Presentation of "Musical Idea" through Tetrachord Exchanges and Rhythmic/Metric Correspondences in the Intermezzo and Gavotte of Schoenberg's Suite for Piano, Op. 25

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Martha Hyde has argued persuasively against understanding Schoenberg's transition from atonal to twelve-tone music in terms of a simple chronological progression, in which each subsequent piece took him one step closer to his mature twelve-tone style. According to her, there was too much overlap between the beginning and ending dates of pieces in proto-twelve-tone and twelve-tone styles to suggest such a progression.[1] Still, it may be the case that within the movements of a single opus number, one *can* find a chronological progression, in which the composer invented new and more effective ways of realizing his musical idea as he wrote one piece after another.

In a recent book, I demonstrated how the Prelude, Menuett and Gigue of Schoenberg's Op. 25 Piano Suite create such a chronological progression in the way they realize their musical ideas.[2] The book describes and illustrates "musical idea," following Schoenberg's scattered comments on *musikalische Gedanke*, as a process from beginning to end of a piece. This process involves presenting or suggesting a musical shape (often a symmetrical one) or relationship, obscuring it, elaborating or developing the "problem" caused by such obscuring, and finally confirming the shape or relationship in a more-or-less conclusive way. In some cases, the "solution" is followed by a codetta that again obscures what was just clarified. The Prelude first hints at, then obscures a symmetrical collection of pitch classes or pitches (creating a problem). A middle section of the piece (mm. 17-19) creates a completely different symmetrical pattern (elaborating the problem), and then, directly afterward, Schoenberg presents his original symmetrical collection in a pure or almost-pure state (solving the

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1 Martha Hyde, "Musical Form and the Development of Schoenberg's Twelve-Tone Method," *Journal of Music Theory* 29/1 (Spring 1985): 85-88.

2 Jack Boss, *Schoenberg's Twelve-Tone Music: Symmetry and the Musical Idea* (Cambridge: Cambridge University Press, 2014).

problem). In the Menuett, which was composed later, the means of realizing the same dialectic of problem-elaboration-solution becomes more subtle. The first two measures present a situation (Stephen Peles was the first to describe it)[3] where different chronological and registral partitions of the aggregate enable the analyst and listener to pick out (unordered) hexachords or tetrachords of three row forms other than the main row of the passage—the main row (presented in order within its discrete tetrachords) is P_4, but a registral partition culls out the reordered hexachords of I_4, a chronological partition the reordered hexachords of P_{10}, and a combination of registral and chronological partitions the reordered tetrachords of I_{10}. (These four row forms and their retrogrades are the only forms Schoenberg uses in the Suite.) Other passages in the subsequent measures admit similar multiple interpretations. But midway through the piece (m. 12), a rotation of P_{10} forward by two order positions seems to make it impossible for that row to be repartitioned and reinterpreted as other row forms, as its predecessor had been. This problem comes up again and again as other forms are rotated similarly. The solution to the rotation problem comes in mm. 19-20. Row form I_{10} appears, rotated forward two order positions; nevertheless, a chronological partition yields the hexachords of another form, I_4.

Finally, in the Gigue, the last piece composed in Op. 25, the musical idea is manifested in still another way, one that looks forward to the piece Schoenberg would compose next, the Woodwind Quintet Op. 26. Schoenberg introduces a foreign element into the piece, which becomes increasingly problematic before the ordered twelve-tone row assimilates it. The foreign element consists of strings of alternating tritone and perfect fifth intervals (usually given in triplet rhythm), which interrupt and obscure symmetrical pitch-class patterns at the piece's beginning, and lead to further complications (including the introduction of two octatonic scale segments). Near the end of the piece, however, Schoenberg puts the tritone-perfect fifth strings back into context by presenting a number of ordered versions of the tone row, and highlighting some of their subsets that create alternating tritones and perfect fifths.

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[3] Jack Boss, *Schoenberg's Twelve-Tone Music: Symmetry and the Musical Idea* (Cambridge: Cambridge University Press, 2014).

This article will fill in more of the details of the Suite's progression through different ways of manifesting the musical idea by considering how the Intermezzo and Gavotte also contribute to that progression. Example 1 provides the order in which the six pieces of Op. 25 were composed with beginning dates and dates of completion, next to the eventual ordering in the published version.[4] The fact that Schoenberg finished his Intermezzo on February 23, 1923 and began his Menuett on the same day seems consistent with the relationship between the two pieces' overall strategies. In brief, the Intermezzo introduces the concept of producing segments of other row forms within a given row through registral and chronological partitions (what I will call "collectional exchange" later in the article), but it does so using tetrachords, not hexachords, and these allusions to other row forms hardly ever exhaust the aggregate as they do in the Menuett. Instead, what appears more commonly in the Intermezzo is one or two tetrachords from the row immediately preceding or following the one undergoing the exchange, or (as the piece progresses) a row further on in the piece. (When exchanged tetrachords do exhaust the aggregate near the end of the Intermezzo, we can understand that as a high point or "solution" to the piece's problem.) Because of all this, we can understand the Intermezzo as a preliminary study for the hexachord exchanges that do exhaust the aggregate more consistently in the Menuett.

The Gavotte was also begun on February 23, the same day Schoenberg finished the Intermezzo, but takes a different direction (from the Menuett) that is also inspired by features of its predecessor. It incorporates rhythmic and metric correspondences into its ideal shape. The piece sets up a relationship between tetrachordal partition, rhythm, meter and texture that it then develops according to the familiar pattern of suggest, obscure, strive toward, and realize. These non-pitch parameters certainly had contributed in crucial ways to the development of the ideal in the Intermezzo, but the ideal itself was not defined in rhythmic terms in the earlier movement.

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[4] The dates are taken from Jan Maegaard's careful account of the history and sketches of Op. 25 as well as several pieces surrounding it: "A Study in the Chronology of Op. 23-26 by Arnold Schoenberg," *Dansk aarbog for musikforskning* (1961): 93-115.

The remainder of the article will now show in detail and with copious illustrations how these two very different manifestations of musical idea are worked out.

Example 1. Comparing the order in which the six movements of Op. 25 were composed with the order in which they appear in the published version

Order of composition	**Beginning date**	**Completion date**	**Order of publication**
1. Prelude	July 24, 1921	July 29, 1921	1. Prelude
2. Intermezzo			2. Gavotte
mm. 1-10	July 25, 1921	July 29, 1921	
mm. 11-45	Feb. 19, 1923	Feb. 23, 1923	
3. Gavotte	Feb. 23, 1923	Feb. 27, 1923	3. Musette
4. Musette	Feb. 23, 1923	Mar. 2, 1923	4. Intermezzo
5. Menuett and Trio	Feb. 23, 1923	Mar. 3, 1923	5. Menuett and Trio
6. Gigue	Mar. 2, 1923	Mar. 8, 1923	6. Gigue

Intermezzo

The Intermezzo, despite being composed in two stages with a two-year hiatus in between (as shown in Example 1), is a remarkably unified piece. Martha Hyde has already described this unity in terms of musical form. She claims that the piece's binary form is projected by using "secondary harmonies" to delimit phrases in the first half (mm. 1-20) and "invariant harmonies" to delimit them in the second half (mm. 20-45). (Secondary harmonies are collections equivalent by set-class to contiguous segments of the twelve-tone row; while invariant harmonies are collections equivalent by set-class to various combinations of the invariant pitch-classes between different forms of the row.)[5] It is not my intention to dispute Hyde's reading of the Intermezzo, which is a compelling account of how Schoenberg realizes an old form in a new way. Instead, as I mentioned above, I will show that

[5] Hyde, "Musical Form and the Development of Schoenberg's Twelve-Tone Method," 110-32.

Schoenberg uses certain other invariant properties of the row to create an overall scheme like that of the other movements in the Suite: suggesting a relationship, obscuring it, striving toward it, revealing it clearly, and finally obscuring it again.

The relationship that I refer to in the previous paragraph may be called a "collectional exchange" (borrowing half of the term from Mead's "collectional invariance" and the other half from tonal analysis, the "voice exchange").[6] It is the property obtaining between two forms of the same row when applying the same tetrachordal (or trichordal, or hexachordal, etc.) order-number partition to both produces in each the pitch-class collections of the other's three discrete tetrachords (or discrete subsets of other sizes). I will use P_4 and P_{10} to illustrate, at the top of Example 2.

Under order-number mosaic **W7**, P_4 produces pitch-class collections {3,4,5,6}, {1,7,10,11}, and {0,2,8,9}, the same as the discrete tetrachords of P_{10}; and P_{10} produces {0,9,10,11}, {1,4,5,7}, and {2,3,6,8}, the same as the discrete tetrachords of P_4.

Collectional exchange is not an unusual property among row pairs. In fact, given the right partition, any pair of rows related by inversion exhibits it. The property results from a condition Milton Babbitt describes in "Twelve-Tone Invariants as Compositional Determinants"—in the twelve vertical dyads resulting from considering the corresponding order numbers in two inversion-related rows as pairs, one of two pitch-class contents will be found: either the same pitch class will be given twice, or two pitch classes will be associated that are also found as a vertical dyad in one other location among the twelve dyads. In addition, any two rows related by transposition with t = 6 will exhibit the same kind of vertical dyad invariance, because each pitch class in a vertical pair will map onto its partner under t = 6.[7] Since Schoenberg limits himself to four row forms in the Intermezzo, P_4, P_{10}, I_4, and I_{10}, related among themselves either by inversion or by transposition with t =

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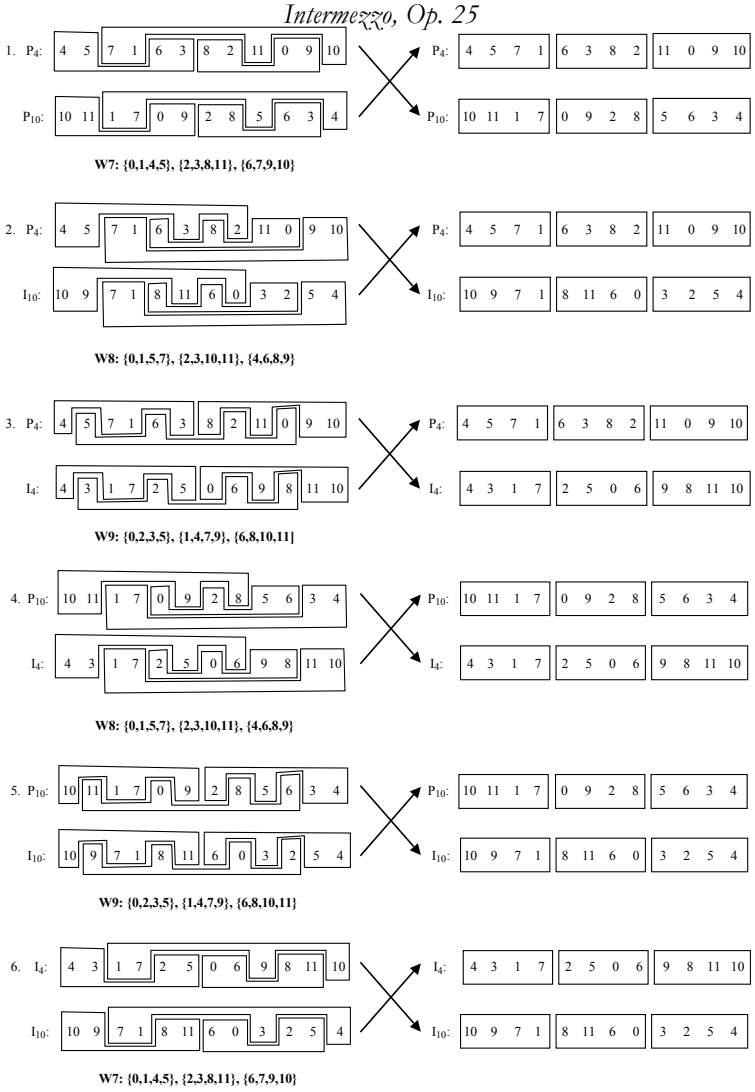
6 Andrew Mead introduces the notion of "collectional invariance" in "Some Implications of the Pitch-Class/Order-Number Isomorphism Inherent in the Twelve-Tone System: Part One," *Perspectives of New Music* 26/2 (Summer 1988): 106-112.

7 Milton Babbitt, "Twelve-Tone Invariants as Compositional Determinants," *The Musical Quarterly* 46 (1960): 254-55.

6, each of his rows has the "collectional exchange" property with respect to all three of the others. The whole of Example 2 serves as

Example 2. The potential tetrachordal collectional exchanges in Schoenberg's Intermezzo, Op. 25



an illustration. Notice that three order-number mosaics, **W7**, **W8**, and **W9**, produce collectional exchange among the six row pairs, each mosaic associated with the two pairs related by the same transformation (**W7** with t = 6, **W8** with I, t = 6, and **W9** with I, t = 0).[8]

Example 3 overviews the form, phrasing and row groupings of the Intermezzo, adopting the form (A A' binary) and phrasing described and charted by Hyde, as well as the subsections suggested by John Buccheri in his 1975 dissertation.[9] Each of the piece's thirteen phrases contains anywhere from one to five row pairings of the kinds illustrated in Example 2. In cases where a phrase contains more than one row pairing, the pairings overlap—that is, each row should be considered together with the row that precedes *and* follows it within the phrase. In addition, certain measures and measure groups are not designated as phrases by Hyde, apparently because no secondary or invariant harmony delimits them; I call these "fragments," and will treat them either as extensions of the phrases or as phrases themselves in the subsequent analysis. One interesting feature brought out by the form chart is that the part of the Intermezzo written in 1921 (mm. 1-10) tends to have shorter phrases that contain single row pairs including P_4 as an element, while the remainder, written in 1923, includes longer phrases with overlappings of all six pairs. This is perhaps the only characteristic distinguishing the first chronological layer of this piece from the second, for the process involving the suggestion, obscuring, and revelation of the "collectional exchange" property, the musical idea of the Intermezzo, stretches across the piece from beginning to end. It is that process that I will now describe.

