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"Im Zusammenhang des Zwölftonwegs sprechen": Reconsidering Pitch-class Sets in Schoenberg's Atonal Music*

by J. Daniel Jenkins

Abstract. Arnold Schoenberg's 1911 précis for a book on counterpoint called *Das Komponieren mit selbständige Stimmen* presages his interest in and return to counterpoint in *Pierrot lunaire*. While many authors have pointed to the contrapuntal studies within *Pierrot*, including "Nacht," "Der Mondfleck," and "Parodie," what has not been previously discussed is how *Das Komponieren mit selbständige Stimmen*, and, by extension, Schoenberg's writings on counterpoint in general, could serve as a context for better understanding these contrapuntal *Pierrot* songs. This article focuses on "Nacht." In the early reception of atonal period music within Schoenberg's circle, "Nacht" emerged as a seminal work largely because it was seen as a harbinger of things to come. Reconsidering this early reception of "Nacht" leads to analysis of passages from "Nacht." The article concludes with some thoughts about what this analysis suggests about the analysis of Schoenberg's atonal compositions in general.

Keywords and phrases: Alban Berg, counterpoint, *Pierrot lunaire*, "Nacht," pitch-class set theory, Arnold Schoenberg.

In summer 1911, even before he had finished the dedication of his first edition of the *Harmonielehre*, Schoenberg was already considering his next project. He sent his publisher at Universal Edition, