Structural Continuities in the First Movement of Thomas Adès's
Violin Concerto (Concentric Paths) Op. 23

by

Jairo Duarte-López

Submitted in Partial Fulfillment
of the
Requirements for the Degree
Doctor of Philosophy

Supervised by
Professor Dave Headlam

Department of Music Composition
Eastman School of Music

University of Rochester
Rochester, New York

2016
Dedication

This research is dedicated to my daughter Natalia.

May you reach all you set your mind to accomplish.
Biographical Sketch

Jairo Duarte-López was born in Bogotá, Colombia. His music interests are both in concert music and music for visual media. After initial studies in Bogotá and Boston as a jazz bassist, he turned to composition and earned a Bachelor of Music degree in Film Scoring from the Berklee College of Music and a Master of Arts degree in Composition from the Eastman School of Music. His principal composition teachers include Vuk Kulenovic, Tibor Pusztai, David Liptak, Carlos Sanchez-Gutierrez, Allan Schindler, and Ricardo Zohn-Muldoon.

His works have been performed by ensembles such as the New York City Opera, Musica Nova, Arabesque Winds, Eastman Triana, Eastman Composers Sinfonietta, Eastman Contemporary Percussion Ensemble, and the Empire Film Music Ensemble. Duarte-López's music has been featured at the Kurt Weill Festival, Montclair State University Opera Workshop, Cincinnati's Opera Fusion: New Works Workshop, the New York City Opera's VOX Festival, the Annual New Music Festival at Bowling Green State University, the IMS Film Festival as well as in academic institutions such as Rice University, New York University, Crane School of Music at SUNY Potsdam, and Rochester Institute of Technology.

In 2007 he was awarded The National Prize of Music in Composition by the Ministry of Culture of Colombia for a solo work for cellist David Gerstein as a commission by the Hanson Institute for American Music of the Eastman School of Music of the University of
Rochester. Other recognitions include the ASCAPLUS Award, Paul Sacher Fellowship Award, McCurdy Prize, Wayne Brewster Barlow Prize, Berklee Composition Achievement Award, and the Berklee International Grant. His music score for the animated short film *Car Crash Opera*, a collaboration with his wife and composer Michaela Eremiášová and renowned filmmaker Skip Battaglia, was the 2012 winner of the “Excellence in Soundtrack Award,” at the 43rd ASIFA-EAST Animation Festival. In addition, his music can be heard in several National Geographic and Discovery Channel documentaries. His website can be found at: www.JairoDuarteLopez.com
Acknowledgements

I would like to express my profound gratitude to my parents Jairo and Idaly, my wife Michaela, and my friend and mentor Professor David Liptak. Without their support and encouragement this research would not have been possible. I also would like to thank my advisor, Professor Dave Headlam, and my readers, Professor Holly Watkins and Professor Ricardo Zohn-Muldoon, for their valuable insight and advice in the completion of this research paper.
Abstract

This essay focuses on the first movement of Thomas Adès's Violin Concerto (Concentric Paths) Op. 23. The analysis has three primary goals: first, to demonstrate how various points of emphasis or ‘punctuations’ provide an overall harmonic structure that functions as the framework of the movement; second, to establish the pre-compositional foundation of the procedures used by Adès to develop melodic and harmonic material within the framework; and third, to explore how this structure and the procedures relate to the notions of continuity and goal-directedness as described in the literature, particularly in Roeder’s article “Co-operating Continuities in the Music of Thomas Adès” (2006).
Contributors and Funding Sources

This work was supervised by a dissertation committee consisting of Professor Dave Headlam of the Department of Music Theory, Professor David Liptak and Professor Ricardo Zohn-Muldoon of the Department of Music Composition, and Professor Holly Watkins of the Department of Musicology. All work for the dissertation was completed independently by the student.
Table of Contents

Dedication ii
Biographical Sketch iii
Acknowledgements v
Abstract vi
Contributors and Funding Sources vii
List of Figures ix

I. Introduction
   About the Commission 1
   Aesthetics and Background 2
   Research 5

II. General Structure
   Form 8
   Framework: Points of Emphasis 12
   Texture and Density 15
   Proportion 19
   Expression and Dynamics 20
   Meter, Rhythm, and Tempo 23

III. Analysis
   1.0 – Pre-compositional Material 25
      1.1 – Twelve-tone Row and Set Class [0158] 25
      1.2 – C1-Cycles and Chromaticism 31
      1.3 – Harmonic Context 33
   2.0 – Realization Procedures 35
      2.1 – Main Motive 35
      2.2 – Counterpoint 36
      2.3 – Polychords and Polytonality 38
      2.4 – New C1-Cycle Lines 40
      2.5 – Harmonic Progression and Common Tones 43
      2.6 – Structural Continuity and Notions of Tonality 46

IV. General Conclusions 50

Bibliography 52

Discography 53
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fig. 1</td>
<td>Form overview</td>
<td>8</td>
</tr>
<tr>
<td>Fig. 2</td>
<td>Form chart, General structure</td>
<td>11</td>
</tr>
<tr>
<td>Fig. 3</td>
<td>M.C. Escher's “Waterfall”</td>
<td>14</td>
</tr>
<tr>
<td>Fig. 4</td>
<td>Orchestral texture, score, mm. 31-34</td>
<td>16</td>
</tr>
<tr>
<td>Fig. 5</td>
<td>Orchestral texture, score, mm. 31-34</td>
<td>17</td>
</tr>
<tr>
<td>Fig. 6</td>
<td>Type A and Type B articulation, score, mm. 18-22</td>
<td>22</td>
</tr>
<tr>
<td>Fig. 7</td>
<td>Twelve-tone row and matrix, mm. 1-13</td>
<td>26</td>
</tr>
<tr>
<td>Fig. 8a</td>
<td>Matrix, sc[0158] segments, Pitch Names, mm. 1-13</td>
<td>27</td>
</tr>
<tr>
<td>Fig. 8b</td>
<td>Matrix, sc[0158] segments, Pitch Class / Order Positions, mm. 1-13</td>
<td>28</td>
</tr>
<tr>
<td>Fig. 9</td>
<td>Solo violin, sc[015], score, mm. 109-112</td>
<td>30</td>
</tr>
<tr>
<td>Fig. 10</td>
<td>Harmonic profile based on pcs {267e} (Gmaj7)</td>
<td>31</td>
</tr>
<tr>
<td>Fig. 11</td>
<td>Opening section, reduction, mm. 1-13</td>
<td>34</td>
</tr>
<tr>
<td>Fig. 12</td>
<td>Main motive, solo violin, m. 4</td>
<td>35</td>
</tr>
<tr>
<td>Fig. 13</td>
<td>Contrapuntal lines, score, mm. 13-17</td>
<td>37</td>
</tr>
<tr>
<td>Fig. 14</td>
<td>Contrapuntal realization, m. 16</td>
<td>38</td>
</tr>
<tr>
<td>Fig. 15</td>
<td>Algorithmic polytonal elaboration, mm. 12-14</td>
<td>40</td>
</tr>
<tr>
<td>Fig. 16</td>
<td>Polytonality, harmonic progressions, and common tones, mm. 1-20</td>
<td>42</td>
</tr>
<tr>
<td>Fig. 17</td>
<td>Fundamental structure (Ursatz), section A, subsection a, mm. 1-20</td>
<td>46</td>
</tr>
</tbody>
</table>
I. Introduction

About the Commission

In 2005, as a joint commission by the Berliner Festspiele and the Los Angeles Philharmonic, Thomas Adès composed the Violin Concerto (“Concentric Paths”), Opus 23. The composer then “led the Chamber Orchestra of Europe in the world premiere on September 4, 2005, with Anthony Marwood as the soloist.”¹ Since then, the Concerto has joined the list of prominent works by Thomas Adès. As pointed out in the introduction to the interview “A Chat in the Park” with the composer, conductor Andrew Manze, violinist Peter Herresthal, and music journalist Tom Service, the Concerto displays “a constant growth of melodic ideas and a compelling sense of pace and energy, and with more than a thousand performances to date (including its setting to ballet), the score has earned a firm place in the repertoire.”²

¹Thomas May, ADÈS: Violin Concerto (Concentric Paths), Opus 23, program notes, performed by the San Francisco Symphony (April 2009), accessed on 10/01/11, http://www.sfsymphony.org/music/ProgramNotes.aspx?id=37878.
Aesthetic and Background


In reference to Adès’s output up to 1997, the year in which he composed the large orchestral work Asyla for the City of Birmingham Symphony Orchestra, Christopher Fox points out that Adès's “instrumental writing is often allied with extramusical subject matter which also has surrealist resonances.” This type of writing is exemplified by Living Toys (1993), for the London Sinfonietta, as it evokes “the world of a child who dreams of being a hero”; Asyla, which “includes a frenetic movement evoking a night of London club raving and excess”; and his opera Powder Her Face (1995), for the Almeida Opera, which “satirizes our culture’s insatiable appetite for sensationalism.” The Violin Concerto is also infused with a programmatic element. The three movements, “Rings,” “Paths,” and “Rounds,” altogether form “the largest of the circular patterns on which Adès bases the concerto, which bears the subtitle Concentric Paths.” In a reflection of this subtitle, each movement follows a circular pattern of its own. For instance, the focus of this paper, the first

---

6Ibid.
movement, “Rings,” evolves “as a series of restless rustlings and punctuations—an impatient perpetuum mobile against a wavering background of harmonically shifting sands or, as the composer describes it, ‘sheets of unstable harmony in different orbits.’”

The Concerto, with its demanding virtuosic writing, intricate and dense construction, and high level of detail, is characteristic of Adès’s works. However, the emphasis on spareness or desolation noted by critics has not always been a primary focus in Adès’s output. The Concerto, as Thomas May points out, “echoes a new level of mastery and humaneness signaled by the recent opera, it also introduces a note of spareness and – at its core – desolation that suggests a strikingly novel tack for the composer.”

These ideas of humaneness and desolation are in fact not new if we consider works such as America: A Prophecy, Op. 19 (1999), written for the New York Philharmonic, in which the subject matter was the destruction of the Mayan civilization. Also, with regard to Asyla (1997), Edward Venn points out how Adès, in his own words, considers music as “a free agent: it is abstract, and when I'm writing, that feels like a nice space where I can go and be free.”

Simultaneously, Adès points out how various types of images influence his writing and makes a reference to being attracted to “wasteland” and “huge wilderness” while having the idea of “images of huge crowds of people moving across that space, a space that was unpopulated, fleeing for safety, trying to find their refuge.” What is perhaps novel with the Concerto is that the notion of spareness is expressed through a heightened level of intensity.

---

9 Ibid.
11 Ibid, 91.
and emotion in a purely instrumental work without the aid of a title that reinforces or suggests that specific notion.

Another significant element in the Concerto is the reference to tonality of the primary materials. Tonal sonorities are not unusual in Adès’s music, but the tendency is pronounced here: the predominant harmony in the opening section is that of major 7th chords in a non-functional progression. These tonal materials are simultaneously part of a serial / set-class non-tonal harmonic structure, and the two systems intertwine in ways reminiscent of Berg’s Violin Concerto. I intend to explore with this analysis how these types of sonorities also relate to the notion of ‘spareness’ and whether they imply a sense of centricity within the structure of the work.

---

Research

In recent years the music of Adès has been the subject of several research studies. Three have particular significance for this dissertation: John Roeder's “Co-operating Continuities in the Music of Thomas Adès” (2006),¹³ which in turn draws on Jonathan Kramer's “Beyond Unity: Toward an Understanding of Musical Postmodernism,”¹⁴ Edward Venn's “‘Asylum Gained’? Aspects of Meaning in Thomas Adès” (2006),¹⁵ and Thomas May's program notes for “Violin Concerto (Concentric Paths).”¹⁶

Roeder explores what Kramer has described as “the notion of the multiplicity of musical time—that music can enable listeners to experience different senses of directionality, different temporal narratives, and/or different rates of motion, all simultaneously.”¹⁷ Roeder further finds in Adès's music “Kramer’s notions of ‘direction’, ‘linearity’, ‘narrative’ and ‘motion’ in more fundamental concepts of continuity.”¹⁸ In this respect, Adès’s music is interesting due to “the consistency with which it employs elemental continuities, and the variety of temporalities that the composer derives from them.”¹⁹ This is the case, for

¹⁵Venn, “‘Asylum Gained’? Aspects of Meaning in Thomas Adès,” 89-120.
¹⁷Ibid, 121.
¹⁸Ibid, 122.
¹⁹Roeder describes two elemental continuities: Durational and Pitch-transformational. The durational continuity is divided into two types: “Metric, when a projected duration is perceived to be realised exactly”; and “Quasi-metric, when a projected duration is perceived to be realised, although not exactly.” The pitch-transformational continuity is likewise divided into two types: “Pitch-interval, when a projected pitch change is perceived to be realised;” and “Pc interval, when a projected pitch-class change is perceived to be realised.” Ibid, 122-23.
example, for the three music layers of the introductory material in *America: A Prophecy, Op.19*. Here, distinct layers of music progress simultaneously in different directions and temporalities through the use of polytonal, polymetric, and polyrhythmic textures.

Roeder’s article draws examples from various works of Adès but does not include the *Violin Concerto*. Although I do not intend to compare my analytical interpretations of the Concerto to the compositional procedures of other works by the composer, I will use Roeder’s analysis as a point of departure to explore similar notions of continuity in the Concerto. As Thomas May points out, Adès’s “scores incorporate a plurality of impulses that circulate around each other and simultaneously pull in opposite directions: centrifugal and centripetal energy.”

The present analysis hopes to shed some light as to the ways in which these “plurality of impulses” interact with each other in creating the notion of a circular design.

This analysis has three primary goals: first, to demonstrate how various points of emphasis or ‘punctuations’ provide an overall harmonic structure that functions as the framework of the movement; second, to establish the pre-compositional foundation of the procedures used by Adès to develop melodic and harmonic material, that is, the ‘restless rustlings’ within the framework; and third, to explore how this structure and the procedures relate to the notions of continuity and goal-directedness as described in the literature, particularly in Roeder’s article “Co-operating Continuities in the Music of Thomas Adès”

---

(2006).\textsuperscript{21} Roeder defines the concept of continuity “as an association between two percepts, formed when the second realises a mental projection that was made as part of the first.”\textsuperscript{22} For instance, this concept can be exemplified in a tonal context where the perception of a leading-tone “includes a projected sense of resolution.”\textsuperscript{23} The concept of continuity is then fulfilled with the arrival of the tonic. Roder further adds that “continuity manifests itself in sequences of successive pitches, or in series of pitch percepts that are not literally successive” but are related through alternative means such as register.

\textsuperscript{22}Ibid, 122.
\textsuperscript{23}Ibid, 122.
II. General Structure

Form

In terms of form, the overall structure of the Concerto's 1st movement may be divided into three distinct sections which can be labeled A, B(A'), A'' (mm. 1-44, 45-84, 85-end). See Fig. 1. These sections are marked by specific differences in terms of thematic content, texture, dynamic, and density of orchestration. The formal sectioning is balanced by the unifying elements of the harmonic soundscape and the constant tempo.

|     | A       | || | B     | (A')   | || | A      |
|-----|---------||| |       |        ||| |        |
| a   | b       | b'   | || | c     | d      | a' + e || | a''   | d'     | Coda   |
| Intro| Theme 1 | Trans 1 || | Theme 2 | Trans 2 | Intro' || | Intro''| Trans 3 |

Fig. 1 – Violin Concerto, form overview

Each section in turn includes subsections with distinct textural content, density, goal-directedness, and melodic material. In section A (mm. 1-44), subsection “a” (mm. 1-20) introduces the main motivic material and descending harmonic progression that characterizes the entire movement. Subsection “b” (mm. 21-37) presents various instances of a melodic elaboration of the main motif that can be labeled as Theme 1. The brief subsection “b'” (Transition 1) (mm. 38-44) further presents statements of Theme 1 in the orchestra while the changing texture in the solo part provides transitional material leading to the middle part of the piece.
Section B (mm. 45-84) subdivides into three parts. Subsection “c” (mm. 45-61) introduces new and distinct melodic material that can be labeled as Theme 2. This contrasting melody and its more sparse texture are transformed in subsection “d” (Transition 2) (mm. 62-75) with undulating arpeggios, a dissipating orchestral ensemble, and figuration in the solo part that accelerates rhythmically, all together functioning as transitional material. After this, subsection “a’” (mm. 76-84) appears in the form of a variation of the opening material of the movement, presented simultaneously with Theme 2 from subsection “c.” For this reason, it can be thought of as a false recapitulation, therefore labeled in parenthesis as (A’)(mm. 76-84). It is a short statement that literally presents material from the A section, albeit as a variation that is transposed and re-orchestrated. However, as Theme 2 is clearly stated in the foreground by the solo violin, (A’) remains structurally as a part of the B section.

The false recapitulation does bring, however, a radical change in texture, density, and harmonic motion reminiscent of measures 1 to 10 of the Concerto. In this way, it prepares the work for a clearer and more complete return of the opening material in section A” (mm. 85-end). Here, subsection “a’” (mm. 85-108) presents an inverted variation of the opening measures 1 to 20 of the work. Although it appears to start in a similar tonal area as the introduction, as well as with similar orchestration, it quickly reveals a departure from the original material with its inverted arpeggiation, ascending goal-directedness, and ascending harmonic progression. Theme 1 does not return and instead the work approaches its closure with the brief subsection “d’” (Transition 3) (mm. 109-114) as a climatic tutti reminiscent
of subsection “d” (in the B section) with its undulating arpeggations. **Transition 3** takes the work into the “**Coda**” (mm. 115-end), this last section being marked by loud and sharp tutti accents in the extreme high and low registers and an angular solo part covering the entire register of the violin. See Fig. 2.
Framework: Points of Emphasis

One of the most distinguishable aspects of the Concerto's first movement is the use of points of emphasis or punctuation marks. After the introduction (mm. 1-20), in the A section, the movement introduces a series of accented tutti chords every 3 to 5 measures. These chords denote phrases, and the irregular duration of the phrases creates uncertainty in the amount of time until the next punctuation will take place. Along with the uncertainty of phrase lengths and amount of time between punctuation points, Adès uses harmony to invoke a dramatic, yet abstract narrative that infuses the music with a sense of inevitability. This narrative is evoked by the gradual increases or decreases in tension which unfold through what appear to be endless descending or ascending harmonic progressions framed by the punctuations that divide each phrase.

Although these forms of punctuation continue throughout most of the work, the B section only presents two points of emphasis, or punctuations (mm. 45 and 62), that require the full ensemble. The shorter and distinct phrases characteristic of the A section are extended in the B section. That is, the lines that create specific divisions between phrases are now blurred by the more fluid continuity in the orchestration. This results in longer phrases and less distinct separation between them. Theme 2 in subsection “c” is by contrast more sparse and quiet than Theme 1, almost static with long sustained notes and small intervallic motion, avoiding the exuberance of the large leaps and angular melodic phrasing featured in the A section. In its quietness, the B section projects the sense of desolation mentioned above, one which is re-energized into a new tutti climatic punctuation in subsection “d” (m.
Still, subsection “d,” with its dissipating transitional texture, presents once again a longer uninterrupted phrase that is 14 measures long (mm. 62-75), instead of the 3-5 measures that are common of the phrases in the A section, as mentioned above.

Overall, the punctuation points serve two purposes. First, they help establish a structural framework in the piece by highlighting the introduction of a new theme, texture, or transition, and second, they provide “resetting points.” That is, as the notions of continuity and goal-directedness are considered, in the form of descending or ascending phrases, the above mentioned “resetting points” create the effect of endless waves of goal-directed continuity. The aural experience of ever-flowing lines creating the harmony, along with the sense of continuity that passes each instance of a thematic statement to the next, can be compared to the surrealism depicted by the ever-flowing water in M.C. Escher's “Waterfall” from 1961. In this drawing the waterfall appears, in B. Sidney Smith's words, as a “closed system, yet it turns the mill wheel continuously, like a perpetual motion machine, violating the law of conservation of energy.”

See Fig. 3.

---

Fig. 3 - M.C. Escher's “Waterfall,” October, 1961
Texture and Density

Throughout the work, the texture of the movement reflects the very intricate contrapuntal polyphony. Various layers or musical strands flow with constant internal transformations. The juxtapositions of various types of building blocks made up of four sixteenth-notes per beat originate from a primary motivic cell. Together, they create a constant flow of non-repetitive arpeggiations in each musical strand. When combined, these strands change the density of the orchestration from multi-layered textures covering the entire spectrum of possible registers and timbres, as is characteristic of the A section, to thin and focused lines articulated within a very narrow register range by a small section of the orchestra, as in the B section.

In the first twelve measures of the movement, the pitch material in the solo violin part is gradually introduced while the orchestra creates a resonant background with overlapping lines that sustain this pitch material. The orchestra closely follows the moto perpetuo writing presented in the solo violin part. Sixteenth-note arpeggiations frequently dovetail and move from one instrument to another, especially in the string and woodwind choirs. This type of writing allows for the use of a wide range of densities in the ensemble, from complex full orchestra contrapuntal textures, as in measures 29-34 (see Fig. 4), where every instrument has a distinct line, to textures of static harmony articulated in a repetitive figuration reminiscent of minimalism, as in the solo part in measures 85-91 of the A" section (see Fig. 5). Here, the sixteenth-note oscillation between the artificial harmonic and the pressed note in the solo part recalls the identical texture first heard at the outset of the piece (mm. 1-3).
Fig. 4 - Orchestral texture, Violin Concerto, Mov. I, mm. 31-34. © Copyright 2010 by Faber Music Ltd, London. Reproduced by kind permission of the publishers.
Fig. 5 - Orchestral texture, Violin Concerto, Mov. I, mm. 88-95. © Copyright 2010 by Faber Music Ltd, London. Reproduced by kind permission of the publishers.
In subsection “d” of the B section, the above-mentioned undulating musical texture appears to ascend and fade as the ensemble is reduced in its instrumentation. The gradual subtraction of lower and middle registers in the orchestra takes the texture to a shimmering of eighth-note triplets that accelerate into sixteenth-note figurations in the solo part. The density of the texture is then focused within the span of pitches Bb4 to C7 in a duet between the piccolo flute and solo violin, quietly accompanied by sustained harmonics in the strings and oboes (mm. 68-75). The narrowing pursuit of the highest possible register in the solo part and the softest possible dynamic in the strings and woodwinds acts as a transition into the (A') section.

The texture of the false recapitulation at subsection (A') recalls the similarly light texture of the introduction of the work, although this time the density is slightly increased as the solo part, doubled by a layer of harmonics in the strings (mm. 76-84), superimposes Theme 2 over the material in subsection “a’.” From the start of section A” until the beginning of the Coda, the piece evolves with refreshed energy, evoking the same texture found in subsection “a.” The most contrasting texture then occurs at the Coda where the ensemble substitutes angular tutti accents for the motoric sixteenth-note figurations.
Proportion

In order to explore the notion of proportion, I have used as sources the Concerto's score along with a recording of a performance conducted by Adès himself with Anthony Marwood on violin and the Chamber Orchestra of Europe.

With one hundred and twenty one measures of music and a total duration of 3'54" minutes (i.e., 234 seconds), the three sections of the movement are balanced with almost equal length in number of measures and performance time duration.

<table>
<thead>
<tr>
<th>Section</th>
<th>Measures</th>
<th>No. of Meas.</th>
<th>Duration</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A</td>
<td>mm. 1 – 44</td>
<td>44 measures</td>
<td>0'00&quot; – 1'22&quot; (82 sec.)</td>
<td>35%</td>
</tr>
<tr>
<td>Section B</td>
<td>mm. 45 - 84</td>
<td>40 measures</td>
<td>1'22&quot; – 2'44&quot; (82 sec.)</td>
<td>35%</td>
</tr>
<tr>
<td>Section A&quot;</td>
<td>mm. 85 - 121</td>
<td>37 measures</td>
<td>2'44&quot; – 3'54&quot; (70 sec.)</td>
<td>30%</td>
</tr>
</tbody>
</table>

A structurally important location can be considered the Golden Ratio of the movement. The location of 61.8% into the work points to measure 75 in the score and a time-point of 2 minutes and 25 seconds in the recording.

Golden Ratio Score: m. 75 Recording: 2'25" Subsection (A')

---

26Thomas Adès, *Tevot*, with the Berlin Philharmonic Orchestra, conducted by Sir Simon Rattle, *Violin Concerto and Three Studies from Couperin*, with Anthony Marwood (violin) and the Chamber Orchestra of Europe, conducted by Thomas Adès, recorded 2010; *Overture, Waltz and Finale* from Powder Her Face, with the National Youth Orchestra of Great Britain, conducted by Paul Daniel, recorded 2009, ©EMI Records Ltd. B0032HKEMM, March 23, 2010, compact disc.
27Determining the location of the Golden Ratio can be achieved by calculating where 61.8% of the work occurs, both as a measure number and duration. That is, 234 seconds x 61.8% = 145 seconds and 121 measures x 61.8% = 75 measures.
These numbers correspond, in both the score and the recording, to a measure before the false recapitulation takes place, at subsection (A') (m. 76). The occurrence of this event is a climatic turning point within the general framework of the movement. The radical change of texture, density, dynamic, and melodic content, and a new tonal area at subsection (A'), prepare the return of the introduction's opening material along with its tonal area at Section A" (m. 85), which starts the third and last section of the piece.

Expression and Dynamics

Adès's writing exhibits meticulous attention to detail in terms of dynamics, articulation markings, and performance guidelines. These elements clarify the hierarchy of the lines within the multiple strands of music. They also enhance the quality of expression and performance technique required for each instrument. An example of performance guidelines can be found in measure 56 (Section B), where the solo part includes the indication to play: *sul tasto, flautando, quasi harm[onic]*. Additional indications of expression include words such as *molto cantabile, appassionato* as well as *solo* in the ensemble parts. Most importantly, the individual attention to expression in each instrument helps to distinguish the thematic threads embedded in multiple streams of foreground, middleground, and background music layers.

Overall, the solo violin part presents two specific types of articulation. I'll refer to the first as Type A, which is characterized by a driving *moto perpetuo* in sixteenth note or eighth-note triplet arpeggiations, and Type B, which is represented by soaring high sustained
notes outlining specific thematic material. Both types of articulation require great virtuosity and dexterity from the soloist. See Fig. 6.

The fast notes are articulated through ever changing arpeggiation. On occasion, the virtuosity of the arpeggios calls for extreme leaps, with intervals as wide as a 15th apart, along with rapid arpeggiated register shifts within a measure from the lowest to the highest possible note, as can be found throughout the Coda section. Overall, the solo part explores the furthest extremes of register range, with the highest note being C7, that is, four octaves above middle C in measure 35, as well as an extreme range of dynamic expression from niente to ffff.\(^{28}\)

The sustained tones also range widely in terms of dynamics. This Type B of articulation is most clearly stated in Section A, subsection “b”; Section B, subsection “c”; and at subsection (A’). These areas are characterized by presenting Themes 1 and 2.

\(^{28}\)The extreme range is significant when considering that most orchestration books, such as Samuel Adler’s *The Study of Orchestration*, present the range of the violin with highest “pressed” note being E6, that is, excluding natural and artificial harmonics.
Fig. 6 - Type A and Type B articulation, Violin Concerto, Mov. I, mm. 18-22. © Copyright 2010 by Faber Music Ltd, London. Reproduced by kind permission of the publishers.
Meter, Rhythm, and Tempo

Although the Concerto is notated in a 3/4 meter, the notated meter is altered and undermined throughout. After the opening section, which maintains the constancy of the 3/4 meter for the first twenty measures, the three-beat expectation is altered by frequent meter changes starting on measure 21. In addition, the traditional accentuation on the strong beats of the measure is frequently omitted. This displacement of strong beats is made possible, for example, by phrase shifts anywhere from a sixteenth-note to a full beat back into the preceding measure, as is the case of the first orchestral tutti punctuation on the 3rd beat of measure 20 (see Fig. 6 above). The altered three-beat expectation and the displaced strong beats are examples of elemental continuities described by Roeder, in this case, as “durational quasi-metric continuities,”29 in which “a projected duration is perceived to be realised, although not exactly”30 where it was expected, for instance through the use of accented chords in weak beats of the measure.

This tendency to supercede the notated meter is also evident in the solo violin part from the beginning of the piece. For example, the driving sixteenth-notes in measures 4-20 accentuate pitches in various places of the measure with only two instances falling on an actual downbeat (mm. 4 and 13). Accentual displacement results in a flow of phrases of irregular duration that undermine the strength of a clear down beat in 3/4 meter.

29Roeder, “Co-operating Continuities in the Music of Thomas Adès,” 123.
30Ibid.
In terms of tempo, the movement calls for a constant “Fast” quarter note at 100 to 108 throughout the entire movement. With the exception of measure 113, where the solo part is to be played “rubato” while the ensemble is to follow “colla parte...,” the movement calls for a steady tempo from beginning to end. However, the illusion of a ritardando does occur through the use of polyrhythms. For example, the quarter note quintuplet against the 3/4 meter of measure 44 as well as the half-note triplet against the 5/4 meter in measure 47 create the effect of the soloist playing slower than the orchestra even though the tempo is maintained constant. These two measures anticipate a harmonic punctuation in measures 45 and 48, respectively.

The effect or illusion of a slower tempo also relates to the notion of durational continuity mentioned above. As Roeder points out, “this type of continuity involves the projection and realisation (or denial) of a distinct type of percept.”31 In this case, the use of a polyrhythm in measures 44 and 47 denies the continuity of the sixteenth-note moto perpetuo by interfering with the listeners' projected expectation pre-established through the motoric rhythmic patterns. Instead, it superimposes a prominent solo line over the moto perpetuo, therefore blurring its continuity. This effect further undermines the sense of a continuous beat and steady tempo.

31 Roeder, “Co-operating Continuities in the Music of Thomas Adès,” 122-123.
III. Analysis

1.0 - Pre-Compositional Material

For the most part, an analytical approach based on twelve-tone and set theory will provide a clear image of the melodic and harmonic vocabulary used by Adès. On occasion, I will also make reference to tonal representations of the harmonies and will relate them to their serial or set class representations as needed. Additional tonal implications of the Major 7th harmonies can be further examined through Schenkerian-type methods of analysis. For examples of the realization procedures I will focus the analysis on section A, subsection “a” of the work (mm. 1-20).

1.1 - Twelve-tone Row and Set Class [0158]

The Concerto's opening material reveals the simultaneous use of twelve-tone serialism, tonal-type harmonies, and linear chromatic motion as the means to provide a sense of continuity and goal-directedness. As the violin part evolves through its Type A motoric sixteenth-note arpeggios, it gradually unfolds a twelve-tone row. Order positions (OP), pitch names (PN), pitch-class numbers (PCs)\(^\text{32}\), and consecutive intervals (INT) are listed below. See also Fig. 7.\(^\text{33}\)

\[
\begin{array}{c|cccccccccccc}
P2 & OP & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 \\
PN & D & G & F# & B & C# & A# & F & C & A & E & D# & G# \\
PCs & 2 & 7 & 6 & e & 1 & t & 5 & 0 & 9 & 4 & 3 & 8 \\
INT & 5 & e & 5 & 2 & 9 & 7 & 7 & 9 & 7 & e & 5 \\
\end{array}
\]

\(^{32}\text{t} = 10 \text{ and } e = 11.\)

This material, with its initial “major 7th tetrachord” (“Maj7,” underlined) in the first half of the row introduces the corresponding set class [0158] as the harmonic cell that characterizes the overall sonority of the movement. Two possible Maj7 chords can be mapped onto the prime forms. For example, the row P2 contains {276e} Gmaj7 and {5094} Fmaj7 in the first and second halves of the row, respectively. However, as the movement evolves certain harmonies predominate over others. An example is the frequent occurrence of the Gmaj7 harmony compared to the rare occurrence of Fmaj7.

<table>
<thead>
<tr>
<th>Pitch Names</th>
<th>Pitch Classes</th>
<th>Order Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 D G F# B C# Bb F C A E Eb Ab</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11</td>
</tr>
<tr>
<td>1 A D C# F# Ab F C G E B Bb Eb</td>
<td>1 8 0 4 2 e 6 7 1 9 3 5 t</td>
<td>1 8 0 4 2 e 6 7 1 9 3 5 t</td>
</tr>
<tr>
<td>2 Bb Eb D G A F# C# Ab F C B E</td>
<td>2 5 t 0 1 8 2 4 e 6 7 3 9</td>
<td>2 5 t 0 1 8 2 4 e 6 7 3 9</td>
</tr>
<tr>
<td>3 F Bb A D E C# Ab Eb C G F# B</td>
<td>3 6 5 8 0 9 4 e t 7 1 2 3</td>
<td>3 6 5 8 0 9 4 e t 7 1 2 3</td>
</tr>
<tr>
<td>4 Eb Ab G C D B F# C# Bb F E A</td>
<td>4 1 e 1 7 0 3 2 4 5 6 9 8</td>
<td>4 1 e 1 7 0 3 2 4 5 6 9 8</td>
</tr>
<tr>
<td>5 F# B Bb Eb F D A E C# Ab G C</td>
<td>5 2 3 5 t 6 0 8 9 4 e 1 7</td>
<td>5 2 3 5 t 6 0 8 9 4 e 1 7</td>
</tr>
<tr>
<td>6 B E Eb Ab Bb G D A F# C# C F</td>
<td>6 3 9 t e 5 1 0 8 2 4 7 6</td>
<td>6 3 9 t e 5 1 0 8 2 4 7 6</td>
</tr>
<tr>
<td>7 E A Ab C# Eb C G D B F# F Bb</td>
<td>7 9 8 e 4 t 7 1 0 3 2 6 5</td>
<td>7 9 8 e 4 t 7 1 0 3 2 6 5</td>
</tr>
<tr>
<td>8 G C B E F# Eb Bb F D A Ab C#</td>
<td>8 1 7 3 9 2 t 5 6 0 8 e 4</td>
<td>8 1 7 3 9 2 t 5 6 0 8 e 4</td>
</tr>
<tr>
<td>9 C F E A B Ab Eb Bb G D C# F#</td>
<td>9 7 6 9 8 3 e t 5 1 0 4 2</td>
<td>9 7 6 9 8 3 e t 5 1 0 4 2</td>
</tr>
<tr>
<td>10 C# F# F Bb C A E B Ab Eb D G</td>
<td>10 4 2 6 5 7 8 9 3 e t 0 1</td>
<td>10 4 2 6 5 7 8 9 3 e t 0 1</td>
</tr>
<tr>
<td>11 Ab C# C F G E B F# Eb Bb A D</td>
<td>11 e 4 7 6 1 9 3 2 t 5 8 0</td>
<td>11 e 4 7 6 1 9 3 2 t 5 8 0</td>
</tr>
</tbody>
</table>

Fig. 7 — Twelve-tone row and matrix, Violin Concerto, Mov. I, mm. 1-13
Further study of the matrix shows all possible segments of set class [0158] in the prime and inversion forms. It can be noted that rows P2 (D) and P4 (E) hold order positions <0123> and <6789> invariant as row segments of pitches {D,G,F#,B}, that is, they occur in the first four notes of each hexachord. In addition, rows Ie (B) and I9 (A) also hold the Gmaj7 chord invariant as the Maj7 chord inverts into itself.

Figures 8a and 8b below show the prime form invariance with segments that share the same color or shade. Invariance of the inversion forms is evident through a vertical line of the same color or shade on the left side of each segment. It can also be noted that rows that are related by T2, both in prime and inversion forms, hold the same Maj7\(^{th}\) chord invariant as a segment as well. For example, rows Pt (Bb) and P0 (C) hold invariant the Ebmaj7 chord in the first and second hexachords, respectively; that is, Pt order positions <0123> correspond to the row segment of pitches <Bb, Eb, D, G> while P0 order positions <6789> correspond to the segment of pitches <Eb, Bb, G, D>.

**Pitch Names**

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>D</td>
<td>G</td>
<td>F#</td>
<td>B</td>
<td>C#</td>
<td>Bb</td>
<td>F</td>
<td>C</td>
<td>A</td>
<td>E</td>
<td>Eb</td>
<td>Ab</td>
</tr>
<tr>
<td>1</td>
<td>A</td>
<td>D</td>
<td>C#</td>
<td>F#</td>
<td>Ab</td>
<td>F</td>
<td>C</td>
<td>G</td>
<td>E</td>
<td>B</td>
<td>Bb</td>
<td>Eb</td>
</tr>
<tr>
<td>2</td>
<td>Bb</td>
<td>Eb</td>
<td>D</td>
<td>G</td>
<td>A</td>
<td>F#</td>
<td>C#</td>
<td>Ab</td>
<td>F</td>
<td>C</td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>Bb</td>
<td>A</td>
<td>D</td>
<td>E</td>
<td>C#</td>
<td>Ab</td>
<td>Eb</td>
<td>C</td>
<td>G</td>
<td>F#</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>Eb</td>
<td>Ab</td>
<td>G</td>
<td>C</td>
<td>D</td>
<td>B</td>
<td>F#</td>
<td>C#</td>
<td>Bb</td>
<td>F</td>
<td>E</td>
<td>A</td>
</tr>
<tr>
<td>5</td>
<td>F#</td>
<td>B</td>
<td>Bb</td>
<td>Eb</td>
<td>F</td>
<td>D</td>
<td>A</td>
<td>E</td>
<td>C#</td>
<td>Ab</td>
<td>G</td>
<td>C</td>
</tr>
<tr>
<td>6</td>
<td>B</td>
<td>E</td>
<td>Eb</td>
<td>Ab</td>
<td>Bb</td>
<td>G</td>
<td>D</td>
<td>A</td>
<td>F#</td>
<td>C#</td>
<td>C</td>
<td>F</td>
</tr>
<tr>
<td>7</td>
<td>E</td>
<td>A</td>
<td>Ab</td>
<td>C#</td>
<td>Eb</td>
<td>C</td>
<td>G</td>
<td>D</td>
<td>B</td>
<td>F#</td>
<td>F</td>
<td>Bb</td>
</tr>
<tr>
<td>8</td>
<td>G</td>
<td>C</td>
<td>B</td>
<td>E</td>
<td>F#</td>
<td>Fh</td>
<td>Bb</td>
<td>F</td>
<td>D</td>
<td>A</td>
<td>Ab</td>
<td>C#</td>
</tr>
<tr>
<td>9</td>
<td>C</td>
<td>F</td>
<td>E</td>
<td>A</td>
<td>B</td>
<td>Ab</td>
<td>Eb</td>
<td>Bb</td>
<td>G</td>
<td>D</td>
<td>C#</td>
<td>F#</td>
</tr>
<tr>
<td>10</td>
<td>C#</td>
<td>F#</td>
<td>F</td>
<td>Bb</td>
<td>C</td>
<td>A</td>
<td>E</td>
<td>B</td>
<td>Ab</td>
<td>Eb</td>
<td>D</td>
<td>G</td>
</tr>
<tr>
<td>11</td>
<td>Ab</td>
<td>C#</td>
<td>C</td>
<td>F</td>
<td>G</td>
<td>E</td>
<td>B</td>
<td>F#</td>
<td>Eb</td>
<td>Bb</td>
<td>A</td>
<td>D</td>
</tr>
</tbody>
</table>

Fig. 8a — Matrix, sc[0158] segments, pitch names, Violin Concerto, Mov. I, mm. 1-13
Other places in the concerto where forms of the row are prominent include the false recapitulation in subsection (A') (mm. 76-84) and the beginning of the A'' section (mm. 90-101). At (A'), row P4 (E) is partially used as it omits the last pitch of the row, Bb. Its first hexachord contains the segment <4981> Amaj7 and its second hexachord the original Gmaj7 chord as segment <72e6>. P4 is related to the original row P2 by T2.

At the A'' section, the official return of the opening material of the movement, I7 (G) is used as an inverted form of the row. The return appears to be in the original “tonal area” of Gmajor7. That is, in this context, the notion of tonality refers to the centricity around Gmajor7 that was established at the introduction of the work (mm. 1-5). In the A'' section

---

14Pitch class [t] is omitted.
chord tones F# and B are used in the oscillating figure of the solo violin (mm. 85-89) until all four notes of the Gmaj7 chord are played by the soloist (mm. 89-90). At this point, however, the entrance of the woodwinds at measure ninety signals the beginning of row form I7 as the orchestration mirrors an inverted variation of measure one of the work.

The use of I7, which contains the segment <723t> Ebmaj7, further highlights the centricity of the tonal areas considering that Gmaj7 and Ebmaj7 are the most predominant chords in the movement, many times appearing superimposed as in the beginning of Theme 1 in subsection “b” (mm. 20-22). The inverted qualities of this third section of the work emphasize also the change in goal-directedness. That is, the harmonic progressions and chromatic, or interval-class1, continuities are now ascending instead of descending.

