

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA FORMS OF *PIANO SONATAS* BY W. A. MOZART

GABRIELA COCA¹

SUMMARY. I have to admit that, when I intended to write this study, I still had to analyze harmonically and tonally the development sections of the Mozart forms of the sonata of the *Piano Sonatas*. Only after I have put the title I thought of the fact that I might have jumped to conclusions with this title. I opened the *Explanatory Dictionary of the Romanian Language*² to look for *ingenuity* in order to find out the explanation for myself. "*Ingenuity*. 1. *The one who has a lot of inventive spirit, the one that is intelligent, resourceful, knows how to do things*. 2. *Made, manufactured inventively, skilfully, wisely*." I was thinking that, is it possible for Mozart to have these qualities in the development sections of his sonatas? Are they made inventively, skilfully and wisely? Moreover, if it is so, how do they become real?

Keywords: Mozart, *Piano Sonatas*, developments, statistic, tonality, modulation, proportionality, Sectio Aurea (golden sections), sonata forms, equilibrium

As I was all for the statistic method, parallel to harmonic and tonal analysis, I started to build some synthesis tables. The first table of this type refers to **the extension of the developments as opposed to the exposition and the restatement** (see table 1).

As an extension, the developments of the sonata form are appreciatively half the expositions or the restatements as they say; they are "short and striking".

An interesting thing to follow in this context is the proportionality of the sonata form that is used by Mozart. The author segments the assembly form always relying on the principle of the **golden section (see table 2)**. Although each sonata form and each composing section of the form (the exposition, the development, the restatement) have a different number of measures, except for two sonatas where these proportions are not relevant (*Sonata No 5* and *No 12*), in fifteen sonatas, one or both golden sections corresponds to the beginning or the end of the development section. There

¹ University Babeş-Bolyai, Faculty of the Reformed Theology, Musical Pedagogy Department.
E-mail: gabriela_coca@yahoo.com

² *Dicţionarul explicativ al limbii române (Explanatory Dictionary of the Romanian Language)*, Ed. Academiei, Bucharest, 1975, p. 428.

are sonatas where these correspondences fit the exact moment of dividing of the sections (the one that are highlighted in the table) and there are sonatas there this correspondence takes place with a minimum approximation (between 1, 3 and 5 measures). However, there will always be the question whether Mozart calculated these correspondences or whether he made them instinctively using his equilibrium sense.

Table 1

The Extension of the Developments As Opposed to the Exposition and the Break

	EXPOSITION	DEVELOPMENT	RESTATE- MENT	
Sonata no. 1, C, KV 279, part I.	: 38	: 21	: 41	SONATAS DÜRINITZ SALZBURG-MÜNCHEN (NO 6.) 1774 - 1775
Sonata no. 2, F, KV 280, part I.	: 56	: 26	: 62	
Sonata no. 3, Bb, KV 281, part I.	: 40	: 29	: 40	
Sonata no. 4, Eb, KV 282, part III.	: 38	: 23	: 40	
Sonata no. 5, G, KV 283, part I.	: 53	: 18	: 49	
Sonata no. 6, D, KV 284, part I.	: 51	: 20	: 56	
Sonata no. 7, C, KV 309, part I.	: 58	: 35	: 62	
Sonata no. 9, D, KV 311, part I.	: 39	: 59 (!!!)	: 14	
Sonata no. 8, A min. KV 310, part I.	: 49	: 29	: 54	SONATAS OF PARIS 1778
Sonata no. 10, C, KV 330, part I.	: 58	: 29	: 63	
Sonata no. 11, A, KV 331	It does not have the sonata form!	-	-	
Sonata no. 12, F, KV 332, part I.	: 93	: 39	: 97	
Sonata no. 13, Bb, KV 333, part I.	: 63	: 30	: 72	
Sonata no. 14a, C min., KV 475	It does not have the sonata form!	-	-	SONATAS OF VIENNA 1784 - 1789
Sonata no. 14b, C min., KV 457, part I.	: 74	: 25	: 86	
Sonata no. 15, F, KV 533/494, p. I.	: 102	: 43	: 94	
Sonata no. 15, F, KV 533/494, p. II.	: 46	: 26	: 50	
Sonata no. 16, C, KV 545, part I.	: 28	: 13	: 32	
Sonata no. 17, F, KV 547a, part I.	: 78	: 40	: 78	
Sonata no. 18, Bb, KV 570, part I.	: 79	: 53	: 77	
Sonata no. 19, D, KV 576, part I.	: 58	: 40	: 62	

