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Annie Yih

University of California, Santa Barbara

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CONNECTING ANALYSIS AND PERFORMANCE:

A CASE STUDY FOR DEVELOPING AN EFFECTIVE APPROACH

ANNIE YIH

One of the purposes of teaching music theory is to connect the practice of analysis with performance. However, several studies have expressed concern over a lack of connection between the two, and they have raised questions concerning the performative qualities of traditional analytic theory.¹ If theorists are to achieve one of the objectives of analysis in providing performers with information for making decisions, and to develop what John Rink calls “informed intuition,” then they need to understand what *types* of analysis—and what *details* in an analysis—can be of service to performers.²

As we know, notation is not music; notation must be realized as music, and the first step involves score study. While both theorists and performers engage in score study, their objectives can be quite different. We often say performers “interpret” and theorists “analyze” because, in general, during score study performers are more interested in interpreting the *meaning* of the music, which usually involves extracting and projecting the mood, character, or drama in the music, whereas theorists focus on understanding the *structure* of the music. Hence, my question

¹ Among other recent studies are: (1) John Rink, “Analysis and (or?) Performance,” in *Musical Performance: A Guide to Understanding*, ed. John Rink (New York: Cambridge Univ. Press, 2002): 35–58; (2) Nicholas Cook, “Analysing Performance and Performing Analysis,” in *Rethinking Music*, ed. Nicholas Cook and Mark Everist (New York: Oxford Univ. Press, 1999): 239–261; and (3) Jonathan Dunsby, *Performing Music: Shared Concerns* (New York: Oxford Univ. Press, 1995).

² Rink discusses this concept in his review of Wallace Berry’s *Musical Structure and Performance*, in *Music Analysis* 9/3 (1990): 319–339. As he observes: “good performers rely at least in part on what I call ‘informed intuition’ (or ‘acquired intuition’), which accrues with a broad range of experience and which may exploit theoretical and analytical knowledge at the ‘submerged level of consciousness’ referred to by Berry” (324).

is this: In what way is the understanding of structure useful to performers' interests? Can structure be interpreted as drama or character? Or, put differently, is analysis interpretation? If not, is there a common ground between analysis and interpretation, structure and drama? The answers are latent in what Rink reveals succinctly: "The dialectical interplay between diachronic process and the synchronic whole is in fact characteristic of the way in which performers conceive of music in general."³ I propose that this interplay exists in both theorists' and performers' understanding of structure as process: process in terms of the unfolding of the effects of musical events in a work, which I will call *structural effects*.⁴ As will become clearer below, understanding music's structural effects will provide performers with information for developing intuitive inner-ear hearing, ultimately for making phrasing decisions. These structural effects, I contend, are what Schenker's analytic method can represent—or better yet, express.

For this essay, Chopin's Prelude in E Minor, Op. 28/4, has been chosen as a case study, because it is brief and exemplary of a number of features for the interpretation of—or for expressing—the music's structural effects. To this end, I partly adopt Rink's suggestion considering four musical factors,⁵ which Schenker's analytic theory aptly addresses:

- (1) Formal divisions and functional processes within a tonal design.
- (2) Constituent motives and/or pitch configurations within the melodic design of small phrase units, and then of larger units.

³ Rink, "Analysis and (or?) Performance," 48.

⁴ Form as process is certainly not a new concept; here, however, I hope to connect it to performance. As for "structural effects," the author introduced the concept in "On Using Schenkerian Analysis to Enhance Performance: Projecting 'Musical Effects' and Structure in Chopin's G-Major Prelude, Op. 28/3," a paper presented at the meeting of the Georgia Association of Music Theory, Agnes Scott College, 18–19 February 2000. Although not expressed this way, the concept of "structural effects" was certainly alluded to in Felix Salzer's ground-breaking *Structural Hearing: Tonal Coherence in Music* (New York: Charles Boni, 1952; reprinted New York: Dover, 1962).

⁵ See Rink, "Analysis and (or?) Performance," 48–56.

- (3) Starting effect, culminating point, and ending effect within each phrase, and the next consequent higher-level phrase, and so on.
- (4) Dynamic, temporal, expressive, and articulation markings. As tempo is relational to determining the character of a work, it is determined in conjunction with the above three factors, resulting in an approximation framed within a character interpreted through the notation.

Although my four factors are only slightly different from Rink's, my approach to using them varies extensively from his. Rink suggests using separate graphs or diagrams to represent different musical factors with which performers are most concerned. I would advocate, however, combining analysts' and performers' concerns by using an approach that interprets all the musical factors and puts the structural effects into one graph. Such an approach may prove more musically inclusive and expressive.

By using Schenker's theories, one can reveal many structural effects of a piece of music's diachronic processes. Among the relatively common effects are giving senses of beginning, continuity, interruption, delayed arrival, suspended momentum, weakened repose, overlapping of phrases, and so on. My contention for Schenker's analytic system is that these effects are comparable to a number of his concepts related to techniques of prolongation, such as "initial ascent," "register transfer," "voice exchange," "reaching over," "interruption," and so on. (In the following, I will assume the reader has some knowledge of Schenker's theoretic concepts and notational system.)⁶

⁶ Two widely used introductory textbooks are: Allen Forte and Steven Gilbert, *Introduction to Schenkerian Analysis* (New York: W. W. Norton, 1982); and Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach* (New York: Oxford Univ. Press, 1998; 3rd edition, 2011). Other sources can be found in the bibliography of the Cadwallader and Gagné book, and in David Carson Berry, *A Topical Guide to Schenkerian Literature: An Annotated Bibliography with Indices* (Hillsdale, NY: Pendragon Press, 2004).

