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J.N. Andrews Honors Program

Andrews University

Honors Thesis

Performance Analysis of Beethoven's Violin Sonata Op. 23:

Freedom of Interpretation in Passages of Formal Anomaly

Arielle E. Cady

April 1, 2011

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Abstract

“Performance Analysis of Beethoven’s Op. 23: Freedom of Interpretation in Passages of Formal Anomaly”

Beethoven’s Violin and Piano Sonata Op. 23 in A minor is a multi-movement sonata that has three unexpected formal events: two occurring in the *Presto* (movement one) and one in the *Allegro Molto* (movement three). These formal anomalies, discovered through the creation of form diagrams, present potentially challenging moments of interpretation for performers. The question this project addresses is whether or not the three areas of formal anomaly allow performers more freedom in personal interpretation than normative formal events. The results of this research show that performers do take additional freedom in interpretation during such unexpected formal events.

INTRODUCTION

Ludwig van Beethoven's violin sonata Op. 23 is often regarded as "the wayward stepchild among Beethoven's violin sonatas..."¹ The main key of A minor, which creates a melancholy mood, along with the work's abrupt thematic changes may contribute to this assessment. That being said, Op. 23's unique features make it an interesting and challenging piece to study and perform.

HISTORY

Beethoven (1770-1827), born in Germany, has become one of the most influential composers of all time. He extended the Classical tradition, of which Haydn and Mozart were a part, and later was able to combine this tradition with innovative ideas that led to unheard of musical advances in compositional style.²

Beethoven's musical compositions have been classified into three periods. The Early Period spans the years up to 1802, the Middle extends from 1802-1812, and the Late from 1813-1827.³ Beethoven wrote Op. 23 during the years 1800-1801, which were the last years before the beginning of the Middle period. Only two of Beethoven's violin sonatas were written for specific people; Op. 12 dedicated to Salieri and Op. 23 dedicated to Count Moritz von Fries.⁴ Joseph Kerman writes "from 1800 to 1802 [Beethoven] produced at high speed a series of

¹ Lewis Lockwood, "On the Beautiful in Music: Beethoven's 'Spring' Sonata for Violin and Piano, Opus 24," in *The Beethoven Violin Sonatas: History, Criticism, Performance*, eds. Mark Kroll and Lewis Lockwood (Chicago: University of Illinois Press, 2004), 26.

² Joseph Kerman, "Ludwig van Beethoven," *Grove Music Online. Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40026> (March 2011).

³ Ibid.

⁴ Paul Nettl, *Beethoven Encyclopedia* (New York: Philosophical Library, 1956), 295.

increasingly experimental pieces which must be seen in retrospect as a transition to the middle period.”⁵ Op. 23 falls directly into this category both because of when it was composed and because of the “experimental” details of the piece, especially those having to do with form.

Beethoven’s Early Period has been characterized as a time when he developed a unique compositional style. Beethoven’s music during this time followed the basic style of Haydn and Mozart though he began to take his compositions a step beyond typical expectations. Kerman describes this breaking free of tradition as “the time when Beethoven began to show signs of dissatisfaction with some of the more formal aspects of the Classical style and reached towards something new.”⁶ Beethoven had been following the conventions of the time and was proficient in those styles, yet he yearned for more. Lewis Lockwood writes,

By the 1790’s Beethoven had learned enough from both Mozart and Haydn to see that his own path to the future lay no longer in assimilating but in augmenting their methods and achievements with his own innovations, despite occasional bluntness and rough edges.⁷

With this in mind, the style of Op. 23 is fascinating because it was composed during this time of exploration. “In musical inventiveness and expressive string writing Op. 23 shows a great advance over the Op. 12 sonatas. . .” explains Paul Nettl.⁸

Op. 23 has three aspects that show Beethoven’s use of compositional innovation. The key of A minor is the first of these because the use of the minor mode as the main key was not

⁵ Ibid.

⁶ Joseph Kerman, “Ludwig van Beethoven” (March 2011).

⁷ Lewis Lockwood, *Beethoven The Music and the Life* (New York: W. W. Norton and Company, 2003), 174.