<table>
<thead>
<tr>
<th>I7</th>
<th>OP 1 0 5 e 3 9 8 7 6 2 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PN</td>
<td>G D Eb Bb Ab B E A C F F# C#</td>
</tr>
<tr>
<td>PCs</td>
<td>7 2 3 t 8 e 4 9 0 5 [6 1]³⁵</td>
</tr>
<tr>
<td>INT</td>
<td>7 1 7 t 3 5 5 3 5 1 6</td>
</tr>
</tbody>
</table>

Other predominant sonorities in the work include sc[0237], which can be tonally represented as a Sus2/Maj7 chord,³⁶ as well as sc[015], which can be interpreted as an incomplete Maj⁷th chord.³⁷ An example of the use of sc[015] can be found in measures 109-112, see Fig. 9. Here the violin part plays consecutive 3-note phrases which denote trichords

³⁶Set class[0158] can be transformed into sc[0237] in two ways by changing one note. For example, a Gmaj7 chord {G,B,D,F#} can be transformed to {G, A, D, F#} or {C#, B, D, F#}.
³⁷There are two [015] subsets in sc[0158]; for instance, {G, B, D, F#} has {G, B, F#} and {G, D, F#}. 
consecutively related by T1: \{e76\}, \{t56\}, \{954\}, \{834\}, \{732\}, and \{612\}. Each trichord is an instance of sc[015] and each can be mapped into the first 3-note segment of the inversion forms of the row in the matrix. The rows are: Ie (B), It (Bb), I9 (A), I8 (G#), I7 (G), I6 (F#), respectively.

Fig. 9 — Solo violin, set class [015], Violin Concerto, Mov. I, mm. 109-112. © Copyright 2010 by Faber Music Ltd, London. Reproduced by kind permission of the publishers.

The harmonic profile of the row (see Fig. 10)\textsuperscript{38} shows the consecutive possible sets of dyads, trichords, tetrachords, pentachords, and hexachords that can be formed starting at each order position of the row. For example, order positions <0> and <6> are both the beginning of sc[0158]; in the same way, order positions <0>, <1>, and <9> begin sc[015], while order positions <2>, <4>, and <5> begin sc[0237].

The row vector describes the intervallic properties of the row. Here, as Joseph Strauss explains, “the first number in an interval-class vector gives the number of occurrences of interval-class 1; the second gives the number of occurrences of interval-class 2; and so on.”\textsuperscript{39} As can be noted in Fig. 10, the row's vector of <212060> indicates two instances of ic\{1\}, one of ic\{2\}, two of ic\{3\}, and six instances of ic\{5\} which contains the perfect 4\textsuperscript{th} and 5\textsuperscript{th}.

\textsuperscript{38}Headlam, “Twelve-Tone and Serial Matrices,” Online Resources.
Some of these properties relate the sonority of the row to the sonority of the major scale. That is, when compared to the interval-class vector for the major scale, which is \(<254361>^{40}\), both, the row and the major scale, share the same number of occurrences of ic\{1\} and ic\{5\}.

<table>
<thead>
<tr>
<th>Int, Int, Harmonic Profile (#2, #3, #4, #5, #6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>[05]</td>
</tr>
<tr>
<td>[015]</td>
</tr>
<tr>
<td>[0158]</td>
</tr>
<tr>
<td>[01568]</td>
</tr>
<tr>
<td>[013478]</td>
</tr>
</tbody>
</table>

Row Vector (ics in row): \(<212060>\)

Harmonic Profile diversity \#2 \#3 \#4 \#5 \#6

\[<6 \ 10 \ 9 \ 8 \ 7 > \text{ max} \]

\[<4 \ 5 \ 6 \ 6 \ 6 > \text{ count} \]

Fig. 10 — Harmonic profile based on pcs\{267e\} sc[0158] (Gmaj7), Violin Concerto, Mov. I

1.2 – C1-Cycles and Chromatic Lines

In addition to the segmental [0158]s in the row, certain pitches are partitioned from the row and appear accentuated and differentiated by their high register (see the underlined pitches below):

\[D, \ G, \ F#, \ B, \ C#, \ A#, \ F, \ C, \ A, \ E, \ D#, \ B, \ G#, \ Bb\]

\(^{40}\)Straus, Introduction to Post-Tonal Theory, 14-15.
Gradually, these pitches outline a descending interval-class 1 melodic line, which in itself represents a C1-cycle collection, that is, a cycle of semitones. An initial line appears, for instance, in the solo violin part starting with the pitch D5 in measure 1 which then continues through the pitches C#5 and C5, until measure 12 where B4 appears. Here, B4 is followed by a sudden leap to A5 in measure 13. The descending C1-cycle line from D5 to B4 and the final note of the twelve-tone row in measure 12 combine to provide the opening material with a sense of direction and continuity, as measure 13 introduces a register shift in the C1-cycle line and a new textural and harmonic statement.

This material exemplifies Roeder's “pitch-transformational continuity.” In this case, the continuity relates to the first type, that of pitch-interval, which occurs “when a projected pitch change is perceived to be realised.” for instance, a semitone motion from B4 to A4 constitutes the realization of a pitch change. Then, at measure 13, the sudden change of register from B4 to A5 outlines an interval-class 1 motion which relates the continuity to the second type, that of pitch-class interval, “when a projected pitch-class change is perceived to be realised.” See Fig. 11.

It is important to clarify that the partitioning of interval-class 1 from the row is interpreted here as an example of a C1-cycle melodic elaboration. This interpretation is distinct from the tonal idea of chromaticism which would be characterized by functional or

---

41Roeder, “Co-operating Continuities in the Music of Thomas Adès,” 123.
42Ibid.
43Ibid.
ornamental pitches such as chromatic passing tones. The concept of C1-cycle lines will be further discussed in section “2.4 - New C1-Cycle Lines” of this paper.

1.3 – Harmonic Context

The music segment in Fig. 11 shows that sc[0158] is predominantly found throughout the first twelve measures, with the exception of sc[0237] in measures 6, 10, and 11. The progression appears to move in a seemingly sequential pattern from Gmaj7 (mm. 1-5) to Bsus2/maj7 (mm. 6-7) and Gbmaj7 (mm. 7-8) to Bbmaj7 (mm. 9-10). The statement then closes with an interval-1 descent from Emaj7 to Ebmaj7 to Dmaj7 (mm. 11-13). These chords represent the predominant harmonies that recur throughout the movement.

In addition, these types of harmonies appear as polychords and introduce the notion of polytonality and the concept of harmonic “orbits,” which can be interpreted as harmonic strands with a controlled intervallic separation between them. Further analysis on this subject and of the relation between set classes [0158] and [0237] will continue in section “2.3 – Polychords and Polytonality” and “2.5 – Harmonic Progressions and Common Tones.”
Twelve Tone Row and Set Class [0158]
Thomas Adès's Violin Concerto Concentric Paths, Op. 23
Movement I, "Rings"

Fig. 11 — Reduction, opening section, Violin Concerto, Mov. I, mm. 1-13. © Copyright 2010 by Faber Music Ltd, London. Reproduced by kind permission of the publishers.
2.0 - Realization Procedures

2.1 - Main Motive

In section A, measure 4 introduces the Main Motive of the work in the solo violin. The specific sequence of pitches in the arpeggiation of the Gmaj7 chord functions as the main building block for the moto perpetuo lines in the solo and orchestra parts. The pattern also functions as the primary cell that shapes the melodic contour of Theme 1. A tonal-type vertical analysis of the intervallic symmetry in the voicing of the chord is that of a major 7th harmony in first inversion with the fifth of the chord transposed up an octave. The melodic contour consists then of a descending minor 6th (ic{4}) from scale degree 5 to scale degree 7 (using scale degrees from G major), an ascending minor 2nd (ic{1}) to scale degree 1, and down again a minor 6th (ic{4}) to scale degree 3. This intervallic pattern of ic{4,1,4}, with its characteristic minor 2nd in the middle framed by two minor 6ths, emphasizes with clarity every harmonic change within the goal-directed progressions. See Fig. 12.

The development of the Main Motive results in multiple variations of the arpeggiation. The melodic contours of all variations favor constant change of direction and are predominantly built by subsequent intervals in the range of a minor 2nd to a major 9th. The
melodic flow specifically excludes any kind of step motion in the same direction of more than two notes. See Fig. 13.

2.2 - Counterpoint

The contrapuntal texture in the opening of the shows a rather close adherence to rules of traditional counterpoint from the sixteenth century. The texture denotes a very strict and disciplined style of writing where each note is predominantly a chord tone of the given harmony. Some of these chord tones also serve as common tones with the next harmony in the progression and move from one to the other in the form of a suspension.

An example of a contrapuntal texture, in this case that of note-against-note counterpoint, can be found in section A, subsection “a” (mm. 13-17). Here, the principal line appears in the solo part and a contrapuntal line below it is divided between violins 1 and 2 through dovetailed phrasing. See Fig. 13.

The notion of “traditional counterpoint” is made in this context with reference to the intervallic relation between note-against-note and species contrapuntal lines as described in The Study of Counterpoint: From Johann Joseph Fux's Gradus ad Parnassum (1725), ed. and trans. Alfred Mann (W.W. Norton & Company, Inc., 1965).
Measure 16, for example, shows that the two lines move in contrary motion and create mostly consonant intervals between them. The predominant intervals are that of a perfect fourth (ic{5}), perfect fifth (ic{5}), minor third (ic{3}), and major third (ic{4}). Two instances of an augmented sixth (ic{2}) occur as well and add moderate dissonance to the texture. The second sixteenth of the first beat shows an instance of occasional voice crossing. Also, it can be noted that the Main Motive, with its distinct sc[0158] and intervalllic pattern of ic<4,1,4>, occurs in each part and is interlocked between the two voices one sixteenth-note apart. See Fig. 14.
2.3 – Polychords and Polytonality

The superimposition of two distinct harmonies results in the formation of a polychord. For example, Fig. 14 above shows that in measure 16 the principal line in the solo violin outlines a C#major7 while the secondary voice in violins 1 and 2 outlines a Dmaj7 chord. The Concerto introduces the first instance of polytonality through the use of polychords in measure 13 (see Fig. 13 above). Here, the primary harmonic strand presented by the solo violin, which up to this point had been echoed by the orchestra, splits into two strands. At this point, the solo violin arpeggiation of an Ebmaj7 chord in measure 12 is continued in measure 13 in violins 1 and 2. Simultaneously, the solo violin part progresses to the new harmony of Dmaj7, thus creating a superimposition of the two harmonies, that is, Dmaj7/Ebmaj7.

A closer examination of measures 13-14 shows the method used to realize the formation of the polychords. Here, the primary line, in the solo violin part, arpeggiates the
Dmaj7 chord and shows two instances of the complete sc[0158], one in each measure. Each instance clearly states the Main Motive. In between the statements, sc[015], in the same harmony, continues the elaboration of the melodic line. The same process occurs in the secondary line, in which violins 1 and 2 show two instances of sc[0158], starting with Bb4 in measure 12, as well as exclusive use of sc[015] to continue the elaboration of the melodic line.

Although the contrapuntal relation between the lines is similar to the one described in measure 16 (see Fig. 14 above), an additional intevallic connection can be extrapolated in this segment. The passage suggests the use of a two-step process, a type of “algorithmic polytonal elaboration.” That is, the secondary line can be created by first transposing the primary line down a major 7th (i<-e>) and then shifting, or displacing, the transposed line one sixteenth-note back. The result of this process is that of a carefully articulated echo, a type of transposed delay. In addition, the process creates a controlled separation between the harmonic strands while still following traditional contrapuntal practices. This controlled separation can be related to the composer's own reference of “sheets of unstable harmony in different orbits.” See Fig. 15.

---

45e = 11

2.4 – New C1-Cycle Lines

The above-mentioned progression from Ebmaj7 to Dmaj7 in the solo violin part occurs through a major 7th (i<e>) ascending leap from Bb4 (last sixteenth-note in measure 12) to A5 (first sixteenth-note of measure 13). The octave displacement can be considered a “pattern reset” in which the previously established C1-cycle descending line from measures 1-12 is suddenly shifted and continued an octave higher. This effect of shifting octaves opens up the spectrum and creates additional space in terms of register for new strands to occur. Simultaneously, the original C1-cycle line (mm. 1-12) is continued in its current octave in measure 13 but in a different group of instruments, here violins 1 and 2.

The use of this “pattern reset” may in fact be the originating principle that calls for the use of the “algorhythmic polytonal elaboration.” Considering that the initial C1-cycle descending line, which started in measure one, occurs in its complete form over the course of twenty measures, it may be reasonable to suggest that, at measure 13, the algorithm is used in
reverse order to generate the second strand, or “orbit,” which outlines a new C1-cycle descending line, in a different register.

The reversal of the algorithm in this case would first shift the initial C1-cycle line one sixteenth-note forward starting with Bb4 (m. 12) as a partition point, then transpose the descending line up a major seventh (i<e>), so that Bb4 now becomes A5, and so on. This higher strand is then articulated by the solo violin part as described earlier. See Fig. 16.
Fig. 16 — Polytonality, harmonic progressions, and common tones, Violin Concerto, Mov. I, mm. 1-20. © Copyright 2010 by Faber Music Ltd, London.
Reproduced by kind permission of the publishers.
2.5 – Harmonic Progressions and Common Tones

The Main Motive can be considered as the pattern that officially establishes any given chord within the harmonic progression. Unlike the example in measure 13 (see Fig. 15), the pattern does not necessarily appear at the start of the arpeggiation of a new harmony. Also, in rare instances a harmony is arpeggiated that does not include a statement of the Main Motive. With the pattern as a point of reference, the Main Motive can be used to describe the harmonic progression in measures 1-20. See Fig. 16 above.

A vertical arrangement of the Main Motive shows the chromatic voice leading that characterizes the motion from one chord to the next. This is made possible predominantly by the use of common tones between the chords. The most frequent common tones are those of the chordal 7\textsuperscript{th} becoming the root of the following chord; for instance, in measures 11-12 the pitch D# serves as the chordal 7\textsuperscript{th} of the Emaj7 chord. Then, the same D# is enharmonically notated as Eb and becomes the root of the subsequent Ebmaj7 chord in measure 12. In this segment, additional common tones include transformations from chord members 7\textsuperscript{th} to 5\textsuperscript{th}, 3\textsuperscript{rd} to 1\textsuperscript{st} (i.e., root), 5\textsuperscript{th} to 1\textsuperscript{st}, 7\textsuperscript{th} to 3\textsuperscript{rd}, and 3\textsuperscript{rd} to 5\textsuperscript{th}.

In measures 8-10, the Bbmaj7 chord adds a chordal 9\textsuperscript{th}, which corresponds to the pitch C5. Within a tonal context, this added note functions as a chromatic passing-tone in the top voice. It is an added note given that no common chord tones exist between Bbmj7 (mm.8-10) and Emaj7 (mm.11-12). Still, the pitch C5 can also be interpreted as continuation of the C1-cycle without regard to its tonal function. In addition, C5 also serves as a “pattern reset”
which enables the continuation of the chromatic descent in the other voices of the chord.

Frequently, added tones like the pitch C5 further the arpeggiation of the original four chord
tones in a major 7th harmony. For example, spelling the Bb maj7 chord by thirds results in Bb,
D, F, A, C.

Measures 6-7 present a similar although rather ambiguous situation. Here, the
pitches B, F#, A#, and C#, that is sc[0237], could be interpreted as a Bsus2/maj7 chord when
spelled by thirds as described above: B, (D#), F#, A#, C#, where chord member 9th (as sus2)
substitutes for the missing chordal 3rd. Alternatively, the chord could be interpreted as an
F# maj/add11 (with no chordal 7th). The function of this chord is to be enharmonically
transformed into a Gbmaj7 in measure seven. It can be said then that sc[0237] functions as a
transitional harmony between two instances of sc[0158]. The transitional function is also
further emphasized by the absence of the Main Motive during the arpeggiation of this
ambiguous harmony.