To demonstrate the performative qualities of Schenker's analytic theory, I will turn to performances of the same prelude by four artists, and extract the structural effects from their interpretations. I shall then explicate which structural effects can be expressed using Schenkerian graphing techniques, and provide some performance suggestions. The four artists are Martha Argerich, Alicia de Larrocha, Garrick Ohlsson, and Maurizio Pollini.⁷ I shall focus on how the artists begin the music, phrase the units, give the music a sense of musical motion and direction toward the "culminating point" (or "points"), and finally bring in closure. These structural effects express the temporality of processes, that is, the unfolding of melodic and harmonic events in time, or music's motion and direction.

Another important performative aspect of Schenker's analytic theory relates to his concept of hierarchy, through which we may distinguish the weighting of notes according to their functions within a phrase, and the phrase's function within a section. It is in this respect that Schenker's foreground and middleground graphs can provide a lot of performative information for making phrasing decisions. Not unlike music notation, however, the Schenkerian graphic representation of an analysis is limited and requires verbal explication, which may be effectively expressed through analogies, not of images or picturesque interpretations but of life-experiential effects—that is, effects that are not only heard but felt in our bodies.

As I begin to read the score with an awareness of the four musical factors mentioned above, several of the most obvious observations have prompted groups of preliminary questions about the music's structural effects and how they can affect performance decisions. Four such groups follow below. Figures 1 and 2 illustrate the score: the former shows Chopin's autograph

⁷ See Martha Argerich, *Chopin: 26 Preludes* [et al.] (Deutsche Grammophon CD, 431 584-2); Alicia de Larrocha, *Weekend Classics: Chopin: 24 Preludes, Op. 28* [et al.] (London CD, 433-089-2); Garrick Ohlsson, *Chopin: 24 Preludes, Op. 28* [et al.] (Arabesque CD, Z6629); and Maurizio Pollini, *Chopin: 24 Preludes, Op. 28* (Deutsche Grammophon CD, 413 796-2).

FIGURE 1. Chopin, Prelude in E Minor, Op. 28/4: Autograph (No. 3 on top, No. 4 on bottom) in the National Library of Poland (Warsaw)

(reproduced from Carl Schachter, "The Prelude in E Minor Op. 28 No. 4: Autograph Sources and Interpretation," in *Chopin Studies 2*, ed. John S. Rink and Jim Samson [New York: Cambridge Univ. Press, 1994], 164)



FIGURE 2. Chopin, Prelude in E Minor, Op. 28/4: Cortot's "Student Edition"

E minor
1 min.40
to
1 min.45

Largo *espressivo*

p 21

① *tenuto sempre*

play

play

stretto *f* *dim.* *p*

SMORE. *pp*

① The change of pedal necessitated by each modification in the harmony is obvious. We recommend, even on French and American pianofortes, which are so sensitive to the action of the foot, analogously with our remark relating to Prelude N° 2, a practically uninterrupted throbbing, whose effect will be to isolate the melodic line more fully.

manuscript, and the latter the edition by Alfred Cortot, selected so that his phrasing interpretation can be compared with the autograph.⁸

1. How does one understand the repetition of the beginning notes of mm. 1–3 in mm. 13–15? Does it suggest in performance a separation of the music into two phrase units? If so, do the two similar phrase units form an antecedent–consequent period, separated by a cadential V⁷ chord, somewhat suggesting a half cadence? If not, does the repetition overlap what seems to be the ending of the first phrase unit, and does the music continue, as the *crescendo* suggests in m. 12?

2. What is the significance of the repeated upper-neighboring motion in the right hand in mm. 1–4 and 5–8 (in particular, B–C–B–C–B and A–B–A–B–A, respectively), and of their reappearance later in the music? While the first upper-neighboring motive, B–C–B, returns in mm. 13–16, the A–B–A motive’s return, though much disguised, can be interpreted as dramatically emphasized for three bars, ending on A4, the last note of m. 18. As A4 moves to F#4 on the downbeat of m. 19, it echoes the appearance of A4 in m. 9 to F#4 on the downbeat of m. 10. Similarities between these upper-neighboring motives are easy to notice, but how do their different harmonizations function in terms of the overall structure of this work, and how would the understanding of their differences affect phrasing decisions?

3. How does the *stretto* marking (mm. 16–17) relate to the whole work? Is it a clue to understanding the whole piece as one continuous work, with the *stretto* being the “culminating point” of the work, instead of emphasizing an antecedent–consequent phrase structure? With

⁸ The edition is from Alfred Cortot, *Introduction to the Cortot Editions of Chopin* (Paris: Editions Salabert, 1975). For those who are interested, Cortot’s interpretation can be compared to the four artists I have selected for this study. However, as autograph study is not the focus of this paper, only a brief discussion is included in the main text.

respect to performance, these two readings will obviously be quite different. Should the performer entertain one reading as preferable?

4. How does the music begin and end? Are there two culminating points, one in each phrase? Or is there only one culminating point, as the second phrase overlaps the first? What is the significance of the octave-leap upbeat gesture at the beginning of the music? Appearing immediately before the final cadence, what is the structural effect of the fermata rest of m. 23? Does the fermata rest play an overall structural role? Would the performer consider it an opportunity for a dramatic or melancholy effect? In either case, how does the performer prepare the listeners for it?