⁸ Nettl, 295-296.

prevalent in his violin sonatas before 1800. Lockwood comments that the word's, "primary key, A minor, is as rare for [Beethoven] as it had been for Haydn and Mozart."⁹

The second characteristic has to do with Op. 23's pairing with Op. 24. Op. 24, conventionally known as the "Spring" sonata¹⁰ is written in A major and has a more lyrical sense to it rather than the tense nature of Op. 23.¹¹ Joseph Szigeti explains that Beethoven meant for the two to be a set because they complement each other in both key and temperament. Szigeti continues, "no greater contrast can be imagined than between the peremptory A minor dictum and the ingratiating long line of Op. 24."¹² Beethoven also wanted them to be published together. Nettl comments that the sonatas "were advertised in this arrangement by Mollow in October of 1801, and there is a copy of the Op. 24 which is labeled number two," showing that the composer did intend them to be a pair. Exactly why the two were never published together is unknown.¹³

In addition to these unusual characteristics, there are the sonata's formal and thematic innovations, moments when musical events don't follow stylistic formal expectations. While studying the form of this piece, I found that there were several rather unusual occurrences. Through the creation of form diagrams, I identified three areas of formal anomaly where Beethoven broke with the traditional expectations of form and ventured in new territory—a move that demonstrates the shift between the end of the Early Period and the beginning of the Middle Period.

⁹ Lockwood, "On the Beautiful in Music," 26.

¹⁰ This title was not given by the composer himself, but was in use by 1860 (Lockwood, 24).

¹¹ *Ibid.*, 24.

¹² Joseph Szigeti, *The Ten Beethoven Sonatas for Piano and Violin* (Urbana: American String Teachers Association, 1965), 14.

¹³ Nettl, 295.

FORMAL ANOMALIES

In the Classical period, sonatas typically consisted of three movements. The first movement was moderately fast, the second was slower, and then the third was the fastest and lively.

Op. 23, as expected, has three movements, but Beethoven differs slightly from the typical expectations when he marks the first movement as *Presto*, Italian for “quick.” This tempo marking makes the first movement the fastest out of all three. Lockwood comments on this tempo marking “the sonata opens with a Presto in 6/8 time, a tempo and meter that he usually reserves for finale,” agreeing this was an odd choice by Beethoven.¹⁴

Sonata form is one of the fundamental musical designs of the Classical Period. The first movements of sonatas, symphonies, and chamber music are usually composed in this foundational structure.¹⁵ The substructure of the form revolves around certain expectations that were solidified during the Classical Period. Hepokoski and Darcy write that “sonata form is neither a set of ‘textbook’ rules nor a fixed scheme.” They explain that “the model . . . crystallized during the second half of the eighteenth century and . . . reached a peak in the mature works of Haydn and Mozart and the early works of Beethoven.”¹⁶

It is important to understand that Op. 23 was composed with the conceptual ideas of sonata form in mind because its formal anomalies can only be recognized with reference to this model.

¹⁴ Lockwood, 26.

¹⁵ James Hepokoski and Warren Darcy, *Elements of Sonata Theory* (New York: Oxford University Press, 2006), 14.

¹⁶ *Ibid.*, 15.

In order to depict each movement's formal detail, I created form diagrams that show themes, tonal area, and other relevant structural details. (Form diagrams for the first and third movements are reproduced in Appendix 1.)

The first two movements are considered examples of sonata form, meaning they are expected to have three main areas: the exposition, development, and recapitulation.

In the exposition there are two *groups*; the first one in the tonic and the second in the dominant. These *groups* are then differentiated by key area and by their content. The development has fewer constraints than the exposition or the recapitulation because there are no specific tonal areas to be used. The development can take thematic elements from the exposition and expound on them or can introduce new material. Before arriving at the recapitulation, there is a preparation for the return tonic key, through a passage known as the retransition, by standing on the dominant chord. The recapitulation then begins with a *double return* meaning that both the tonic key and the principle theme reappear. The recapitulation, which restates material from the exposition, either ends with a strong cadence on the tonic chord or there is a coda.¹⁷

The coda (Italian for 'tail') is anything added to the end of the recapitulation. Bullivant and Webster write that "Beethoven is usually said to have been the first 'to develop' the coda as an important section of a sonata form movement. Some of his codas are indeed very long owing to his love of dramatic excursions away from the home key, necessitating weighty passages to restore it."¹⁸ All three movements of Op. 23 end with a coda or codetta (an abbreviated coda).

¹⁷ James Webster, "Sonata Form," *Grove Music Online. Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40026> (March 2011).

¹⁸ Roger Bullivant and James Webster, "Coda," *Grove Music Online. Oxford Music Online*, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40026> (March 2011).

