Perspectives on Order, Disorder, Combinatoriality, and Tonality in Schoenberg's Opus 33a and 33b Piano Pieces[1]

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The opus 33 piano pieces are commonly characterized as a pair of strictly worked-out serial compositions, op. 33b being the "companion" piece to op. 33a.[2] But is that really accurate? Schoenberg's writings often emphasize the strict ordering procedures involved in serialism,[3] but examples of repetition, order position exchanges, and missing notes abound in both pieces; as for being "companion pieces," 33b is based on a row which cannot be derived in any logical way[4] from that of 33a. How strictly has Schoenberg adhered to the supposed "rules" of serialism in these works? Is there any observable relationship between the two?

My primary goal in this paper will be to establish a conceptual framework that addresses and can be used to analyze Schoenberg's use of row techniques, accounting for the liberties Schoenberg often took with regard to strict serial ordering.[5] This framework will rely on the concept of different "Perspectives" on the musical material. Some of these Perspectives are strictly serial, while others invoke more traditional ideas of melody, harmony, or tonality. These different approaches yield different analytic

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[2]The two works are hereafter referred to as "33a" and "33b."

[3]See, for example, "Composition with Twelve Tones (1)," and "Composition with Twelve Tones (2)," Schoenberg (1975, 214–249); other specific references appear below.

[4]Including transposition, inversion, M, MI or X transforms, or *ad hoc* combinatorial set derivations.

[5]Score excerpts will be included as musical examples only to the extent necessary for a clear understanding of the text; inclusion of all relevant score musical examples would be prohibitively excessive.

insights—including insights into the form of the pieces—which ultimately have implications for performance. The notion of "Perspectives" itself can be extended to non-serial works, as well.

Enough has been written about 33a to provide an interested reader with good insight into the piece (and confusion as well).[6] On the other hand very little has been written about 33b.[7] In the first section of this paper, therefore, following a brief survey of the literature, I will approach 33a more from a conceptual than an analytic standpoint, establishing the framework of Perspectives and demonstrating their utility through analysis of selected portions of 33a. On this basis I will then analyze 33b, and in so doing extend the framework further. Examining 33a and 33b side by side will show that the two works may indeed be thought of as companion pieces, in the sense that 33b continues the exploration of possible Perspectives begun in 33a.

Opus 33a: An Overview

1. The Literature

Perle's analysis of 33a,[8] one of the earliest in the literature, is arguably the most insightful. The two most salient features of 33a are the textural changes that distinguish Perle's two subjects (Subject 1 is predominantly chordal, while Subject 2 is more horizontal and has more pitch repetition), and the different

[6]Sources include (but are not limited to) Ogden (1955), Tuttle (1957), Perle (1962; page references are to 6th Edition, 1991), Cone (1972), Graebner (1973), Glofcheskie (1976), Bailey (1976), Clark (1981), and Schoffman (1983). This last examines most of the analytical approaches and finds them all wanting, and in the end essentially dismisses the piece as unanalyzable from any serial or set theoretic approach.

[7]Cone (1972) discusses possible misprints and Bailey (1976) discusses row anomalies; until recently the bulk of the other discussions of 33b in the literature simply point out that 33b is composed entirely from one combinatorial row pair. More recently, Friedmann (1993), Hyde (in Dunsby, 1993), and Alegant (1996) have written cogently about 33b, in ways that complement the present article.

[8]Perle (1962; page references are to 6th Edition, 1991), 111–116.

segmentational uses of the row. These row segmentations allow us to divide the piece fairly neatly into sections that coincide well with the textural changes, as shown in Figure 1:

Figure 1. Form of 33a based upon row segmentations.[9]

Mm.	Segmentation	"Subject" or Section
1–11	Tetrachordal	1 (Exposition)
12–13	Ambiguous Tetrachordal and/or Hexachordal	Transition
14–26	Hexachordal (usually divided into Trichords)	2 (Exposition)
27–29	Hexachordal	Development
29–32	Ambiguous Hexachordal and/or Tetrachordal	Retransition
32–34	Tetrachordal	1 (Recapitulation)
35–36	Hexachordal	2 (Recapitulation)
37–40	Ambiguous Tetrachordal and/or Trichordal	Coda

While providing us with a powerful—and perceivable—formal outline, Perle's analysis gives us little insight into Schoenberg's actual use of the pitch classes of the rows (P_0 = <B♭, F, C, B, A, F♯, C♯, D♯, G, A♭, D, E>), except to point out that the transpositional levels of the rows in the development section are based on the opening three pitches of the row itself.

Glofcheskie's analysis provides some insight into long-term pitch relationships that coincide with Perle's formal structure.

[9]After Perle (1991), 113; Perle, however, segments mm. 12–13 and 29–32 unambiguously into tetrachords. I perceive an ambiguity between hexachords and tetrachords, which actually makes formal sense as a "transition" from tetrachords into hexachords in 12–13 and as a "retransition" from hexachords into tetrachords in 29–32, and fits in with Perle's "sonata form" analysis. The same may be said regarding mm. 37–40 which, while predominantly tetrachordal, may be somewhat ambiguously segmented into trichords, fitting in with the notion of a "coda" to a work that is structured around segmentational contrast.

Although his article focuses on the question of the supposed "wrong" and missing notes in the piece *vis-à-vis* the row structure,[10] most useful is his characterization of the piece as a process of horizontalization, from the chords of Subject 1 to the melody and accompaniment of Subject 2.[11]

Schoffman believes that no analysis sufficiently addresses the supposed ambiguity of pitch ordering within the basic set—not until mm. 32–33 is P_0 of the row stated completely unambiguously. It is true that because P_0 is first presented as completely vertical statements of its three component tetrachords, after the first two measures one cannot tell what the proper order of the individual pitch-classes is.[12] But this is to ignore the relationship that P_0 has to the three other principal row forms of the piece (R_0, I_5, and RI_5), which make the ordering of the pitches of the row completely unambiguous. Furthermore, the process of horizontalization in mm. 1–14 as described by Glofcheskie can be expanded to provide an alternative view of Schoenberg's use of twelve-tone rows and supply additional rationale for dismissing Schoffman's criticism.

2. A Conceptual Framework, with Selected Analysis

Specifically, while the simultaneous presentation of the members of each successive tetrachord presents the listener with *prospective* ambiguity regarding pitch order, it is not necessarily the case that "simultaneity cannot represent succession."[13] Consider the visual analogy presented in Figure 2. At the top of the diagram are twelve dots (labeled "S1" for "Stimulus 1"), arrayed in three columns of four dots each. When viewed from directly below (from the perspective of the arrow pointing

[10]In several cases, however, his analysis flies in the face of evidence to the contrary and musical logic—such as the B♮ in place of the B♭ in m. 35; see, for example, Cone (1972), 74–75. The A♮/A♭ conflict in m. 22 presents more of a problem.

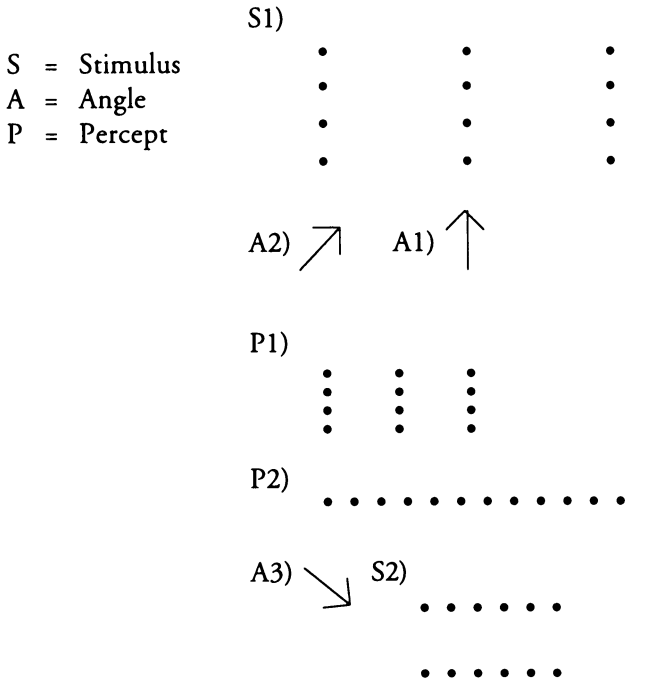
[11]Glofcheskie, 93 ff.

[12]Schoffman, 33.

[13]See Perle (1977), 23.

straight up, labeled "A1" for "Angle 1"), the dots will be perceived roughly as three groups of four (labeled "P1" for "Percept 1"), with the relationship among the dots within each group ambiguous. When viewed from below and to the side (from A2), however, those three groups of four will be viewed as one array of twelve dots, each dot in a precise ordering relationship to the others, that is, as P2.[14] The only difference between the two percepts with respect to the stimulus is the angle of perception; in essence, then, the three-by-four array has become "horizontalized" by viewing it from a "diagonal" perspective.

Figure 2. Segmental Perspectives on twelve-object stimuli.



[14]Note that the single one-by-twelve array could also result from a different diagonal perspective of a two-by-six array (that is, as A3's perspective of S2), as shown at the bottom of diagram.

To reverse the analogy—to go from a two-dimensional visual space into a two-or-more-dimensional musical space[15]—in mm. 3-6 of 33a we can see the "diagonalization" (similar to Glofcheskie's horizontalization) of the tetrachords literally played out, as they become gradually more explicitly linear through the course of the first section of the music; serial ordering becomes apparent through the use of a different perspective.

This diagonalization or horizontalization of the tone row is not the only perspective trick at play in this piece. One of these we have already seen in Perle's analysis: Schoenberg's structural use of what I will refer to hereafter as the *"Segmental Perspective."* The systematic exploration of different row segmentations in 33a represents a series of different and (in the end) complementary *Perspectives* on the musical material.[16] An analysis of the music into those segments—in conjunction with the row forms—is useful, at least inasmuch as the segmentations shown can be used to represent some of the different types of *Perspectives* on the use of the row.[17] Three *Perspectives—Segmental*, *Hexachordal*, and

[15]We can make similar observations about three-dimensional visual space. Thus, for example, a pyramid, depending upon the perspective, may be seen as a square, an Isosceles triangle, or as the whole. The concept of three-dimensional space, however, is more difficult to apply to music: if a two-dimensional musical space is made up of pitch and duration (time, hence yielding the ordering relationships), is three-dimensional musical space one that includes pitch, duration, and timbre (articulation, dynamics, instrumentation, etc.)? Is it actually possible to have a simple two-dimensional space, one that does not include timbre?

[16]See also Lewin (1962) or Hamao (1986) for other views of twelve-tone segmentation. In the context of this piece, Schoffman's assertion of unanalyzable ambiguity is neither accurate nor a drawback, but a compositional item.

[17]In Appendix 1 I have drawn up a "map" of the entire work, showing row forms and the respective segments, together with tempo markings and most of Perle's sonata form sectional divisions. When presented this way, it is quite easy to see how the different segmentations of the rows coincide with the tempo markings and the textural changes to produce the form. It is also easy to see how certain sections (mm. 12–13, 29.5–32, and, less so, 37–40) embody ambiguous segmentations.

Schoffman's own analytic technique is to divide the music up into its

Tonal—will be used to examine 33a and to establish the system of *Perspectives*.

The value of this framework of *Perspectives* is in the kaleidoscopic—almost "cubist"—view of the musical materials, casting light on different facets of the composition. One *Perspective* may illuminate large portions of the work, while another *Perspective* may provide insight into only selected measures. Individual *Perspectives* are not, therefore, to be considered self-sufficient; rather when taken together they complement each other, leading to a global understanding of the entire work and the musical interrelationships therein.

The *Segmental Perspective*—focusing here as it does on trichords and tetrachords instead of hexachords—represents a different view and use of combinatoriality. The more traditional use of hexachordal combinatoriality Schoenberg described in a letter to Rufer:

> Personally I endeavour to keep the series such that the inversion of the first six tones a fifth lower gives the remaining six tones. The consequent, the seventh to twelfth tones, is a different sequence of these second six tones. This has the advantage that one can accompany melodic phrases made from the first six tones with harmonies made from the second six tones, without getting doublings.[18]

We do find exactly that type of hexachordal combinatoriality —melody in the hexachord of one row accompanied by harmony in the hexachord of the other row, what I will refer to as the *"Hexachordal" Perspective*, with its concomitant *"Melodic"* and *"Harmonic" Perspectives*—in "Subject 2" of 33a. This *Hexachordal Perspective* yields some valuable insights into the Subject 2 section of 33a, and through that into the entire composition. A close examination of this section of the piece should provide an

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respective tetrachordal and trichordal segments, which he treats as self-sufficient. Without the foundation of the row, those segments make a good deal less sense.

[18]Rufer (1954), 95.

instructive example of the use and value of some of these *Perspectives*, and will lead to the establishment of an additional *Perspective*.

At the beginning of Subject 2, the right hand in mm. 14–15 very clearly has the character of accompaniment, while the bass (extending into m. 16) equally clearly has the character of melody.[19] Given that the accompaniment of mm. 14–15 features consistent eighth-note motion as compared to the more sustained notes of the melody, it is not difficult in mm. 16–18 to ascribe to the left hand the role of accompaniment and to the right hand that of melody (although this distinction is less clear than in the previous measures).[20]

Viewing Subject 2 from this *Hexachordal Perspective* has implications beyond merely labeling the "melody" and "harmony." Since the melody switches from the (A) hexachord of I_5 in mm. 14–15 to the (B) hexachord of P_0 in mm. 16–18 (which are identical in pitch-class content),[21] a clearly unifying feature of the melody is the pitch-class content of that

[19]Curiously, while most analyses make mention of "melody" and "harmony," few that I have found actually label the elements of this passage as being one or the other. One partial exception to this is Ogden, who, after making vague references to melody and harmony (pp. 32–33), later characterizes the right hand of mm. 3–7 as melody accompanied by the harmony of the left hand (p. 38).

[20]One may well disagree with the characterization of mm. 16–18 as being melody in the right hand and harmony in the left hand. In addition to introducing the *Melodic* and *Harmonic Perspectives*, the analysis presented—as will be seen below—also introduces the possibility of a need for tonal resolution of missing pitches. While this argument is made stronger through this particular *Hexachordal Perspective*, one need not rely on it: the expectation that the missing pitches will be supplied can be established solely on the basis of a *Twelve-Tone Perspective*—viewing the entire row as melody. The exact distribution of melody and harmony in this passage, therefore, is only of secondary importance in the introduction of these different *Perspectives, per se.*

[21]The hexachords of each row are labeled as (A) and then (B), respectively; retrograde forms in order, therefore, would be labeled R(B)–R(A) or RI(B)–RI(A); the pitch-class content of I(A) is equivalent to that of RI(A), P(B) or R(B), and the pitch-class content of P(A) is equivalent to that of R(A), I(B) or RI(B).

hexachord. The melody with the same pitch classes is again present in mm. 21–23 (first two beats). But what of the remaining measures of the second section? Disregarding mm. 25–26 (labeled "transition" in Perle's analysis), what should we make of mm. 19–20 (labeled "Episode") and mm. 23–24 (labeled "Codetta")?