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8 Martha Hyde describes a feature of the Op. 33b Piano Piece that strongly resembles collectional exchange, in "Dodecaphony: Schoenberg," *Early Twentieth-Century Music,* ed. Jonathan Dunsby (Oxford: Blackwells, 1993), p. 73. She calls them "artificial invariants," and they result from the non-contiguous partitioning of the first hexachord in one row form (P_{11}, for example) to create two trichords with pc content that duplicates the pc content of the discrete trichords in the second hexachord of another row form (I_4 in the same example).

9 Hyde, "Musical Form and the Development of Schoenberg's Twelve-Tone Method," 125-32; John Buccheri, "An Approach to Twelve-Tone Music: Articulation of Serial Pitch Units in Piano Works of Schoenberg, Webern, Krenek, Dallapiccola, and Rochberg" (Ph.D. dissertation, Eastman School of Music, 1975), p. 84.

Example 3. Form and row groupings in the Intermezzo, Op. 25 (Phrasing after Martha Hyde, "Musical Form," p. 128; subsections in Roman numerals after John Buccheri, "An Approach to Twelve-Tone Music," p. 84)

Section	Measures	Phrase	Row forms	Section	Measures	Phrase	Row forms
A, I	mm. 0-3	1	P_4/I_{10}	A', III	mm. 20b-23	7	P_{10}/I_4
	m. 4	(frag.)	I_4		m. 24	(frag.)	I_{10}
	mm. 5-7a	2	P_4/I_{10}		mm. 25-26	8	$I_4/P_4/I_{10}/P_{10}$
	mm. 7b-9	3	P_{10}/P_4		mm. 27-28	(frag.)	P_4/I_4
	m. 10	(frag.)	P_{10}		mm. 29-30	9	I_{10}/P_{10}
(1921)							
(1923)							
II	mm. 11-15a	4	$I_{10}/I_4/P_{10}/I_{10}/I_4/P_4$	IV	mm. 31-33a	10	I_{10}/P_{10}
	mm. 15b-18a	5	$P_4/I_{10}/P_{10}$		mm. 33b-35a	(frag.)	P_4/P_{10}
	mm. 18b-20a	6	$P_4/I_4/P_{10}$		mm. 35b-37a	11	$I_{10}/P_{10}/I_4/P_4$
					mm. 37b-43	12	$P_4/I_{10}/P_{10}/I_4$
					mm. 43-45	13	I_4/P_4

The A section of the Intermezzo

The piece opens with a side-by-side pairing of P_4 and I_{10} in mm. 0-3, which Hyde calls Phrase 1. Example 4 gives musical notation and a pitch-class map for this passage, above the pertinent collectional exchange from Example 2, number 2. Notice that the first tetrachord of P_4, <4,5,7,1>, and the second tetrachord of I_{10}, <8,11,6,0>, are combined together into an ostinato in the right hand. Others have commented on the ability of parts or all of this right-hand ostinato to unify and delimit mm. 1-3.[10] But, for our

[10] For example, Ethan Haimo in *Schoenberg's Serial Odyssey* (Oxford: Clarendon Press, 1990), p. 89, comments on how the opening sonorities in the two halves of the ostinato, {1,4,5} and {0,8,11}, both belong to set-class 3-3 (014) and can be heard as a transposition; while Hyde points out that the entire ostinato forms set-class 8-8 (01234789), and is thus equivalent to a contiguous segment of the row ("Musical Form," 117).

Example 4, Schoenberg, Intermezzo Op. 25, mm. 0-3, phrase 1
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purpose, it is more significant to point out that the pitch-class content of each of these tetrachords is highlighted through register and rhythm in the left hand of the *other* row—<4,5,7,1> within I_{10} in mm. 2b-3, and <6,11,0,8> within P_4 in mm. 0-2a. These tetrachord exchanges, part of the collectional exchange shown at Example 2, 2, are highlighted with gray shading on Example 4's pitch class map. In the left hand of m. 1, the listener can associate G♭ with the B that occurs sequentially after it, rather than the E♭ that comes next in its tetrachord. The connection from B to C is encouraged by Schoenberg's slur, then A♭ connects through a stepwise motion to the initial G♭. (Certainly E♭ can also be grouped together with the other 4 pitches in our hearing, but it is still appropriate to make the claim that a tetrachord exchange is suggested here, if only as a subset of a larger five-note collection.) In the left hand of mm. 2b-3, the "exchanged" tetrachord seems even more obvious—E, F, and G succeed one another within a narrow registral compass, then D♭ occurs next after the G. Schoenberg even associates the same dyads within the exchanged tetrachords as he does within the right-hand ostinato tetrachords—E with F (temporally, then registrally) and D♭ with G (sequentially) in the right hand of 0-2a and left hand of 2b-3, and G♭ with A♭ (registrally, then sequentially) and B with C (sequentially, then temporally) in the left hand of 0-2a and right hand of 2b-3.

Thus mm. 0-3 hint at a "collectional exchange," in the sense that each row projects one discrete tetrachord belonging to the other, by applying some of the order-number partitions illustrated in Example 2, 2. But the Intermezzo's opening measures only suggest such an exchange, because the other tetrachord invariances of the exchange are not similarly projected, and because there are other sensible ways to segment the passage besides the ones that produce the exchange. Thus, it remains for the rest of the piece to demonstrate ways in which a collectional exchange might be expressed more completely.

The second phrase of the Intermezzo, mm. 5-7a, increases the number of tetrachords that are exchanged between rows. As Example 5 shows, one tetrachord from I_{10} is formed out of P_4's pitch classes, when Schoenberg moves the C♯ and G from tetrachord 1 of P_4 up from the bass into the right hand at the end of measure 6, associating those two pitch classes with B♭ and A from P_4's third tetrachord. The tetrachord created thus is

Example 5. Schoenberg, Intermezzo Op. 25, mm. 5-7a, phrase 2
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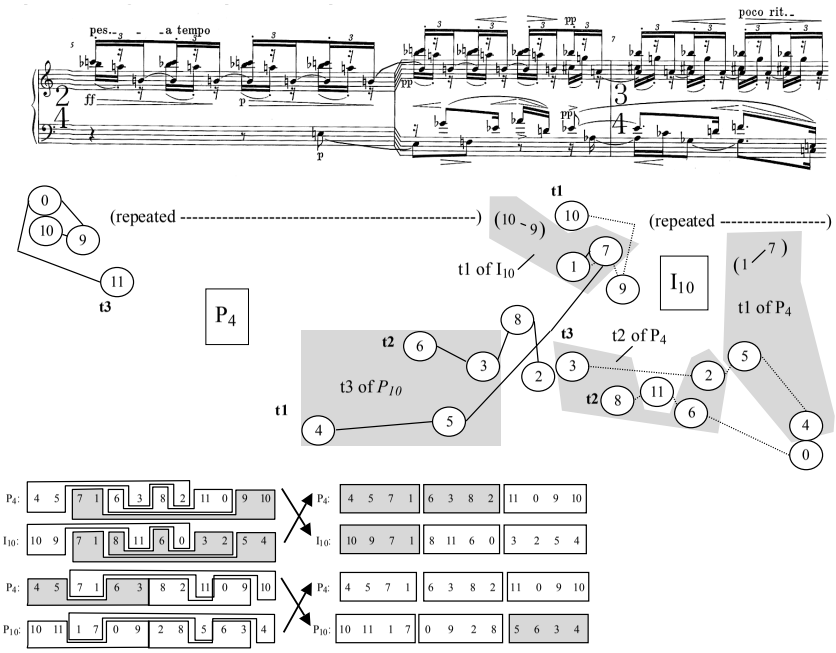
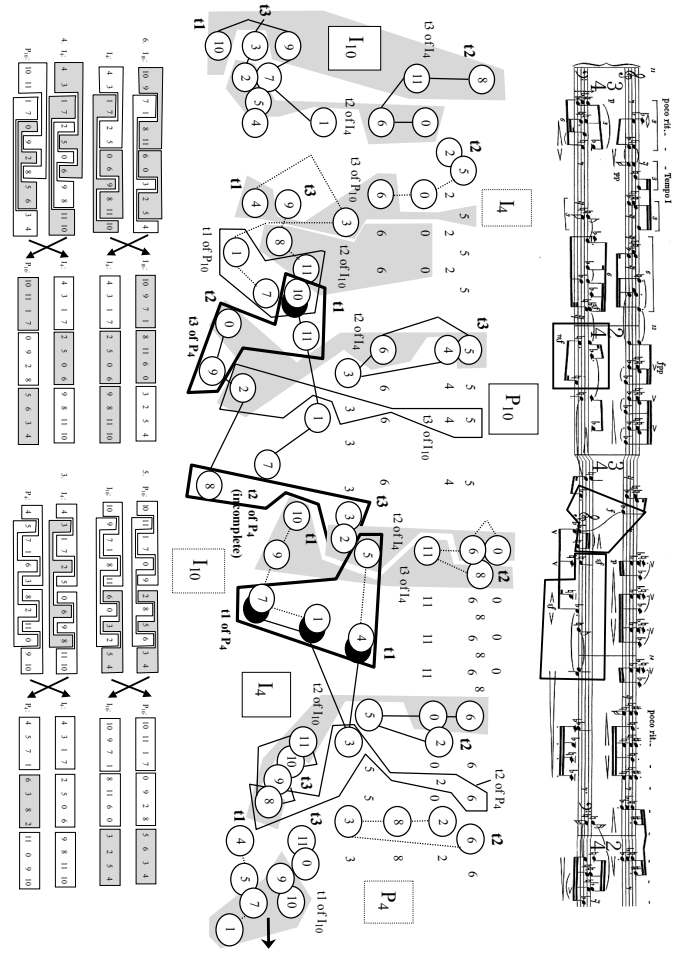


{1,7,9,10}, I_{10}'s first tetrachord, which follows immediately at mostly the same pitch levels in m. 7. In addition, two discrete tetrachords of P_4 are projected by partitions of the pitch classes of I_{10}, though these exchanges are not as salient as the one just described. On the last eighth of m. 6 and first quarter of m. 7, the left hand's highest pair of notes, E♭ and D, and its lowest pair of notes, A♭ and G♭, produce {2,3,6,8}, the equivalent of P_4's second tetrachord, which had just been heard (middle voice) in the first part of m. 6. This connection is more audible, I think, because Schoenberg places E♭ and D, pcs 3 and 2, in the same register for both the discrete tetrachord of P_4 and its registrally-created echo within I_{10}. Finally, in the second quarter note of m. 7, two of the horizontal lines, C♯-G in the right hand and F-E in the left, combine to form {1,4,5,7}, which had been the first tetrachord of P_4.

While the second phrase takes the notion of collectional exchange a bit further than had the first phrase, it also introduces a new technique that will play a much larger role in the section following measure 11. On the last eighth of m. 5 and first quarter of m. 6 the left hand brings together E-F from the first tetrachord of P_4 and G♭-E♭ from P_4's second tetrachord, by means of Schoenberg's oft-commented-on technique of starting one tetrachord before the previous one finishes. What results is {3,4,5,6}, the third tetrachord of P_{10}. Schoenberg is exchanging a tetrachord with a row that does not appear within the second phrase, but a quick look at the score in mm. 7b-8 (not illustrated in my examples) will confirm that P_{10} is the next row to be heard. A second role for collectional exchange has been revealed here: not only can it tie together two rows within an adjacent pair, but also it can look forward to rows that will occur further down the line. Of course Schoenberg is only suggesting these roles at this point, entirely appropriate for a stage in the Intermezzo where the musical idea is only beginning to unfold.

After a third phrase (mm. 7b-10) that increases the number of tetrachord exchanges between adjacent rows comes the fourth phrase of the Intermezzo, the first written in the 1923 stage of Schoenberg's compositional process. This phrase definitely outstrips its predecessors with respect to length--now, six row forms are chained together in a 4 1/2-measure phrase, as Example 6 illustrates. But Schoenberg gives the Intermezzo as a whole



Example 6. Schoenberg, Intermezzo Op. 25, mm. 11-15a, phrase 4
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continuity by picking up the same two compositional processes in the fourth phrase that he had been working with in 1921. That is, he links adjacent row forms with tetrachord exchanges, and also foreshadows rows that will be heard further on in the piece through exchanges not belonging to the present row pair. The most important aspect of the fourth phrase is that it causes a shift in emphasis from the former process to the latter. A quick look at the pitch-class map in Example 6 indicates that measure 11 highlights a larger number of tetrachord collectional exchanges between adjacent rows, while later measures seem to bring out fewer exchanges. In addition, most of the exchanges in the fourth phrase no longer depend on registral or durational proximity to be noticed, but on the treatment of their subsets as returning motives. For example: the I_{10} in the first half of measure 11 brings together {2,5} and {0,6} to create the second discrete tetrachord of I_4 in the second half of the measure. But the two dyads are not brought together in I_{10} through registral or durational proximity as in previous measures--instead, each seems to connect separately as a motivic "foreshadowing" to the associated dyad in I_4. The rising minor third of <2,5> in the bass of I_{10} looks forward to the repeating minor third in I_4's soprano, and the vertical {0,6} is set by the same pitches in both rows.