The third movement is in sonata-rondo form. This hybrid form is a combination of both sonata form (incorporating the previously mentioned three areas) as well as aspects from the rondo. The rondo is made up of a principle theme, A (called the refrain), which is alternated with a contrasting theme, sometimes called an episode. The rondo is most typically found as a five-part rondo, ABACA, in which there are two episodes, B and C. The length of the rondo can be expanded through the addition of extra episodes, while still maintaining the general principle of alternating the refrain and episodes.

The combination of elements from both sonata and rondo forms results in the sonata-rondo hybrid. In a sonata-rondo, the exposition contains the rondo's ABA, the development encompasses C (a rondo's episode), and the recapitulation includes a recurrence of ABA. The sonata-rondo can also have coda or codetta following the recapitulation.

Through the form diagrams, I was able to identify three moments where Beethoven steps beyond the bounds of general expectations for sonata form, events that I have named formal anomalies. There are two in the first movement and one in the third movement. These elements are shown with an asterisk on my form diagrams.

The first of these unexpected occurrences is found in the *Presto* movement. In the development, there is a proper retransition in preparation for the return of the first theme from the exposition (measures 120-164). Beethoven returns to the correct key but uses the wrong theme, creating a false recapitulation. Hepokoski and Darcy agree, writing "at this point one presumes that the recapitulation will ensue. But instead a new, initially *piano* tarantella-idea springs forth. . . . The recapitulation proper begins, more or less normally, in m. 164."¹⁹ The

¹⁹ Hepokoski and Darcy, 219.

false recapitulation creates a sense of expectancy and prolongs the double return of the recapitulation.

The second unexpected moment is also found in the *Presto*, but this time during the coda. Beethoven takes motivic ideas from the first theme for only one measure (m. 223) and continues with thematic material from the false reprise that occurred in the development (223-243). This is unusual because the use of the thematic material from the development is not typically seen in the recapitulation. The more common practice would have been to include material from the exposition.

Hepokoski and Darcy also comment on the formal anomaly occurring during the coda, saying that Beethoven may have chosen to do so to remind the listeners of what had happened previously in the piece.

Although there was no requirement or expectation to do so, Beethoven sometimes brought back such expanded episodes in the coda, as happens here, in part because his longer codas contain passages that review events of the development.²⁰

The third area is found in the third movement, the *Allegro Molto*. During the recapitulation (m. 203-332), Beethoven unexpectedly includes the C theme from the development section. This is unusual because in sonata-rondo form the A theme in the recapitulation is usually followed by the B theme, not the C theme (see form diagram example below).

The C theme first appears in measure 114, exactly as expected. When it returns in m. 276 it is surprising for two reasons. First, we don't expect new themes from the development

²⁰ Ibid.

(episode) to return in the exposition. Second, it comes just after the “Folk Dance,” which in the exposition was followed immediately with “a.”

Example 1. Form diagram of the third movement, *Allegro Molto*.

Exposition							Development	
Am A	Transition	B	Codetta	A'			C	Retrans.
				a	“Folk-Dance”	a		
m. 1-20	m.20-24	m.25-42	m. 43-53	m. 54-74	m. 74-94	m. 95-113	m. 114-177	m.178-203
i		v	V	i	i	i	VI	V
Recapitulation								
A	“Tarantella”	Trans.	“Folk-Dance”	C	Retransition	A'	Codetta	
m. 204-223	m. 224-247	m. 247-267	m. 268-275	m. 276-283	m. 284-303	m. 304-323	m.324-332	
i	i		<i>m. 276 C theme from Development returns</i>	<i>m. 294 on V from RT in Development</i>		i	i	

Christopher Hatch writes about the recurrence of the C theme and how it works with this sonata-rondo form in his article “Thematic Interdependence in Two Finales by Beethoven:”

The new meaning acquired by the lyrical theme depends almost entirely on its placement, not on any substantial internal alterations. It is so located that in the

end it effectively reconciles two disparate thematic entities. Yet, despite this eventuality, its last appearance comes without warning.²¹

PERFORMANCE ANALYSIS

Clive Brown, Lockwood, and Szigeti discuss performance practices in Beethoven, focusing on the use of bowings, fingerings and tone production.²² However three areas of formal anomaly provide an interesting challenge for performers. The variance from normal expectations complicates the interpreter's ability to create a seamless musical idea. My contribution will therefore be in the area of performance analysis of form and interpretation.

