have seen, that smoothing process culminates in a reverse climax, at the very end of the third movement, in which repeated notes give way to a written *legato* trill. This process is accompanied by a change between persistent *fff* attacks, in the first movement, to uneven but overall softer dynamics in movements II and III. The second sub-unit of the piece, consisting of movements IV and V, assumes a much more poetic stance, which is translated through exquisite resonance effects and, quite unusually for the composer, extended techniques, such as the extraction of harmonics directly from the piano strings.

Great challenges for the performer are condensed in this short piece of music; a number of them are quite common in most piano repertoire of the 20th and 21st centuries, like fast and horizontal movements on the keyboard, both in one hand alone, in the third and fifth movements, or with alternating hands, in the first movement; exploration of extreme registers; specific and quite uncomfortable chord configurations, in the second movement; dealing simultaneously with measured and non-measured rhythm, as well as with very precise durations, in movements III and V; playing at the same time inside the piano and on the keyboard, in the fourth movement; performing complex and very precise pedal indications, in the whole piece. Other challenges, such as the extension and intensity of the *martellato* 32nd note-sequences in the first movement, are quite unusual and unique.

Making extensive use of mathematical principles, such as the Lucas sequence and the correlated Golden proportion, in order to express fundamental musical properties, *Essay VIII* deploys, at all levels of its construction, a coherent use of those principles and their multiple applications; if, on one hand, the underlying mathematical ground fosters the work’s musical conception, there is extensive evidence that several aspects of the instrumental writing contribute to an analytical and even aural understanding of the compositional procedures adopted.

From a performer’s standpoint, a thorough understanding of the compositional principles and operations at work, as well as of their relationship to the pianistic idiom and instrumental features deployed, is an essential tool in designing a coherent, meaningful and informed performance. As nothing seems to have been overlooked by the composer, in a work with unique characteristics (a result of the web of influences which converge in Bochmann’s musical idiom, and its close relationship to the

aesthetical context of the time), the establishment of an equally unique performance approach depends largely on the performer's scrupulous desire to highlight each particular feature of the composition with comparable rigor, and his/her willingness to conduct a full encompassing analysis of the work.

In a sense, *Essay VIII* requires the development of a specific set of performance practices which, no matter if some of them are recurrent in works of 20th and 21st centuries, must be as terse, coherent and pertaining as the composer's choices themselves. Given the work's key position in the composer's total pianistic output, this exercise may in turn prove extremely helpful in approaching and performing other piano works by Christopher Bochmann.

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