By the time we reach mm. 12-13, the situation has changed somewhat. Now, only one tetrachord exchange looks forward from P_{10} to I_{10}, the {2,3,4,5} enclosed in a non-shaded box on the second quarter of m. 12, and no exchanges go back the other way from partition-created tetrachords in I_{10} to discrete tetrachords in P_{10}. But another type of exchange is coming to the fore in place of the exchanges between adjacent rows. The heavy boxes on the pitch-class map in mm. 12-13 show that Schoenberg uses registral and durational proximity to create the third and first tetrachords of P_4 and an almost-complete version of the second. The set {0,9,10,11} can be heard clearly on the first quarter of the left hand in m. 12, and <5,7,1,4> emerges as a left-hand succession in the later part of m. 13. Between them, in the first part of m. 13, the pitch-classes 8, 3, and 2 follow one another with no interpolations, but the remaining pitch class of P_4's second tetrachord, 6, is buried in the middle of a trichord in the right hand on the second half of beat 2. P_4 is not an adjacent row to the passage in mm. 12-13, but we do find it occurring later, in mm. 14b-15. Thus, the fourth phrase has to do mainly with the notion of using collectional

exchange to foreshadow a row that will be heard in the more distant future. This shift in the principal use for exchange constitutes the stage in Schoenberg's "musical idea" where the relationship suggested in the opening measures, i.e., a collectional exchange of tetrachords between two adjacent rows, is obscured.

When P_4 arrives in mm. 14b-15, the arrangement of its tetrachords 1 and 3 in the left hand brings the pitch classes {1,7,9,10} into close proximity, as the shaded box in the pitch-class map at the end of Example 6 shows. This partition looks forward to another row that will occur in the future, but not as the next form: I_{10}. As one might imagine, this invariance begins a chain of such longer-range foreshadowings in the subsequent measures, which are shown in Example 7. Between P_4 in m. 15 and I_{10} in m. 17 occurs a second P_4 in m. 15b-16, kicking off the fifth phrase. Within this row, paying attention to the order of attacks and registral extremes can yield the sequence C - A♭ - A - D in the latter half of m. 16. This partition forms {0,2,8,9}, the second tetrachord of P_{10}, which will arrive on the downbeat of m. 18. Meanwhile, on m. 17, second beat, durational and registral proximity bring together D, G♭, C, and F, {0,2,5,6}, the second tetrachord of I_4, which makes its rather marked entry as a discrete tetrachord at the end of m. 18. This technique of overlapping "long-range foreshadowings": equivalences between a partition-derived tetrachord in one row and a discrete tetrachord in a second, with an intervening row form between the two, is represented on Example 7 by the overlapping arrows in the pitch-class map.

At the same time, while salient connections with row forms further in the future continue to distract the listener from the original idea of connection between adjacent row forms that was suggested at the piece's beginning, that original idea begins to work toward coming to the fore again. P_4 in m. 16 and I_{10} in m. 17 exchange two tetrachords-- {0,6,8,11} as partition in P_4 and discrete tetrachord in I_{10}, and {2,3,6,8} as discrete tetrachord in P_4 and partition in I_{10}. This exchange calls to mind the first phrase of the Intermezzo, since it involves the same two row forms and one of the same tetrachord exchanges ({0,6,8,11}). But the most obvious tetrachord exchange between adjacent forms comes during the following row pair at mm. 17-18, I_{10} and P_{10}, highlighted by shaded enclosures directly under those two measures. Schoenberg uses rhythmic parallelism, registral extremes, and accent to give the

Example 7. Schoenberg, Intermezzo Op. 25, mm. 15b-20a, phrases 5 and 6
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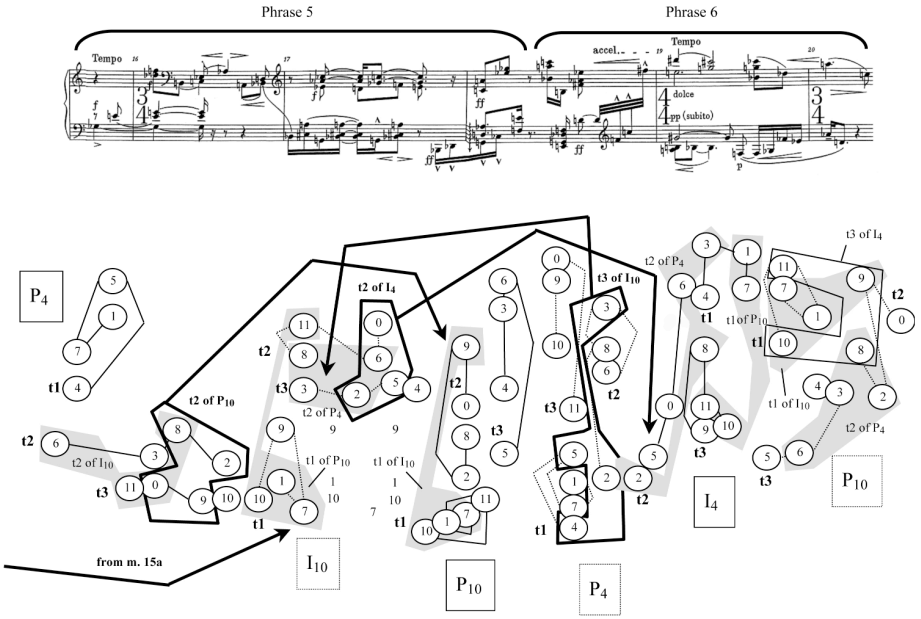

listener the strong impression that each of these two rows actually starts with the first tetrachord of the other ({10,1,7,11} within I_{10} and {10,1,7,9} within P_{10})!

A quick look at the remainder of Example 7 will show that tetrachord exchanges between adjacent rows continue to occur through the end of the sixth phrase at m. 20a. The last row form of Phrase 6, P_{10}, is notable in another way. It not only contains a partition formed by subsequent on-beat verticals {8,9,10,11} that looks back at a discrete tetrachord of the preceding I_4, but it also isolates {2,3,6,8}, the second tetrachord of P_4, through contour in the lowest voice, and brings together {1,7,9,10}, the first tetrachord of I_{10}, through registral proximity. In other words, mm. 19-20a, for the first time in the Intermezzo, suggests tetrachords from all four row forms in a small space, the same technique that Schoenberg would explore in a more exhaustive way in the opening measures of the Menuett Op. 25. Perhaps Schoenberg meant this gesture to serve as a kind of cadence to the first part of the piece.

The A' section of the Intermezzo

In the overall A A' binary form of the Intermezzo, m. 20b constitutes the opening of the second part. Like Bach in the A' sections of his keyboard suites, Schoenberg begins with a variation of the piece's opening. In fact, mm. 20b-23, which place P_{10} and I_4 side-by-side, are a pitch-class transposition of mm. 0-3 (which juxtaposed P_4 with I_{10}), by t = 6. Because of this, the same tetrachord exchange strategies as those in the opening measures are in evidence. Close examination of the pitch-class map below Example 8 will show that registral and durational proximity bring together {0,2,5,6} within P_{10}, equivalent to the second discrete tetrachord of I_4. In exchange, registral and durational proximity associate <10,11,1,7> within I_4, which had been the first discrete tetrachord of P_{10}. This exchange of single tetrachords constitutes within the whole piece a return to suggesting the idea of tetrachord exchange between adjacent rows, after it had been obscured in previous measures by exchanges between non-adjacent rows.

The ideal of adjacent rows exchanging tetrachords is then developed significantly in the following measures. This is exactly what the listener would expect as the piece works its way toward the final cadence and the "solution" of the "musical idea."

Example 8. Schoenberg, Intermezzo Op. 25, mm. 20b-24, phrase 7 and subsequent fragment, beginning of A'
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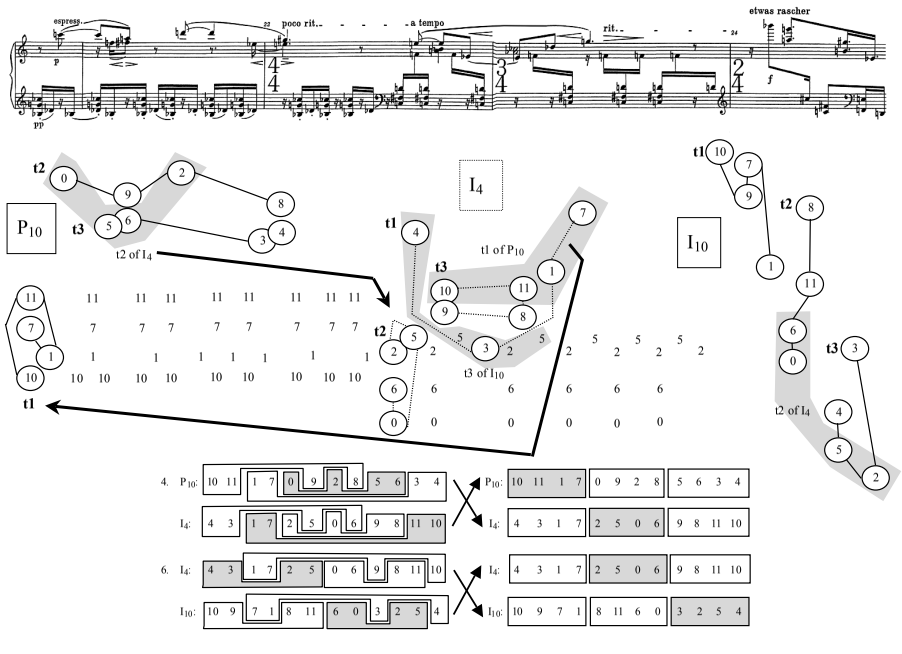

Examples 9, 10 and 11 illustrate the four adjacent row pairs that constitute mm. 25-30 (corresponding to Martha Hyde's phrases 8 and 9). Within these pairs, I_4/P_4, I_{10}/P_{10}, P_4/I_4, and I_{10}/P_{10}, Schoenberg works progressively toward laying out each row in identical rhythm and register to its partner. This process of exact repetition gradually coming into focus results in an increase of audible tetrachord exchanges, as well as trichord invariances that strongly suggest tetrachord exchanges.

In measure 25, I_4 and P_4 pair together. Notice that the corresponding tetrachords of the two rows occur in the same registers—the first tetrachords in the bass, the second tetrachords in the middle, and the third tetrachords in the top voice. Notice also that the common tones {1,4,7} between first tetrachords <4,3,1,7> of I_4 and <4,5,7,1> of P_4 appear in the same register, order, and (proportional) rhythm, and that each first tetrachord combines with the one non-common tone (designated by non-circled pc numbers in Example 9's pitch-class map) to form the same sequence, <1-above-3, 4,7,5>, twice. Because of this, the

Example 9. Schoenberg, Intermezzo Op. 25, mm. 25-26, phrase 8
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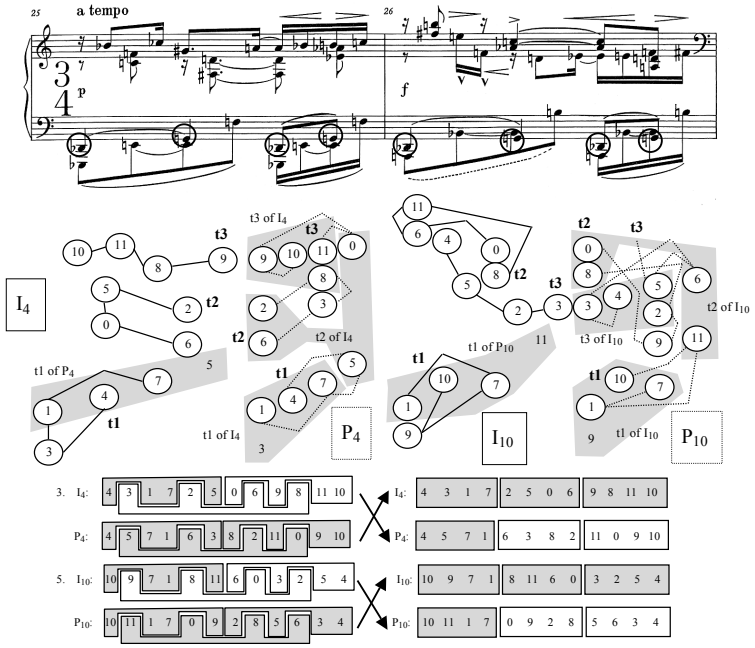

sequence <1,4,7,5> within I_4, corresponding to the first tetrachord of P_4, is easy to hear, as is the sequence <1-above-3, 4,7> within P_4, corresponding to the first tetrachord of I_4. Exchanges between the other tetrachords in I_4 and P_4 are not as easy to pick out of the texture, but become more salient through registral and durational proximity, as the shaded boxes in the second half of m. 25 show. It is important to recognize that all three discrete tetrachords of I_4 have partition-generated counterparts in P_4, but only one of the tetrachords of P_4 (the first) seems to reflect back into I_4. Maximal tetrachord exchange has not yet been attained.

Measure 26 presents a parallel situation to m. 25, now featuring I_{10} and P_{10}. One interesting feature of m. 26 is that Schoenberg has put the common D♭ and G of the first tetrachords <10,9,7,1> and <10,11,1,7> in the same registral and rhythmic positions as the D♭s and Gs within I_4 and P_4 in the previous measure (circled in the notation part of Example 9). In this way, he highlights a dyad invariance between the first tetrachords of all four row forms--{1,7}, which also plays an important role in the other movements of the Suite.