The pitch classes of the melodic hexachord are found in the "Episode" in the right hand of m. 19 (as part of R_0). But they are presented much less linearly than in the other three sections mentioned above, and most importantly the E♭ and A♭—originally the first two pitches of the melody in m. 14—are disguised as the "alto" voice of two different dyads. Indeed, it appears that the melody is lacking in that measure. In the next measure, the melodic hexachord (now in the left hand, as part of RI_5) is incomplete, leaving the E♭ and A♭ completely absent! The last two pitches of R_0, B♭ and F, are left out as well.

Given the changed rhythmic, textural, melodic, and pitch profile of these measures, then, it seems appropriate to re-label this Episode an Interruption.[22] In the tight-knit structures of Schoenberg's works, such an interruption demands resolution; most especially, the row forms need completion through a clear statement of the missing pitches. The expected resolution—featuring the missing pitches—comes in the Codetta (mm. 23–24), the sustained harmonic passage made up of the first hexachords of both P_0 and I_5. This Codetta begins, as expected, with E♭–A♭ (–D♭) in the bass accompanied by B♭–F in the treble; a somewhat surprising "quintal" (or ic5) chord. The addition of the third pitch in the treble (the C) results in a six-pitch quintal chord, or 6-32.[23]

Examination of the implications of this quintal chord as found in the Codetta will provide us with the next *Perspective*. It is of course the case that the quintal chord results from the perfect fifths at the beginning of the row combined with those of the T_5I combinatorial row; there are plenty of hints of quartal or quintal

[22]My student Wayne Perkins first suggested this to me.

[23]See below for a discussion of secondary hexachords in this work.

chords, most especially in the first section at the end of m. 5 and the beginning of m. 8, and in the second section in mm. 14–15. In this light, then, what should be surprising is that there are not more quintal chords. In fact, much of the first two sections of the piece may be viewed as demonstrating Schoenberg's conscious effort to avoid the fifth-based chords.

The open fifths of mm. 23–24, then, sound like a respite from the higher level of dissonance in the preceding measures, and inasmuch as it also represents a resolution of the interruption of mm. 19–20, we associate the open fifths sound with resolution. This raises the question of the interval of a perfect fifth (or fourth) having tonal implications, coinciding with such features as the "dominant-to-tonic" resolution from the end of the development section to the beginning of the recapitulation. Most writers take great pains to avoid such implications; Perle is a case in point:

> The compositional importance of the interval of a fifth in opus 33a is a consequence of the structure of the set, not of any quality inherent in the interval itself. The attribution to this interval of some special *a priori* significance, implied in Schoenberg's emphasis on relationships based on the fifth in almost all of his twelve-tone works, can only be explained as an unjustified transference of tonal concepts.[24]

But is this true? Is it possible that tonality *can* be a force in this composition? Schoenberg's 1946 addendum to his 1941 "Composition with Twelve Tones" is revealing:

> In the course of about the last ten years, some of the strictness of the rules concerning octave doubling and prominent appearances of fundamental chords of harmony have been loosened to some degree.
>
> At first it became clear that such single events could not change the style of non-tonality into tonality. There remained still those characteristic melodies, rhythms, phrasings and other formal devices which were born simultaneously with the style of freedom of the dissonances.

[24]Perle (1991), 116.

Besides, even if the negation of a tonal centre's domination would have been temporarily undermined, this need not have destroyed the stylistic merits of a composition.[25]

Put slightly differently, tonal centers need not undermine the stylistic merits of a composition—even a twelve-tone serial composition.

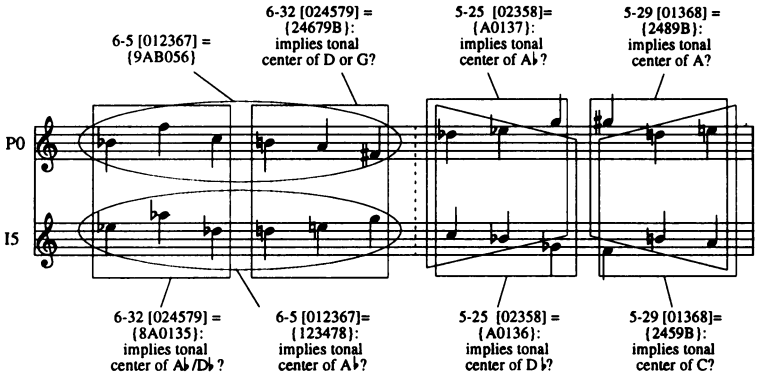
Is this an "unjustified transference of tonal concepts?" I think not: analysis of the set-class content of the row and of the combinatorial row pair demonstrates this. As shown in Example 1, when P_0 and I_5 are aligned, the first half of both aggregates have identical tonal implications (A♭/D♭), while the second halves imply a complex related by perfect fifth (C/G/D/A). Specifically, alignment of P_0 with I_5 produces two successive 6-32 (the so-called "diatonic hexachord") sets within the first aggregate, which can imply A♭ or D♭ major, and D or G major, respectively. In the second combined aggregate, the hexachords produced (6-50 and 6-29) are not in themselves diatonic, but two different embedded 5–25 sets within the first hexachord once again imply A♭ or D♭ major, and two different embedded 5–29 sets within the second hexachord imply A or C major. Not surprisingly, then, the "tonal centers" of the respective halves of both aggregates are related by a tritone: A♭/D♭ opposed to D/G, expanded to A/D/G/C.[26] In addition, one of the two 6-5 hexachords from the row itself can imply A♭ major, if one allows the D/E dyad to "function" as an augmented sixth.[27]

[25]Schoenberg (1975), 244.

[26]There are further tonal implications based upon the tetrachordal divisions of the row used in the first section of the piece.

[27]This augmented sixth would resolve outwards to E♭, the fifth of A♭. Note that in this work minor sevenths are often transformed into two pitches from the ic5 cycle through the presence of the intervening pitch; in the case of the D/E the presence of an A would change the character of the D/E dyad markedly from a "dissonance" to part of a "quartal" chord, as for example at the end of m. 26 or the middle of m. 33. Similarly, the E♭/D♭ dyad in m. 16 is rendered less dissonant in part by the presence of the A♭ in m. 17.

Example 1. Sets that result from aligning P_0 and I_5.



Tonal functions exist in 33a most especially within the second section of the piece. If the accompanimental part is played with appropriate subtlety, the melody in the bass in mm. 14–16, transferred to the treble in mm. 16–18, may easily be construed as a progression in A♭ major.[28] The interruption of mm. 19–20, then, which cannot be heard as functioning within A♭ major, is rendered incomplete by the avoidance of those pitches necessary for the A♭ tonality; these pitches are then stated plainly and openly in the Codetta of mm. 23–24.[29]

The A♭, D, and E found at the end of P_0, analyzed above as the tonic and the augmented sixth of A♭ major, can also be interpreted as a dominant seventh of A major—coinciding with the 5–29 shown above in Example 1. By this logic, while most of

[28]By this reasoning the D and E of mm. 15–16 resolve to the E♭/D♭ dyad in the treble which, together with the G in the bass (and following, in the treble) and the B♭ in the "tenor" voice (decorated with a neighbor C), form a dominant seventh chord. This chord resolves incompletely to an A♭-major chord in m. 17 (A♭ in the alto, C in the tenor, surrounded by oscillations to and from E♭, and D♭, and G).

[29]This interpretation may lend credence to the notion that the A♮ in m. 22 is not a mistake, since the presence of the expected A♭ at that point might have "given away" the resolution to the A♭ sonority to come less than a measure afterwards. This is essentially the view of Ogden (67–68) and Glofcheskie (97). See also Perle (1991, 113).

the second section of the piece can be viewed as operating within an A♭ tonality (or, at least, within the "flat" realm or region around A♭), much of the rest of the piece can be thought of as an oscillation between the "flat" realm and the "natural" or mildly "sharp" realm—the C/G/D/A area. Thus, the much written-about passage from the end of m. 34 into the beginning of m. 35, while undeniably embodying semitonal relationships,[30] can also be said to represent a tonal shift from the A♭/D♭ major area to the A major area.[31]

Interestingly, then, since the row forms used when the second theme is recapitulated in mm. 35–36 are the retrogrades, the second theme is *not* stated in the A♭/D♭ key area. This makes the fairly well-accepted analysis of 33a as a "sonata form" more reasonable: as with tonal works, upon recapitulation the second theme group is stated at a different key level; Schoenberg's use of thematic and harmonic contrast are definitely similar to tonal strategies.[32] These similar strategies, as Mead has pointed out,

[30]See, for example, Graebner.

[31]Cone (1960, 185–186) sees references and analogies to E minor (especially in the first section of the piece) which would correspond to the relative minor of the G tonality—that is, as the area of tonality contraposed to the A♭/D♭ area. See also Ogden, 36–38.

[32]Furthermore, one of the predominant characteristics of tonal harmony is forward-moving chord progressions; such progressions can plainly be found in 33a right from the outset. While the first two measures of the piece have a melodic component (the arch contour), equally importantly the series of six tetrachords seems to achieve a certain degree of rest (somewhat akin to a half cadence?) upon arrival on the last one. The harmonic rhythm changes over the course of the piece—it is noticeably slower in the second section, as expected in the stereotypical tonal sonata form. Ogden devotes considerable attention to the "serial rhythm" which, as he points out, bears a remarkable resemblance to the harmonic rhythm of tonal music, with special emphasis on a sonata by Beethoven (52–66). This may be seen to lend further support to Perle's (and others') notion of 33a as a first movement sonata-form. But even with the concentration on only four row forms, there is no question that there is perceptible forward harmonic motion. In the context of this motion, it is certainly the case that certain tones might be perceived as harmonic and others as non-harmonic.

make analogies to tonality relevant, without asserting that 33a is in fact a tonal work.[33]

While I do not contend that 33a is a tonal work, it is my belief that hints of tonality are a force in this piece[34]—the *"Tonal" Perspective* on hexachordal combinatoriality. We have already seen that even when a work or a passage is "about" hexachordal combinatoriality Schoenberg does not treat the hexachords equally: one is melodic and the other harmonic.[35] If hexachords are going to be used unequally—if one group of pitches is more "to the fore" than another—then why may not a subset of that hexachord be brought even more to the fore—further skewing the *Hexachordal Perspective*? How a listener may apprehend the pitches brought more to the fore—as a contextually defined set, as references to actual tonality, or the establishment of a new type of referentiality—need not be determined here; for the present analysis, "tonality" may simply be taken to refer to unequal emphasis on selected pitch classes.

3. Applying the Conceptual Framework to Questions of Ordering Violations

In the light of "unequal emphasis on selected pitch classes," it is interesting to examine certain aspects of Schoenberg's liberties with respect to his own writing regarding ordering of, or repeating notes in, the row. While repetition is not uncommon in the remainder of the piece, the note repetitions found in the accompaniment in the second section seem the most systematic. In mm. 14–15 (plus the first two notes in the bass in m. 16), for example, there are thirty-two note attacks in the right hand as compared to nine in the left hand; each hand projects only a

[33]Mead (1987), 92. When the form is viewed in this way—as a collection of strategies—it probably makes more sense to think of 33a as an example of "compound binary" than an example of sonata form.

[34]For further support of this analytical attitude, see Cone (1960), 186.

[35]For further insight into the development of such "hexachordal functionalism," see Lefkowitz (1997).

single hexachord. But compare this with Schoenberg's stated goal of *avoiding* repetition of single notes:

> The construction of a basic set of twelve tones derives from the intention to postpone the repetition of every tone as long as possible. I have stated in my *Harmonielehre* that the emphasis given to a tone by a premature repetition is capable of heightening it to the rank of a tonic. But the regular application of a set of twelve tones emphasises all the other tones in the same manner, thus depriving one single tone of the privilege of supremacy.[36]

In the case of mm. 14–15 in particular (and the entire second section of 33a in general), it seems to me that one possible purpose of note repetition in the accompaniment is to *counterbalance* the "supremacy"—the referential weight—that might be accorded the E♭/A♭ of the melody, or of the melodic hexachord in general. But then why does Schoenberg repeat the E♭ and the A♭? Here I answer that the purpose of the repetitions are simply melodic: that one of the characteristics of this melody is that it is built up incrementally, and that such incremental construction requires a certain amount of repetition. Indeed, I believe that it is precisely because of the repetition of E♭ and A♭ that the accompanimental hexachord in m. 14 is repeated verbatim in m. 15.

Note repetitions, then, may play a role not only in establishing "tonalities," but in counterbalancing them as well.[37] Over and above questions of tonality however, repetitions create further problems that must be addressed. It is supposedly a principle that, as Schoenberg wrote, "every tone appears always in the neighbourhood of two other tones in an unchanging combination..."[38] But clearly, if the pitches of a hexachord are repeated in order, thus:[39]

[36]From "Composition with Twelve Tones (2)," Schoenberg (1975, 246).

[37]Note that this counterbalancing is not dependent upon how one determines in which hands the melody and harmony are.

[38]From "Composition with Twelve Tones (2)," Schoenberg (1975, 246).

[39]In this article, order numbers begin on 0 and range to 'A' and 'B' in place of ten and eleven.

012345012345

order number ("ON") 5 will appear next to ON 0, which is decidedly not the unchanging neighborhood of two other tones.

Or is it? Still another perspective on Schoenberg's use of rows may be gleaned from consideration of violations of the serial ordering determined by the row.[40] Note that I am not speaking of the flagrant violations of order found at various points in this piece and discussed in the literature,[41] but rather of the pedestrian violations of simple ordering principles or procedures. Note too that allowance for such order violations increases through the course of the piece.

It is exactly Schoenberg's increasing license or liberties as the piece progresses that provides the best clue to the nature of this perspective on his use of the rows. For example, the first time that I_5 is used melodically (as RI_5 in mm. 3–5), the pitches are used perfectly and completely in order. By the beginning of m. 14, the pitches of I_5 appear in the following order:

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which results, for example, in ON 9 being adjacent to ON 7, and 6 adjacent to 8.

The hexachords, however, are kept intact: the moment that the first pitch of the second hexachord appears, the pitches from the first hexachord cease. This distinction is appropriate, since the second section features hexachordal segmentation, rather than tetrachordal segmentation. In the passages concentrating on tetrachordal segmentation, the moment that the first pitch of a subsequent tetrachord appears, the pitches from the previous tetrachord cease.

[40]I am indebted to Kathryn Bailey's "Row Anomalies in Opus 33: An Insight into Schoenberg's Understanding of the Serial Procedure" (1976).

[41]Such as the G♭ appearing before the F on beat three of m. 37, or the A/A♭ confusion in m. 22.

Within each respective segment, however, repetition seems to be allowable—of individual notes (such as the first pitch of RI_5 at the end of m. 6 through the beginning of m. 7) or entire segments (such as the first tetrachord of P_0 in m. 8 or the first hexachord of P_0 in mm. 14–15)—and even wholesale retrogrades appear (such as the first tetrachord of P_0 in the bass of m. 12). But these liberties are only allowable *after* straightforward orderings have been used.