In order to facilitate an analysis of how to handle these formal anomalies in performance, I chose to study the performances of five violinists. I chose well-known and highly concertized performers who recorded Op. 23 during that latter half of the twentieth century. I also chose performers who had different stylistic approaches to the sonata so the case studies would cover more ground.

The first chamber ensemble I chose was Arthur Grumiaux, violin, and Clara Haskil, piano. They recorded the sonata during the years 1956-1957. The second recording was Itzhak Perlman, violin, and Vladimir Ashkenazy, piano, recorded in 1988. The third recording I chose was Pinchas Zukerman, violin, and Marc Neikrug, piano, recorded in 1992. Isaac Stern, violin, and Eugene Istomin, piano, was the fourth ensemble I chose to study, which was recorded in 1996. The final recording I chose was that of Anne-Sophie Mutter, violin, and Lambert Orkis, piano, which was done in 1998.

²¹ Christopher Hatch, "Thematic Interdependence in Two finales by Beethoven," *The Music Review*, 45 (Aug-Nov 1984), 207.

²² Clive Brown, "Ferdinand David's Editions of Beethoven," in *Performing Beethoven*, ed., Robin Stowell (Cambridge: Cambridge University Press, 1994), 135.

Individual interpretation is most marked by performance choices in the use of rubato, dynamics and in tone production. My study is limited to only two elements, that of dynamics and the use of rubato. Tone production, while it is important to performance analysis, did not fit into the scope of this research.

Dynamics are the measurements of how intense the volume is at a given time, and are usually specified by the composer. A performer typically follows what the composer has specified for a given section of the music, but sometimes takes the liberty of choosing to do a different dynamic. It is a performer's choice as to how to enhance phrasing by gradually getting louder or softer in a given dynamic marking.

Rubato (Italian for "robbed") is defined as speeding up and subsequent slowing down of the tempo. Like dynamics, rubato is used to enhance the expression in the music. The composer may specifically mark rubato in the score, or the performer may choose to utilize it. There are two ways in which rubato is used; the first is when the main beat remains the same but little changes are made to the beat subdivisions and the second is when the tempo changes for longer than a few notes, usually resulting in a ritardando.

After I chose the focus areas of dynamics and rubato to study in the performance analysis part of research, my performance analysis data collection comprised of three steps. Step one was creating in-score markups that showed the initial tempo at the beginning of the movement and the tempo during the anomaly. These in-score markings detailed the interpretation choices made by each recording. I also marked in the score exactly where the performers chose to use dynamics other than what was specified by the composer, and if they used rubato.

Below is an example of an in-score markup from the *Allegro Molto* showing use of dynamics and rubato. Dynamics are shown with a crescendo marking along with a subito marking and rubato with the back arrows. (see appendix 2 for complete in-score markups.)

Example 2. Score Analysis, Mutter/Orkis performance.



The second step was to synthesize the information from the score into comparison tables. I created a table for each formal anomaly that shows the performers, tempo at the beginning of the movement and during the anomaly, use of rubato, and the use of dynamics. This step was crucial because it showed me similarities and differences between the performances, and eventually led me to make two performance style categories. (see appendix 3 for complete tables.)

Determining the category of performance style then became the third step in the process of analyzing performance choices. I classified each performance into one of two categories of performance style based on the use of dynamics and rubato: the classical performance style and the romantic performance style (see table below).

Example 3. Performance Analysis Table for Test Study 1

Presto, False Reprise in Development, m. 120-164

(false retransition beginning m. 120)

(false reprise beginning m. 136)

Performer	Initial Tempo	During Formal Anomaly	Use of Rubato	Use of Dynamics other than specifically notated	Performance Style
Grumiaux/Haskil	116	126	Yes, 128-135 133-151	Large dim. 128- 135	Classical
Perlman/Ashkenazy	120	120	Yes, 136	No	Classical
Zukerman/Keikrug	120	120	Yes; phrase endings	No	Classical
Mutter/Orkis	126	120	Yes; phrase endings especially elongated	m. 132 <i>piano</i> instead of <i>forte</i>	Romantic
Stern/Istomin	112	112	Yes; phrase endings	No	Romantic

The Classical classification refers to a performer who chooses to follow Beethoven's tempo markings and dynamics as specified in the urtext score, which is a score that has limited editorial influences and tries to stay as true to the composer's ideas as possible. These performers adhere to a stricter tempo, meaning they more typically use subdivision or one-beat rubato. They also exactly follow the dynamics that are written in the score.