Example 10 illustrates mm. 27-28, in which Schoenberg is taking us one step closer to identical rhythmic and registral presentation of the two rows. As the rhythm chart above the notation shows, attack-point rhythms for both measures *are* identical, but since the notes are distributed between the hands differently in each measure, the rhythms within each hand diverge on the third quarter of measures 27 and 28. Registrally, too, the two measures follow similar paths on the first two beats and diverge on the third beat--m. 27 plunges down, m. 28 shoots up.

With respect to tetrachord exchanges, mm. 27-28 follow the same pattern as the previous measures—one exchange between corresponding tetrachords in the two rows is very clearly marked, while two other partition-derived tetrachords in the second row (I_4) reflect discrete tetrachords from the first in a less salient way. The clearly marked exchange is between third tetrachords this time--{8,9,10,11} come together through registral and durational proximity in P_4, and, conversely, {0,9,10,11} come together by means of the note C's registral extreme, durational and registral proximity in I_4. What makes this exchange easier to hear is the setting of the common trichord {9,10,11} as <11,10,9> on the last

Example 10. Schoenberg, Intermezzo Op. 25, mm. 27-28, fragment between phrases 8 and 9
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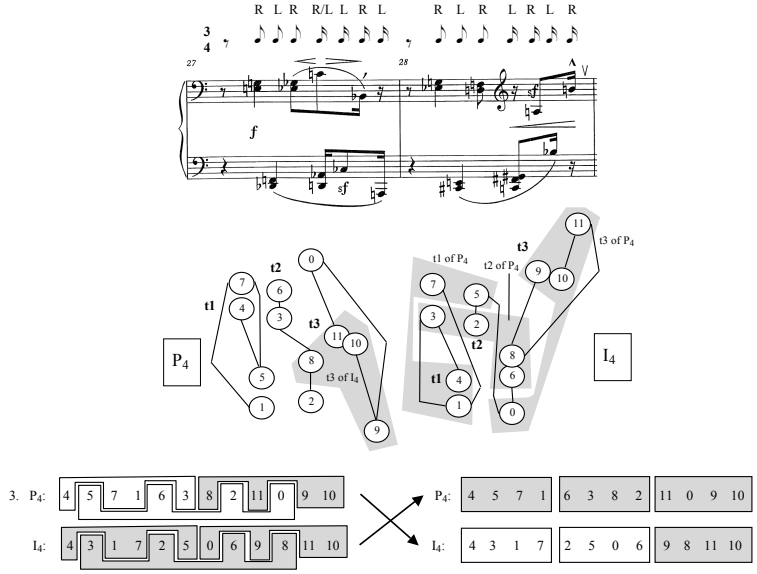

three sixteenths of m. 27 and <9,10,11> on the last three sixteenths of m. 28.

In Example 11 (mm. 29-30), the row pair I_{10}/P_{10} locks into identical rhythms and nearly identical registers for the first time. Surprisingly, though, this is not yet the place where each row generates (through partitions) all three tetrachords of the other, which would be the "ideal" the piece is striving toward, the solution to its problem. That solution will come several measures later. But measures 29-30 are nevertheless an important stage in the process toward the ideal, because they not only clearly present one tetrachord exchange in its entirety, but they also present larger (i.e., trichord) subsets of more of the other possible exchanges than have been included in the past. The salient exchanged tetrachords are in the right hand—an <10,7,1> ostinato leads to pc 11 on the third beat of m. 29 within I_{10}, creating the first discrete tetrachord of P_{10}. Then, after the ostinato changes to a {7,10,11} chord followed by pc 1 in m. 30, the same <10,7,1> leads to pc 9 on the third beat of m. 30, forming (in exchange) the first discrete tetrachord of I_{10}. Notice that the fourth pitch class, which

Example 11. Schoenberg, Intermezzo Op. 25, mm. 29-30, phrase 9
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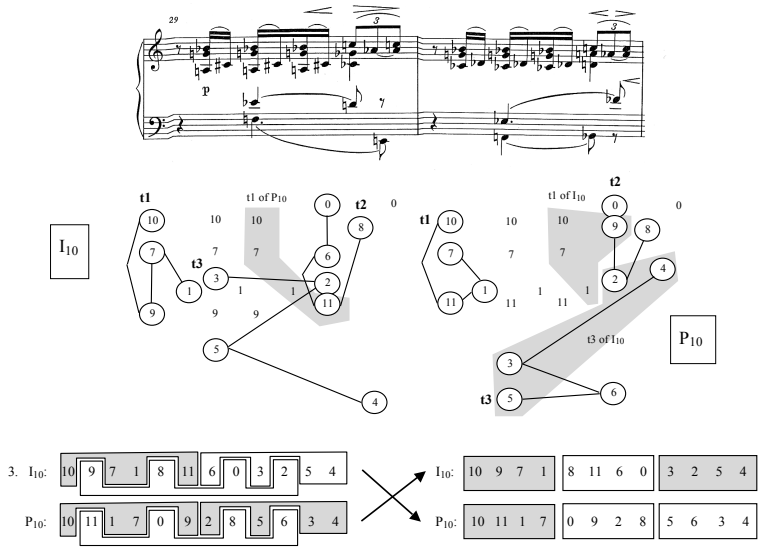

completes the exchange, arrives on the third beat in both cases, a by-product of the rhythmic parallelism.

At the same time, some of the other exchanges between corresponding tetrachords are, if not realized, then at least strongly suggested by invariant trichords between row forms that are set in identical rhythmic and registral locations. Between second tetrachords, a {0,2,8} trichord is placed in corresponding locations in both measures; 0 and 8 on the third beat's right-hand triplet and 2 on the same beat in a lower voice. Had pitch class 9 been more closely associated with {0,2,8} in m. 29, this would have looked forward to the second discrete tetrachord of P_{10} in m. 30. Between third tetrachords, the trichord {3,4,5} can be found in corresponding locations—the dyad on beat 2 in the left hand gives {3,5} both times, and pc 4 appears as a single note on the "and" of 3. This trichord invariance does give rise to a tetrachord exchange, but not as obvious as the one in the right hand—if pc 2 in m. 30 is grouped through registral proximity with {3,4,5}, it forms the third discrete tetrachord of I_{10}, within P_{10}.

After approaching the ideal through placing exchanged tetrachords in increasingly-similar rhythmic contexts in phrases 8 and 9, the next two phrases move away from that ideal, replacing it with another kind of collectional invariance between adjacent and non-adjacent rows. After a tenth phrase that takes us back again to the situation of the Intermezzo's opening (two adjacent rows that exchange one tetrachord, not illustrated in my examples), comes phrase 11, measures 35b-37a. This phrase contains a dwindling number of tetrachord exchanges, first two between I_{10} and P_{10} and then one between I_4 and P_4, which are shown on the pitch-class map in the middle of Example 12a. But the main focus seems to shift onto smaller units. A second pitch class map, shown in Example 12b, shows that if we divide each row into "voices" registrally (allowing for an occasional "voice crossing," as in the right hand of m. 35b, 36b and 37a), I_{10} and P_4's voices produce the same group of dyads and trichords, as do the voices of P_{10} and I_4. For I_{10} and P_4 the invariant elements are {9,10}, {1,7}, {4,5}, {2,3,6}, and {0,8,11}. For P_{10} and I_4, they are {10,11}, {1,7},

Example 12a. Schoenberg, Intermezzo Op. 25, mm. 35b-37a, phrase 11
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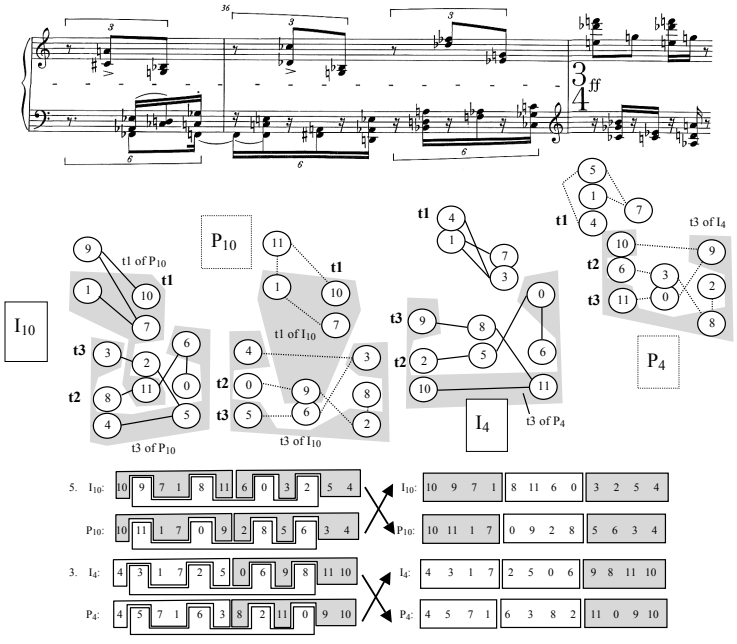
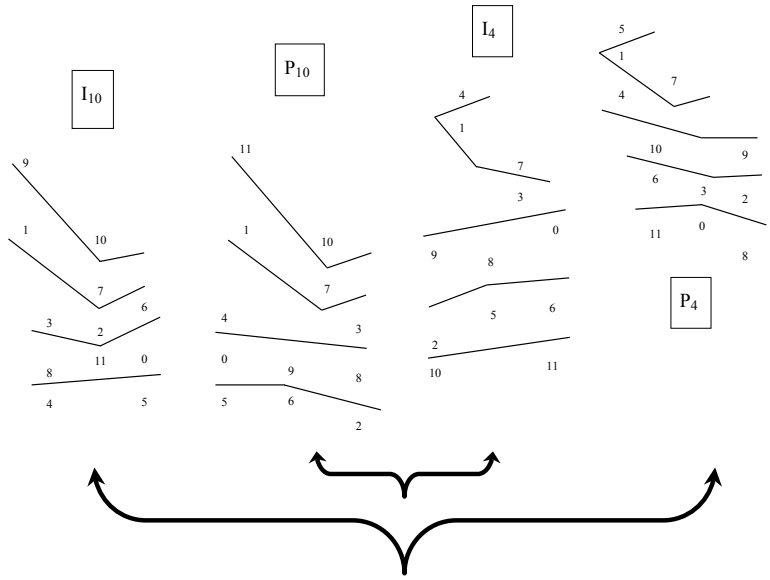


Example 12b. Measures 35b-37a partitioned registrally to show dyad and trichord invariants



{3,4}, {0,8,9} and {2,5,6}. The reader will note that the order-number partition Schoenberg uses to divide the four rows into their elements is the same in all four cases: {**0,1**}, {**2,3**}, {**4,5,7**}, {**6,8,9**}, {**10,11**}. Thus P_4 and I_{10} exhibit the property of collectional invariance, as do P_{10} and I_4, but it is a different collectional invariance from the ones that give rise to exchanged tetrachords and are illustrated in Example 2. Measures 35b-37a in the Intermezzo could be considered a culmination of activity in a direction away from the piece's tetrachord-exchange ideal, coming just before that ideal is realized.

Example 13, constituting mm. 37b-40a, the first half of Hyde's phrase 12, shows Schoenberg working back toward his tetrachord-exchange ideal, in two ways—the tetrachord is again highlighted as a segment, and one exchange is presented clearly while others are at least suggested. The last four notes in the right hand of m. 38 bring together {1,7,9,10} through rhythmic and registral proximity, forming within P_4 the first discrete tetrachord of I_{10}. And the last four notes of m. 40a, using the same short-long rhythmic motive as m. 38, bring together {1,4,5,7} within I_{10}, forming the first discrete tetrachord of P_4. In addition, another exchange is almost realized

Example 13. Schoenberg, Intermezzo Op. 25, mm. 37b-40a, first half of phrase 12
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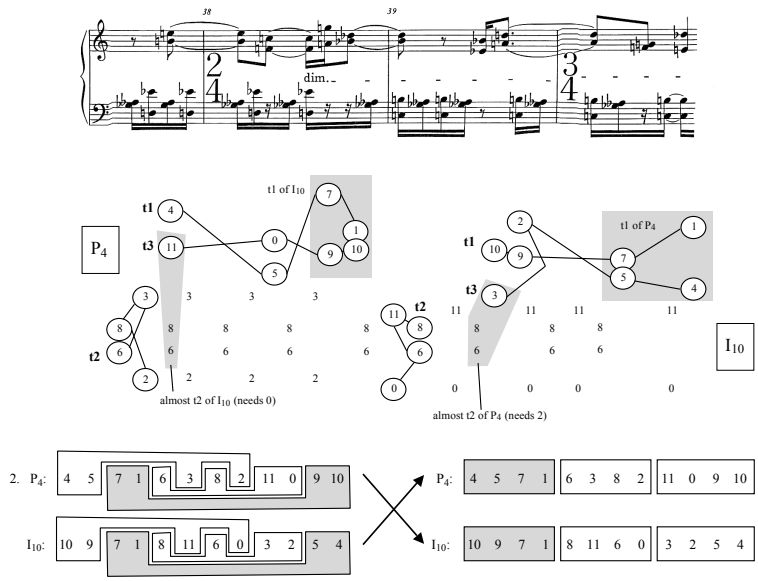

but falls one note short on both sides. The third sixteenth of m. 37b sounds {6,8,11} as a vertical in P_4 in the lower three voices, but instead of the pc 0 we would need to create the second tetrachord of I_{10}, we get pc 4 on top. Likewise, the fourth and fifth sixteenths of m. 39 bring together {3,6,8} in the lower three voices. But instead of the pc 2 that would complete the second tetrachord of P_4 within I_{10}, we get pc 10 on top.