However, it is not as if Schoenberg feels free to pick and choose pitches willy-nilly within any given segment. Indeed, the visual analogy again seems appropriate here: if presented with a visual stimulus of four or six objects lined up in a row, the eye may easily view those objects in the reverse order, or may progress from the first to the last in order but with step-by-step back-tracking (returning to an earlier object directly from its successor) or repetition (returning to an object after leaving it but before proceeding to the successor object). It is conceptually quite difficult, however, to imagine the eye proceeding from one object to another having completely skipped the intervening objects.

Put another way, having segmented the row, Schoenberg feels free to view the individual segments from whatever perspective fits his musical purposes. This approach is confirmed by Rufer:

> A series can be subdivided one or more times—into two groups of six notes each, three of four notes, or four of three notes.... Division into groups also makes it possible to regard these as small independent series and to treat them as such...[42]

Put into this context, 33a actually seems quite well-ordered. At no time are there cross-segmental violations (although there are segmental ambiguities; see above), and while portions may be repeated within each segment, they generally are repeated "serially"—that is, as if each segment were an entire row, subject to the ordinary procedures, including retrograde statements and incremental statements or unfoldings which involve repetition.

[42]Rufer, 90–91.

It is interesting to examine Rufer's list of permissible reasons for note repetition:[43]

(a) repetitions of single notes as a characteristic element in a musical idea.

(b) repetition of a single note for reasons connected with instrumental technique or on grounds of sonority—if a note which is to be held for a fairly long time is liable to stop sounding too soon.

(c) repetition of a single note for compositional reasons, e.g., a pedal point.

(d) trills.

(e) tremolos.

(f) repetition of groups of notes in accompaniment figures.

(g) repetitions of groups of notes [no further explanation given].

(h) repetitions of groups of notes as an ostinato.

To which we may add:

(i) repetition of groups of notes as a counterbalance or in contraposition to a group of notes which might succeed in establishing themselves as a referential set.

Of those, (b), (c), (d), and (e) seem entirely reasonable; a musical system which prohibited such prolongations would certainly be impoverished. We may accept (a) with reference to the *Melodic Perspective*, and (f) and (h) from the *Harmonic/Accompanimental Perspective* (which may both be subsumed into the *"Combinatorial" Perspective*—here substituting for the similar *Hexachordal Perspective*[44]). And we may accept our putative (i), along with (c), (d), and (e) again, because of the *Tonal Perspective*.[45]

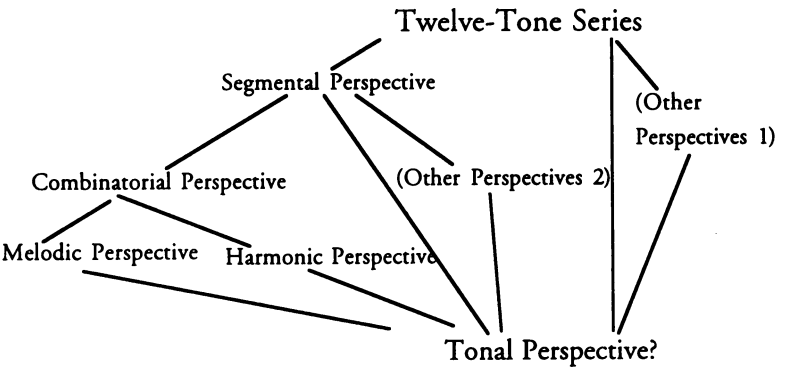
[43]I quote Bailey's paraphrase of Rufer, 44–45.

[44]Note that the Combinatorial Perspective is not by its nature necessarily a *hexachordal* perspective (see, for example, Starr and Morris [1977, 1978]). However, for the purposes of analyzing Schoenberg's opus 33 pieces (as well as most of the rest of his output) "combinatoriality" is equivalent to "semi-combinatoriality."

[45]Only the ambiguous and unexplained (g) is left unaccounted for.

These different *Perspectives* on Schoenberg's use of twelve-tone rows may themselves be organized into a hierarchy, which should serve well to make clear the justifications for Schoenberg's own violations of his *a priori* rules. Since examples are found of entire hexachords being repeated, the *Combinatorial Perspective* may be seen as a particular case of the *Segmental Perspective*. And since we have seen the establishment of "tonality" (in the broad sense defined above) in different ways as a result of the use of both hexachordal and tetrachordal segmentation, the *Tonal Perspective* may be seen as a special case of any level of the *Segmental Perspective*.

Figure 3. Hierarchical organization of different Serial Perspectives.



By this hierarchy I do not mean to imply that "all roads lead to tonality," or that the more general *Segmental Perspective* is by virtue of its higher hierarchical level any more important than the less general *Combinatorial Perspective*. Rather, I am presenting a way to understand how Schoenberg makes special and unique use of the system that he played such an important role in developing.

This hierarchy is neither complete nor necessarily fixed with respect to the use of twelve-tone series in twentieth-century music. Relationships among the different rows in a piece may project different facets of the relationships to be explored; the "basic set," then, need not necessarily be the uppermost level in

the hierarchy—there could be relationships between row forms, thus referring to the row-class (or large portions of the entire row-class) as a higher hierarchical level.[46] Among other possible *Perspectives*, one of the *"Other Perspectives 1"* might be a *"Registral" Perspective*. In Milton Babbitt's *Du*, *Partitions* and *Post-Partitions*, the *Registral Perspective* provides one of the more important and more powerful listening (as well as compositional and analytical) strategies.[47] And among the *"Other Perspectives 2"* might be any number of other types of segmentations; one such type is important in understanding Schoenberg's *Wind Quintet* opus 26,[48] while another type is crucial to an understanding of 33b.

Opus 33b: Introduction

Absent in-depth study, the most obvious similarities between 33a and its so-called 'companion piece' 33b can be summed up quite quickly and easily: they are both (1) solo piano works which are (2) unconnected to other works and which were (3) composed using twelve-tone techniques, specifically (4) a small region of hexachordally combinatorial rows related by inversion down a perfect fourth.

There most of the similarities end and the differences begin. Again, absent in-depth study, the differences in Schoenberg's use of twelve-tone technique and hexachordal combinatoriality seem far greater than the similarities: the very disconnectedness between the pieces would seem to argue against their pairing. They were composed at much different times (33b was written in October 1931, almost three years after 33a's composition in December 1928–April 1929) with unrelated rows, and each with very different musical characters. Some other differences include length—33b's 68 measures to 33a's 40,[49] less formal clarity in

[46]See Mead (1987).
[47]See Morris and Alegant (1988).
[48]Ibid.
[49]While 33b is in 2/4 meter as compared to 4/4 in 33a, the note values in

33b versus 33a, and the absence of the unambiguous hexachord/tetrachord dichotomy.

So why are these two called "companion pieces?" Or, perhaps more to the point, why were they published under the same opus number? I believe that the answer may be found in the sense of a continuum in the use and exploration of serialism and hexachordal combinatoriality, and most especially the common thread of increasing the number and variety of perspectives on said semi-combinatoriality. Where 33a explores two different types of segmentations (hexachordal and tetrachordal) while maintaining the traditional roles of melody and harmony (and, in the process, making more or less overt references to tonality), 33b explores three different sub-types of hexachordal segmentation (dyadic, trichordal, and secondary trichordal, which collectively define much of the form of the piece), as well as several other *Perspectives*, including *Registral* and *Tonal*, which provide additional insight into its content.

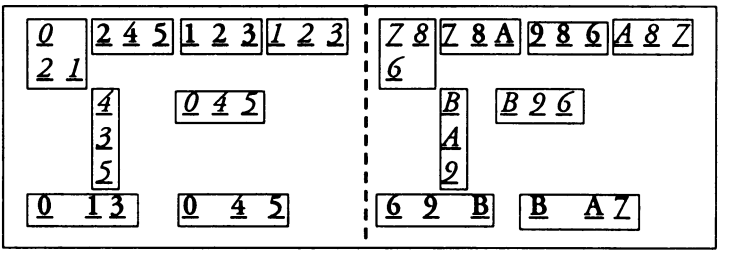
One of the most striking dissimilarities between 33a and 33b is the greatly increased level of disorder (*vis-à-vis* the row structure) found in 33b. Indeed, the pitch ordering found in mm. 52–53 of 33b (for example) is quite a bit different from anything found in 33a; see Figure 4. For convenience, hereinafter the rows will be referred to as simply P and I, along with R and RI. P_0 (P) of the row is <B, C♯, F, E♭, A, G♯, F♯, B♭, G, E, C, D>, and I_5 (I) is <E, D, B♭, C, F♯, G, A, F, G♯, B, E♭, C♯>.

Even taking into consideration the note repetitions found in 33a—not exclusive of the second section of the piece—such violations in note order as found in the passage from 33b are unprecedented. This fact will take us into our first perspective on 33b.[50]

33b are correspondingly shorter.

[50]Note that the analysis of 33b will proceed by topic—that is, the variety of *Perspectives*—not by measure number.

Figure 4. Order Numbers in mm. 52–53 of 33b.
(Numbers in italics are the ONs of I; numbers in bold face are the ONs of P; boxes indicate trichordal groups as indicated in the music.)



First Perspective: Order, Disorder and Segmentation - Four Varieties of the Segmental Perspective

In this section, four sub-perspectives of the *Segmental Perspective* are developed: *Incremental*, *Layered*, *Dyadic*, and *Secondary*.

Kathryn Bailey has written cogently regarding row anomalies in both 33a and 33b.[51] For the most part and with only a few exceptions, row anomalies in 33a can be explained either as examples of repetition or from the *Segmental Perspective*. Whereas in 33a the primary segmentations of the row into either tetrachords or hexachords are both highly salient and form-determining, in 33b the primary segmentation of the row is hexachordal throughout. Keeping consistent with Schoenberg's practice in 33a, in 33b whenever the first pitch class of a subsequent segment of the row is stated, all pitch classes from the previous segment will cease to be sustained or attacked. Within that primary segmentation, however, many ordering rules are violated in 33b, only a few of which can be ascribed to repetition.

In general—and similar to part of the development section of 33a—Schoenberg feels free to state any given hexachord in its entirety without regard to the row from which it is derived or its

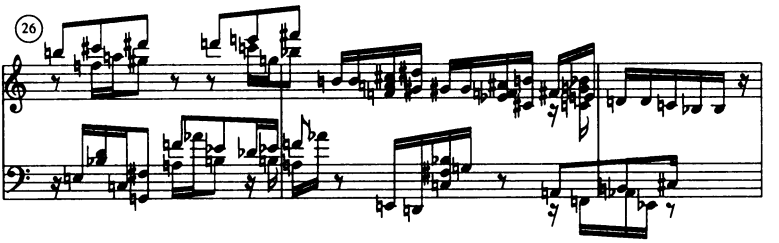
[51]See Bailey.

proper placement with respect to the combinatorial row. Thus, for example, mm. 26–27 (and into the beginning of m. 28) are constructed essentially as follows:

Figure 5. Order numbers (left) and hexachords (right) in mm. 26–27.

P: 0–5, B–6, 0–5, 5–0, 6–B P: (A) R(B) (A) R(A) (B)
I: 0–5, 6–B, B–6 0–5 6–B I: (A) (B) R(B) (A) (B)

Example 2. Measures 26–27.



While R(A) and RI(B) in this passage may be thought of as simple retrograde repetitions of the preceding hexachords, R(B) clearly cannot be thought of in that way. Similarly, mm. 41–44 and mm. 46–48 are highly repetitive statements of the A hexachord from both rows, clearly violating Schoenberg's own precepts regarding the need to keep rows intact and complete. Appendix 2 presents a complete tally of Schoenberg's use of the individual hexachords in 33b.

All of this interpretation may still be ascribed to the *Segmental Perspective* which, although it is hexachordal, is not necessarily identical to the *Combinatorial Perspective* discussed regarding mm. 14–23 of 33a. The violations in note order *within* each hexachord, however, require refinement of our understanding of the *Segmental Perspective* and four constituent sub-perspectives.

Measures 5–10 provide the first example of the *"Incremental" Perspective*, whereby an entire statement of a segment (in this

case, hexachord) is arrived at through repetition of incrementally larger sub-segments. Thus, the left hand of mm. 5–10 may be abstracted as follows:

(P:) BA98, BA987, BA9876, 5432, 54321, 543210[52]

This is somewhat similar to the *Melodic Perspective* discussed with reference to mm. 14–23 of 33a.

The next three *Perspectives* are unique to 33b. The first, which I call the *"Multi-Layered" Perspective* (or simply the *"Layered" Perspective*) is in force in the right hand in mm. 46–48, illustrated in Figure 6 and Example 3.

Figure 6. Layered Perspective order number analysis of mm. 46–48 (right hand).

	Measure 46		Measure 47		Measure 48	
(P:)	0	1	2	3	4	5
	1234	54320	01345	54521	0102	32310

Example 3. Measures 46–48 (right hand).

In the upper layer, the pitches of the segment are slowly stated in order; filling out the intervening space are all or most of the other pitches of the segment. Thus, as with combinatoriality, the Universe (the six pitches of the hexachord) is stated both linearly and vertically. This is clearest in the middle portion of this

[52]This chart is not exactly the way the increments are stated, but for the purposes of this perspective it is an adequate and more insightful representation.

passage (see Figure 7). Within each "bar" of Figure 7 the Universe is stated; when viewed horizontally (with the remaining pitches of the passage), the Universe is stated in both layers.[53]

Figure 7. Layered Perspective order number analysis of mm. 46 (second half)–47, by beat.

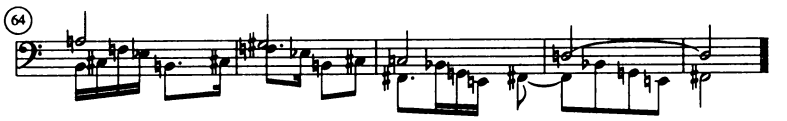
1	2	3
54320	01345	54521

Overall, the *Layered Perspective* is not of great importance for this work. The only other time the *Layered Perspective* seems to be in force is in the final measures of the piece, mm. 64–68 (Figure 8 and Example 4).

Figure 8. Order number analysis of mm. 64–68 (right hand).

(P:)	4	5	A	B
	012301	2301	67896	7896

Example 4. Measures 64–68 (right hand).



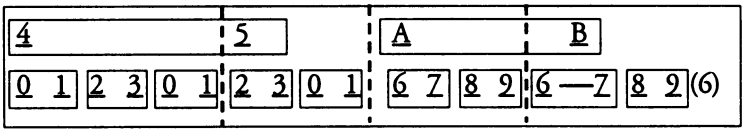
But closer inspection reveals that this is an example of a different technique: one of the two most important aspects of the *Segmental Perspective* in 33b, the *"Dyadic Subsegmental" Perspective.* As detailed in Bailey, much of the surface of the music and many of the violations of note order in 33b can be

[53]A similar technique may be seen in Debussy's piano prelude *"...Les collines d'Anacapri."*

"explained" as subdivisions of the principal segment into a series of three dyads.