The Romantic classification refers to a performer who chooses to use lots of rubato, which in turn can alter the overall tempo even if only for a few bars. The Romantic performer also chooses to use other dynamics than those specified by Beethoven in the urtext edition.

The importance of creating these two categories comes into play by studying the results of the tables. By organizing the performances into either the classical or romantic classification, I was able to see what, if any, was the most general way in interpreting the formal anomalies. Rather than compare each individual performance, I could compare the results from the

performers in each group with each other. After that initial analysis, I was then able to compare the general choices of the classical performers with those of the romantic performers to see if and where freedom of interpretation occurred.

RESULTS

The results of the case studies show that performers do tend to take more liberties with the use of dynamics and/or rubato in areas of formal anomaly. During the first formal anomaly in the *Presto*, all of the performers used some kind of rubato, especially at phrase endings. The most noticeable use of rubato at phrase endings was during the beginning of the false recapitulation and into the double return. All of the performers stayed true to the dynamics that Beethoven wrote except for the Mutter/Orkis recording. They decided to play m. 132 *piano* instead of *forte*. This choice exemplified the romantic classification of their performance and was the most interesting use of freedom during the first anomaly.

The second anomaly, also found in the *Presto* but this time during the coda when material from the development's false recapitulation is used, did not have as dramatic results as the first anomaly. The use of rubato was used sparsely by all of the performers. None of the performers varied from Beethoven's dynamic markings. The romantic performers only exaggerated some of the crescendos (gradually increasing in volume) and subito (sudden) dynamics.

The third formal anomaly found in the *Allegro Molto*, during the recapitulation, has the most interesting results. The recapitulation is anomalous because it contains the C theme from the development. Because the C theme occurs twice in the movement, the first occurrence, which follows formal expectation, can be considered a "control group." I compared what the performers chose to do the first time the C theme occurs with their interpretive choices during

the second, anomalous, occurrence. By doing so I was able to show how performers may choose to play a formally anomalous passage differently than a normal occurrence of the same music.

The results of the third formal anomaly show that all of the performers use a significant amount of rubato. In the Zukerman/Neikrug performance, they chose to use rubato specifically before the C theme appeared again. This use of rubato announced the arrival of this unusual and theme in the recapitulation. The most interesting use of dynamics took place in the Mutter/Orkis recording when they chose to play the C theme in a *pp* (very soft) dynamic compared to the *forte* (loud) they used previously for the control group C.

The ensembles of Zukerman/Neikrug and Mutter/Orkis were categorized into two different performance styles, and yet they still showed freedom in their interpretation during this third formal anomaly. These specific results show that from both performance perspectives, performers choose to utilize the additional freedom the anomalous passage allows.

PERSONAL PERFORMANCE CHOICES

As a Violin Performance major, learning how to play stylistically is an important part of my education. When I first began studying Op. 23, I developed an interpretation that would be described as a classical, according to my research categories. Showing the ability to play Op. 23 in the correct “Beethoven” style, that is to say, with a limited use of rubato and staying true to the marked dynamics, was the goal.

As I researched Op. 23 with the idea of formal anomalies and freedom of interpretation in mind, my performance choices began to mature. I now more fully understand what musical ideas Beethoven was trying to convey. With this more detailed knowledge of the structure of the piece, my own interpretation has developed.

Through analyzing the performance choices of the five selected ensembles, I was able to conclude that during these anomalous events, performers use more freedom in the use of dynamics and rubato to enhance their stylistic interpretations. With this awareness, I made a change in my performance choices of the third movement, *Allegro Molto*. I have decided to take the cue from the Mutter/Orkis recording and make a difference in dynamics the second time the C theme appears. In order to stay within the classical performance style, my dynamic use will not be as drastic.

This performance analysis on Op. 23 showed that in areas of formal anomaly, performers have more freedom in their personal interpretations. The results of the research have directly effected my own performance choices in the area of interpretation, specifically focusing on dynamics and rubato.

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Appendix 1. Form Diagrams

Form Diagram of 1st Movement: *Presto* (sonata form)

Exposition				Development			
Am Group 1	Transition	Group 2	Closing theme :	Group 1	Group 2	Trans. Motif	RT to false recap*
m. 1-29	m. 13-29	m.30-49	m. 50-68	m.69-83	m. 83-93	m. 94-120	m. 120-134 False Recap. m. 135-164
i	V			i	VI	Iv	V

Recapitulation			Coda		
Group 1	Group 2	Closing Theme	Motif from Exposition*	Theme from false recap	Codetta (material from group 1)
m. 164-181	m. 182-214	m. 205-221	m. 222	m. 223-243	m. 245-252
i	III, m. 190 i		iv	m. 228 i	i

*Denotes formal anomaly.

Form Diagram of 3rd Movement: *Allegro Molto* (sonata-rondo form)

Exposition							Development	
Am A	Transition	B	Codetta	A			C**	Retrans.
				a	“Folk-Dance”	a		
m. 1-20	m.20-24	m.25-42	m. 43-53	m. 54-74	m. 74-94	m. 95-113	m. 114-177	m.178-203
i		v	V	i	i	i	VI	V
Recapitulation								
A	“Tarantella”	Trans.	“Folk-Dance”	C *	Retransition	A	Codetta	
m. 204-223	m. 224-247	m. 247-267	m. 268-275	m. 276-283	m. 284-303	m. 304-323	m.324-332	
i	i		<i>m. 276 C theme from Development returns</i>	<i>m. 294 on V from RT in Development</i>	i	i		

*Denotes formal anomaly.

** “Control group”

(67) 5

160

Musical score for measures 160-165, featuring a treble and bass staff with various musical notations including notes, rests, and dynamic markings.

166

Musical score for measures 166-171, featuring a treble and bass staff with various musical notations including notes, rests, and dynamic markings.

176

Musical score for measures 176-181, featuring a treble and bass staff with various musical notations including notes, rests, and dynamic markings. The word *meno* is written above the treble staff and *dim.* below the bass staff.

185

Musical score for measures 185-190, featuring a treble and bass staff with various musical notations including notes, rests, and dynamic markings.

194

Musical score for measures 194-199, featuring a treble and bass staff with various musical notations including notes, rests, and dynamic markings. The word *rit.* is written above the treble staff.

Bas.

(2)

Itzhak Perlman, violin
Vladimir Ashkenazy, piano
Classical Classification

Test Area 1:
Score Analysis of Rubato
and Dynamics

tempo 120

(65) 3 4 (66)

72 117

80 126

89 136

99 144

109 153

B. 22. B. 22.

(1)

160 *didn't slow down*

168

176 *rit.*

184

192 *rit.*

Bss.

(9)

Pinchas Zukerman, violin
Marc Neikrug, piano
- classical classification

Test Area I:
Score Analysis of Rubato
and Dynamics

(65) 3

72 *tempo 120*

80

89

99

109

B.22.

4 (66)

117

126

136

144

153

B.22.

(1)

160

Musical score for measures 160-167. The system consists of two staves. The upper staff contains a melodic line with various ornaments and slurs. The lower staff contains a bass line with chords and rhythmic patterns. A dynamic marking of *sf* is present in the lower staff.

168

Musical score for measures 168-175. The system consists of two staves. The upper staff contains a melodic line with various ornaments and slurs. The lower staff contains a bass line with chords and rhythmic patterns.

176

Musical score for measures 176-184. The system consists of two staves. The upper staff contains a melodic line with various ornaments and slurs. The lower staff contains a bass line with chords and rhythmic patterns. Dynamic markings of *ffff* and *depress.* are present.

185

Musical score for measures 185-192. The system consists of two staves. The upper staff contains a melodic line with various ornaments and slurs. The lower staff contains a bass line with chords and rhythmic patterns.

194

Musical score for measures 194-201. The system consists of two staves. The upper staff contains a melodic line with various ornaments and slurs. The lower staff contains a bass line with chords and rhythmic patterns. A dynamic marking of *mf* is present.

B. 93.

(2)

a tempo
recapitulation

(87) 5

166

168

170

185

190

B. so.

Isaac Stern, violin
Eugene Istomin, piano
Romantic Classification

Test Area 1:
Score Analysis of Rubato
and Dynamics

72 *tempo 1/2*

80

89

99

109

B.ss.

Detailed description: This block contains the first system of musical notation, measures 72 through 109. It is written for violin and piano. The tempo is marked 'tempo 1/2'. The score includes various dynamic markings such as *mf*, *ff*, *pp*, and *pppp*. There are also markings for *rit.* and *crca.* (crescendo). The notation features complex rhythmic patterns and phrasing.