Of the four recordings I have selected, the general mood is what Alfred Cortot described as “one of the most thrilling images of despair ever immortalized in music.”⁹ Of particular interest is Cortot’s comment about one interval’s relation to the structure of this prelude: “the melodic line doubles back on itself, and is enclosed once more in the prostrate immobility of that interval of a second.”¹⁰ I believe he is referring primarily to the upper-neighbor motive, B–C–B, in mm. 1–4, which occurs a step lower in mm. 5–7, as A–B–A, and the return of the former in mm. 13–15. Indeed, all four artists seem to be aware of Cortot’s observation about the interval of a second and the return of the melody. However, their interpretations vary slightly. It is not my intention to evaluate these interpretations *per se*; rather, I aim to show how Schenkerian graphing techniques can be used to express what is elicited in their performances.

⁹ For Cortot’s performance notes about Chopin’s E-Minor Prelude, Op. 28/4, see the translation by David Ponsonby in *Introduction to the Cortot Editions of Chopin*, 11. Cortot’s personal perception reflects what Jeffrey Kallberg identifies as the characteristics of “aesthetic form” in *Chopin at the Boundaries: Sex, History, and Musical Genre* (Cambridge, MA: Harvard Univ. Press, 1996).

¹⁰ Cortot, *Introduction to the Cortot Editions of Chopin*, 11. Interestingly, the “aesthetic form” and “generic form” that Kallberg identifies (see n. 9) seem to find their definitions somewhere in this remark.

Musical factor #1: Formal divisions, functional processes, and tonal design.

Understanding formal divisions will provide performers with overall directional information for making phrasing decisions. Let us begin with the melody in the right hand. If we consider mm. 13–15 to be the repetition of the melody in mm. 1–3, and the first phrase to end on a half cadence, it is conceivable to read this work as having an antecedent–consequent period structure with an interruption. This is expressed in Schenker’s notation as an overall fifth progression. The descent from $\hat{5}$ is interrupted in m. 12 (as marked by the backward-slanted double lines) after reaching $\hat{4}$ in m. 9;¹¹ then, the descent from $\hat{5}$ begins again at m. 13 (see Figure 3a).

In performance, expressing the interruption in this reading can be done simply by introducing a phrase break somewhere before m. 13. Of the four artists, two (de Larrocha and Ohlsson) seem to share this interpretation, although they differ in where the break or voice-leading interruption occurs. De Larrocha takes the break right before the downbeat of m. 13, after the last triplet-note B4. Ohlsson’s overall tempo is slowest among the four artists. Furthermore, he begins slowing down the tempo on m. 11, beat 2, suggesting the ending of the first phrase. Effecting a phrase break at the beginning of m. 12, he then demarcates the beginning of the second phrase by treating beats 2–4 as an expanded pickup to m. 13. Instead of employing a *crescendo* to lead into m. 13 and continuing into the *stretto* segment, both artists begin the second phrase softly, at *piano*, interpreting the second phrase as a consequent to the first phrase.

¹¹ Schenker only spoke of an interruption upon $\hat{2}$ over V, although Forte and Gilbert suggest that the caesura after $\hat{4}$ over V serves as the interruption in this case (see Forte and Gilbert, *Introduction to Schenkerian Analysis*, 207 [comments on Exercise 3], and idem, *Instructor’s Manual for Introduction to Schenkerian Analysis* [New York: W. W. Norton, 1982], 98). Although calling this moment an “interruption” remains unorthodox, my graph aims to indicate how it could be shown to the performer, if such an interpretation is permitted.

If we look at Chopin's slurs in the autograph manuscript (Figure 1), we see that—apart from a few short ones—there are two long slurs at the beginning of the piece, one over the right hand and the other over the left. They perhaps suggest a *legato* effect, as the left-hand chords are repeated in eighth notes. What is interesting, though, is that the slur in the right hand breaks off at $\hat{4}$ in m. 8, with the following three short slurs grouping $\hat{4}$ in m. 9 (supported by IV) to $\hat{2}$ in m. 10 (as the harmony changes to the V^7 chord). If we read m. 13 as the beginning of the second phrase unit, what do we make of the slur in the right hand in m. 12? One could perhaps interpret it as suggesting the prolongation of $\hat{4}$ of the V^7 chord over the rest in m. 12. In other words, $\hat{4}$ is to be continued into its resolution to $\hat{3}$. Interestingly, $\hat{3}$ occurs in the bass as the melody begins again with $\hat{5}$. Thus, one interprets this as the second phrase overlapping the first. Such is expressed in Schenkerian notation in Figure 3b. Beginning with $\hat{5}$, the descent reaches $\hat{4}$ at the same place but is transferred down an octave into the accompaniment in m. 10. It is then sustained over the rest before resolving to $\hat{3}$ in the bass, while $\hat{5}$ returns in the melody in the right hand, overlapping the first phrase to begin the second phrase at m. 13.

Pollini and Argerich seem to project this second interpretation, although they differ in methods of execution. Pollini uses *crescendo* in m. 12 to lead into m. 13, hence projecting the second phrase as a continuation of the first, taking it to the climax *forte* in m. 17. Argerich does the same with the dynamics, but she uses the *sostenuto* pedal, catching B3 on beat 2 of m. 12 to project the continuation effect, while Pollini observes the rests in the accompaniment. Of the four artists, Argerich comes closest to expressing the overlap effect of the second interpretation, as she sustains $\hat{5}$ across into m. 13.