In keeping with Schoenberg's practice of permitting segments of a row to be treated as if they were complete rows in and of themselves, individual dyads in a passage focusing on dyadic sub-segmentation are often retrograded or augmented, resulting in apparent violations of the original row order. Measures 64–68, thus, can be reanalyzed as in Figure 9.

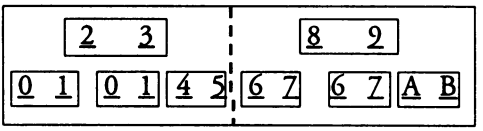
Figure 9. Dyadic Perspective on order-number analysis of mm. 64–68 (right hand).



This interpretation is essentially in accordance with Bailey's view, but represents a refinement in that the repetition of pitches 0–3 and 6–9 is more easily accommodated.[54]

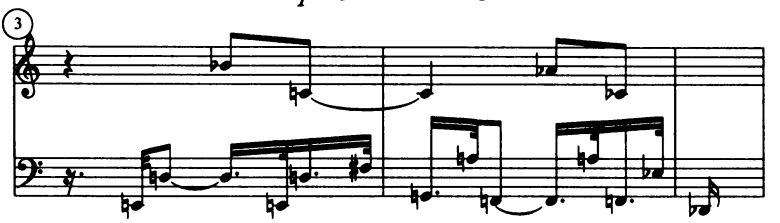
That the *Dyadic Perspective* is so important in the piece should come as no surprise, since it is clearly implied by the opening four measures of the composition in which the pitches of first the P and then the I rows are progressively stated in pairs (each pair joined under a slur). In this view, then, there are no order violations whatsoever in mm. 3–4 (see Example 5), which can be represented as in Figure 10.

Figure 10. Dyadic Perspective on order number analysis of mm. 3–4.



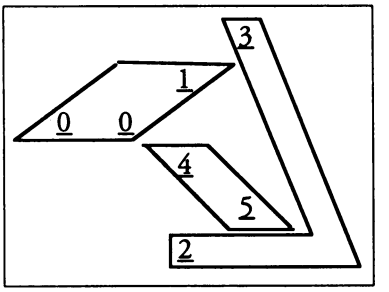
[54]See Bailey, 48–49. (Note that Bailey uses pitch-order numbers ranging from 1–12.)

Example 5. Measures 3–4.

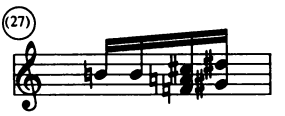


This type of dyadic analysis falls short, however, in mm. 21–28 and mm. 52–56 of 33b. For example, Bailey reckons a portion of the right hand part of m. 27 (see Example 6) as in Figure 11.[55]

Figure 11. Bailey's Dyadic Perspective on order number analysis of m. 27 (2nd and 3rd eighth-notes).



Example 6. Measure 27 (2nd and 3rd eighth-notes).



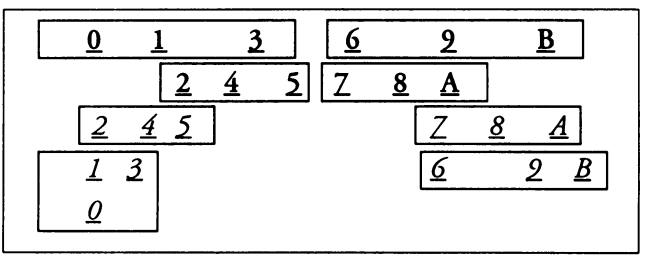
But this interpretation entirely misses the point of the thirteen or so measures in question. In those portions of the piece that are

[55]See Bailey, 50–51.

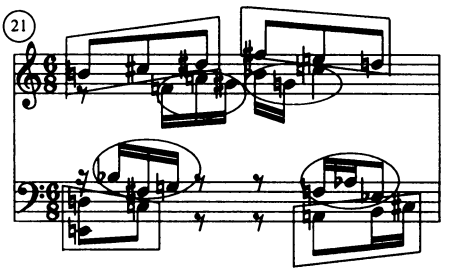
plainly dyadic (such as, for example, mm. 1–4), Schoenberg takes pains to make clear to the listener how the dyads played as such were derived, and he uses those dyads in such a way that they can be perceptually grouped as distinct from other pitches (by virtue of register, articulation, or duration). This is the case in mm. 64–68, for example, as shown above in Figure 8.

The dyadic grouping shown above for m. 27, however, has neither perceptual logic nor musical precedent in the composition. On the other hand, a very different type of segmentation—and the last of our *Segmental Perspectives*—does have very clear precedent in m. 21, the beginning of the passage. As shown in Figure 12 and Example 7, Schoenberg presents the hexachords of both P and I as a series of four trichords made up of non-contiguous notes, which I will refer to as "secondary segmentations" or "secondary trichords."

Figure 12. Analysis of trichordal segmentation of m. 21 (by ON).



Example 7. Secondary trichords in m. 21.



It is important to note that Schoenberg treated the use of secondary segmentations with the same sort of respect as he did the original row. [56] As he stated:

> It will be observed that the succession of the tones according to their order in the set has always been strictly observed. One could perhaps tolerate a slight digression from this order... in the later part of a work, when the set had already become familiar to the ear. However, one would not thus digress at the beginning of a piece.[57]

Similarly, the secondary segmentations are first stated in such a way that their derivation from the original row is both salient and canonical; only later does use of the segmentations result in apparent violations of the original row. Thus, the secondary trichords shown above in Figure 12 or Example 7 are first presented in such a way that they can be heard in concatenation as a statement of the original row in order, as shown in Figure 13.

[56] I am using the term "secondary segmentations" to mean something different from the term "secondary sets" as usually applied to Schoenberg's combinatorial music: where "secondary set" means the set(s) resulting from the combination of two combinatorially-related rows (see, for example, Perle [1991] 100*ff.*), "secondary segmentation" refers to a twelve-tone *perspective* which isolates non-contiguous notes *within* the original row.

[57] Schoenberg (1975), 226 (from "Composition with Twelve Tones (1)").

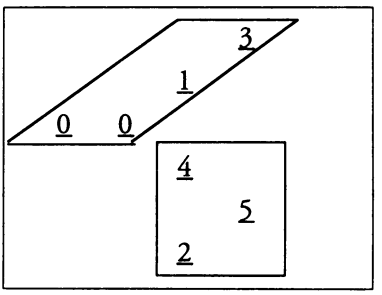
Figure 13. Concatenation of Secondary Trichordal Segmentations (by ON). Slashes indicate simultaneity.

(P:) 0 1 2 3/4 5 6/7 8 9/A B
(I:) 0/1 2 3/4 5 6/7 8 9/A B

The way the rows are stated, however, both registrally and articulatively, yields secondary trichords. Thus, unlike the dyadic groupings found in much of the piece, mm. 21–28 and 52–56 should be heard as being based (in part) upon the (013) (245) (69B) (78A) secondary trichords.[58]

From the *"Secondary Segmental" Perspective*, then, we can rethink m. 27 (as shown in Figure 11 or Example 6) as in Figure 14.

Figure 14. Secondary Segmentational Perspective on m. 27 (by ON).



This interpretation much more accurately reflects the musical and compositional meaning of the passage (see below for an in-depth analysis of several measures from this *Perspective*).[59]

[58]I have written "in part" because mm. 22–28 also make use of some different secondary trichords—most especially 045 + 123, and 689 + 7AB—as well as some straightforwardly ordered passages, as, for example, parts of mm. 25–26. See below.

[59]The *Secondary Segmental Perspective* can also be used to explain the row order violation in m. 37 of 33a: the G♭ occurred out of order there so that a secondary melodic segmentation from mm. 32–34 could be preserved (see

First Summation and Preliminary Formal Analysis

To this list of four *Perspectives—Incremental, Layered, Dyadic,* and *Secondary*—we can also add the *"Trichordal"*, which as in 33a would be ordinary (contiguous, hexachordally distinct) trichords rather than secondary trichords. As in 33a, trichordal divisions are often ambiguous: passages in which the hexachord is simply divided into two trichords are often mixed in with music in which the hexachord does not appear to be divided at all.

Just as the form of 33a is based largely on the segmentational strategies used, we can make a preliminary formal analysis of 33b based on the *sub*-segmentational strategies used.

Figure 15. Preliminary formal analysis, based on Segmentational Strategies. (Slashes indicate different strategies or perspectives used in the different hands)

D= *Dyadic* H= *Hexachordal* I=*Incremental*
L= *Layered* S=*Secondary* T= *Trichordal*

Mm.	1	5	10	12	17	19	21	28+	32
Persp.	D	I	H	D	H	D	S	H/S	D/T

Mm.	41	46	49	52	56	57	59	64
Persp.	I/T	L/H	D/T	S	D	T	D	D/L

Formal relationships are immediately suggested, relating such passages as mm. 5–10 to mm. 41–45, and mm. 21–28 to mm. 52–56. Such a formal analysis, however, would have to be fleshed out by an analysis of the actual musical results of the segmental strategies employed.

Glofcheskie, pp. 100–101). Nevertheless, this perspective is only of "secondary" importance in 33a and for the most part can be ignored, while for 33b it is crucial.

Second Perspective: Musical Relationships

The variety of perspectives discussed above provides plenty of grist for the analytical mill; a study of straightforward set-theoretic relationships can be undertaken from any one of them. I will begin with some observations regarding the relationships between the two forms of the row used in this piece from the *Dyadic Perspective* (in part 1). The *Dyadic Perspective* will enable us to distinguish between "*Serial*" and "*Twelve-Tone*" *Perspectives*, which in turn will again give rise to *Secondary Perspectives*. In part 2, whole-tone content of the row—with respect to both the original pitch-class ordering and secondary segmental reorderings —will then be examined.

1. Dyadic, Serial, Twelve-Tone, and Secondary Perspectives

We note that dyadic ordering—although not dyadic adjacency—is preserved from P(A) to I(B),[60] and from P(B) to RI(A) (the same may be said substituting "P" for "I" and vice-versa), as illustrated in Figure 16 and Example 8.

An interesting passage in 33b with respect to dyadic order invariance may be found in mm. 64–68, the measures we first analyzed from the *Dyadic Subsegmental Perspective*. While the music is best analyzed as shown above in Figure 9, it is interesting that these dyads are at once perceptually distinct and also paired with their I-forms (the ONs of the P-form in the treble staff are replicated with rhythmic alterations in the I-form in the bass staff). This relationship makes it possible instead to hear the treble staff as ordered dyads from the I row and the bass staff as ordered dyads from the P row. Figure 17 presents the two alternatives for mm. 64–65 in the treble staff.

[60]There is also trichord order preservation as follows: P0,2,4↔I2,7,6; P1,3,5↔IB,A,8; P6,7,9↔I4,2,0 P8,A,B↔I5,3,1. This order preservation plays little if any discernible role in the design of the piece, however.

Figure 16. Mappings of Order-Preserved Dyads (by ON).

$P_{0,1} \leftrightarrow I_{2,B}$	$P_{2,3} \leftrightarrow I_{7,A}$	$P_{4,5} \leftrightarrow I_{6,8}$
$P_{6,7} \leftrightarrow I_{4,2}$	$P_{8,9} \leftrightarrow I_{5,0}$	$P_{A,B} \leftrightarrow I_{3,1}$

Example 8. Mappings of Order-Preserved Dyads.

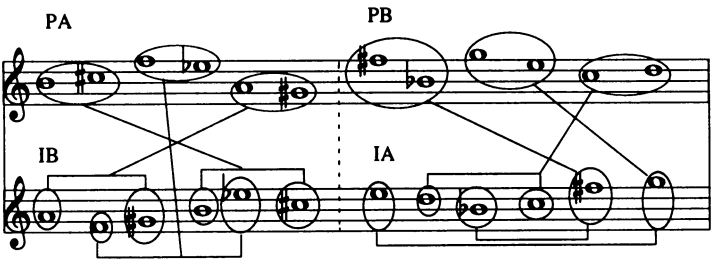
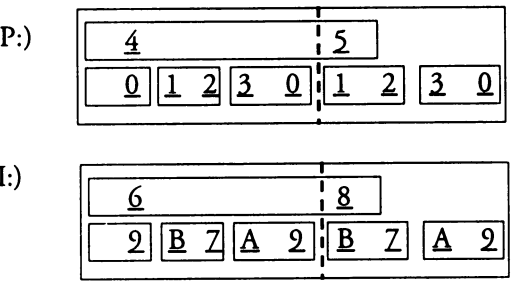


Figure 17. Alternative ON analyses of mm. 64–65 (right hand).



This ambiguity between P(A) and I(B) in mm. 64–65 (and between P(B) and I(A) in mm. 66–68) as a result of the dyadic order invariance lends richness to this passage, and helps give these last few measures a feeling of finality or summation.

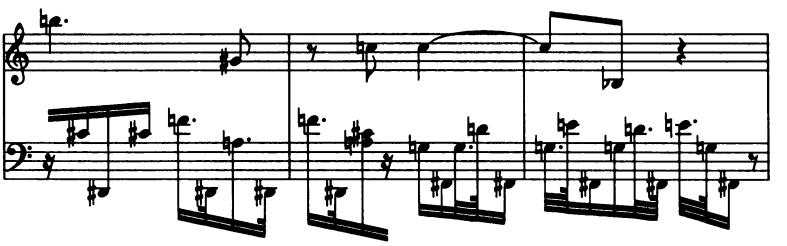
Curiously, dyad-derived order-number ambiguity is more important in certain passages that cannot be said to manifest dyadic order preservation, most especially mm. 14–16. Measure 14 begins a new row form, apparently on B5. That starting note suggests that the row form used is P, but it becomes apparent

immediately that this cannot logically be the case; from our *Segmental Perspective* it is fairly easy to discern that the row form used is RI, with B5–G♯4 as the second dyad of the row. A comparison of the two different possible ON analyses should make this clear, as illustrated in Figure 18 and Example 9.

Figure 18. Possible analyses of mm. 14–16 (by ON).

	Measure 14		Measure 15		Measure 16
P:	0	5	A	A	7
	131	2343	2314	868B6	8968B6986
or:					
RI:	9	8	3	3	2
	BAB	7A6A	7AB6	54514	504514054

Example 9. Measures 14–16.



Although m. 14 begins with the first two pitches of the P-form (thus making it might appear that P works better than RI to explain the first hexachord), one is more likely to hear the main melody in the treble independently of the ON relationships than to hear the dyadically shifted RI row form because the two RI hexachords begin with ONs 9 and 3 (B5 and C5) rather than ONs B and 5. This interpretation has ramifications for our *Third Perspective*, below.

Of more immediate importance—both for the purpose of this analysis and for a prospective listening to the work—are the relationships between the melody in the treble (in mm. 12–16)

and the opening four measures. The work begins with a descending minor seventh in the soprano (B–C♯), followed by a descending minor sixth (F♯–B♭) in the next measure. Measures 12–13 feature an approximate inverse of that: an ascending minor seventh (F–E♭), followed by an ascending major sixth (G–E). To be more precise, the pitch classes in the "tenor" voice in mm. 1–2 are stated in registral inversion in mm. 12–13. The next two measures in both passages are similar: in mm. 3–4 the B♭–C, G♯–B of the treble are stated in retrograde and registral inversion in the treble of mm. 14–16. The beauty of this registral inversion is that the notes are drawn not from transposed inversions of the row, but from exactly the same rows.

Again, this connection allows the listener to hear pitch-class relationships as well as intervallic or gestural relationships; similarly the ordering ambiguity is due to the conflict between the pitch-class content of the passage and the interval-class content of the row. Indeed, because Schoenberg does not use any rows other than the single combinatorial region, he is free in 33b to treat the row as a series of pitch classes as well as of intervals. Bailey criticizes this aspect of Schoenberg's row technique as a shortcoming—as evidence of his lack of understanding of the nature of serial technique.[61] In the case of 33b, however, the tension between the row as a series of intervals and as a series of pitch classes serves to lend richness to the work. Indeed, for the purposes of our analysis of 33b we can distinguish between a *"Serial" Perspective*, in which ONs and interval- and set-classes are of most importance, and a *"Twelve-Tone" Perspective*, in which pitch classes are of most importance.

The conflict between pitch-class content and interval-class content is nowhere more pronounced than in the sections devoted to secondary sets, most especially mm. 21–28 and 52–56—thus, the *Secondary Perspective* has implications for both the *Serial* and the *Twelve-Tone Perspectives*. Example 10 shows how each row is

[61] Bailey, 44.

divided into a series of four non-pitch-order-adjacent trichords in mm. 21–24.[62]

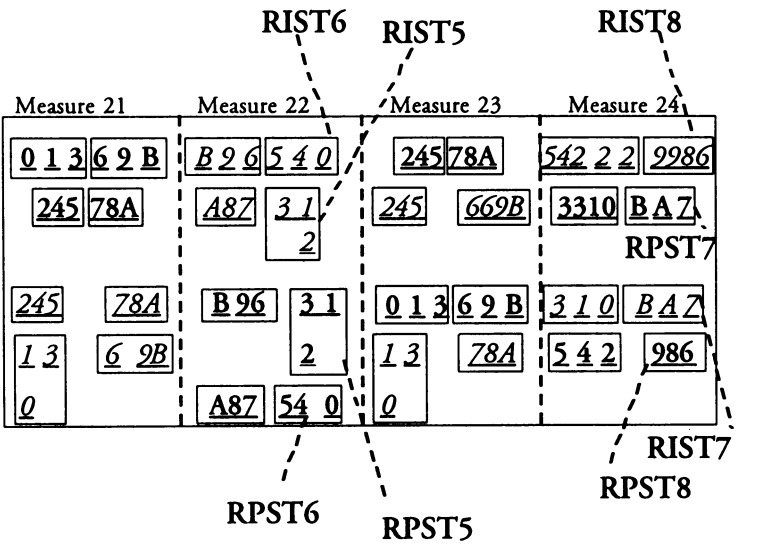
Given our understanding of the *Secondary Trichordal Perspective* in 33b, it is not difficult to make sense of the order number anomalies in mm. 23–24, which are the result of secondary trichordal segmentations made in mm. 21–22, as shown in Figure 19.[63]

[62]These secondary trichords are labeled PST1 through PST4 and IST1 through IST4 (for P row-form Secondary Trichord numbers 1 through 4, and I row-form Secondary Trichord numbers 1 through 4). While these eight secondary trichords account for most of the music in the two passages, there are some additional secondary trichords that play a role. The first appear in the second half of m. 22, where the A hexachord of each row (actually presented as the second hexachord of the retrograde rows) is segmented somewhat differently than in the first half of m. 21. These are labeled PST5, PST6, IST5, and IST6 (since they show up in the music retrograded, they are actually labeled RPST5, etc.).

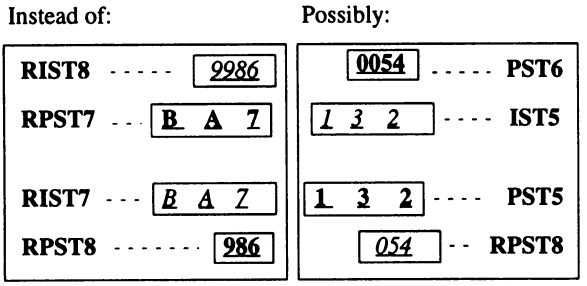
[63]While the ordering analysis of mm. 21–23 seems fairly clear, m. 24 presents some difficulties. Measure 24 begins with R(A) and RI(A), followed by R(B) and RI(B) involving a third set of secondary trichords, labeled RPST7–8 and RIST7–8. This is curious in two ways: the first is that R(B) and RI(B) should *precede* R(A) and RI(A). We have, however, seen this sort of violation before in both 33a and 33b. The second is that the actual *pitch-class content* of the secondary segmentations identified in the second half of m. 24 is identical to the pitch-class content of the secondary segmentations identified in the second half of m. 22. Thus, the second half of m. 24 could be analyzed in two ways as shown in Footnote Figure 1.

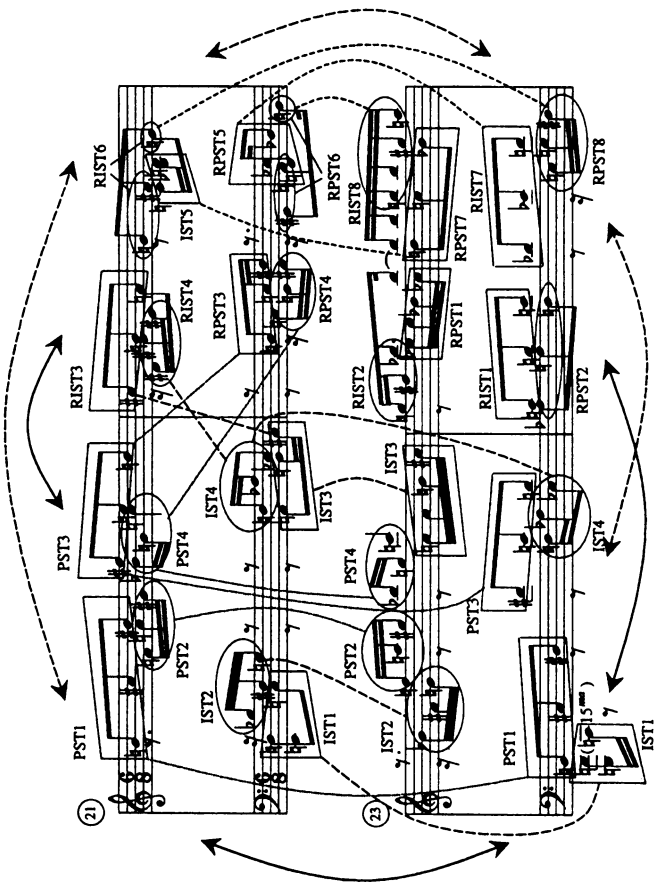
While recognizing the pitch-class identities, to analyze RIST8 as PST6, RIST7 as PST5, RPST8 as IST6, and RPST7 as IST5, would be to ignore the resulting complete breakdown in row ordering. The third set of secondary segmentations shown on the left of the figure thus seems more reasonable. Nevertheless we cannot deny that there is a certain amount of ambiguity inherent in the passage due to the pitch-class identities and the apparent row violations.

Figure 19. Analysis of mm. 21–24 by ON. (Numbers in italics are the ONs of I, and numbers in boldface are the ONs of P.)



Footnote Figure 1. Different possible analyses of the second half of m. 24 by ON. (Numbers in italics are the ONs of I, numbers in bold face are the ONs of P.)





Example 10. Secondary trichords and their relationships in mm. 21–24.

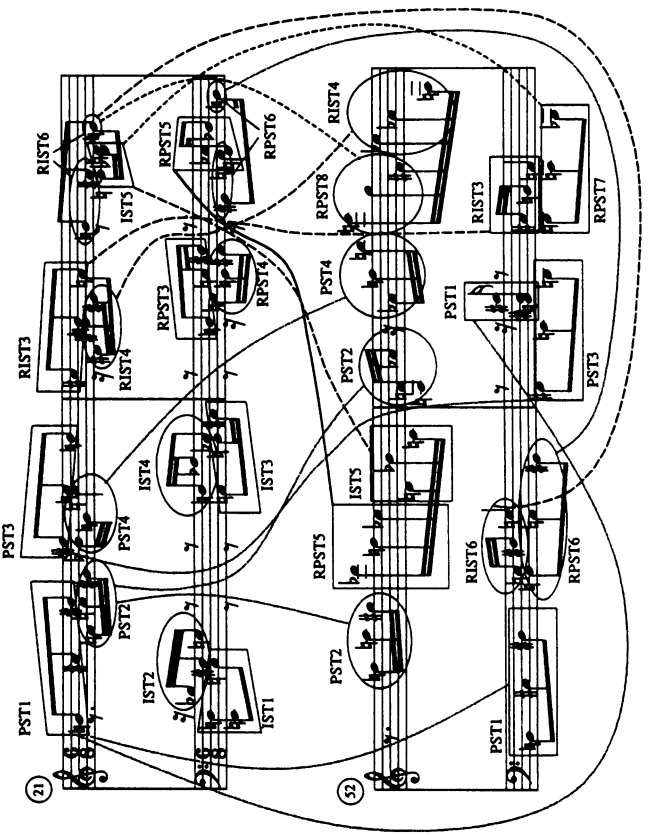
In addition to showing the secondary trichord labels, Example 10 demonstrates the relationships between mm. 21 and 22, between mm. 23 and 24, and between mm. 21–22 and 23–24. While somewhat complicated, a close inspection reveals that the relationship between the first and the second pair of measures is essentially a beat-to-beat mapping (21.1 to 22.2, 21.2 to 22.1, etc.; ".1" and ".2" here mean the first beat and second beat of a measure, respectively). The situation is similar but even more complicated in relating mm. 21–22 to mm. 52–53, as shown in Example 11.

These correspondences can be summarized as follows: m. 52.1 = m. 21.1, m. 52.2 = R(m. 22.2), m. 53.1 = m. 21.2 + m. 21.1, and m. 53.2 = m. 22.1 + m. 22.2—all with registral alterations. Figure 20 presents these relationships graphically; each letter W–Z represents one beat of music. The hexachords used are represented below each beat; for mm. 21–22 the placement on the chart of the four hexachords represents their actual registral use, while for mm. 52–53 the hexachords are registrally jumbled by secondary trichord, so P forms have been placed arbitrarily above the I forms):

Figure 20. Beat-to-beat correspondences, mm. 21–22 and mm. 52–53

	M. 21		M. 22		M. 52		M. 53	
Beats:	W	X	Y	Z	W	RZ	X/W	Y/Z
Hexachords:	(A)	(B)	RI(B)	RI(A)	(A)	(A)	(B)	R(B)
Hexachords:	I(A)	I(B)	R(B)	R(A)	I(A)	I(A)	I(B)	RI(B)

We can make similar analyses of mm. 25–28 and 55–56. In effect, then, in these passages Schoenberg has taken a *Segmental Perspective* on *complete measure groups*.



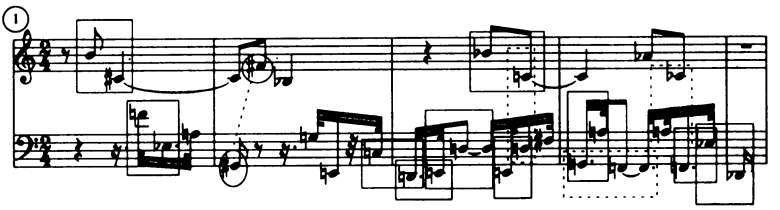
Example 11. Correspondences between mm. 21–22 and mm. 52–53.

2. Whole-tone Content

While the ON ambiguity here represents a certain richness in 33b—for example, in mm. 21–28 and 52–56 the pitch classes B, C♯, D♯, F, G♯, and A truly *can* be drawn from either P(A) or I(B)—the more important aspect of these measures with regard to a musical understanding of 33b is the ways that Schoenberg emphasizes the whole-tone content of the row. Before returning to mm. 21–28 and 52–56, however, a brief discussion of the set-class content of the row forms and the way this is manifested in the work is in order.

Each hexachord of the row is a form of set-class 6-34 [013579], which is but one "note" away from 6-35 [02468A], the whole-tone hexachord. Whole-tone formations, therefore, should be wholly expected. One aspect of the importance of whole-tone relations is the ic2 dyads found prevalently throughout the work. For instance, mm. 1–4 have no fewer than ten distinct, highly salient ic2s as well as four less salient, shown in Example 12.

Example 12. Interval-class 2s in mm. 1–4.



The whole-tone dyads in those measures are emphasized in two additional ways. First, since the C–D at the end of P (end of m. 2) is followed immediately by the E–D at the beginning of I (in m. 3), which is then repeated, a longer expanse of whole-tone formations is created.[64] This technique of row juxtaposition is simple and effective: whenever P is followed by either R or I, for

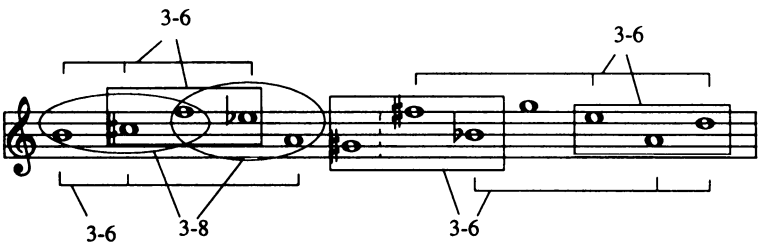
[64]This whole-tone formation can be thought of as beginning with the E in m. 2 and ending with the F♯ at the end of m. 3.

example, an extended whole-tone passage can be formed. Appendix 2 demonstrates how common these or similar row juxtapositions are.

The second way that the ic2 dyads of mm. 1–4 are emphasized is in the melody in mm. 5–7. In this very distinctive melody[65]—which I will refer to as "Q"—two ic2s are put together to form a 3-6 [024] trichord. In some ways this additive process, whereby two dyads combine to form a trichord, is extended later in the piece (see below with regard to mm. 64–68).

Whole-tone trichords are quite salient and easily distinguishable (on the basis of order or registral contiguity) in the original row. Nine of these are of most interest: two contiguous 3-8s (order numbers 012 and 234), and seven 3-6s. These nine trichords are shown in Example 13:

Example 13. Whole-tone trichords in the original row.



We can categorize the above as being either (1) contiguous, (2) one of the secondary trichords, or (3) none of the above; Figure 21 shows their characterization by ON.

[65]In some ways it has the character of the first main melody of the piece, following the introductory statement of mm. 1–4.