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

Sonata no 19 is the only sonata where Mozart repeats the exposition in the first part, but not the development and the restatement. The numbering of the sonatas is taken from the following score *Edition Peters*, Leipzig, nr. 1800 a, b (10817-10818), © 1951. Comparatively, the *The Complete Bärenreiter Edition* (Neue Mozart Ausgabe, 1986) inverts the sonata 8 and 9 (adding them into the chronological way of appearance) and they exclude from the list sonata no 17 (KV 547a), as they number the last two sonatas as no 17 and 18 respectively.

Table 2

The Proportionality of the Sonata Form

	No. of measures	+ S. A. (x 0,618)	- S. A. (x 0,382)
Sonata no. 1, C, KV 279, part I.	100	measure ± 61,8	m. 38,2
Sonata no. 2, F, KV 280, part I.	144	-	± 55
Sonata no. 3, Bb, KV 281, part I.	109	67,36	± 41,63
Sonata no. 4, Eb, KV 282, part III.	101	± 62,41	38,58
Sonata no. 5, G, KV 283, part I.	120	-	-
Sonata no. 6, D, KV 284, part I.	127	-	± 48,51
Sonata no. 7, C, KV 309, part I.	155	± 95,79	± 59,21
Sonata no. 9, D, KV 311, part I.	112	-	± 42,78
Sonata no. 8, A min. KV 310, part I.	133	± 82,194	± 50,80
Sonata no. 10, C, KV 330, part I.	150	-	± 57,30
Sonata no. 11, A, KV 331	It does not look like a sonata!		
Sonata no. 12, F, KV 332, part I.	229	-	-
Sonata no. 13, Bb, KV 333, part I.	165	-	63,03
Sonata no. 14a, C minor, KV 475	It does not look as a sonata!		
Sonata no. 14b, C min., KV 457, part I.	185	-	± 70,67
Sonata no. 15, F, KV 533/494, p. I.	239	± 147,70	-
Sonata no. 15, F, KV 533/494, p. II.	122	± 75,39	46,60
Sonata no. 16, C, KV 545, part I.	73	-	27,88
Sonata no. 17, F, KV 547a, part I.	196	± 121,12	± 74,87
Sonata no. 18, Bb, KV 570, part I.	209	129,16	79,83
Sonata no. 19, D, KV 576, part I.	160 (218)	98,88 (134,72 = irrelevant moment)	± 61,12 (83,27 = irrelevant moment)

Calculating the number of measures we do not take into consideration the repetitions in the first 18 sonatas. By the double calculation of the proportions of the measures we realize that the golden section moments do not change.

In *Sonata No 19* (KV 576) we calculate the number of the measures without the repetition of the exposition and then, we use its repetition. Without the repetition of the exposition, both the positive golden section and the negative one are overlapped to the beginning and the end of the development. However, by its repetition, (without the development and the restatement to be repeated) these moments become irrelevant. Taking these things into consideration, we tend to believe 99% that the lack of repetition signs from the beginning of the development and the end of the restatement are graphical errors and they are not the structural way of the sonata form.

I would like to follow the ingenuity of the tonal plan of the development sections of the piano sonatas, putting them into a chronological order, taking into consideration the place where they were composed. Consequently, we have four groups:

1. Dürnitz Sonatas composed in Salzburg and Munich (1774-1775), respectively sonatas nr. 1-6 (*C, F, Bb, Eb, G, D major*) – (KV. 279, 280, 281, 282, 283, 284);

2. Cannabich and Freysinger sonatas composed in Mannheim (1777), respectively sonatas no. 7 and 9 (*C, D major*) – (KV 309, 311);

3. The sonatas that are composed in Paris (1778), respectively the sonatas no. 8 and sonatas 10-13 (*A minor, C major, A, F, B b major*) – (KV. 310, 330, 331, 332, 333);

4. The sonatas that are composed in Viena (1784-1789), respectively the sonatas no. 14 a-b, și 15-19 (*C minor, C minor, F major, C, F, Bb, D major*) – (KV. 475, 457, 533/494, 545, 547a, 570, 576).

In order to have a global image of the tonal frame of each sonata form, we present in a synthetic way the debut and the closing keys of the development sections in the context of the expositions and the restatements keys (see **table 3**). In seven of the sonatas, (see the light green highlight), at the beginning of the development, Mozart modulates in the **parallel key**, which is the final key of the exposition. This ending key of the exposition is formed in these cases on the dominant of the basic key. In eight sonatas, (see the blue highlight), Mozart keeps at the beginning of the development the key of closing the exposition, which is a key that, except the *Sonata No 8*, is the dominant key of the basic key. In *Sonata No 8*, the ending key of the exposition is the major related of the basic key. The exceptions of these two cases are highlighted in red and yellow.

- In *Sonata no 9*, the development section starts with the **key of the minor dominant** of the closing key of the exposition (*F major – E minor*)!

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

- In *Sonata no 13*, the end of the development brings in the surprise of the modulation of the dominant key in the parallel of the basic key (*F major – B b minor*)!

- In *Sonata no 14b*, the beginning of the development modulates from the basic key (*C minor*) into the key of the subdominant, which is also a minor key (*F minor*). In this sonata, at the end of the exposition, we have Mozart not to modulate it in the key of the major related.

- In *Sonata no 15*, part II, at the beginning of the development the author modulates from the dominant of the basic key to the minor related of the dominant key.

- However, the biggest surprise is brought by *Sonata no 18* where Mozart modulates from the dominant of the basic key, to the major inferior third (*F major – D b major!!!*) – a key association typical Romantic.

Table 3

The Debut and Closing Keys of the Main Form Sections

	EXPOSITION	DEVELOPMENT	RESTATEMENT
Sonata no. 1, C, KV 279, part I.	C → G	G minor → C	C → C
Sonata no. 2, F, KV 280, part I.	F → C	C → F	F → F
Sonata no. 3, Bb, KV 281, part I.	Bb → F	F → Bb	Bb → Bb
Sonata no. 4, Eb, KV 282, part III.	Eb → Bb	Bb minor → Eb	Eb → Eb
Sonata no. 5, G, KV 283, part I.	G → D	D → G	G → G
Sonata no. 6, D, KV 284, part I.	D → A	A minor → A	D → D
Sonata no. 7, C, KV 309, part I.	C → G	G minor → C	C → C
Sonata no. 9, D, KV 311, part I.	D → A	E (!) → D	D → D
Sonata no. 8, A, KV 310, part I.	A minor → C	C → A minor	A minor → A minor
Sonata no. 10, C, KV 330, part I.	C → G	G → C	C → C
Sonata no. 11, A, KV 331	It does not have a sonata form!		
Sonata no. 12, F, KV 332, part I.	F → C	C → F	F → F
Sonata no. 13, Bb, KV 333, part I.	Bb → F	F → Bb minor (!)	Bb → Bb
Sonata no. 14a, C, KV 475	It does not have a sonata form!		
Sonata no. 14b, C, KV 457, part I.	C minor → C minor	F minor (!) → C minor	C minor → C minor
Sonata no. 15, F, KV 533/494, p. I.	F → C	C minor → F	F → F

	EXPOSITION	DEVELOPMENT	RESTATEMENT
Sonata no. 15, F, KV 533/494, p. II.	Bb → F	D minor → Bb	Bb → Bb
Sonata no. 16, C, KV 545, part I.	C → G	G minor → F	F → C
Sonata no. 17, F, KV 547a, part I.	F → C	C → F	F → F
Sonata no. 18, Bb, KV 570, part I.	Bb → F	Db (!) → Bb	Bb → Bb
Sonata no. 19, D, KV 576, part I.	D → A	A minor → D	D → D

In order to have an image of the inner key ingenuity of the developments, we chose three sonatas which I consider to be relevant, highlighting the aspects that fundaments their originality.

Ex. 1

The development of the *Sonata in D Major*, (nr. 6), KV 284

The musical score illustrates the development of the *Sonata in D Major*, KV 284, through four systems of music. Each system shows a melodic line and a bass line with key changes indicated by dashed lines below the notes.

- System 1 (measures 52-54):** Labeled "A minor melodic / natural combined". The key changes from A minor to E minor melodic.
- System 2 (measures 55-57):** Labeled "E minor". The key changes from E minor melodic to E minor melodic / natural combined.
- System 3 (measures 58-60):** Labeled "B melodic minor". The key changes from B melodic minor to B harmonic minor.
- System 4 (measures 61-63):** Labeled "F # minor". The key changes from F # minor to E minor.

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

The image shows three systems of musical notation for a piano piece. The first system (measures 64-67) features a treble clef with a melodic line and a bass clef with a rhythmic accompaniment. Dynamic markings include *f*, *p*, *f*, and *zitate*. Below the staff, the chords are labeled as E minor and D minor. The second system (measures 67-71) continues the melodic and rhythmic patterns, with a *crescendo* marking. Chords are labeled as D minor, G minor, B b major, G minor, and A major. The third system (measures 71-72) shows a final melodic phrase and a chord labeled D major.

The development of this first part of the sonata, the last of the *Dürnitz Sonatas* is highlighted key wise, through the fact that it is made of 90% of minor keys (although the basic key of the musical work - including the first part) is made in *D major*. The minor keys that can be found here are *A minor*, *E minor*, *B minor*, *F # minor*, *D minor*, *G minor*. Only the last four measures of the development intervenes three major keys: *B b major*, *A major* and *D major*!

This procedure shocks the auditorium, the player and the analyst on the same time, taking into consideration the major key context of the sections that frame the development. Among the fact that the author uses the minor keys in a great part of the development, he combines the melodic and natural variants of these with the harmonic variant (see measures 53 – 54, and 57 – 59 respectively). The impetuous character of this part is kept in the development section as opposed to the minor keys, as it is maintained by the permanent pulsation of semiquaver notes and the continuous interval oscillation of the accompanying voice. Beyond these, the chorded structure of the development is relatively simple.

*

From the two sonatas that were composed at Mannheim, the development of the first part of the *Sonata no 9 (D major)* KV 311, has a series of significant elements (**see ex. 2**). In this sonata form, Mozart turns the principle that he used so far for his developments. Up to this sonata, his developments were, from the extension point of view, twice as reduced than the sections of exposition and the restatement. Here, the development is twenty measures bigger than the dimensions of the exposition and 45 measures bigger

than the restatement. Here the development is bigger than the dimensions of the exposition and the restatement on their own, but also, when they are added! This is a proportional turning that is very significant! Although, in the previous sonata (no 7), that was composed in Mannheim, the development section of the sonata form of the first part grows significantly in their shape and importance, compared to the *Sonatas Dürnitz*.

From the key point of view, the first surprise that is made by Mozart, is the beginning key of the development. It debuts with **the key of the minor secondary dominant** of the basic key in *D major*, with a SDT cadence in *E minor*! Analyzing the table with the debut keys and the closing keys of the developments, one can see that until this sonata, Mozart was a *good man* from a key point of view; he could not afford this type of “extravanzas”.

The tonal structure of the development of this sonata presents an outstanding elasticity.

- After an airy key segment (the measures 40 - 47), there follows a busy key segment (the measures 48 - 58). Since in the first segment of the form, along eight measures can be seen only three keys, in the second segment, along ten measures, we can see ten keys. The agglomeration effect is increased by the multitude of the **chromatic chords, sometimes, even bi-functioning (!)** that are used by Mozart. The rhythmical diminution of the successive quavers of the preceding segment to successive sixteenth notes is developed under the Alberti basses or a Murky basses and, in the same time, they increase the agglomeration effect. There follows a new airy segment in *G major* plane (without any modulation), between the measures 59 – 65.

Ex. 2

The image shows two systems of musical notation for piano. The first system, labeled '40', spans measures 40 to 47. It begins in D major (one sharp) and modulates to E minor, indicated by a dashed line below the staff. The second system, labeled '44', spans measures 48 to 58. It begins in D major (one sharp), modulates to D minor (no sharps or flats), and then returns to D major (one sharp), also indicated by dashed lines below the staff. Both systems feature dynamic markings: *p* (piano) at the start of each system, *fp* (fortissimo piano) in the middle, and *f* (fortissimo) at the end. The notation includes treble and bass staves with various rhythmic figures and chordal structures.