With respect to performance, I would like to point out that understanding the structural information gleaned from an analysis for interpretation is by no means an infringement on a

FIGURE 3. Chopin, Prelude in E Minor, Op. 28/4: Interpretations of antecedent–consequent structure

Figure 3 displays three musical staves (a, b, c) illustrating different interpretations of antecedent–consequent structure in Chopin's Prelude in E Minor, Op. 28/4. The staves are labeled (a), (b), and (c) on the left. Above the staves, measure numbers ①, ⑨, ⑩, ⑫, and ⑬ are indicated. The notation includes various musical symbols such as notes, rests, and accidentals, along with specific annotations like "P", "LN", "RT", "ant.", "N", "ovlp.", and "6 I".

Staff (a) shows a melodic line in the treble with notes marked with circumflexed 5 and 4, and a bass line with notes marked with circumflexed 6, 6, and 7. A line connects the 4 in the treble to the 6 in the bass. Staff (b) shows a similar setup but with a line connecting the 4 in the treble to the 4 in the bass. Staff (c) shows a different interpretation with notes marked with circumflexed 5 and 4, and a line connecting the 4 in the treble to the 4 in the bass.

performer's personal and technical decisions as to how to project the structural effects of the music. Nonetheless, this particular structural effect can become part of a performer's "informed intuition," which can be analogous to a life-experiential effect. This life experience is somewhat like sitting in a car about to come to a stop, which at the last moment makes a gentle turn-around loop, accelerating as it does so. This is the overlapping effect that can be projected when the expected $\hat{1}$ does not follow to end a phrase, after $\hat{3}$ descends to $\hat{2}$ supported by a V^7 chord, but instead a new phrase begins, usurping the ending effect. This happens on the downbeat of m. 12 where E4 is expected to appear on beat 2 (notes appear in parentheses). At the same place, another element of voice leading that is left hanging is the expected resolution of the dissonant seventh ($\hat{4}$) to $\hat{3}$ of the tonic in the accompaniment. Instead, rests appear for three beats and the upper-neighbor motive brings in an expanded upbeat gesture that lasts over the rests.

In performance, the overlapping effect requires earlier preparation. First, performers can bring out $\hat{4}$ when it occurs as a consonance in the right hand above IV in m. 9. Then they can emphasize the transfer of $\hat{4}$ to the left hand in m. 10, as it becomes the dissonant seventh of V^7 . On the downbeat of m. 12, they could perhaps even use the *sostenuto* pedal to catch the $\hat{4}$ so that it rings over the rests to connect to $\hat{3}$ in m. 13 (shown by the beam in Figure 3b). In m. 12, the overlap effect, which is primarily done in the right hand, can be achieved by emphasizing G4's descent to F \sharp 4 on the first beat. While the descent to E4 ($\hat{1}$) is expected to occur on the second quarter note, the following notes of the next three beats function as the beginning of an ascending upbeat gesture to the second phrase, usurping the ending. One can project this overlap like a "turn-around" by phrasing the accented C4 as the beginning of the upbeat gesture which then lands on $\hat{5}$ (B4) on the downbeat of m. 13. Or, one could catch $\hat{4}$ on beat 4 of m. 11 with the *sostenuto* pedal, which is emphasized by the grace-note B4 in the right hand, to create the overlap effect, even though the resolution to $\hat{3}$ is one octave lower.

In brief summary, Figure 3a expresses a tonal design that has an antecedent–consequent period with an interruption (only the beginning of the consequent is shown). On the other hand, Figure 3b expresses a continuous tonal design with the second phrase overlapping the first,¹² and the music reaching the culminating point in m. 16 and progressing to closure.

Thus far, we have focused on some of the features of the first thirteen measures. As I consider the other three musical factors below, I shall explain other features of the work, demonstrating the performative qualities of other Schenkerian graphing techniques.

Musical factor #2: The starting upbeat effect of the two phrases in conjunction with the culminating point of each phrase, and in relation to the ending effect.

Let us turn to consider the second musical factor, which constitutes the second level of structural effects. These effects are expressed through various special Schenkerian graphing techniques. Although Schenker did not define the performance of each specifically, they are alluded to and are to be musically and intuitively understood. Perhaps a sample explication will help to clarify certain performance decisions. For example, many performance decisions can be determined through understanding the significance of the first five notes in the right hand, in terms of how they relate to the rest of the piece. Three motivic musical effects are set off at the beginning (see Figure 3c):

First, the register transfer (notated “RT”) of the dotted-eighth–sixteenth octave-leap gesture, from B3 to B4, occurs as an upbeat. It not only projects upward-thrusting energy, aiming further into the piece, it prepares for further ascending motion, to be followed by the descending

¹² Carl Schachter also reads the descent to $\hat{3}$ (G3) in m. 13 in his article, “The Triad as Place and Action,” *Music Theory Spectrum* 17/2 (1995): 149–169. The idea that the second phrase overlaps the resolution of $\hat{4}$ to $\hat{3}$ in m. 13 is certainly implied in his graph even though it is not identified as such. Although coincidentally the same as Schachter’s, my reading of overlap was developed independent from his.

FIGURE 4. Chopin, Prelude in E Minor, Op. 28/4: Voice-leading structure

The figure displays a musical score for Chopin's Prelude in E Minor, Op. 28/4, focusing on voice-leading structure. The score is written for piano and features a treble and bass staff. The key signature is E minor (three sharps: F#, C#, G#). The time signature is 4/4. The score is divided into measures, with circled numbers 1, 5, 9, 13, 17, 21, and 25 indicating specific points of interest. Annotations include 'RT' (Right Hand), 'UN' (Upper Note), 'ovlp.' (overlap), 'stretto', and '(5)' (fifth). Chord symbols are provided below the staff, including I⁶, IV⁶, V⁷, V^{4-#}, I⁶, IV⁶, V^{4-#}, I⁶, IV, V⁸⁻⁷, VI (I), V^{4-#}, and I. The score shows a complex voice-leading structure with various intervals and chord progressions.

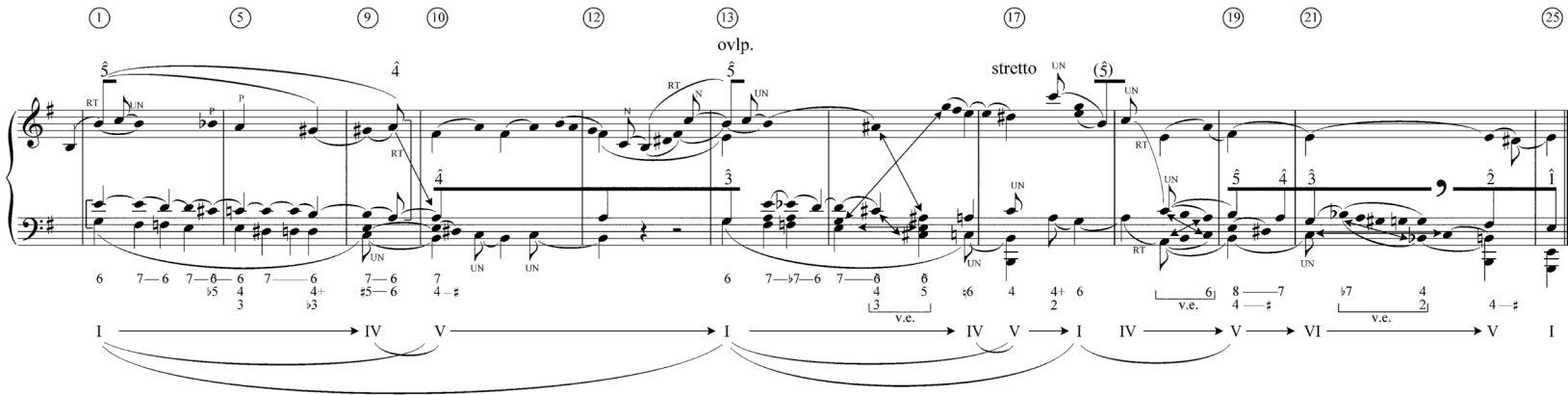
motion of resolution. The next upward ascent occurs in m. 12: an octave leap expanded by arpeggiation, which can be interpreted in terms of the two readings presented above. This upward motion is further expanded by the register transfer of the upper-note motive to the culminating point of this piece, C6 in m. 17, marked by *stretto* (see Figure 4).

Second, the dissonant upper-neighbor C5 (shown as a flagged note marked “N” in Figure 3c), which returns to B4 in m. 1, relaxes the upward energy started by the octave leap. It struggles to stay up but is later pulled down by the descending motion in the accompaniment. I shall return to this below.

Third, the register in which the first note of the piece begins is structurally and musically significant. It is in the same register as the ending segment of this work, which begins in the accompaniment in m. 19. The ending effect of both readings consists of the accompaniment’s descent of the fifth-progression, B4 to E4 ($\hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1}$, shown in Figure 4 as beamed notes in mm. 19–25). Performers who are sensitive to registral transfer can add to the projection of large-scale ascent toward the culminating point in m. 17, and ultimately to the music’s descent, projecting the ending effect.

Before we look at more details in the music, there is an important point for the performer that is not suggested by the opening five notes; it concerns temporality in Schenker’s analytic notation. As we consider the barlines in increments of four in Figure 4, we see that the ascent to the culminating point (C6 in m. 17) takes sixteen measures. Then the energy is dissipated rather quickly in the following two measures, as the upper-neighbor note descends two octaves to B3 ($\hat{5}$) in the accompaniment. For a performer, this creates a need to slow down, to suggest the approaching ending, while maintaining the melancholy mood. As the final descent of the fifth-progression begins in m. 19, the temporary dissipation of energy takes merely two measures to

FIGURE 5. Voice-leading analysis featuring four specific melodic features



reach $\hat{3}$ in m. 21. Here, the motion is further slowed with $\hat{3}$ being prolonged for three bars. Then, the breath mark indicates the fermata rest of m. 23, creating a sense of further decline in motion. Now, we are ready for the final cadence to occur in the last two bars. By seeing the barlines and measure numbers, we can understand proportionally where the events unfold in time; thus, a sense of temporality is expressed in the graph.

Musical factor #3: Constituent motives and/or pitch configurations.

Continuing with the top-down approach, the third musical factor concerns the details. In general, Chopin's contrapuntal writing is acknowledged to be important.¹³ It is certainly the case for this piece. In Schenker's notation, the contrapuntal parts are stemmed, with voice-leading figures appearing below the bass notes, as well as Roman numerals for the structural harmonies. Because phrasing decisions depend greatly on recognizing and separating structural weights of notes, such analytic information can be very useful. In performance, recognizing and giving more structural weighting to four specific melodic features will not only give the work a sense of unity, it will bring forth the energy of these features. For the unfolding in time of these melodic features, in relation to the different structural levels expressed in the graph, requires that performers make phrasing decisions as to how the various weightings are to be expressed, so as to reveal the large-scale motion and direction in this work. These four melodic features are shown by various notational techniques in Figure 5, and are described below (labeled *a-d*).¹⁴

¹³ It is common knowledge, as reported in Chopin biographies, that he practiced contrapuntal writing, and that while finishing the preludes in Majorca he had with him a copy of Bach's preludes and fugues from the *Well-Tempered Clavier*. Whether he was directly influenced or inspired by Bach's contrapuntal writing is not the issue here, but it may certainly be a factor for consideration from the performer's perspective.

¹⁴ These motives were not included in Figure 4 so they can be more easily picked out in a separate example, but they still need to be heard within the contexts of the whole piece.

(a) *The upper-neighbor motive (B–C–B) in m. 1.* This motive, shown with B stemmed and its upper-neighbor note flagged and slurred to B, appears four times in complete form in mm. 1–4 before it descends. With every occurrence, its tension changes as the accompaniment changes with the 7–6 descending harmonic sequence. The upper-neighbor note's return to B4 releases a little bit of the energy, allowing the music to descend in mm. 4–8 before the next upward thrust can occur in m. 9.

While the left-hand accompaniment descends steadily, this descending motion is slowed by the repeated use of the upper-neighbor motive until both hands meet up in m. 9. At this point, the right-hand melody tries to generate upward motion, and the accompaniment utilizes the upper-neighbor motion to fight against further downward resolution. Its repeated appearance in the bass in mm. 10–12 creates a wavering effect. The interpretation of this wavering is important. If one is to project the phrase-overlap effect, one needs to be careful not to slow down; perhaps a slight *crescendo* will add to the forward motion. On the other hand, if one is to project an interruption, a slight *rubato*, with slight *diminuendo*, may be effective.

With the expansion of the octave leap in m. 12, the second phrase begins a slight descent across three bars, echoing the first phrase's descent to m. 9, where the suggestion of upward motion started. Then, after three bars, the energy picks up as the music reaches the fully diminished seventh chord in m. 16. Through a voice exchange within this chord (shown by double-headed arrows in Schenkerian notation), the motion from A[#]4 to G5 begins the *stretto* (compound-melody) segment, continuing and completing a final upward thrust to reach C6, the culminating point in m. 17. From m. 16 to the downbeat of m. 17, the V⁷ chord arrives, marked by the use of pedal; its bass is doubled an octave below to emphasize the dramatic *stretto* segment.

The use of the upper-neighbor motive in these three situations not only gives the music unity, it increases the dramatic effect in relation to the overall design of the work. As the music begins to dissipate its energy, in mm. 19–21, C3 appears as submediant in mid phrase, to support the descent of the fifth-progression to $\hat{3}$, creating a deceptive resolution of the V chord and allowing the phrase to expand further before the music concludes.

(b) *Two voice-leading features: the 7–6 suspension expanding the parallel 6–6–6 figure, and the 4–3 suspension.* The first figure, which occurs as the underlying voice-leading pattern in the accompaniment, is expanded into 6–7–6 with chromaticism. It occurs in mm. 1–10 and 13–16. Because the first harmony is in $\frac{6}{3}$ position, the music has an effect of beginning at mid sentence, so to speak. Argerich is most sensitive to this, and the downbeat is not emphasized. No one but Ohlsson brings out the bass, although the other three artists focus more on one of the inner voices in counterpoint with the upper-neighbor motive in the right hand. Ohlsson is the only one who pays special attention to the counterpoint in the accompaniment, and in fact he hushes the right hand in comparison to the other three artists, and adds *diminuendo* to mm. 1–8 and 13–15.

With respect to tonal motion, because they all want to project the mood of melancholy, phrasing the descending direction or the harmonic progression becomes secondary. While it is not necessary to consider this contrapuntal voice leading or the overall harmonic progression, incorporating such considerations into a performance might help project the tonal drama of the second reading. I shall return to this below.

The second figure is the 4–3 suspension, E–D \sharp over B, which is used four times (mm. 10, 17, 19–20, and 24) to emphasize the importance of the structural V⁷ chord. Each occurrence, however, has a different structural effect. The first suggests the ending of the first phrase on a

half cadence, or it suggests the second interpretation, an overlapping effect, which leads to the climatic arrival of the second occurrence in the *stretto* segment. Then the energy dissipates quickly through the descending motion of the upper-neighbor motive in the right hand. The temporary resolution of the climatic V^7 chord (m. 17) is briefly achieved through the register transfer from B2 to A3 in an inner voice, then to G3 of I^6 , which is followed by the subdominant harmony. The importance of this subdominant harmony is emphasized by Chopin's use of pedal marking (the second of only two pedal markings in the entire work). For the third time in this work, a structurally significant V^7 chord appears in m. 19. While supporting the descent of the fifth-progression, its resolution is delayed by its deceptive resolution to the submediant (marked "N" as a structural upper neighbor). Thus, while the prolongation of the submediant decreases the tension throughout mm. 19–23, it deepens the feeling of melancholy through another delay of closure.

Finally, the concluding cadence occurs in mm. 24–25 with the final descent of $\hat{2}$ to $\hat{1}$, supported by the final appearance of the V^7 ; this recalls the climatic bass doubled an octave below in m. 17. With the continuous descent into a very low register, the conclusion resigns in a deep sense of despair. In performance, the weighting of the four V^7 chords can be graded according to their temporal position, and their structural effect projected in relation and proportion to the phrasing design of the whole, as described above. The phrasing of the motion and direction of these four occurrences is shown by using four middleground slurs below the Roman numerals. The longer slur at the bottom (mm. 1–13) shows that the expected tonic cadence is usurped. The phrases are overlapped. The second, longer slur (mm. 13–17) shows that the expected tonic cadence is weakened, then delayed, and finally, after a long silence, appears to conclude the descent.