With measures 40b-43a of the Intermezzo, the second half of Hyde's phrase 12, the piece's ideal is realized in the clearest way we have heard yet. As mentioned before, the Intermezzo, by presenting its ideal near the end of the piece, after it has been suggested, then obscured, manifests a "musical idea." Example 14's second half, both the notation and the pitch-class map, shows that all three discrete tetrachords of P_{10} are clearly presented as proximate within I_4. The first tetrachord, {1,7,10,11}, constitutes all the attacks in the right hand from the second beat of m. 42 (if the collected works edition's C natural is read as C♭, which it clearly is in Schoenberg's fair copy, also in the first published edition:

consult p. 27d of MS 25 on the Schoenberg website, www.schoenberg.at). The second tetrachord of P_{10}, {0,2,8,9}, sounds as a group in both hands on the second half of beat 1 in m. 42. Finally, P_{10}'s third tetrachord, {3,4,5,6}, results from the alto and left hand notes on the first half of beat 1 in m. 42. Interestingly, the three tetrachords of P_{10} appear within I_4 in *reverse order*, suggesting a palindromic construction similar to those in many other movements of the Suite (unfortunately, though, P_{10}'s tetrachords do not appear in their usual order in the first half of Example 17).

The first half of Example 14, mm. 40b-41a, can also be heard as using partitions to create the three tetrachords of I_4 in reverse order within P_{10}, but two of them are not as obvious as the tetrachords in the latter half of the example. I_4's first tetrachord, {1,3,4,7}, is stated clearly enough--the second beat of the right hand of m. 41 gives us those four pitch classes in the succession <1-above-3, 7, 4>. But the other two tetrachords of I_4 are mixed with other pitch classes in a way that obscures them a little. Consult the boxes on both the notational and pitch-class parts of Example 14. Maybe we could hear this phrase as providing the solution for Schoenberg's initial problem, the realization of his ideal (namely, two rows placed side-by-side that exchange all three of their tetrachords), but doing so in such a way that the exchange becomes more obvious as the phrase progresses.

The thirteenth and final phrase of the Intermezzo, mm. 43b-45, seems to have a function similar to final parts of other pieces in the Suite; that is, the ideal of the piece again becomes obscure. A pair of rows—I_4 and P_4—is heard, but, as Example 15 shows, only one tetrachord is exchanged between these row forms (together with four trichords).

The Intermezzo, like the Prelude, Menuett and Gigue, creates a long-range structure that expresses Schoenberg's "musical idea," but, unlike the Prelude and Gigue, it does so by means of collectional exchange. Example 16 illustrates the path the Intermezzo takes with respect to closeness to the "ideal." It involves first suggesting the exchange relationship inherent in an adjacent pair of twelve-tone rows, then setting that aside to explore other relationships (such as exchanges with rows in the more distant future, or dyad and trichord invariances). The Intermezzo then moves back in the direction of realizing the exchange relationship, and finally realizes it in a relatively complete way in

Example 14. Schoenberg, Intermezzo Op. 25, mm. 40b-43a, second half of phrase 12

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Example 15. Schoenberg, Intermezzo Op. 25, mm. 43b-45, phrase 13
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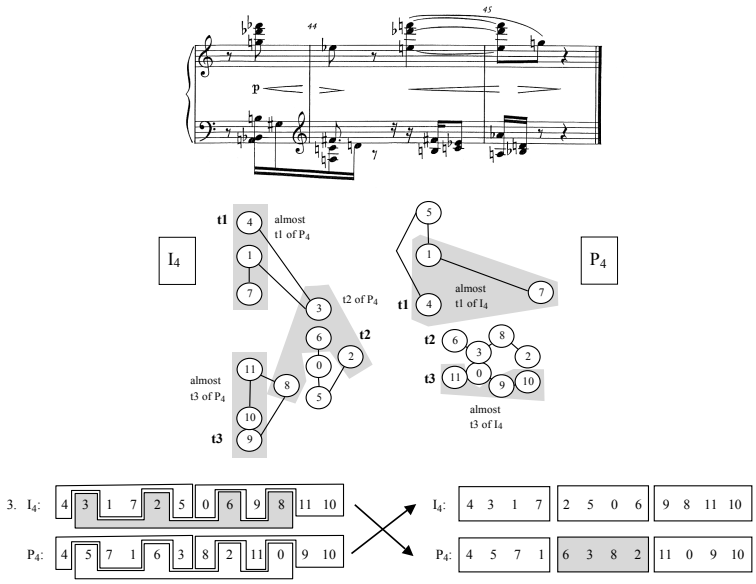
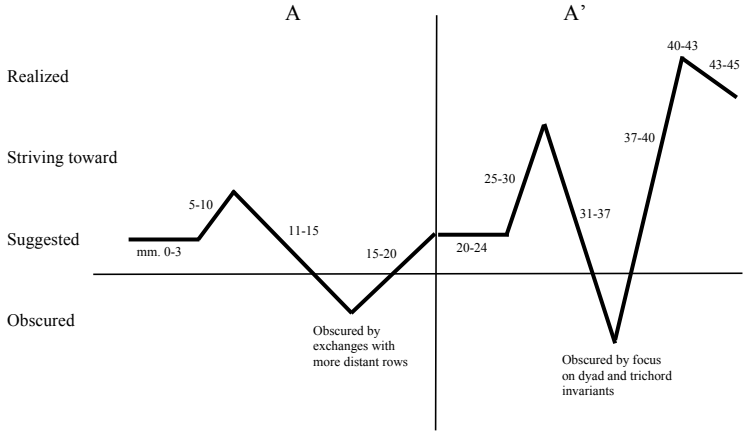


Example 16. The Intermezzo's contour with respect to closeness to the "ideal"



mm. 40-43 (the "solution"), followed by a move away from tetrachord exchange at the end.

Gavotte

The Gavotte, though it comes second in the published version of the Suite Op. 25, was the third piece to appear chronologically, and the first one that was written completely after the hiatus of 1921-23. As we saw earlier, Schoenberg started it on February 23, 1923, the same day as the completion of the Intermezzo and beginning of the Menuett, and completed it on February 27, 1923. Some writers have already argued that the Gavotte represents a step forward from the chronologically prior movements of the Suite, for example Ethan Haimo. The reader may recognize his claim that there is a "substantive correspondence between the notated meter and the set structure" in the Gavotte that did not exist in the Prelude and the Intermezzo as too extreme, when he/she recalls some of the correspondences between tetrachords, invariant pitches, register, rhythm, and meter we discussed in mm. 25-30 of the Intermezzo.[11] But Haimo is correct in one sense—the Gavotte is the first movement to establish such connections at the *beginning* of the piece, which can be heard as generating the meter for the rest of the piece. I want to go one step further than Haimo, to assert that it is a consistent, regular relationship between notated meter, duration pattern, and set structure that constitutes the Gavotte's "ideal," as opposed to the ideals of the two pieces Schoenberg composed first, which manifest themselves primarily in the pitch realm. Nevertheless, just like the Prelude and Intermezzo, the Gavotte begins by presenting its ideal, then obscures it, strives toward it, realizes it, and finally obscures it again.

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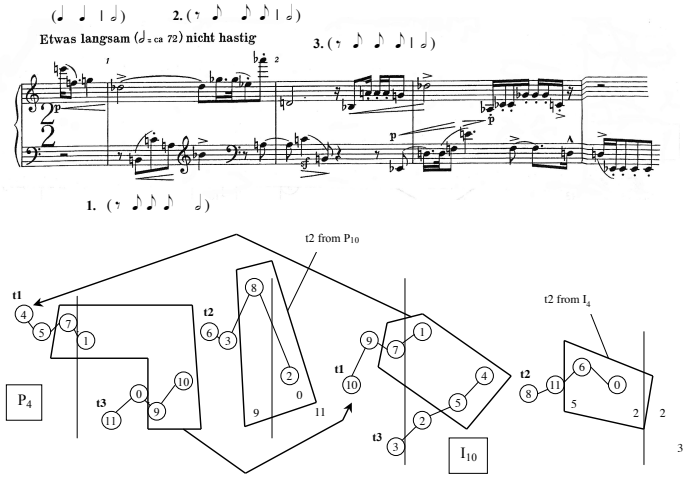
[11] Haimo, *Schoenberg's Serial Odyssey,* pp. 99-100. Martha Hyde makes a good case for a substantive correspondence between set structure and *phrasing* in the Intermezzo, showing that the "secondary harmonies" formed by combining tetrachords or other segments from different, adjacent row forms (sets that belong to the same set classes as contiguous segments of the row) delineate the phrases of the piece. But the resulting phrases do not seem to correspond regularly with the meter, at least not at the beginning of the piece in a way that would establish the meter. See "Musical Form and the Development of Schoenberg's Twelve-Tone Method," 125-32.

The Gavotte's ideal relationship between pitch, rhythm and meter takes two forms, which are related to each other, and both of which should be understood as referring back to the characteristic correspondences between rhythm and meter in the Baroque dance that gives the piece its name. The first places the duration pattern 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥 on the second beat of one 𝅗𝅥𝅗𝅥 measure and the downbeat of the following measure, to yield 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥. Alternatively, the eighth rest and three eighth notes are associated with the downbeat and the half note with the second beat. These rhythmic motives are then aligned with each of the discrete tetrachords of the row, so that the tritones between order positions **2** - **3** and **6** - **7**, as well as the interval class 1 between **10** - **11**, are always associated with a move from pickup note to beat. Measures 1-3, portrayed in Example 17, illustrate (see the numbered rhythmic motives 1-3 below and above the score in that example). As Haimo points out, the repetition of this same tetrachordal/rhythmic/metric relationship three times (with small variations in the duration patterns) clearly emphasizes and establishes the downbeats and second beats of the meter. The second characteristic relationship between rhythm, meter, and row is already foreshadowed in the pickup measure of the Gavotte (measure 0), but comes to the fore

Example 17. Schoenberg, Gavotte Op. 25, mm. 0-4, beginning of Section A



in mm. 8-10a. It involves the durational/metric correspondence ♩ ♩ | 𝅗𝅥, the first two quarters of which Schoenberg usually associates with tetrachord 3 (split into dyads), and the downbeat half note with the second tetrachord (and tetrachord 1 ideally runs in eighth notes below the two quarters). Example 18 illustrates.

Example 18. Schoenberg, Gavotte Op. 25, mm. 8-10a, beginning of section B
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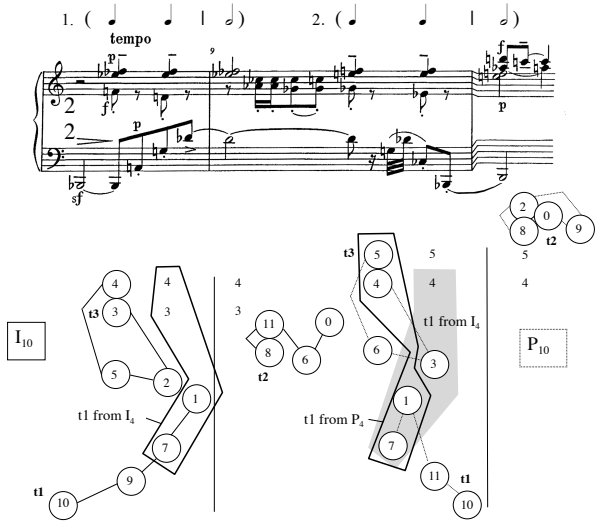

Schoenberg carefully coordinates the different stages that these ideal relationships go through (statement, obscuring, striving toward, realizing, etc.) with the different parts of the piece's form. Following John Buccheri for the most part, I divide the Gavotte into three parts: an A section that goes to the end of measure 7, a B section that stretches from m. 8 to m. 16a, and an A' section (though perhaps it should have been called A/B, because it brings back elements of both earlier sections) that progresses from m. 16b to the end.[12] The A section presents the first ideal

12 Buccheri, "An Approach to Twelve-Tone Music," pp. 75-76. The main difference between my and Buccheri's readings of the form is that he puts the beginning of A' on the last sixteenth of m. 16, where the *ritardando* ends and the original tempo is regained. My reason for placing the section boundary in the middle of measure 16 is the varied reprise of not only the row form but also many of the pitches of the opening measures.

pitch/rhythm/meter relationship, begins to obscure it, and then regains a more condensed version of it. The B section introduces the second ideal relationship, obscures it by means of a sequential passage, and brings it back in a slightly different form (rhythm and meter are aligned the same way, but the disposition of the three tetrachords has changed). The A' section begins by throwing the first relationship completely out of whack, then, via a step-by-step process, it regains a regular correspondence between pitch, rhythm and meter—which turns out to be the *second* ideal relationship! In the final measures, both ideals are departed from, though at the end there is a suggestion of the first correspondence. The following paragraphs will now describe the process, with illustrations.

The A section of the Gavotte

The opening passage, mm. 0-4a, not only sets up $\frac{2}{2}$ through its correspondence between rhythm, meter and set structure, but also begins to destroy that correspondence, almost as soon as it is established. Refer back to Example 17. Schoenberg begins dislocating his first ideal relationship between rhythm and meter on the last eighth of m. 2, where the new correspondence 𝅘𝅥𝅮 | 𝅘𝅥𝅮𝅘𝅥𝅮𝅗𝅥 appears in the left hand, associated with tetrachord 3 of I_{10}. Neither downbeat nor second beat is emphasized by this motive, rather the emphasis shifts to the second quarter note of the measure, an afterbeat in $\frac{2}{2}$. Then, on the second beat of m. 3, right hand, the rhythm pattern 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 appears, associated with the second tetrachord of I_{10}. This pattern seems to be derived from the variation on 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮 | 𝅗𝅥 that was presented in the right hand at the second beat of m. 2 and downbeat of m. 3, but there is one new feature—the last note of this new figure, the accented sixteenth note, is no longer associated with a beat or even a quarter-note afterbeat, but now falls on an eighth-note subdivision. In effect, Schoenberg has moved, progressively, the last note of the discrete tetrachord, originally the note that projected down- and second beats, to parts of the meter that are less accented.

Measures 0-4a also demonstrate some of the same pitch relationships that we first encountered in the Intermezzo. Accents of various kinds, articulative, registral, and dynamic, tend to

emphasize the last two notes of each discrete tetrachord. Within P_4, 7-1 and 9-10 are brought together to form the first tetrachord of I_{10}; and in I_{10}, 7-1 and 5-4 are associated to recall the first tetrachord of P_4, forming an exchange between adjacent row forms. The emphasized notes of the second tetrachords of P_4 and I_{10} are 8-2 in mm. 1-2 (emphasized by their extreme registers) and 6-0 in m. 3 (emphasized by repetition of pc 6 and an accent). Together with repeated notes from the third tetrachords of those same rows, these two dyads form second tetrachords of rows that are not represented in mm. 0-4a, but will appear in mm. 4b-5, P_{10} and I_4. Thus, exchange's function of foreshadowing future row forms is also referred to.

The next passage in the A section, mm. 4b-5a, further dislocates the relationship between rhythm, meter and tetrachord that was established at the beginning. The motive in the last half of measure 4, ♪♪♪ ♪, can be heard as deriving from the original 𝄾♪♪♪ | 𝅗𝅥, but now its first attack rather than the eighth-note rest has been placed on the beat, and the accent comes on the third note rather than the last note. Row form P_{10} is used in mm. 4b-5a, and Example 19 shows that not only does Schoenberg stack its three tetrachords vertically according to the new rhythm, but he also delays the ending notes of the first and third tetrachords to give the impression of a continuation. This continuation should be heard as an extension of the left hand's motive in m. 4a, because of the registral and rhythmic similarities between the two passages.[13]

Measures 5b-7, the remainder of the A section, shown in Example 20a, can be heard as an attempt to get back to the relationship between musical parameters that was established at the beginning. Schoenberg does this in two ways: first, he uses tetrachord exchange to give certain pitch-class motives that stay invariant between different row forms (shaded in the example)

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[13] Note that the G♮ that should have occurred on the downbeat of m. 5 according to the row count has been replaced by a G♭. This note change has been discussed in great detail by Henry Klumpenhouwer in "An Instance of Parapraxis in the Gavotte of Schoenberg's Op. 25," *Journal of Music Theory* 38/2 (Fall 1994): 217-48, and hence will not be discussed here.

Example 19. Schoenberg, Gavotte Op. 25, mm. 4b-5a
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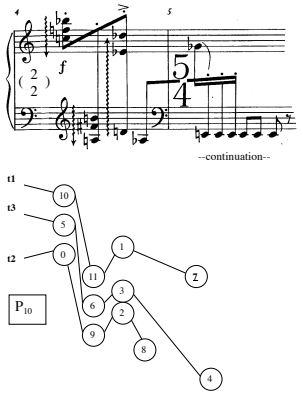

rhythmic shapes which progressively return to the original 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥 shape. Second, he takes the whole vertical stack of tetrachords that he had introduced in mm. 4b-5a through a rhythmic "focusing" process, whereby they gradually begin to project something close to the opening measures' ideal relationship between rhythm, meter and tetrachord, but in a way different from the opening. Let us look at the second process first. Example 20a shows that mm. 5b-8a comprise four row forms, in order, I_4, I_{10}, I_4, and P_4. In I_4, we have a vertical stack that has been "pulled apart" so that tetrachord 1 begins on the third beat of the 𝄪 measure (not shown in the notation part of the example), tetrachord 2 on the fourth beat together with the second note of tetrachord 1, and tetrachord 3 on the and of 4 together with the subsequent notes of the other two tetrachords. The endings of the three tetrachords are staggered as well. Of the rhythms given to the tetrachords, only t3 has something similar to 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥, while t1 and t2 are quite different. Moving on to measure 6 and I_{10}, we again have what could be thought of as a vertical stack, which has been dislocated even further--t1 and t2 still "imitate" one another at a distance of one eighth note, but t3 does not make its appearance until <8,11,6> of t2 have been heard. One of the apparent reasons for shoving t3 so far to the right in measure 6 is that its last three notes

<2,5,4> take on the rhythm ♪♪♪ |, which recalls the original rhythmic/metric correspondence, especially when combined with pitch class 3 from the first tetrachord of I_4 on the downbeat of m. 7. In addition, tetrachord 1 appears in the rhythm | ♪♪♪♪♪ 𝅗𝅥 in m. 6, another close relative of the original correspondence. From measure 5 to measure 6, the number of tetrachords that resemble the original motive has increased from one to two.

Measure 7 divides in half, with the first part given to I_4 and the second P_4. Here the process of lining up increasing numbers of tetrachords with the first rhythmic/metric motive continues. In I_4, tetrachord 1 is the only one that does not state something close to the motive. Tetrachord 3 is given | 𝄾♪♪♪♪, and t2 has the original correspondence itself, in the form that goes from downbeat to second beat. In the second half of the measure (which spills over into the downbeat of measure 8), both tetrachord 1 and tetrachord 2 of P_4 have close relatives of the original, and t3 is given the original correspondence. As Schoenberg lines up more and more of his tetrachords with his first rhythmic/metric correspondence, or correspondences related to it, the listener should sense a growing rhythmic focus, moving back in the direction of the original meter. But the meter in mm. 5b-8a is being projected by vertical stacks of tetrachords (staggered in every case) rather than tetrachords in alternation, so the textural effect is different, heavier, perhaps more cadential.

At the same time, tetrachord exchange between adjacent row forms in mm. 5b-8a results in another kind of focusing process, by which certain pitch-class tetrachords that remain invariant between row forms seem to gradually take on the rhythmic and metric qualities of the original correspondence. The pertinent exchanges are highlighted with gray shading, boxes and arrows on the bottom half of Example 20a. Notice that {9,8,11,10}, the third tetrachord of I_4 in mm. 5b-6, is echoed in I_{10} through an exchange in m. 6, returns again as part of I_4 in m. 7a, then again through exchange in m. 7b as part of P_4. Likewise, {2,5,0,6}, the second tetrachord of I_4 in m. 5b, is projected by exchange in the last half of m. 6 as part of I_{10}, then returns again within its own row in m. 7a. Example 20b depicts these two tetrachords' path through mm. 5b-8a, indicating the specific pitches and rhythms that Schoenberg assigns to them. The reader can see from the top half of the example that {2,5,0,6}

Example 20a. Schoenberg, Gavotte Op. 25, mm. 5b-7
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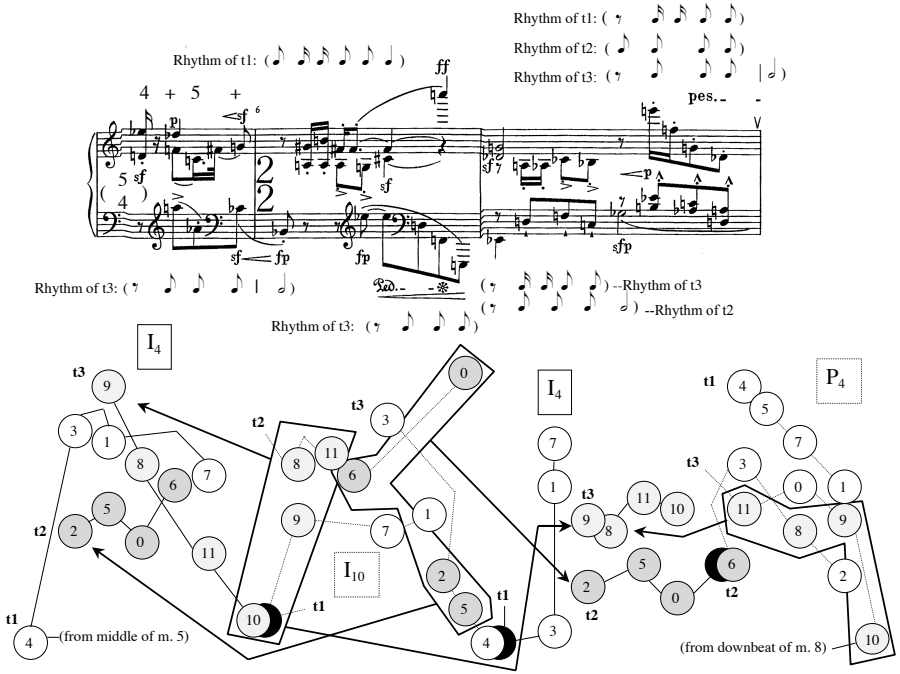

Example 20b. Rhythmic transformations of selected motives in mm. 5b-8a
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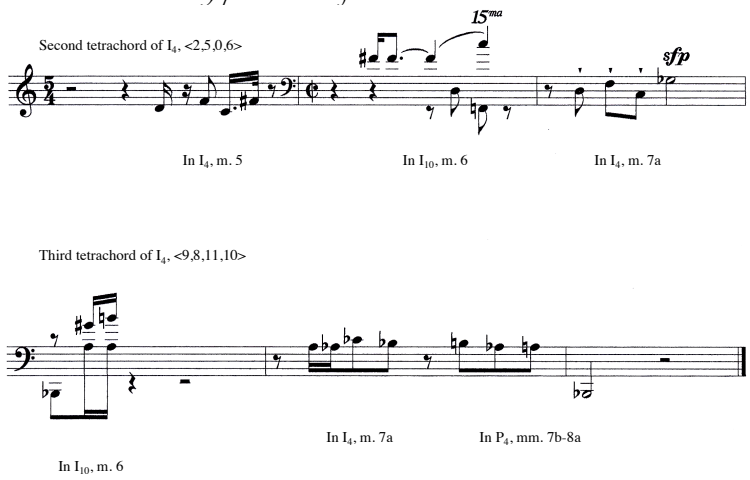

begins with a rhythmic and metric pattern very different from the basic correspondence in m. 5, takes on one characteristic of the basic motive in m. 6 (the eighth-note pickup to a more-accented fourth quarter note), and falls into the motive itself at measure 7a. As for {9,8,11,10}, its path seems even clearer--as part of I_{10} its rhythm presents only the first quarter note of a variation of the basic motive (| ♪♪♪♪♪ 𝅗𝅥), in m. 7a, it takes on the first *two* quarter notes of a similar variation (| 𝄾♪♪♪♪𝅗𝅥), and in m. 7b, as part of P_4, it appears with the complete, original rhythmic/metric correspondence 𝄾♪♪♪ | 𝅗𝅥 (though not in its usual order, <9,8,11,10>).

The B section of the Gavotte

Measures 8-10a, the beginning of the B section, have already been depicted in Example 18. The reader will recall that the main function of these measures is to present a second correspondence between rhythm, meter and tetrachord, by which the first two quarters of the motive ♩ ♩ | 𝅗𝅥 are associated with tetrachord 3 of a row, the half note provides a rhythmic boundary for tetrachord 2,

and tetrachord 1 runs in eighth notes below the first two quarters. This second correspondence will turn out to be the one that "solves" the piece near the end, which ties up its loose ends with respect to rhythm/meter/pitch correspondences. But first Schoenberg is going to dislocate this correspondence by means of a sequence in mm. 10b-12a (see Example 21). The sequence is based on a relationship between third tetrachords of all four row forms—since the third tetrachords of P_4 and P_{10} can be represented by the symmetrical interval pattern <+1,-3,+1>, their inversions are identical to a transposition of their retrogrades. For example, inverting the third tetrachord of P_4, <11,0,9,10>, around its first note yields <11,10,1,0>, which is also a transposition up one semitone of the retrograde of P_4, t3 (<10,9,0,11>).