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

48 D major-----
 49 F# minor
 50 A major-----
 B minor---

51 F# minor-----
 52 G major-----
 53 F# major-----

54 B minor-----
 55 E minor-----
 56 G major-----
 G major-----

59 G major-----
 60 p
 61 tr

62 G major-----
 63 f
 64 p

GABRIELA COCA

Measures 65-67. Measure 65 features a trill (tr) on the right hand. Measure 66 has a forte (f) dynamic marking. The bass line consists of a steady eighth-note accompaniment. Chords are indicated as G major and D major.

Measures 68-70. The right hand has a continuous sixteenth-note pattern. The bass line has a steady eighth-note accompaniment. Chords are indicated as D major, E minor, and D major.

Measures 71-73. Measure 71 has a forte (f) dynamic marking. The right hand has a continuous sixteenth-note pattern. The bass line has a steady eighth-note accompaniment. Chords are indicated as G major, E minor, D major, B minor, and E minor.

Measures 74-76. The right hand has a continuous sixteenth-note pattern. The bass line has a steady eighth-note accompaniment. Chords are indicated as D major and A major.

Measures 77-79. Measure 77 has a piano (p) dynamic marking. The right hand has a continuous sixteenth-note pattern. The bass line has a steady eighth-note accompaniment. Chords are indicated as D major.

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

Musical score for measures 87-91. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A trill is marked above the first measure of the right hand. The bass line is labeled "D minor" with a dashed line underneath.

D major-----

Musical score for measures 86-90. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A forte dynamic (f) is marked. Two measures in the right hand are circled in red. The bass line is labeled "D minor" with a dashed line underneath.

D minor-----

Musical score for measures 89-92. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A piano dynamic (p) is marked. Two measures in the right hand and one measure in the left hand are circled in red. The bass line is labeled "D major" with a dashed line underneath.

D major-----

Musical score for measures 92-94. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A forte dynamic (f) is marked. A trill is marked above the first measure of the right hand. The bass line is labeled "D major" with a dashed line underneath.

D major-----

Musical score for measures 95-97. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A piano dynamic (p) is marked. A forte dynamic (f) is marked. A trill is marked above the first measure of the right hand. The bass line is labeled "D major" with a dashed line underneath.

D major-----

Musical score for measures 98-100. The key signature is D major. The score shows a melodic line in the right hand and a bass line in the left hand. A trill is marked above the first measure of the right hand. The bass line is labeled "D major" with a dashed line underneath.

D major-----

The measures 66 – 74 are busy from a key point of view. Along nine measures, Mozart puts eleven keys that alternate the related key of the *G major* and the superior fifth of this related key (*D major* and *B minor*). Between the measures 75 – 82, a new key relaxation maintains in the line the *D major* key in a simple Tonic – Dominant alternating way. In the second musical phrase, the function of the Subdominant appears twice. As an interesting thing, the following busy musical period confronts just two keys *D major* (the basic key of the part) and its minor parallel – *D minor*. In this context, the feeling of being busy is given on one hand by a rapid alteration of the functions: T-D-S (see measures 83-86). Along four measures, there is the following succession T-D-T-T-S-D-D-T-D-T-S-D. On the other hand, Mozart colours harmonically successively the chords by using the inferior retarded chromatic notes and also by using successions of turned chromatic formulas: *A – G # - A – G – A*.

The author creates in the same time, in this busy segment, a spatiality sensation through the rapid movement of a melodically motif from one register to the other, through the intersection of the pianist hands (see measures 87 – 91 – the circled melodic formulas). Following this busy segment, to the end, of its development, we can see the maintaining of the *D major* key (see measures 91 - 99), as Mozart releases the atmosphere again through the simplicity of the musical discourse, which is almost too simple, but it is beautiful through its balanced melody.

The third sonata, which thematic development will be presented below, is *Sonata in A Minor*, KV. 310, part I.

Ex. 3

The image displays two systems of musical notation for piano accompaniment, with harmonic analysis below each system.

System 1 (Measures 50-54):
 - Measure 50: C major
 - Measure 51: V₃ (labeled "Bi-functionality!")
 - Measure 52: F minor
 - Measure 53: F minor
 - Measure 54: F minor

System 2 (Measures 54-58):
 - Measure 54: F minor (dynamic *f p*)
 - Measure 55: D minor (dynamic *f p*)
 - Measure 56: F minor (dynamic *f*)
 - Measure 57: F minor
 - Measure 58: B minor (dynamic *f*)
 - Annotation: ~ Enharmonic modulation

THE INGENUITY OF THE TONAL PLAN OF THE DEVELOPMENT SECTIONS OF THE SONATA...