(c) *The fully diminished seventh chord in mm. 4, 8, and 16.* The melodic context in which the fully diminished seventh chord occurs has various structural weights. While all four notes can be recognized by the figured-bass notation, Schenkerian notation differentiates their significance by using slurs, noteheads with or without stems, and the labels “P” for passing note, “N” for neighbor note, etc. For example, B \flat 4 of the fully diminished seventh chord in m. 4 does not have structural weight; it occurs in passing, as an incidental, chromatic, descending passing tone. On the other hand, the enharmonically equivalent A \sharp 4, of the fully diminished seventh chord in m. 16, is structurally functional; the chord is emphasized by the melodic figuration of a turn followed by a dramatic wide leap up to a new register. Thus, the delay of A \sharp 4’s resolution to B4 (shown by the dotted line in Figure 4) creates tension, which is further compounded by its chromatic change to A \flat 3 on the fourth quarter note of the same measure. Then, when B2 finally occurs on the downbeat of m. 17 in the bass, doubled an octave lower, its dominant function is emphasized by two melodic events mentioned earlier. One is the 4–3 suspension (E5–D \sharp 5), and the other the upper-neighbor C6, as the culminating point or as the ninth of a V⁹ chord.

To bring back briefly the key of E minor without creating a strong sense of repose, the tonic chord occurs as at the beginning of the work, in first inversion. Another diminished seventh chord emphasizes the arrival of the subdominant chord from its chromatic lower-neighbor note G \sharp 4 on the upbeat of m. 9. The emphasis of $\hat{6}$ as upper neighbor in the bass prepares for the announcement of the first structural V⁷, suggesting a sense of cadence to follow, only to be prolonged by wavering around the B–C–B motive. Again, in performance, understanding that not all diminished seventh chords have equal weight can help in making phrasing decisions.

(d) *Three occurrences of voice exchange, in mm. 16, 18 and 21–23.* (On the graph, I have added a horizontal square bracket below the double-headed arrows, and “v.e.” [voice exchange] is indicated.) In m. 16, the significance of A \sharp 4’s voice leading to the expected B4 is emphasized

harmonically by the richness of the diminished seventh chord and by its repetition through voice exchange. The delay of its expected resolution to B4 (shown by a dotted slur), achieved by the chromatic change of two notes (C[#]3 to C^b3 and A[#]3 to A^b3), increases tension. This increase is made clear by the *crescendo* marking.

In m. 18, there is discrepancy between Argerich and de Larrocha in reading the B2 on the third quarter note of m. 18. Argerich brings out the V⁷ in m. 17, resolving it temporarily to the tonic in a higher register. She then emphasizes the prolongation of IV in m. 18, reading the B2 in question as passing; the return of the structural dominant occurs on the downbeat of m. 19. On the other hand, de Larrocha emphasizes the arrival of the structural V⁷ chord in m. 17, and treats the ensuing bars as a prolongation of the dominant. My graph shows Argerich's reading, indicating a voice exchange in the prolongation of IV. Performers can bring out the C4 in the inner voice, moving through B3 to A3 against A2 to C3 in the bass. In the larger sense, C4 in the inner voice is another occurrence of the upper-neighbor motive: on the downbeat of m. 19, C4 (shown as a flagged note) moves to B3 ([♩], shown with a thick beam as part of the descending fifth-progression being transferred to the low register). Bringing out these details (the prolongation of the upper-neighbor motive and its downward register transfer) will add to the downward motion of this phrase, which will help to project the character of the work.

The third occurrence of voice exchange emphasizes the prolongation of [♩] supported by the submediant harmony. This occurs first with an added B^b3, which descends by chromatic half-steps to G3 as C3 descends in the bass by chromatic half-steps down to B^b2 before the fermata rest in m. 23. The addition of B^b3 is somewhat puzzling, as it creates a V⁷-type chord above C3. But the chord does not resolve to F; instead what follows is V⁷ of E. Thus, in retrospect, with the added B^b3 down to B^b2, the C⁷ chord functions as a German augmented-sixth chord, with B^b2 enharmonically equivalent to A[#]2, which then leads to the final V⁷ chord. Although it is only in

retrospect that we recognize the earlier importance of B \flat 4 in m. 4, and A \sharp 4 and A \sharp 3 in m. 16 (marked by asterisks in Figure 4), awareness of these motivic relations will add to the intuition of a performer.

Musical factor #4: Dynamic and articulation markings.

Having studied the details through the three prior musical factors, we now have a better understanding of the dynamic and articulation markings, as these markings will not make sense unless we can understand their functions within the overall design of the work. How soft should one play *piano*, or how loud *forte*? To what level of dynamic does one interpret a *crescendo* or *decrescendo* marking? Answers to such questions depend on the context in which the markings occur. On the other hand, it is just as important to understand that dynamic markings can work in the other hierarchic direction: small *crescendo* and *decrescendo* markings within a phrase will support the interpretation of local phrasing, which is emphasized within the overall design of the work.

With respect to the two interpretations, the small *decrescendo* and an immediate small *crescendo* followed by another *decrescendo* in mm. 8–9 help to bring out the motivic importance of several pitch-events cited above. All four artists bring out G \sharp 4 in m. 8 as leading to A4. However, only Ohlsson emphasizes A4's importance as part of the arrival of the subdominant harmony. The long *crescendo* in m. 12 can be interpreted as leading into the end of the first phrase, followed by an interruption. Although there is no dynamic marking in m. 13, with the first interpretation, the music may begin again at *piano* (Figure 3a). Or, as in the second interpretation (Figure 3b), the *crescendo* in m. 12 may emphasize the overlapping effect, hence causing m. 13 to begin somewhere around *mezzo-piano*. One could continue the directed motion

by interpreting the *crescendo* in m. 16 as leading to the *stretto* segment, and then on to the apex of the piece in m. 17, in *forte*. Of the four artists, Pollini comes closest to this interpretation.