Figure 21. Characterization of the whole-tone trichords shown in Example 13 (by ON).

013: PST1 (3-6)	567: Contiguous (3-6)	9AB: Contiguous (3-6)
123: PST5/Contiguous (3-6)	69B: PST3 (3-6)	012: Contiguous (3-8)
014: None (3-6)	7AB: PST7 (3-6)	234: Contiguous (3-8)

Of those nine trichords, ONs 014, as neither contiguous nor one of the secondary trichords, and ONs 567, as a contiguous trichord which spans the two hexachords, obviously play a subsidiary role. Even those two trichords, however, can be found commonly in 33b: ONs 014's can be isolated in mm. 3, 11–12, 16, 38, 42 (twice), 43–44, 48, 55–57, 61–62, and 64; and ONs 567 can be found whenever the end of hexachord (A) is followed immediately by the beginning of hexachord (B), or the retrograde of that (as, for example, in mm. 10–11 or m. 50).

Just as the remaining trichords are either contiguous or secondary (indeed, this analysis makes it clear that one of the compositional values of the secondary segmentations was to highlight the possible 3-6s), so too much of the composition can be characterized according to what type of 3-6 trichords are used. We will begin examining this aspect of the *Twelve-Tone Perspective* from the *Trichordal Perspective*. For the most part the music that focuses on the contiguous 3-6s are variations on the "Q" melody discussed above. These occur in mm. 35–36 (slightly obscured in the soprano), and mm. 41–44 in both the bass and the soprano.[66]

[66]Measures 41–44 are interesting in that a miniature inversional canon is at work. Q in the bass is accentuated by the remaining pitches of R(A) (which are, in fact, the pitches of S2b), giving a little kick to the sedate melody. This altered Q is stated again exactly three beats later at T5I in the treble (corresponding to the T5I relation between the rows). In addition, the accompanimental music in mm. 41–42 in the soprano is subjected to approximate canonical inversion in the corresponding place, in the bass. While the canon is far from exact, there are more than enough similarities for the relation to be noticed. This inversional counterpoint helps to put into relief the importance of the Q melody.

But equally important are the 3-6s based upon the secondary trichords—the interaction of the *Twelve-Tone* and *Secondary Perspectives*. We return now to the passages which make use of *Secondary Perspectives* for further study. As indicated above, PST1 and PST3 are both members of set-class 3-6. The other two trichords in m. 21, PST2 and PST4, are members of set-classes 3-3 and 3-7, respectively. I will call these two "left-over" sets together the "L" set. (The same set-class relationships exist with the I row: IST1 and IST3 are 3-6s; IST2 and IST4 together form IL.)

While the constituent trichords of the L-sets are not 3-6s, across the hexachordal "divide" each L-set can be broken up into two *implied* 3-6s. Thus, L is F–A–G♯–B♭–G–C, which may be broken up into F–A–G and G♯–B♭–C. It is important to note that the L-set is a 6-8 [023457], a highly symmetrical set whose narrow range and symmetry as realized here make aural identification of the whole-tone divisions quite easy.[67] Furthermore, as realized, there is musical justification for these segmentations: in the treble the two middle pitches of L are separated from the other pitches by articulation; thus we can link the fifth pitch (the G) with the first two similarly articulated pitches (the F and the A), forming one of the two 3-6s and leaving the other three to form another 3-6. The contiguous register assists in such identification. While the IL set in the bass is not broken in articulation quite as easily as L is, it too is in one register. Overall, this means that m. 21 is made up of no fewer than eight 3-6s, four in each register.

The relationship of m. 22 to m. 21 has already been discussed. Measure 23, as shown in Example 10, is essentially a repetition of m. 21 with registral displacement. Thus, the soprano B–C♯–D♯ and F♯–E–D of m. 21 is played down two octaves and one octave, respectively, with L played up one octave. The E–D–C of the bass is played down an octave, while the rest of the I(A) hexachord is played up one octave. The A–B–C♯ of the next hexachord is played up two octaves, but the remainder of IL

[67]Set-class 6-8 is also one of the six all-combinatorial hexachords.

remains untouched. Part of the beauty of this registral placement is that in addition to the integrity of the 3-6s (with the possible exception of the E–D–C of the bass), L is also kept intact at the top of the texture. This placement helps us to hear the many different 3-6s. On the other hand, while the rhythm and pitch ordering are almost exactly the same as m. 21, it does not sound like a repeat, which in this context would be extremely unusual.

Measure 23 differs from m. 21 rhythmically at the end of the measure, with a repeated note. This repeated rhythmic figure is picked up in the next measure and is then carried through to the end of the passage in m. 28. Similar in a way to the registral changes in m. 23, this rhythmic change, while keeping intact the character of the 3-6s (and occasional 3-2s), helps keep the passage from sounding dull—helps keep it from sounding like a long string of 3-6s. Measure 24 contains yet another twist on the same material, presenting some of the trichords in retrograde along with the third group of secondary sets invariant in pitch-class content to the second group of secondary sets.

In this way each of the four measures 21–24 sounds very much the same, yet very much different. The overriding sense of the measures is that scalar 3-6s are brought out, with 3-2 becoming more important as well. Measures 25–28 carry on that same feeling with different textures. At times the 3-6s are at the fore, other times they are more disguised, yet they are always present until the next phrase begins on the second beat of m. 28. The same may be said about the "recapitulation" of this passage, in mm. 52–56 (note that as mm. 52–53 can be related to mm. 21–22, m. 54 can be related to m. 23). Similar in a way to mm. 24 through 28, mm. 55–56 continue the 3-6s—mostly in the bass—with a different texture. Overall, both passages bring out the non-imbricated 3-6 trichords in a way that is both incredibly volatile and yet unvarying. Mixed in with the 3-6s of mm. 55–56 are straightforward row orderings, which serve as a bridge to the next passage. These formal relationships bring us to the next part of this analysis.

Second Summation and Final Formal Analysis

In a sense we have just summed up the nature of the entire work: unlimited change and potential for change within the stasis of a single row region. Measures 21–28 and 52–56 highlight this "developing variations"[68] aspect of the work, but only determine part of the overall form. The combination of two distinct sets of sounds—large leaps involving minor sevenths or major ninths, and instantiations of 3-6s—largely determines the form of 33b, Graphically displayed (Figure 22), it becomes clear that between the two different types of pitch-class relations, most of the piece—and most of the form—is accounted for.

Figure 22. Division of 33b into Leap or 3-6 music.[69]

Leaps:	1–4	9	12–16(–18)		32–34		37–40		46–48		57–60	
3-6s:		5–7		21–28		35–36		41–44	(46)	52–56		

Figure 22 does a fair job of laying out the form of the piece, with the start of a new "variation" coinciding with the start of a new pitch-class relationship. These relationships are not, however, the only form-determining aspects of the work. Register and—more importantly—texture also have an important effect on the way we hear it. In fact, these aspects are so important that one can almost wholly discern the form of 33b simply by examining the score from a distance. Figure 23 illustrates where textural and registral changes occur.

With very few exceptions, the changes in register and texture conform entirely to the sectional changes indicated in Figure 22. Furthermore, comparison of Figure 23 with Figure 15 reveals that textural and/or registral changes coincide almost exactly with

[68]See Frisch (1984) for a discussion of the term "developing variation."

[69]The melody in mm. 46–48 is not actually composed of large leaps, but the slow presentation of the P form is so distinct that it rightfully belongs in this group of measures. Furthermore the rhythmic character of the melody unites it with the other measures mentioned.

changes in segmentational strategies; only slight distinctions occur.[70]

Figure 23. Division of 33b by Textural and Registral Changes.

Texture:	(1)	5	10	12	19	21	23	28	32	(37)
Registure:	(1)		10	(12)			23	28	32	

Texture:	41	46	52		57	61	64	
Registure:	41	45—		54	57	61		

Only two passages remain to consider in terms of the overall form of the piece: mm. 10 (beat 2) through 11 (not including the B–C♯–B at the end of m. 11)—that is, the *poco scherzando*—and mm. 19–20, marked *drängend*. Both passages feature a sudden change of texture, complete fully-ordered row presentations, and minimal pitch repetition.[71] Both passages are sandwiched between clearly defined phrases, and both are faster, overall, than

[70]In addition to the divisions shown in Figure 23 there are subdivisions at mm. 17 and 49, and there is a slight conflict between mm. 56 and 57 (the preponderance of evidence, however, points to a division at m. 57). From Figures 15 and 23, then, to the sections shown in Figure 22 we must add the subsections from mm. 28–32 and 48–51, and the last two sections, starting at mm. 61 and 64, respectively. Conversely, further consideration of pitch and row content makes clear that mm. 46–48 should be connected to mm. 48–51, and the last two sections (mm. 61–63 and 64–end) should combine to form one large section.

I have already discussed mm. 64 to the end; it is in m. 61 that the dyadic segmentation of the row used in the next subphrase is first used. The main difference between the two subsections is that the texture of the second phrase is more regular, smooth, and even than that of the preceding phrase. Indeed, what I mentioned regarding the last (sub-)phrase uniting the row forms into one feeling of finality or summing up is apt, not only with respect to the last phrase taken independently, but with respect to the entire piece: it is as if mm. 61–63 provide the pitch ordering but not the rhythm to finish the piece, and mm. 64–68 take that pitch ordering and give it the feeling necessary to make it conclusive.

[71]The E in the bass in m. 11 is repeated, but other than that, there is no pitch repetition whatsoever in these two sections.

the surrounding passages. Furthermore, while m. 10 is not the first time when dyads are presented simultaneously, it is the first time we have such dyads in the middle register. This register had previously been occupied entirely by melody lines, and, after the return to the *dolce/cantabile* at the end of m. 11, reverts to such melodic motion until the bar before the *drängend* of m. 19. This *drängend* begins with the exact same registral placement of pitches as the *scherzando* of m. 10. And while the *drängend* marking does not indicate *scherzando*, the figuration in mm. 19–20 is reminiscent of one.

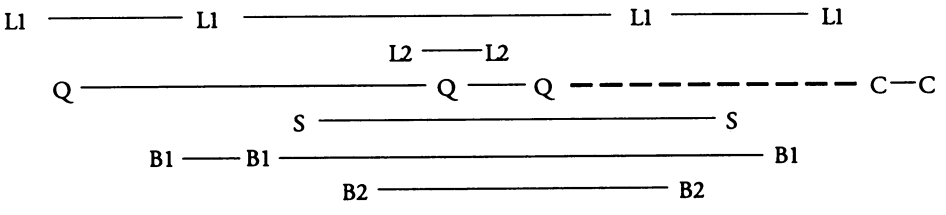
As I will demonstrate in greater detail (see *Third Perspectives*, below), both passages function as a cross between bridge and codetta. Contributing to the function of codetta is the fact that the realization of the pitches tends to emphasize minor sevenths, which is integral to both of the immediately preceding passages. Contributing to the bridge function of mm. 19–20 is the fact that while it continues the *Dyadic Perspective* of the first eighteen measures, in the right hand there are melodic secondary trichords (albeit different ones from those discussed above), foreshadowing the systematic exploration of the *Secondary Trichordal Perspective* in the following passage.

Once again, I will make a chart of 33b, shown as Figure 24, incorporating the refinements discussed above. "L" will stand for the slower melodic "Leap" music, "S" will stand for the Scalar 3-6 (or 3-2) music, "B" will stand for Bridge/Codetta music and "C" will stand for the final Coda in mm. 61–end. There are two different types each of Leap, Scalar, and Bridge musics, which are reflected in the six lines at the bottom of the chart (the first type of Scalar music is the "Q" theme referred to above).

Figure 24. Formal analysis of 33b by Melodic Type, showing long-term sub-type connections.

L1 & L2 = "Leap" music
B1 & B2 = Bridge/Codetta music
S & Q = "Scalar" music
C = Coda

Mm:	1	5	(9)	10	12	19	21	28	32	35	37	41	45	46	(51)	52	56	57	61	64
Var. A:	0				I		II		III		IV			V				VI	Coda	
Var. B:	0	I		II	III	IV	V	VI	VII		VIII	IX		X	XI	XII		XIII	XIV	XV
Th.:	L	S	(L)	B	L	B	S	B	L	S	L	S	(B)	L	(B)	S	B	L	C	C



Based upon the divisions within the music, I have also added two "Variation Number" rows (beginning with Variation 0 at m. 1[72]), one showing larger (Variation A) and the other smaller (Variation B) divisions. Variation B presents a somewhat more foreground way of hearing the music. Thus, with Variation B there is a new mini-section every time the texture of the music changes, with the sixteen sections varying in length from one and a half measures (Var.B.II) to eight measures (Var.B.V). Variation A, however, is closer to the way I think the piece is structured: each of the eight variations (except for Var.A.VI) have "a" and "b" sections within it, and most of the variations are structured L-S-(B). A comparison of Figure 24 with Appendix 2 shows how nicely the different types of row presentations coincide with the Var.A division of the piece. This analysis also coincides with most of the major tempo changes (as indicated with vertical lines in Figure 24): the only tempo/meter change that does not coincide with the beginning of a Variation A section is that at m. 52.

The Variation A sections range from four or five measures (Var.A.VI or Var.A.III, respectively) to twelve measures (Var.A.0), with most of the sections ranging from nine to eleven measures. If we unite the Coda with Var.A.VI, furthermore, that variation becomes a total of twelve measures, and the only section shorter than nine measures starts at m. 32—symmetrically beginning two bars before and ending two bars after the halfway point of the piece.

This is not to say that the work is necessarily in an arch form. Coextensive with the seven- or eight-part structure I have posited, above, there are many references forward and backward which add to the "free-flowing" feeling of the music—and possibly give more credence to the Variation B analysis.[73] When the music is

[72]I have labeled the first section "Variation 0" so as not to beg the question of whether or not there is a "theme" proper which is varied.

[73]Consideration of the question of where the "climax" in the piece occurs can also lend support to either the A division or the B division. Measures 28–32 are I think, among the most climactic, and feature the highest notes of the piece. If those measures *alone* form the climax, then perhaps the B division of the music is more accurate. Those measures, however, can legitimately be

examined from this more narrow viewpoint, in place of the a-b structure of the Variation A sections we have more of a "Rondo" form, with the "L" music as the refrain and the other sections as the episodes.

It is worth noting, however, that if we put the C-pair on the same line as the Q music, as I have, we arrive at a disposition of themes which appears *somewhat* palindromic, with the center of the arch at mm. 32–37, roughly the center of the piece. While I will not assert that the Coda music is drawn from the 3-6-based Q music, there is good reason to link the two in our ears. First, looking simply at the structure of the row, we note that the 3-8 at the start of the row and the 3-6 which is the second imbricated trichord combine to form a 4-21 [0246], a whole-tone tetrachord. Going further, the first imbricated pentachord is none other than the whole-tone 5-33 [02468]. Very seldom do we hear those connections in the music; in mm. 1–2, for example, the A is firmly connected to the following G♯, and in general the whole is heard in a dyadic sort of way.

The end of m. 63 and the beginning of m. 64, however, present both the tetrachord and the pentachord very clearly. First, using the I-form, we have the C–B♭–E–D tetrachord at the end of RI, which can be joined by the F♯ just previous. This is stated in retrograde in the next measure, the E–D–B♭–C as the repeated "ostinato" joined by the remaining F♯. The situation is similar in the right hand: the B–C♯–F–E♭ is the ostinato, joined at the opening of the measure by the A. There are also some rhythmic similarities between the C-music and the Q-music.

Thus, while there is no question that the C-music is quite different from the Q-music, the C-music has the beauty of not only taking the whole-step scalar idea one and then two steps further, but of uniting the imbricated chords into one clear, final whole-tone statement—in effect, it is a pun, turning 3-6 into 5-33. This pitch relation helps give the music the finality I discussed above.

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paired with the phrase from m. 21 to m. 28, as one long climax. This view lends more support to the A division of the music.

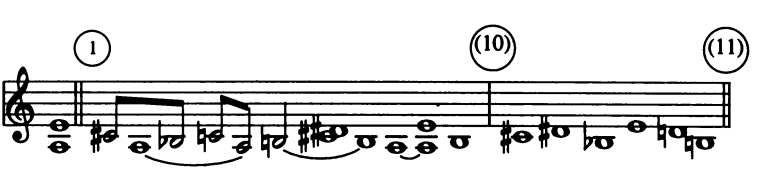
Third Perspectives: Register and Tonality

Although much of the discussion about the overall form of 33b leading to Figure 24 supports the Variation B analysis (the "Rondo," which features shorter phrases and phrase groups), as said I believe the Variation A analysis (the "Developing Variations," which features longer phrases), is more accurate. In this last section I will examine 33b from a pair of different *Perspectives*—the *Registral* and *Tonal Perspectives*—which not only support the longer phrase analysis but also cast a very different light on the entire composition.

From the *Registral Perspective*, I will examine middle-ground pitch relations in a portion of the register occupied by the main melody in the first section of the piece. The total register of that melody ranges from A3 to D5; taking into account the wide leaps characteristic of this melody and following the voice-leading through,[74] it can be seen that the total range is divided roughly into two: the notes from A3 to E4, and from F4 to D5.

Focusing on the notes in the narrow register of A3 to E4 in the first eleven measures from this *Registral Perspective*, we notice the notes revolve around or move towards B3. Example 14 presents some of these relationships graphically;[75] the notes from m. 1 through the first beat of m. 10 are before the barline, and the notes of mm. 10–11 are after the barline.

Example 14. Registral Perspective on mm. 1–11.
(Note that the C♭, D♭, and E♭ of 4–7 are respelled.)



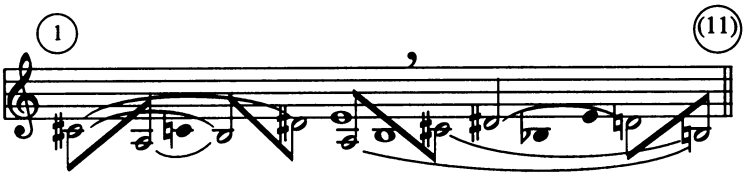
[74]As one might with the "virtual polyphony" of a Bach melody.

[75]In Examples 14 and 17, the range of the register in question is shown on the extreme left. Notes considered ancillary to the main pitch progression have solid heads, while the other notes are hollow.

Disregarding for the moment the first A, there is a "sequence" leading to B: C♯–B♭, C–A, B (shown with stems and beams). The B is then "prolonged" by the Q melody (with the D♭ and E♭—spelled as C♯ and D♯—shown together), resolving back to the B at the end of m. 6.

Example 15 presents a reduction of Example 14, demonstrating that the "root progression" over the first five measures is A to B, stepwise. Simultaneously the C♯ in the upper voice on the one hand moves down through C♮ to B♮, while on the other hand moves up to a D♯.

Example 15. First registral reduction of mm. 1–11.



This stepwise motion from A to B is presented literally in m. 4, in which the two notes are adjacent (although in different hands). Significantly, this stepwise motion is put into relief by reversing it in m. 7: the last note of the Q melody, the C♭, moves down to an A (subsequently picked up by the "tenor" voice) which is prolonged for a measure and a half until it resolves upwards again to the B, in m. 9. To stress this resolution, the final hexachordal statement in the bass with the A-to-B motion made registrally distinct is repeated without any notes in the treble (from the last note in m. 9 through the first beat of m. 10). This repetition of the A–B cadence in mm. 7–10 is represented by the last three notes in the first "measure" of Example 14.

The resolution of A to B in m. 10 is only temporary, however, as it is followed immediately by the *poco scherzando* section (mm. 10–11), which posed some formal difficulties, above. The second "measure" of Example 14 presents those notes graphically, and Example 15 continues the reduction of those notes. The overall gesture of the *scherzando* is—not coincidentally—almost exactly the same as the preceding nine and a half bars: a move

down from C♯ to B. Whereas the C♯ of m. 1 moved down to B through a C♮ while the A moved directly to B, in mm. 10–11 the reverse occurs: the A moves up to B through B♭, while the C♯ moves directly to B. The core notes of these progressions, C♯/A–B, is none other than our 3-6!

We can also take note of a voice-leading progression whereby D♯4 is embellished by an upper neighbor E. In the *scherzando*, however, the E itself moves down not to a D♯ but to a D♮, *which was the only pitch in that register not presented in the first ten measures*. It is the D that ends the phrase, in essence satisfying our need for pitch saturation in the register in question.[76] Measures 10–11, then, emphasize and repeat the overall gesture of the first nine measures.

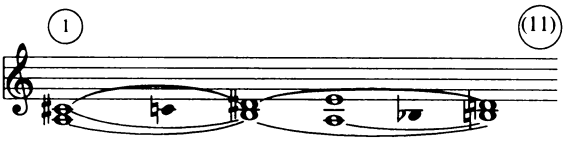
It is this compressed recapitulatory gesture in the *scherzando* which, I believe, gives it the characteristics of a codetta. At the same time, since pitch trends in the *scherzando* resolve back to the B of the next phrase, it has a bridge-like quality. Nevertheless, it is the recapitulatory codetta quality which makes linking these measures to the preceding nine and a half as the entire first phrase most logical—that is, just as set out by Variation A in Figure 24. In a similar way, it is significant that the *drängend* in mm. 19–20 begins in the right hand with a B and ends in the left hand with a B. The middle register, however, rather than rounding out the phrase, opens it up, propelling it into the next passage. Thus, again, this passage functions as both bridge and codetta.

In sum, there are two sets of general pitch trends in this passage: the resolution of C♯ and A to B (at times direct, at times via semitone), and the movement of C♯ to D through E. This is captured in Example 16, a further reduction of Example 15.

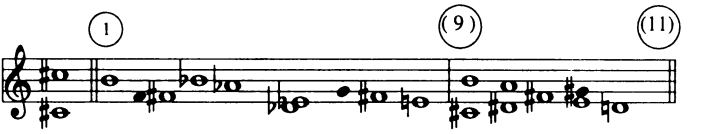
Example 17 presents a reduction of a slightly higher range of the same measures, and further confirms this theory. Put simply, there is a line that moves down from B through F♯ to E in the first nine measures, which—after a compressed repetition—finally resolves to D.

[76]Note that the D5 in m. 9 represents the climax of the first nine measures.

Example 16. Second registral reduction of mm. 1–11.



Example 17. Alternative Registral Perspective on mm. 1–11.

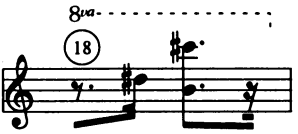


This higher register encompasses all of the notes in the upper half of the main melody's range (as discussed above), but for the climactic D5 in m. 9; the addition of the D5 to Example 17 would lend emphasis to D as the goal note. When examined from a narrow *Registral Perspective,* then, there is a sense that part of what these passages are "about" is an unfolding of the interval of a third—an A-major chord resolving to a B-major or B-minor chord. The *Registral Perspective* thus invokes the *Tonal Perspective*.

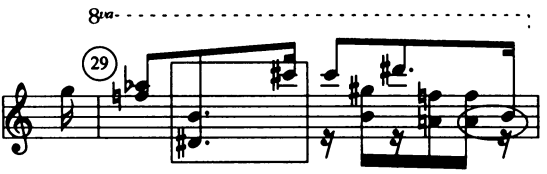
The validity of the *Tonal Perspective* on 33a lends credence to its application to 33b. Further confirmation can be obtained by examining the pitch *extrema* of the entire work. As shown in Examples 18 and 19, the two passages reaching the highest pitches are in mm. 18 and 29, first a high C♯, second a high D♯. In both cases, the C♯ and the D♯ are linked together with a B—forming a 3-6 with B as its lowest note (in Example 19, shown in the box). In m. 29, furthermore, there is even an A-to-B move in the alto voice (shown within the oval).

The notes at the other extreme can be found in the left hand of the last three bars of the piece. Example 20 gives an approximate reduction of these notes. In essence, there are two pitch trends: down from E♭ to B through D♭ (a 3-6) and up from A♭ to A to B (a 3-2). Adding to this are the E♮s in the right hand, which combine with the A–D♭s to form A-major chords. (Note that the final D♮ in Example 20 is actually played an octave higher in the right hand).

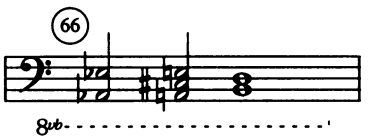
Example 18. Isolated highest notes (from m. 18).



Example 19. Isolated highest notes (from m.29).



Example 20. Isolated lowest notes (reduction from mm. 66–68).



Clearly, any references to tonality must be taken with a grain of salt. Nevertheless, it is my contention that the combination of 3-6 figures (D♯–C♯–B and C♯–A–B) account for much of the long-term structure of this work; and if "tonality" is understood in the sense developed in the discussion of 33a (that is, as unequal emphasis on selected pitch-classes), then assertions of tonality for 33b are not that radical. The D♮ with the B at the end of the first phrase (mm. 10–11) *and* the last phrase (mm. 66–68), furthermore, is a move that is provocative if nothing else.

Provocative, too—and more important—is how these *Registral* and *Tonal Perspectives* lend weight and support to one of the two modes of formal analysis (the Variation A analysis); if the "tonality" discussed had absolutely no validity, one would not expect an analysis based upon it to coincide so well with the other less controvertible analytic approaches. These two *Perspectives* do not make the analysis, but rather support it.

Conclusion

1. Analysis of 33b

While justified in part by the range and nature of the main melody in the first section of 33b (together with other sections with similar implications), I admit that applying the *Registral Perspective* to selected measures of 33b is somewhat arbitrary (what about other registers, other measures?). The imposition of a *Tonal Perspective* on the serial techniques of both 33a and (especially) 33b, furthermore, is only of limited utility, and is potentially more misleading than informative: the existence of a real "tonality" in what are clearly atonal serial works must be understood to be in the mind of the listener; as each listener is different, so too will the perception of tonality in these works. On the other hand, there is no question that selected pitches and pitch-classes are given unequal emphasis through the course of both 33a and 33b. Regardless, both the *Tonal* and *Registral Perspectives* cast a different light on both short- and long-term voice-leading connections which I believe are relevant to an understanding of this work, and which might have been overlooked if we were to rely solely on serial ordering relations—that is, on the *Serial Perspective*.

Similarly, an analysis that begins and ends with observations of where the serial ordering of pitches is violated and where it is not, is an analysis that falls far short of addressing the real issues of the composition: aside from the unifying feature of the row itself, what makes this composition work, how is the listener likely to perceive the relationships that occur both at and below the surface, and what is unique to this piece—as opposed to a work by another composer using the same row? The multifaceted view of a piece that multifarious *Perspectives* provides may generate answers to these questions.

2. Summary of Perspectives

I can now present a final revision of Figure 3, reflecting the above analysis of 33b. In addition to the division of the Twelve-

Tone Series into the *Twelve-Tone Perspective* and the *Serial Perspective*, new connections and subsidiary *Perspectives* have been added; additionally, Figure 25 reflects the actual use of the different *Perspectives* in 33a and 33b.

The range of quasi-formalized *Perspectives* shown in Figure 25 empowers the analyst to look beyond the row to the music itself. There are assuredly other possible *Perspectives* applicable to other pieces; I have concentrated on those I have found useful in analysis of 33a and 33b. No single *Perspective* provides the key to the entire composition, but taken as a group the variety of *Perspectives* provide great insight into music.

3. Performance and Analytic Approaches

Just as this list is not exhaustive, neither is it the case that all of these *Perspectives* are necessary. For the performer, for example, the *Perspectives* relating most directly to voice-leading connections (*Melodic*, *Harmonic*, *Registral*, and *Tonal Perspectives*, most especially) would probably yield the most insight into how best to perform the work.

In regard to the performance of 33a, I have already mentioned how the accompanimental parts of mm. 14–23 should be played with a certain amount of subtlety, keeping those notes in the background with regard to the melodic tones. In addition I can mention two approaches to performance of the piece in general. First, to project the form of 33a, one might want to emphasize the differences in segmentation so central to the composition: thus the break before the C–B dyad in the left hand of m. 4, for example, and the staccato marks under the *tenutos* in the right hand of mm. 10–11 should be carefully respected, as should the break in articulation in the left hand of m. 16.

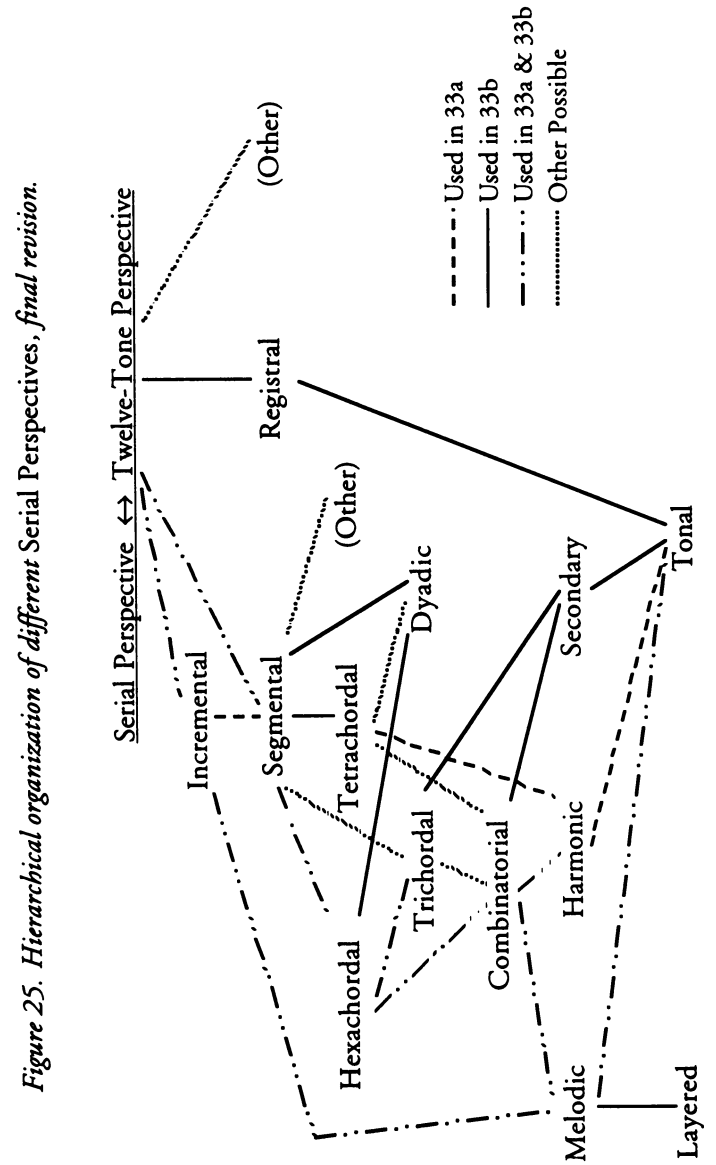


Figure 25. Hierarchical organization of different Serial Perspectives, *final revision.*

In the transitional passages (mm. 12–13 and 29–32) there is more freedom: the right hand of mm. 12–13, for example, might be best performed as segments of 4, 2, 2, and 4 notes each, blurring the tetrachordal/hexachordal distinction. Secondly, the performer should decide whether or not to play up the E♭/A♭ tonality discussed (or alternatively the contraposed tonal areas and the transitions between them), or to try to emphasize the atonal aspects of the piece.