58 *ff* contrasts to the natural / and sharp → ...
 B major-----
 E minor-----

61 *pp* Contrasts D natural / D sharp
 A minor-----
 E minor-----

64 A minor melodic *ff*
 A minor-----
 D minor-----

67 *b2* Contrasts G natural / G # ...
 D minor-----

70 *tr* A minor-----
 C major-----

73 *tr* E minor-----
 A minor-----
 E minor

GABRIELA COCA

75
76
77
78
79

E minor
A minor
A minor
A minor

The development of the first part of this sonata debuts in the major related key of the basic key in *A minor*. As an interesting solution, in the second measure of the development, we can see a bi-functionality. Above the rhythmic pulsation of a first-degree pedal, a four – three rhythmic chord of a fifth degree is overlapped to it. Overall, the structuring of the left hand chord has a symmetrical distribution (2 + 3 + 2) of the composing elements.

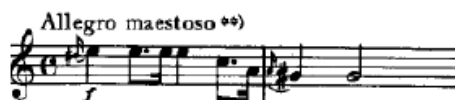
Ex. 4

For the first time, in the developing sections of the *Piano Sonatas*, we can see Mozart to use the **enharmonic modulation**. Between the measures 56 – 57, the author reinterprets the tone *Bb* in *A#*, modulating from the *F minor* key in the *B minor* key and then, in *B major*. Thus, it crosses seven ascending fifths, then three more fifths making a minor- major modal contrast. In the moment of the modulation, in the *B minor* key, the author uses a six-five-chord of the seventh degree with the basis of the chord that is lowered (the second degree of the scale and the *B harmonic minor*).

Following this moment of enharmonic modulation, starting from the measure 59 until the measure 77, Mozart steadily uses almost in each measure, the **diminished octave**, an interval that is characteristic for the music of the twentieth century. The eleven semitones distance between two overlapped chords is the basic interval of the *Beta* chord (as a derived from *Alpha*). We come across the following overlapping in these measures: *A# / A natural*, *D# / D natural*, *G # / G natural*, *C # / C natural*. Steadily, the alteration from the steady voice (the bas) appears in values of semiquavers note that alternate under the form of a trill with the tone of the fundamental tone.

Mozart did not write anything on this page with the thought of setting the basis of the twentieth century harmony. On his piano creation, the *Sonata KV 310* is the first sonata that is written in a minor key (*A minor*) and it was written under the influence of the crisis of his spirit that was due to the death of his mother. That is why we can find here the debut rhythm of funeral march of the first part.

Ex. 5



The question that makes me wonder is the following:

- If Mozart, **under the influence of a spiritual crisis** steadily uses the **diminished eight**, ..., this is one of the intervals that is characteristic to the twentieth century, is it possible for it to be the artistic fruit of the creative thinking of the human being of last century, in the same way an expression of his spiritual crisis?

(Translated from Romanian by Maria Cozma)

REFERENCES

- ***, *Dicționarul Explicativ al Limbii Române (DEX) (The Explanatory Dictionary of the Romanian Language)*, Ed. Academiei, București, 1975.
- Lendvai, Ernő, *Szimmetria a zenében (Symmetry in Music)*, Kodály Intézet, Kecskemét, 1994.
- Livio, Mario, *Secțiunea de aur. Povestea lui phi, cel mai uimitor număr (The Golden Ratio)*, Ed. Humanitas, Bucharest, 2005.
- Mozart, W. A., *Sonaten für Klavier zu zwei Händen*, Band I-II, Edition Peters, Leipzig, 1979 (Nr. 1800^{a,b} – 10817- 10818).
- Mozart, W. A., *Klaversonaten*, Band I-II, in: Mozart, W. A., *Klaviermusik, NMA, Serie IX, Werkgruppe 25*, Ed. Bärenreiter, Kassel, Basel, London, 1986.
- Rosen, Charles, *A klasszikus stílus. Haydn, Mozart, Beethoven (The Classical Style. Haydn, Mozart, Beethoven)*, Orfeusz Könyvek, Budapest, 1977.