The next long *decrescendo* dissipates the energy after reaching the culminating point. The last small *crescendo* marking, in mm. 20–21, brings forth the long awaited voice leading of $\hat{5}-\hat{4}-\hat{3}$ in the left-hand accompaniment (Figure 5). Interestingly, all four artists are sensitive to this voice leading. The arrival of $\hat{3}$ (G) in an inner voice, and its prolongation in mm. 21–23, is marked by the *smorzando*. After the arrival of $\hat{3}$, all artists emphasize the effect of prolongation, projecting the mood of melancholy by bringing out the addition of $B\flat$ to the submediant (C), making it a harmony that sounds like V^7 of F. The contrapuntal voice leading that follows seems to be wandering, forlorn, only to end on a harmony that sounds like the third inversion of the expanded seventh chord. The long silence adds further emptiness and then, emphasized one last time by the 4–3 suspension, V^7 of E appears, making in retrospect the previous, inverted seventh chord an inverted, enharmonic, augmented-sixth chord. Then, as if exhaling for the last time, the final cadence, occurring at *pianissimo*, effectively projects deep despair.

As for the tempo marking, “Largo,” how does a performer decide? Now that we understand the structural effects and the overall character of the piece to be projected, I think Ohlsson’s tempo is too slow, Argerich’s is a bit too excited, and perhaps de Larrocha’s is closer to Pollini’s most-fitting tempo.

CONCLUSION

By using an integrated analyst-performer approach, I hope to have demonstrated how Schenkerian notation can express the interpretation of the music’s structural effects. Recognizing the concepts of prolongation and voice exchange, differentiating structural from non-structural notes, and identifying voice-leading events and register transfer of melodic pitches that are of

motivic significance—these all involve interpreting the hierarchic weighting of notes. Also, how performative the four melodic features (discussed above) are, can be determined by how they relate to formal divisions, and to processes of motion and direction as they occur within their relevant phrases in temporal proportion to the whole work.

With respect to temporality, of particular interest is the culminating point at m. 17 in relation to the total length of twenty-five bars. It is in close proximity to the Fibonacci or Golden ratio (0.618, whereas $\frac{17}{25} = 0.68$). In defining visual beauty, recognition of the Fibonacci ratio is commonly cited; and it has also been recognized that temporal balance within a musical work has an aesthetic value that may be correlated to the ratio.¹⁵ This consideration, along with the long slur over the rest in the autograph manuscript, perhaps supports the second interpretation (with overlapping effect) over the first (with interruption). Understanding the temporal position of certain pitches (within a phrase or the whole work), as well as their different structural effects in relation to the whole, will add to the intuition of performers.

While it is important for performers to understand conventions of musical notation, it is just as important to acquire knowledge of interpreting structural effects as can be expressed in Schenkerian graphic notation. Furthermore, if we understand the grammar and syntax of Schenkerian notation as a means of interpreting the structural effects of a work, then as performers we will acquire additional means for developing “informed intuition.” With such intuition, the performer can determine which effects to create within the overall mood. Whether the effect is that of passing, directing motion, dissipating energy, creating a turn of direction, or bringing in closure, the performative quality inherent in Schenker’s analytic approach is invaluable.

¹⁵ For a general survey of some of the musical applications of this ratio, see the section on “Golden Music” in Mario Livio, *The Golden Ratio: The Story of Phi, the World's Most Astonishing Number* (New York: Broadway Books, 2002), 183–194.

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ABSTRACT

Although theorists and performers both engage in score study, we often say that performers "interpret" and theorists "analyze" because, in general, performers are more interested in interpreting the *meaning* of the music, which usually involves extracting and projecting the mood, character, or drama in the music, whereas theorists focus on understanding the *structure* of the music. Recognizing that there is need for connecting the practices of analysis and perfor-

mance, the author suggests developing an effective approach to this concern. It is proposed that both theorists and performers understand structure as *process*, and that this particular process expresses the unfolding of (what are called) the “structural effects” of a work’s musical events. It is argued that these structural effects are what Schenker’s analytic methods can represent (or, better yet, express). Chopin’s Prelude in E Minor, Op. 28/4, is employed as a case study, because it is brief and exemplary of a number of features for the interpretation of—or for expressing—the music’s structural effects. It is hoped that this effective approach, applied to understanding “structural effects,” will provide the kinds of performative information useful for making phrasing decisions.

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ABOUT THE AUTHOR

Annie Yih received her Ph.D. in music theory from Yale University in 1992, under the tutelage of Allen Forte. She has published articles in *Music Analysis* and *Music Theory Spectrum*, and has given papers on connecting analysis and performance at conferences in the U.S. and abroad, including those held by the College Music Society and the Narodowy Instytut Fryderyka Chopina. She currently holds a Continuing Lecturer position in music theory at the University of California at Santa Barbara. Since 2009, she has been an active board member in music theory for the Pacific Southwest Chapter of the College Music Society. Currently, she is investigating and developing a new approach that utilizes J. S. Bach’s four-part chorales to enhance advanced aural skills training. Her most recent paper—“Why a New Approach to Teaching Part-Writing Practices of J. S. Bach’s Style of Chorale Harmonization?”—was given at the CMS 2013 International Conference in Argentina.

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