As mentioned earlier, the new C1-cycle line appearing in measure 13 introduces
polytonality into an interpretation of the harmonic progression. Measures 13-20 arpeggiate
four distinct polychords:

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dmaj7</td>
<td>C#maj7</td>
<td>Abmaj7</td>
<td>Ebmaj</td>
</tr>
<tr>
<td>Ebmaj7</td>
<td>Dmaj7</td>
<td>Dbmaj7</td>
<td>Cmaj7</td>
</tr>
<tr>
<td>(mm. 13-14)</td>
<td>(mm. 15-17)</td>
<td>(mm. 17-18)</td>
<td>(mm. 19-20)</td>
</tr>
</tbody>
</table>
The intervallic relation between the top and bottom chords in the first and second polychords is that of a major 7th, that is, they are related by ic{1}; the third polychord is related by a perfect 5th, or ic{5}; and the fourth polychord is related by a minor 3rd, or ic{3}. The distinct intervallic relation within each polychord differentiates the type of common tones found in each instance. For example, the first and second polychords show that the 7th in the bottom chord equals scale degree 1 in the top chord, that is, 7=1. The third polychord shares common tones 7=3 and 5=1, while the fourth polychord shares common tones 5=3.

Considering the chords in ascending order, it can be said that:

<table>
<thead>
<tr>
<th>Chords related by</th>
<th>Hold common tones in scale degrees:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ic{1}</td>
<td>7=1</td>
</tr>
<tr>
<td>ic{5}</td>
<td>7=3 and 5=1</td>
</tr>
<tr>
<td>ic{3}</td>
<td>5=3</td>
</tr>
</tbody>
</table>

These relations hold true in a vertical superimposition (within a polychord) and in a horizontal chord progression (from one polychord to the next). For instance, each part of the first polychord is related by ic{1} to its subsequent part in the second polychord, that is, D to C# and Eb to D.

The distinct available common tones directly affect the type of voice leading that occurs between polychords. In the first and second polychords, chromatic voice leading predominates. However, the top chords of the second, third and fourth polychords are related by the circle of fifths, or C5-cycle, and create the intervallic sequence of down a 4th / up a 5th. This sequence is simultaneously superimposed on the C1-cycle descending progression outlined by the bottom of the four polychords. See Fig. 16 above.
2.6 – Structural Continuity and Notions of Tonality

An adapted type of graphic notation using principals of Schenkerian analysis, here showing the fundamental structure, or Ursatz, of section A, subsection “a,” provides focused insight into the aspects of tonal organization which are present, or hinted at, within the music. The impression of tonal centricity is predominant at structural markers. For instance, durational emphasis on a specific harmony at the start of a segment can create a sense of tonal centricity. By contrast, a harmonic progression characterized by faster moving harmonic rhythms can, in turn, generate areas of increased tonal instability. As Straus points out, “notes that are stated frequently, sustained at length, placed in a registral extreme, played loudly, and rhythmically or metrically stressed tend to have priority over notes that don't have those attributes.”

Fig. 17 — Fundamental structure (Ursatz), section A, subsection “a,” Violin Concerto, Mov. I, mm. 1-21

The adapted fundamental structure in Fig. 17 reveals that the Gmaj7 chord at the start of the piece functions as a “Tonic area” (mm. 1-5). This is followed by an increasingly faster harmonic rhythm of one to two measures per harmony (mm. 6-11). The shorter durational emphasis on these harmonies creates an area of tonal uncertainty. Simultaneously, pitches such as F#, D, and A in the bass line of the Ursatz, along with C in the fundamental line, appear outlined by different chords in the non-functional harmonic progression. Although the tritone F#-C, characteristic of the D7 dominant harmony, is not vertically aligned, these pitches do resolve to G – B, respectively. The overall collection of pitches can be interpreted as hinting at an unstable “Transitional / Dominant area” in this section.

The pitch G in the bass line then recurs as part of the Ebmaj7 chord in measures 12-14. This harmony shares chord tones G and D as common tones with Gmaj7. Ebmaj7 can then be said to function as a deceptive resolution to the “Tonic area” while substituting for the Gmaj7 chord. The framing of the transitional “Dominant area” by the two tonic harmonies creates the notion of a prolongation of the “Tonic area” in the first twelve measures of the movement, which can be labeled in traditional harmony as I – V – bVI.48

An additional confirmation of the centricity on G is the C1-cycle descending line in the fundamental line, or Urlinie. In a tonal context, the elaboration can be considered a

---

48Further investigation will be necessary regarding the use of modal mixture as a source for harmonic material. In this case, bVI is derived from the parallel minor of Gmajor. A transformation into major 7th chords would then be applied to the chosen diatonic harmonies derived from other modes.
descending chromatic line from the notes D to G (mm. 1-20), which can be interpreted as scale degrees 5 to 1 in the “Tonal area” of Gmaj7.

As mentioned earlier, measure 13 marks a “Tonic area” with Ebmaj7 and the pitch G in the bass line. Structurally, it marks the beginning of a consequent phrase from measures 13-20. However, the appearance of the Ebmaj7 as a polychord (Dmaj7/Ebmaj7) lessens the strength of the centricity and points to the start of a second “Transitional/Dominant area.” The chord Dmaj7 is then durationally emphasized in the polychords Ebmaj7/Dmaj7 and C#maj7/Dmaj7 (mm. 13-17), while the pitch F# in the bass line of the Ursatz further emphasizes a chromatic transitional descent.

Finally, the appearance of Abmaj7 (mm. 17-18) and Cmaj7 (mm. 19-20) harmonies points to a possible “Transitional / Predominant area” in relation to the “Tonic area” of Ebmaj7 and Gmaj7, respectively. The C and F# tritone resolution to B and G, respectively, occurs between measures 20-21. This motion further emphasizes a return to the “Tonic area,” this time to the polychord Gmaj7/Ebmaj7.

In summary, the Schenkerian analysis constitutes an interpretation of the fundamental structure of measures 1-21. It presents an overview of the areas of “tonic” stability and instability as they appear in the form of a tonic prolongation, a transitional area, and a return to the tonic area in measure 21. In addition, the traditional Roman numeral analysis sheds
light on the quasi-functional tendencies of the fundamental harmonic progression which can
be related to notions of tonality.

Straus points that out “all tonal music is centric, focused on pitch classes or triads, but
not all centric music is tonal.” With this statement in mind, it can be said that the notions of
centricity in the Concerto show aspects that are reminiscent of traditional tonal organization,
such as the emphasis throughout the movement on the harmonies of EbMaj7 and Gmaj7, as
well as allusions to fundamentally functional harmonic progressions.

---

49 Straus, Introduction to Post-Tonal Theory, 131.
IV. General Conclusions

The pre-compositional foundation of the procedures presented here as precursors to the melodic and harmonic material originate in a four-note Main Motive which outlines a Gmaj7 chord. This Main Motive serves both as a building block for the non-functional harmonic progressions and as an intervallic pattern that outlines thematic material. The four notes of the motive are also the first segment of a twelve-tone row used in structurally important areas of the movement. The primary function of the row appears to be its ability to provide transpositional and inverted variations of the opening material in the A section when it returns in the subsection (A') and section A", respectively.

The structural continuity in the work is created through the use of goal-directed phrases that emphasize departure and arrival to points or areas of tonal stability. The punctuations that frame these areas create the opportunity for a “pattern reset.” In other words, punctuations allow for an expansion or contraction of the spectral space and give way to new strands of music that outline new goal-directed phrases. A type of “Escher effect” is then evoked as the piece evolves with a seemingly endless stream of descending (or ascending) C1-cycle melodic and thematic lines.

The various punctuations and goal-directed phrases are evidence of the elemental continuities proposed by Roeder, such as durational and pitch-transformational continuities. For instance, the use of C1-cycles within a row creates the mental projection of pitch continuity that is frequently realized at a specific pitch or pitch-class. Durational continuities
are often “quasi-metric continuities” in which the projections are often realized but not precisely in congruence with the notated meter. Still, structurally important punctuations do occur as projected through “durational metric continuities.”

The notion of “unstable sheets of harmony in different orbits”\textsuperscript{50} is presented through the use of overlapping strands of non-functional harmonic progressions. The use of layers interpreted as polychords and polytonality, generated through careful algorithmic elaborations, shines a light on the idea of harmonic “orbits,” as suggested by the composer. This idea, together with the notions of “Tonic areas” and centricity, further associate the movement with the imagery that accompanies the title of the Concerto, that of “Concentric Paths.”

\textsuperscript{50}May, ADÊS: Violin Concerto (2009).
Bibliography


**Discography**