In measures 10b-12a, Schoenberg presents all four of his rows in succession, P_4, P_{10}, I_4, and I_{10}. The order of pitches within tetrachords and pitch contours of tetrachords stay the same from P_4 to P_{10} and from I_4 to I_{10}, making each of those transitions sound like a sequence up a tritone. From P_{10} to I_4, Schoenberg changes the order of the notes in each tetrachord to preserve the sense of sequence. Tetrachord 3 in I_4 is taken backwards to make it sound like a sequence up a perfect fourth from t3 in P_{10}, and the other

Example 21. Schoenberg, Gavotte Op. 25, mm. 10b-12a
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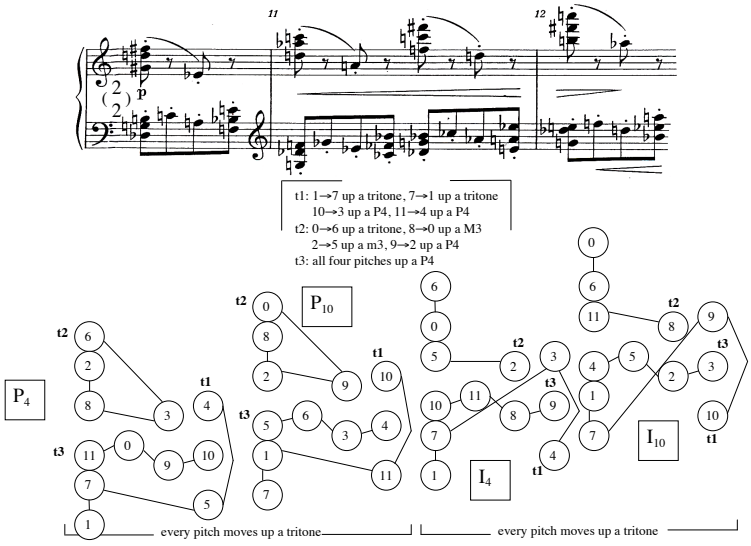
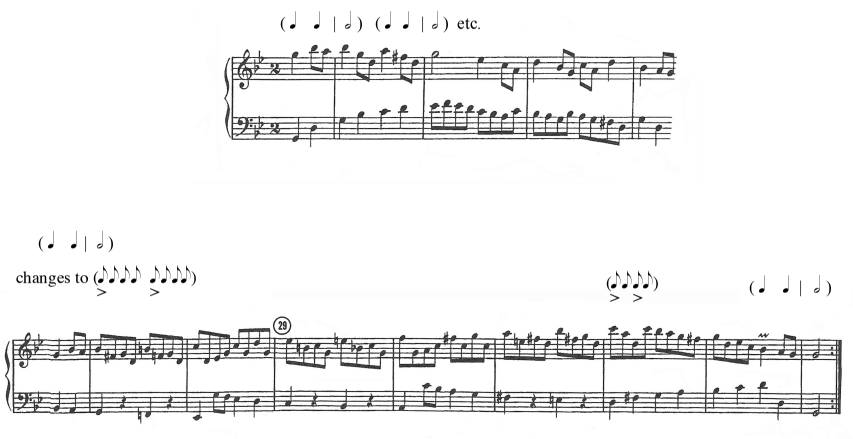


two tetrachords are reordered in slightly more complex ways (see the pitch-class map below Example 21), nevertheless their members still sound like transpositions (by several different intervals) up from corresponding notes in P_{10}. With respect to rhythmic/metric relations, in each row, the first tetrachord appears as two dyads on the first and last eighths of a half-measure, t2 as a three-note chord on the first eighth and single note on the third eighth, and t3 as the sequenced motive on all four eighths. Thus a regular rhythmic/metric correspondence is set up, but a completely different one from the beginning of the B section, one which seems to make the first correspondence go astray—the composer has replaced ♩ ♩ | 𝅗𝅥 with ♪♪♪♪.

It is entirely appropriate to note that Schoenberg's rhythmic/metric pattern shift in mm. 10b-12a is the same one that Bach makes in many of his Gavottes. See Example 22 for the opening and closing phrases of Bach's Gavotte from the Third English Suite in G minor, BWV 808 (my example indicates changes from one rhythmic/metric correspondence to another above the score). Bach's first rhythmic pattern change is also associated with a sequence—mm. 29-30 takes mm. 27-28's material up a fourth, and m. 31 starts as a fourth-transposition of m. 29 but then adjusts to prolong the dominant in G minor. It seems that Schoenberg was imitating several characteristics of Bach's Gavotte style in his mm. 10b-12a, which have the same function as Bach's closing phrase—to change the prevailing rhythmic/metric correspondence.

The final part of the B section of Schoenberg's Gavotte is displayed in Example 23a. The piece returns for two measures (mm. 12b-14a) to a rhythmic/metric correspondence much like the one that began the section, two quarters moving to an accented downbeat, with triplet eighths beneath rather than eighth notes. An important difference is the way tetrachords 1 and 2 align with the rhythmic motive—rather than occurring one after the other as t3 and t2 had at the beginning of B, they now interlock in two different ways, all of t2 coming before the second dyad of t1 in P_4, and alternating between tetrachords in I_4. One byproduct of this shift in the way the tetrachords align with the rhythm is that six of the eight pitches under the top slur in mm. 13b-14a can be heard as a half-step transposition down from mm. 12b-13a. The third tetrachord of I_4, since it is inversion-related, can also be heard as a half-step transposition down from t3 of P_4, played backwards (and

Example 22. mm. 1-4 and 26b-34 of Bach, Gavotte from English Suite no. 3 in G minor, BWV 808



then raised one octave). Since mm. 8b-10a had also featured apparent half-step transpositions to some extent (between third tetrachords of I_{10} and P_{10}), here is another way in which this passage points back to the beginning of the B section.

The composer's next move in mm. 14b-15a is recognizably similar to the sequence that occurred back in mm. 10b-12a. In both P_{10} and I_{10}, tetrachord 1 is on top, its first dyad associated with the quarter note on the beat and the second with a quarter after the beat (though the common pitch class 10 sustains in each row as a kind of pedal point); and tetrachord 2 is on the bottom, its last three notes sounding on the beat and the first on the afterbeat. Tetrachord 3 is played horizontally in the middle of the texture, just as in the sequential passage—in 14b-15a, though, both third tetrachords are given the rhythm 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥 which makes them recall the A section's rhythmic motive, and they are reordered and given in pitch inversion, rather than the retrograde of the earlier passage (which had made them sound like transpositions of one another). Even though mm. 14b-15a resemble 10b-12a in many respects, I have given their rhythm (above the score in Example 26a) as 𝅘𝅥 𝅘𝅥 | 𝅗𝅥 rather than 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯—this is mainly because of the effect of the sustained B♭ on the downbeat of m. 15. Nevertheless, because of the realignment of the tetrachords with respect to the rhythm, these measures seem to alter the basic B correspondence substantially.

If measures 14b-15a can be interpreted as taking the listener one step away from Section B's characteristic rhythmic/metric correspondence, then mm. 15b-16a takes us yet another step. In P_{10} during the last part of Example 23a, the correspondence between single row form and the location within the meter 𝅗𝅥 | 𝅗𝅥 is recaptured, but that is about the only recognizable characteristic from the beginning measures of the section. The alignment of the tetrachords with the rhythm is mostly new—tetrachord 1 is associated with an attacked pc 11 and three sustained notes from earlier in m. 15 (the attacked C♭ heard together with the two quarter notes from m. 15a could be heard as creating another 𝅘𝅥 𝅘𝅥 𝅗𝅥 that would overlap with the one in 14b-15a). Tetrachord 2 retains its last-three-notes-on-the-beat, first-note-on-the-afterbeat pattern,

Example 23a. Schoenberg, Gavotte Op. 25, mm. 12b-16a
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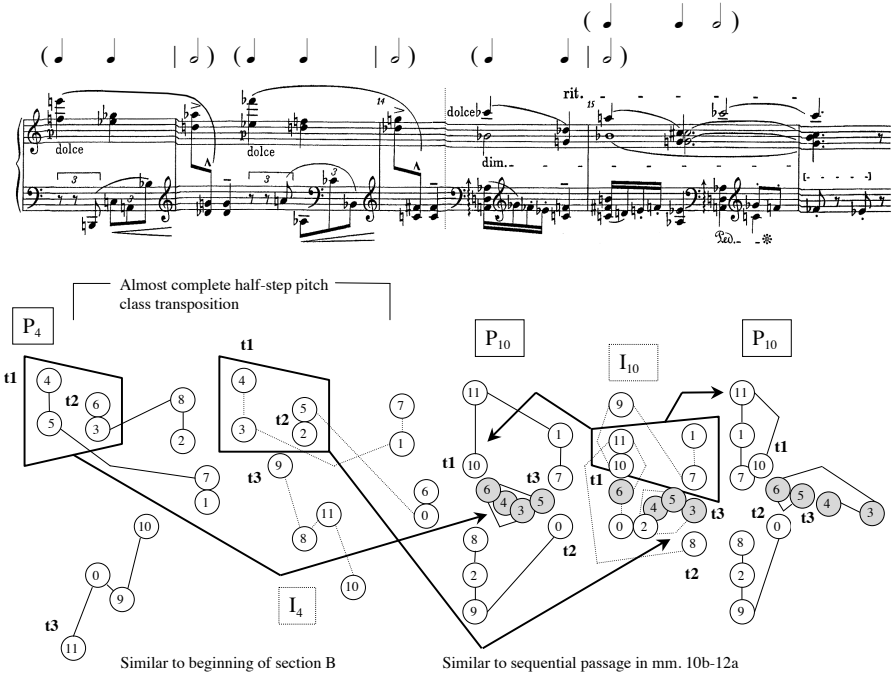

and tetrachord 3, which had occurred together with the other two before, is now shifted forward rhythmically and reordered to create the descending scale that ends the passage. The rhythm and meter of this little scale, ♪ ♪ | 𝅘𝅥𝅯𝄾 𝅘𝅥𝅯𝄾, can be interpreted as both a diminution and an extension of the B section's motive.

The movement of the latter measures of the B section away from the motivic correspondence that had characterized its beginning is reinforced by a gradual altering of the rhythmic characteristics of an invariant tetrachord (the notes of the invariant tetrachord are shaded in Example 23a's latter half). This is a process similar to the one that occurred in mm. 5-8a (which I had illustrated in Example 20b), but in mm. 14b-16a the process goes in the opposite direction—the rhythmic characteristics of <5,6,3,4> become progressively *less* like those of the A section's motive. Example 23b illustrates. The third tetrachord of P_{10} in m. 14b carries the rhythm of the A section's motivic correspondence in diminution, as remarked on before. When that tetrachord is reprised at the same pitches in m. 15a as part of I_{10}, only part of the A motive remains on the pitches E4, F4 and E♭4, the last two sixteenths moving into the quarter. Then at 15b-16a, the same pitches return as part of P_{10} again, and the rhythmic motive has changed to a diminution and extension of B's motive. This rhythmic transformation of the same 4 pitches, as well as the reordering of the tetrachord from its original form in all three of these instances, contributes to the sense in the final measures of B that old correspondences are breaking down.

Example 23b. Rhythmic transformations of a selected motive in mm. 14b-16a
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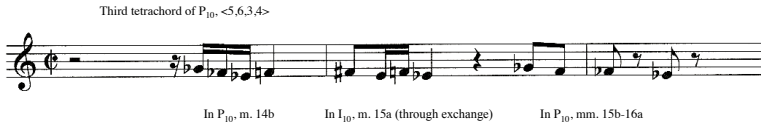

The A' section of the Gavotte

I argued above that measure 16b brings in the A' section of the Gavotte's modified ternary form. A careful comparison of Example 24, the opening measure-and-a-half of A', with the

Example 24. Schoenberg, Gavotte Op. 25, mm. 16b-17, beginning of Section A'
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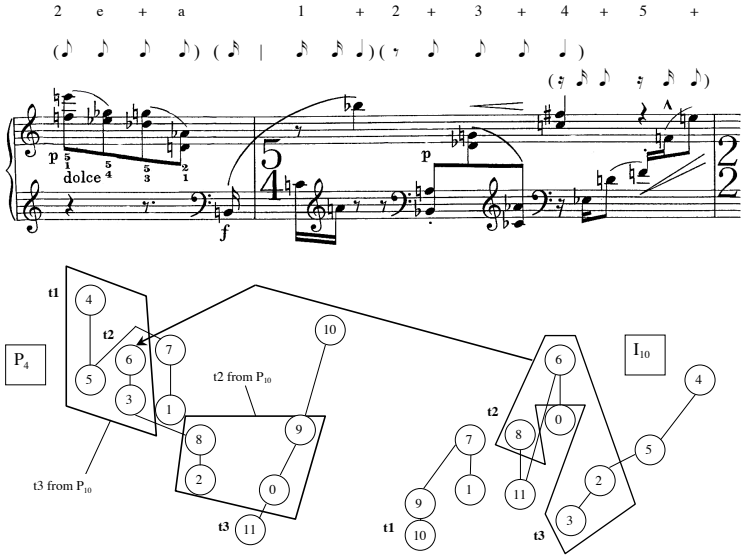

opening measures of the piece in Example 17 will demonstrate why. Not only are the same two row forms reprised, P_4 followed by I_{10}, but many of the specific pitches and ordered pitch intervals of mm. 0-4a are retained. For example, all four pitches of tetrachord 1 in P_4 return in m. 16b from mm. 0-1, as do three of the pitches from tetrachord 2 (what had been A♭6 is lowered two octaves). The two tetrachords are again interlocked in the fashion that became familiar in mm. 13b-14a, alternating dyads. In tetrachord 3 of P_4, the last two pitches are raised one octave in the latter passage, but two ordered pitch intervals, both +13s, remain. I_{10} is varied a little more substantially during its first two tetrachords, but by the third tetrachord the ordered pitch interval succession from the opening passage returns, <+11,+3,+11>.

The progressive variation in the pitches of the tetrachords of P_4 and I_{10} is accompanied by a much more sudden dislocation of the rhythm. The rhythm layer above Example 24 shows that this passage includes three approximations of the A section's motivic correspondence 𝅀♪♪♪ | 𝅗𝅥, but not one of them aligns the rhythm with the meter in the "ideal" way. The third comes closest: it

anticipates a quarter note with three eighth notes, but the longer note comes on the fourth beat of a $\frac{5}{4}$ measure rather than a downbeat. Measures 16b-17 are the place in the Gavotte, corresponding to mm. 35b-37a in the Intermezzo, where the ideal relationship between pitch, rhythm, and meter is furthest from being realized. It is important to note that the same passage contains sudden, motive-by-motive juxtapositions of ≻ and ≺ dynamics (which have not been characteristic of the Gavotte to this point), and irregularity of meter, contributing to the sense of disruption.