117

126

136 *a tempo*

144 *a tempo*

153

B.ss.

Detailed description: This block contains the second system of musical notation, measures 117 through 153. It continues the violin and piano score. The tempo is marked 'a tempo'. Dynamic markings include *mf*, *ff*, *pp*, and *pppp*. The notation shows intricate phrasing and rhythmic detail.

(1)

(87) 5

165 *dim. slow down*

168

176 *rit.* *dim.*

185

191 *rit.*

Rss.

(7)

Arthur Grumiaux, violin
Clara Haskil, piano
- classical Classification

Test Area 2:
Score Analysis of Rubato
and Dynamics

61 (64)

(tempo 116)

220

226

234

B.93.

62 (68) 2

ritardando *Tempo*

ritardando *ppp* *sf*

Andante scherzoso più Allegretto.

Andante scherzoso più Allegretto.

B.93.

Pinchas Zukerman, violin
Marc Neikrug, piano
classical classification

Test Area 2:
Score Analysis of Rubato
and Dynamics

(68)

tempo 120

226

230

234

Ras.

(69)

242

ritardando a Tempo

ritardando pp

Andante scherzoso più Allegretto.

Andante scherzoso più Allegretto.

Ras.

Anne-Sophie Mutter, violin
Lambert Orkis, piano

• Romantic Classification

Test Area 2:
Score Analysis of Rubato
and Dynamics

(68)

198
200
202
204
206
210
212
214
216
218
220
222
224
226
228
230
232
234
236

B.a.

(69)

237
239
241
243
245
247
249
251
253
255
257
259
261
263
265
267
269
271
273

B.a.

Isaac Stern, violin
 Eugene Istomin, piano
 Romantic classification

Test Area 2:
 Score Analysis of Rubato
 and Dynamics

61(64)

tempo 112

68

71

72

75

76

79

80

83

B.35.

242

ritardando

a Tempo

ritardando pp

Andante scherzosopiu Allegretto.

Andante scherzosopiu Allegretto.

246

249

250

253

254

257

258

261

262

265

B.35.

Grumiaux, violin
Haskil, piano
- Classical Classification

Test Area 3:
Score analysis of Rubato
and Dynamics

218(80) tempo 70

Handwritten musical score for measures 218 to 233. The score is written in two staves (treble and bass clef). It includes dynamic markings such as *pp*, *cresc.*, and *pp*. The tempo is indicated as 70. The score shows a complex rhythmic pattern with many sixteenth and thirty-second notes.

218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233

B.a.

(81) 19

Handwritten musical score for measures 240 to 276. The score is written in two staves (treble and bass clef). It includes dynamic markings such as *pp*, *cresc.*, and *pp*. The score shows a complex rhythmic pattern with many sixteenth and thirty-second notes. There are handwritten annotations in the right margin, including "1/16", "1/32", and "1/64".

240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276

B.a.

Perlman, violin
Ashkenazy, piano
Classical Classification

Test Area 3:
Score Analysis of Rubato
Anti Dynamics

(81) 19

201 tempo *rit.*

212

219

236

233

B.a.s.

Detailed description: This block contains the first five systems of a musical score, measures 201 to 233. The notation is in treble and bass clefs. Measure 201 is marked with 'tempo rit.' and 'cresc.'. Measures 212, 219, 236, and 233 have circled annotations. The bottom of the page is labeled 'B.a.s.'

240

248

258

266

276

B.a.s.

Detailed description: This block contains the second five systems of a musical score, measures 240 to 276. The notation is in treble and bass clefs. Measures 240, 248, 258, 266, and 276 have circled annotations. The bottom of the page is labeled 'B.a.s.'

Zukerman, violin
Neikrug, piano
Classical classification

Test Area 3:
Score Analysis of Rubato
and Dynamics

209 ^{18 (80)} tempo 78

213

219

226

233

Bac.

Detailed description: This block contains the first column of musical notation, measures 209 through 233. It features a piano accompaniment with a violin line above. The tempo is marked as 78. The score includes dynamic markings such as *pp*, *cresc.*, and *ff*. The bottom of the page is labeled 'Bac.'.

246

248

258

268 *allegro*

276

Bac.

Detailed description: This block contains the second column of musical notation, measures 246 through 276. It features a piano accompaniment with a violin line above. The score includes dynamic markings such as *pp*, *cresc.*, and *pp*. The tempo is marked as *allegro*. The bottom of the page is labeled 'Bac.'.