The same may be said of the conflict between tonality and atonality in 33b: is there any sort of "B-ness" in force? If so, should that be emphasized or not? The distinctions between *Dyadic* and *Secondary Segmentations* may be emphasized without necessarily committing to a tonal or atonal perspective. Undoubtedly, however, the importance of the segmentational strategies to both the form of the piece and to the salience and the relative importance of melodies and harmonies must be addressed.

While this may sound obvious or intuitive, it is surprisingly not at all the approach taken by most analysts. The most common type of analysis for a work constructed from a pair of hexachordally combinatorial rows would be one in which hexachordal relationships and vertical as well as horizontal aggregate completion are viewed as paramount. This approach is relevant to portions of 33a (mm. 14–23, especially), but in the long run it yields relatively little information about the other parts of 33a, and fairly little about 33b. Similarly, the typical undergraduate-level study of 33a or 33b would begin and end with a discussion of the level of freedom Schoenberg exercised with respect to ordering relationships, usually summarized by demonstrating how this level of freedom increases as the piece progresses. The shortcoming of these approaches essentially is that the compositional method—or more appropriately, the twelve-tone row—is being confused with the composition itself. If we as analysts desire to figure out what makes these pieces work so that we may make them come alive, we need to do much more than discover how the piece was composed, we need to discover how the piece "works."

And last, let me address one of the original questions regarding the opus 33 pieces: why should they be referred to as "companion pieces?" It is my belief that they are companion pieces not due to any specific musical relationships, nor to any need to perform the two works together. Rather, it is because 33b continues and expands the exploration of the same serial *Perspectives*, most especially the variety of *Segmental Perspectives*. 33a's exploration of the *Segmental Perspective* includes *Hexachordal Combinatorial*—with its concomitant *Melodic and Harmonic—Perspectives*, as well as *Tetrachordal Segmental*. 33b substitutes *Dyadic*, *Trichordal*, and *Secondary Perspectives*. In both pieces, the particular usage of the *Segmental Perspective* has voice-leading and potential tonal implications. In sum, then, the opus 33 Piano Pieces as a pair of companion pieces are not about the twelve-tone rows themselves, but *how* twelve-tone rows are used.

Appendix 1: "Map" of 33a[1]

AB = Hexachords
klm = Tetrachords
wxyz = Trichords
... repetitions (not used consistently)
r(*n*) = retrograde statement of partition *n*
u(*n*) = unordered statement of partition *n*
i(*n*) = incomplete statement of partition *n*
R*n* = retrograde statement of row form *n*
Temp. = Tempo Row = Row Form Part. = Partitioning Perle = Perle's "Sonata Form"

Perle: Exposition: First Group

	Subject 1		Episode							Subject 1′		Trans.	
Temp.	*Mässig (cantabile)*							*poco rit... a tempo*				*poco rit... molto rit...*	
Mm.	1	2	3	4	5	6	7	8	9	10	11	12	13
Row	P0		RI5			P0		P0		P0	RI5	I5	
Part.	klm		m	l	k	klm		kk	lm	klm	mlk	klm (or AB?)	
Part.		mlk	m	l	k		mlk (or BA?)	kk	lm	klm	mlk	r(k) u(l) m (or u(A)B?)	
Row		RI5	R0				RI5	I5		I5	R0	P0	

Appendix 1 (continued): "Map" of 33a

Perle:	Exposition: Second Group											
	Subject 2		Episode					Subject 2′		Codetta & Transition		
Temp.	*a tempo (cantabile)*					*heftiger*	*rit.*	*ruhiger (cantab.)*		*rit...*	*a tempo*	
Mm.	14	15	16	17	18	19	20	21	22	23	24	25	26
Row	P_0					R_0		P_0		P_0		P_0	
Part.	A	A	B			B	i(A).. ^{*2}B ^{*3}			A		A	B
Part.	wxxw	wxxw	yyy....		zz	zy	x(i(w))x	y...	z^{*2}	w	x	wx	yz
Part.	w	x	y	y	z	zyzy	xx(i(w))	y	z^{*2}	w	x	wwxw	yz
Part.	A . . .		B . . .			B	B i(A)	B^{*3}		A		A	B
Row		I_5				RI_5		I_5		I_5		I_5	

Perle:	Development					Retransition ^{*4}			
Temp.	*steigernd*								*fermata*
Mm.	27		28		29	30	31	32	
Row	R_0	RI_5	P_2	I_0	P_2	I_0	I_0	R_7	
Part.	B	A	A	A	A	klm r(m)	klm	mlk	
Part.	zy	xw	wx	wx	wxyz		(w)	(z)	
Part.	r(z)r(y)	xw	wx	wxx	w(xy)z	klm	klm	mlk	
Part.	r(B)	A	A	A	k(l)m	(AB?)	(or AB?)		
Row	RI_5	R_0 I_7	P_7		I_7	P_7	P_7	RI_0	

Appendix 1 (continued): "Map" of 33a

Perle:	Recapitulation					Coda						
	Subject 1″				Subject 2″							
Temp.				*rit...*	*Ruhig*			*steigernd*	*rit*			
Mm.	32	33	34		35	36	37	38		39	40	
Row	P0		RI5		R0	P0	P0	I5		P0		
Part.					B	A	(wxyz)			(wxyz)		
Part.	klm		ml	kk	(m l k)		klm	klm		klm		
Part.	klm		ml	k	m l k			u(m)lk	mlk	kl	m	
Part.					B*5	A		(zyxw)		(wxyz)		
Row	I5		R0		RI5			RI5	R0	I5		

NOTES

[1]I have used Schoffman's trichord and tetrachord labeling system with two changes: in place of ABC for the tetrachords, I have used klm, reserving AB for hexachords—in conformity with the remainder of this paper and standard analytic usage. Also, Schoffman uses capital letters to designate segments drawn from the P0 and R0 row forms, and lower case for those drawn from I5 and RI5 row forms; I use capital letters to indicate the hexachords, and lower case letters to indicate the smaller segmentations. In both Schoffman's partial analysis and my map, "wxyz" would indicate a non-retrograde form, and "zyxw" would indicate a retrograde from. See Schoffman, pp. 33–36.

[2]In place of repetitions of i(B) of R0, m. 20 could end with i(A) of R0 and RI5.

[3]There is a possible misprint in mm. 21–22: A/A♭ conflict; also possible continuation of i(A) of m. 20 (see above).

[4]Retransition: my emendation of Perle's analysis.

[5]Possible misprint in m. 35: B/B♭ conflict.

Appendix 2: "Map" of 33b

Tempo	*Mässig langsam*					*poco rit.*												*drängend*			Meter
Markings	*cantabile*				*molto staccato*					*poco scherzando cantabile*							*cresc. e accel*				Change
Mm.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	(21)
Rows	P	—	I	—	RI	———				I		P	—	RI	——		R	RIA RIB	P-RI-R-I		
Rows					R	———				P											

Tempo	(6/8)	*Etwas rascher*							*Etwas breiter*			*allargando rit.*		Meter
Markings								*leggiero*						Change
Mm.	21	22	23	24		25	26	27	28	29	30	31		(32)
Rows	P	RI	P+	RIA-RIB+		P	A-RB	A-RA-B		IA-IB	RIB-RIB-RIA-RIA			
Rows	I	R*1	I	RA—RB		I	IA-IB-RIB	IA-IB-RIB		A-B	RB-RB-RA			P

Tempo	Tempo 1 (2/4)				*rit.*	*Ruhig*													*rit.*	Meter
Markings	*cantabile*																			Change
Mm.	32	33	34	35	36		37	38	39	40	41	42	43	44	45	46	47	48	49	50	51 (52)
Rows	R	———					R*2		R		A-RIA——			RB-RIB-IB		A-RA-A-RA-A-RA			B	RI	
Rows	RIB-RIB-RIA			IA-RIA-IA			R		RI		RA———			RIB-RB-B		IA—	RIA—	IA	IB	B-RB-RA	

Appendix 2 (continued): "Map" of 33b

Tempo Markings	*Etwas Langsamer* (6/8)				*rit...*	Meter Change (4/8)													*poco rit.*		
Mm.	52		53			54	55	56	57	58	59	60	61		62	63	64	65	66	67	68
Rows	IA+	IA+	IB+		RIB+	P+	R	A	P		P+I		A—B		A—B		A-A		B-B		
Rows	A	A	B[*3]		RB	I	RI[*4]	IA	I					RI[*5]		RI	IA-IA—		IB-IB-IB		

NOTES

To the extent possible, when two different row forms are presented simultaneously, their positioning in the chart represents approximately which row form is registrally above the other. In this chart, "+" is used to indicate that one row or row segment is presented simultaneously with the other *without* clear registral differentiation.

As in the body of the article, "A" and "B" refer to the first and second hexachords, respectively, of either row form. "P" on its own indicates a complete statement of P_0, "R" on its own indicates a complete statement of RP_0, and "I" on its own indicates a complete statement of I_5. Similarly, "A" and "B" alone indicate one hexachord from P_0.

[1]Assuming that the correct accidentals for the lowest line in the bass are as printed in the 1959 Edition, not the Collected Works. See Cone (1972), 73.
[2]Assuming that the G♭ in the 1959 Edition (B♭ in the Collected Works) is a misprint, and should be C♭. See Cone (1972), 73.
[3]Assuming that the first E♮ in the treble is a misprint, and should be C♮. See Cone (1972), 73.
[4]Assuming that the E♮ in the bass preceding the two F♯s should be G♮. See Cone (1972), 73.
[5]Final two notes of RI form, E and D, are missing, "supplied" at the end of the following RI statement.

References

Alegant, Brian. 1996. "Unveiling Schoenberg's op. 33b," *Music Theory Spectrum* 18/2: 143–166.

Bailey, Kathryn. 1976. "Row Anomalies in Opus 33: An Insight into Schoenberg's Understanding of the Serial Procedure," *Current Musicology* 22: 42–60.

Clark, Timothy Vincent. 1981. "A Notational Problem in Schoenberg's Opus 33a." Doctoral Dissertation, Brandeis University.

Cone, Edward T. 1960. "Analysis Today," *Musical Quarterly* 46: 272–288.

Cone, Edward T. 1972. "Editorial Responsibility and Schoenberg's Troublesome 'Misprints'," *Perspectives of New Music* 11/1: 65–75.

Dunsby, Jonathan. 1993. *Early Twentieth-Century Music*. Oxford: Basil Blackwell, Ltd.

Friedmann, Michael. 1993. "Motive, Meter and Row: Conflicting Imperatives to the Performer in Schoenberg's *Klavierstück*, op. 33b," *Ex Tempore* 6/2: 29–49.

Frisch, Walter. 1984. *Brahms and the Principle of Developing Variation*. Berkeley: University of California Press.

Glofcheskie, John. 1976. "'Wrong' Notes in Schoenberg's Op. 33a," *University of Western Ontario Studies in Music* 1: 88–104.

Graebner, Eric. 1973. "An Analysis of Schoenberg's *Klavierstück*, Op. 33A," *Perspectives of New Music* 12: 128–140.

Hamao, Fusako. 1986. "On the Origin of the Twelve-Tone Method; Schoenberg's Sketches for the Unfinished Symphony (1914–1915)," *Current Musicology* 42: 32–45.

Hyde, Martha. 1993. "Dodecaphony: Schoenberg", *Early Twentieth-Century Music*, ed. Jonathan Dunsby. Oxford: Basil Blackwell, Ltd.

Lefkowitz, David S. 1997. "Combinatorial Functionality in Schoenberg's Non-Serial Opus 23 Number 4," *Music Analysis* 16/3: 309–348.

Lewin, David. 1962. "A Theory of Segmental Association in Twelve-Tone Music," *Perspectives of New Music* 1: 89–116.

Mead, Andrew W. 1987. "'Tonal' Forms in Arnold Schoenberg's Twelve-Tone Music," *Music Theory Spectrum* 9: 67–92.

Morris, Robert D. 1987. *Composition with Pitch Classes*. New Haven: Yale University Press.

Morris, Robert D. and Brian Alegant. 1988. "The Even Partitions in Twelve-Tone Music," *Music Theory Spectrum* 10: 74–101.

Ogden, Wilbur Lee. 1955. "Series and Structure: An Investigation into the Purpose of the Twelve-Note Row in Selected Works of Schoenberg, Webern, Krenek and Leibowitz." Doctoral Dissertation, Indiana University.

Perle, George. 1991. *Serial Composition and Atonality*, Sixth Edition, Revised. Berkeley: University of California Press.

Perle, George. 1977. *Twelve-Tone Tonality*. Berkeley: University of California Press.

Rufer, Josef. 1954. *Composition with Twelve Notes Related Only to One Another*. Westport: Greenwood Press.

Schoenberg, Arnold. 1969. *Structural Functions of Harmony* (Revised Edition), ed. Leonard Stein. New York: W.W. Norton and Company.

Schoenberg, Arnold. 1975. *Style and Idea*, ed. Leonard Stein. London: Faber and Faber.

Schoffman, Nachum. 1983. "Schoenberg Opus 33a Revisited," *Tempo* 146 (September): 31–42.

Starr, Daniel and Robert D. Morris. 1977, 1978. "A General Theory of Combinatoriality and the Aggregate (Parts 1 and 2)," *Perspectives of New Music* 16/1: 3–35, and 16/2: 50–84.

Tuttle, T. Temple. 1957. "Schoenberg's Compositions for Piano Solo," *The Music Review* 18: 300–318.