The next five-and-a-half measures are portrayed in a single example, No. 25—the reason is that this whole block of music has a single purpose, to recapture the ideal relationships between rhythm, meter and row that were offered at the beginning of the piece and the beginning of section B. In this way, the problems of rhythm/meter/pitch alignment posed by the beginning measures of A' are solved. Schoenberg creates step-by-step processes that approach the piece's original conditions in several different realms: the rhythms grow closer to 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥 and ♩ ♩ | 𝅗𝅥, the tone-row moves in the direction of aligning with the second half of one measure and the first half of the next, and the individual tetrachords begin to take the places in the rhythmic/metric/registral context that they were accustomed to take at beginnings of A and B sections. The culmination of the three processes leads to mm. 22b-23a as a return to the ideal correspondence between parameters—a correspondence much like that of section B's beginning, as commented on earlier, but which also incorporates the rhythmic motive of section A.

The development of rhythmic/metric correspondences can be traced by looking at the rhythm layers above and below the notation on Example 25. The uppermost layer portrays Schoenberg trying out several alternatives that get progressively closer to his ♩ ♩ | 𝅗𝅥 ideal, first two quarters moving to a quarter downbeat (second part is too short), then two dotted quarters moving to a half-note downbeat (first part is too long), then an irregular figure of three pickups moving to a half-note downbeat in the bass, and finally the two quarters moving to a half-note downbeat that is characteristic of the ideal. In the majority of these rhythmic "alternatives," the

Example 25. Schoenberg, Gavotte Op. 25, mm. 18-23a
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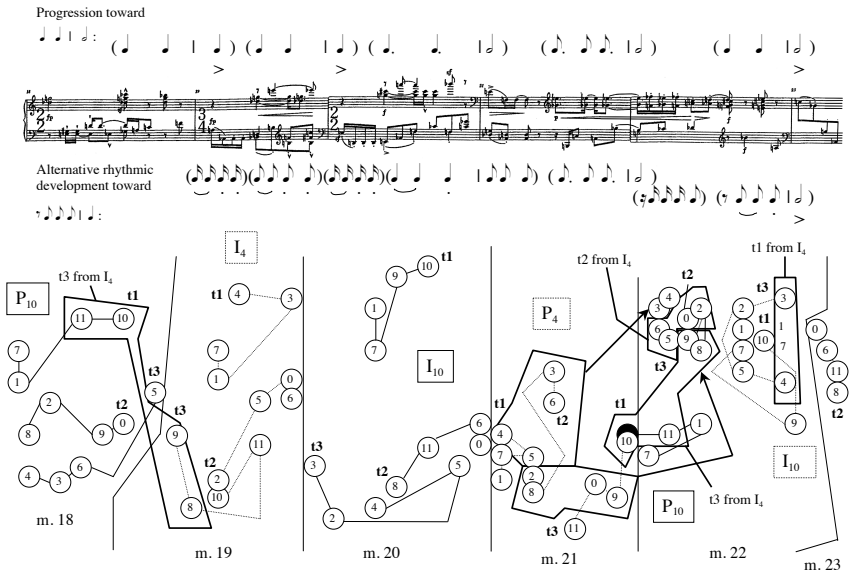

quarter- or half-note on the downbeat is represented by a figure of four sixteenths or eighths with the first two notes slurred and the other two staccato, a feature that helps the listener organize the music into the segments I have just described. Simultaneously with the first process, there is a development of rhythmic motives (visible on the rhythm layer below the notated music) that seems to be transforming the figure in sixteenths, with the first two slurred and the second two staccato, into the A motive 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥. Schoenberg lengthens the initial figure from sixteenths to eighths, then returns to sixteenths again before expanding it to quarters in mm. 20-21. The version in quarters, for the first time, is aligned with the meter according to the A motive's correspondences, 𝅗𝅥 ∪ 𝅗𝅥 | 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯. It is followed at mm. 21b-22a by the dotted eighth-eighth-dotted eighth figure moving to a half note on the downbeat. While the bass plays its half note in m. 22a, the right hand gives a diminuted version of the A motive. Finally, in 22b, the syncopated B♭-A in the left hand together with the eighth-note chord in the right hand on the and of beat 2, strongly suggests 𝅘𝅥𝅯𝅘𝅥𝅯 ∪ 𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥. But, as we have seen, these same measures also present the 𝅗𝅥 𝅗𝅥 | 𝅗𝅥 ideal in the right hand, so that we have a bringing-together of the two main motives, the A motive merely suggested within a context that seems controlled by the B motive.

As the rhythmic motives move in the direction of the two basic correspondences, Schoenberg also begins to align the tetrachords of the various row forms with the rhythm and meter according to the way that was customary at the B section's beginning. Notice that from m. 18 to m. 21, measure boundaries and row forms line up, one row per measure. The composer then packs the row form P_{10} into the first half of m. 22, so that the next row, I_{10}, can stretch across the last half of 22 and first half of 23 in the manner characteristic of the first part of this piece (and gavottes in general). This return to normalcy with respect to entire rows' placement is accompanied by a progressive change in the positioning of individual tetrachords, moving back to something close to the situation that obtained at the beginning of section B. In m. 18, tetrachord 1 appears in the right hand as a dyad vertical on {1,7}, which then sustains under pcs 11 and 10 laid out horizontally. The same format is used for first tetrachords in mm.

19 and 20, with rhythmic variations. Meanwhile, t2 and t3 in m. 18 create something like the displaced vertical stacks of mm. 4b-6, which develops in mm. 19 and 20 into an imitative texture. In m. 21, then, the three tetrachords come in row order. Tetrachord 2 of P_4 splits into two vertical dyads (first two and second two notes again), and t3 follows it with a horizontal presentation. If we were to place both vertical dyads above the horizontal four-note segment, we would then have a tetrachord alignment similar to the B section's beginning. That is exactly what Schoenberg creates in the first part of m. 22, where t2 and t3 as dyad pairs play above a reordered t1, laid out mostly horizontally. Finally, in 22b-23a, we have t3's dyads on the two eighth-note pickups and all of t2 contained within the half note on the following beat. The only tetrachord that does not completely take the role it had at beginning of B is t1, half of which joins the chords created by t3, while the other half plays the customary role of countermelody.

The "solution" of mm. 22b-23a is followed in the last half of measure 23 by a passage in which it is difficult to identify the row form, and where the rhythms of the three tetrachords taken individually diverge drastically from both of the Gavotte's original correspondences. See Example 26. Schoenberg seems to be obscuring suddenly the relationships between parameters that he had built gradually in the preceding measures of A'.

Finally, the closing 4 1/2 measures of the piece (in Example 27) function as a final, mostly successful attempt to confirm the two original pitch/rhythmic correspondences. Measures 24b-25a offer two three-note approximations and one four-note statement

Example 26. Schoenberg, Gavotte Op. 25, m. 23b
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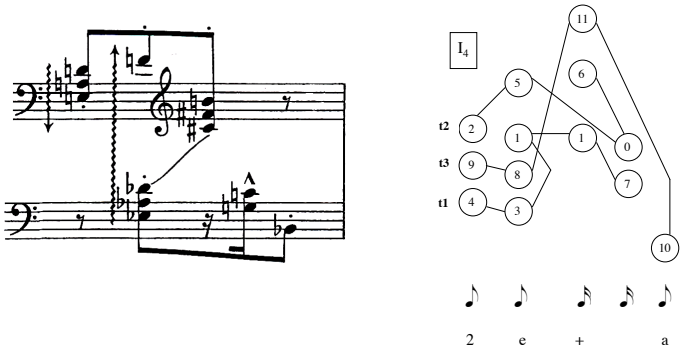

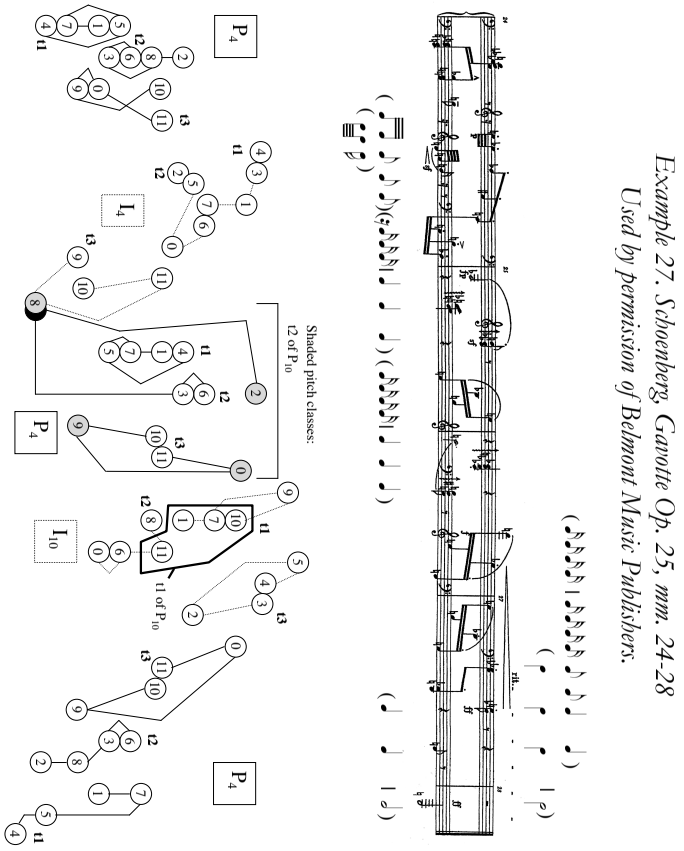

Example 27. Schoenberg, Gavotte Op. 25, mm. 24-28
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of the first (A section) motive that gradually move closer to its original rhythm and correspondence with the row's tetrachords. A pair of 32nd note pickups moves to an eighth note on the second half-note beat, and simultaneously a pair of 64th note pickups moves to a sixteenth note, also falling on the second beat. The first of the two motives, the one with the 32nd notes, is associated with a single tetrachord, t1 of I_4, in a manner reminiscent of the piece's beginning. Not long after, a diminution of the complete A motive, 𝅀 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅗𝅥, occurs, aligned perfectly with the third tetrachord of I_4.

After m. 25, however, the Gavotte diverts again from the customary correspondences between rhythm, meter and pitch that were characteristic of the beginning, by means of additions to the A motive. The A♭ downbeat of m. 25 is echoed by attacks on the second and third quarters. Measures 25b-26a repeat the rhythm of 24b-25a, and add an extra sixteenth to the beginning, to form 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯 | 𝅘𝅥 𝅘𝅥 𝅘𝅥. And measures 26b-28 add a second set of sixteenths on the downbeat of m. 27 (using the same tetrachord, t3, and the same unordered pitch interval pattern, <13,1,13>, that has characterized every group of four sixteenths since measure 25), followed by a transformation of the three equal quarter notes into 𝅘𝅥𝅯𝅘𝅥𝅯 𝅘𝅥 𝅘𝅥. At the same time, the last two quarters of this elongation lead as pickups to a half note downbeat in measure 28, so that the extension of motive A gradually morphs into the B section's correspondence, 𝅗𝅥 𝅗𝅥 | 𝅗𝅥. This motive B lines up with the first tetrachord of P_4: a change in the usual correspondence, because motive B had been associated with complete row forms rather than single tetrachords up to this point. Certain characteristics of the Gavotte's end remind us of its beginning (the return to the initial row, P_4, and the idea of lining up a tetrachord with a motivic rhythm) while other features are new. It is this quality that makes the final cadence seem suggestive, rather than conclusive, with respect to the piece's overall pattern.

Jan Maegaard's account of the dating for the various movements of the Suite Op. 25 indicates that the Intermezzo and Gavotte followed directly after one another in Schoenberg's compositional process, with the Prelude coming before both of them and the Menuett beginning simultaneously with the Gavotte but being completed after it. Our detailed study of tetrachord

exchange in the Intermezzo and correspondences of elements of sets with rhythm and meter in the Gavotte strongly suggests that the Suite itself could be understood as a "voyage of discovery": similar in one way to the "Serial Odyssey" for which Ethan Haimo has argued, but very different in another way. As Schoenberg progressed through writing the Suite, he invented more subtle and effective ways to realize his "musical idea," his overarching dialectic introducing a problem, elaborating that problem, and providing a solution (such large patterns are completely absent from Haimo's account of the development of Schoenberg's twelve-tone music). The Intermezzo can be understood as a preliminary exercise in using collectional exchange between pairs of rows to unify a piece and project its idea, in which the exchanges are partial for the most part and apply only to tetrachords. The Menuett which came directly after it seems to embody a more advanced version of the technique: it projects its idea through hexachordal as well as tetrachordal exchanges which exhaust the aggregate consistently, as well as alluding to multiple row forms simultaneously. Finally, although the Gavotte also demonstrates tetrachord exchange, its main line of development picks up on the correspondences between division into tetrachords, rhythmic motives and metrical locations that characterized certain measures of the Intermezzo (mm. 25-30 specifically) and creates a problem, elaboration and solution by dislocating such correspondences and recapturing them throughout the piece.

Even if Schoenberg did not traverse his entire path from atonal to twelve-tone music progressively, then, one could perhaps make the argument for smaller voyages of discovery within specific opus numbers. In any case, tracing the ways that techniques like collectional exchange and rhythmic-metric correspondences manifest themselves across an entire piece, as we have just done, is instructive: it invariably "throws the idea into relief" and enables the analyst to understand how a musical idea is "presented and worked out."[14]

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14 These quoted phrases come from Schoenberg's letter of July 27, 1932 instructing his student, brother in law and interpreter Rudolf Kolisch how to analyze a passage of the Third String Quartet. See Schoenberg, *Letters*, selected and ed. Erwin Stein, trans. Eithne Wilkins and Ernst Kaiser (Berkeley and Los Angeles: University of California Press, 1987), pp. 164-65.

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