Handwritten musical score for piano, measures 281-333. The score is written on five systems, each with a treble and bass clef staff. The notation includes various musical symbols such as notes, rests, slurs, and dynamic markings. The measures are numbered on the left side of each system: 281, 298, 301, 315, and 323. The score concludes with the word "Fin." centered below the final system.

281

298

301

315

323

Fin.

Anne-Sophie Mutter, violin
Lambert Orkis, piano
Romantic Classification

Test Area 3:
Score Analysis of Rubato
and Dynamics

204 (80) *Tempo - 80*
204
no cresc
212
218
226 *strict tempo*
234
Bas.

240 (81) 10
248 *stretton*
258 *P*
268 *sub pp*
274 *al. 1/40*
Bas.

(1)

Stern, violin
Istomin, piano
Romantic Classification

Test Area 3:
Score Analysis of Rhythms
and Dynamics

209 *tempo 84*

212

219

226

233

Bass

(81) 20

240

248

258

266 *ritardando* *held longer*

276

Bass

20 (82)

Musical score for piano and bass, measures 288-333. The score is written in G major and 3/4 time. It features a piano part with a treble and bass clef, and a bass part with a bass clef. The piano part includes dynamic markings such as *dim.*, *rit.*, *creac.*, *pp*, and *decres. p*. The bass part includes dynamic markings such as *pp*, *ppp*, and *decres. p*. The score is divided into systems, with measure numbers 288, 301, 315, and 323 indicated on the left. The piece concludes with the marking *B. 33.*

Appendix 3: Comparative Performance Analysis Tables

Test Study 1

Presto, False Recapitulation in Development, m. 120-164

(false retransition beginning m. 120)

(false reprise beginning m. 136)

Performer	Initial Tempo	During Formal Anomaly	Use of Rubato	Use of Dynamics other than specifically notated	Performance Style
Grumiaux/Haskil	116	116	Yes, 128-136 133-151	Large dim. 128-135	Classical
Perlman/Ashkenazy	120	120	Yes, 136	No	Classical
Zukerman/Keikrug	120	120	Yes; phrase endings	No	Classical
Mutter/Orkis	126	120	Yes; phrase endings especially elongated	m. 132 <i>piano</i> instead of <i>forte</i>	Romantic
Stern/Istomin	112	112	Yes; phrase endings	No	Romantic

Test Study 2

Presto, Coda using thematic material from the development's false recap, m. 222-243

Performer	Initial Tempo	During Formal Anomaly	Use of Rubato	Use of Dynamics Other than specifically notated	Performance Style
Grumiaux/Haskil	116	126	Very limited	Cresc. during seq.	Classical
Perlman/ Ashkenazy	120	120	Yes, 242	No	Classical
Zukerman/ Neikrug	120	120	Yes; 223-240	No	Classical
Mutter/Orkis	126	120	Yes; especially on phrase endings	Huge cresc., emphasis on <i>subito</i> dynamics	Romantic
Stern/Istomin	112	112	limited	Exaggerated dynamics (229-231)	Romantic

Test Study 3

Allegro Molto, use of the C theme from the Development during the Recapitulation, m. 268-301
(especially focusing on 268 with the C theme returning)

Performer	Initial Tempo	During Formal Anomaly	Use of Rubato	Use of Dynamics Other than specifically notated	Performance Style	Control Group: C theme m. 114-177
Grumiaux/Haskil	70	70	Yes, 274	Exaggerated <i>pp</i> / <i>cresc</i> and <i>dim.</i>	Classical	Dynamics: as written in score Rubato: phrase endings
Perlman/Ashkenazy	84	84	Yes, <i>accl.</i> in Tarantella section, last two measures	No	Classical	Dynamics: as written in score Rubato: phrase endings
Zukerman/Neikrug	78	78	Yes, just before the C theme returns	No	Classical	Dynamics: exaggerated <i>sfz</i> Rubato: m. 154-162
Mutter/Orkis	80	80	Yes, 268-275 stretches tempo significantly, as well as phrase endings	<i>pp</i> for the C theme, huge <i>cresc.</i> to A theme	Romantic	Dynamics: <i>mf</i> instead of <i>piano</i> Rubato: stretched throughout
Stern/Istomin	84	84	Yes, 268 and phrase endings	Exaggerated <i>subito pp</i> in 268	Romantic	Dynamics: as written in score Rubato: Phrase endings exaggerated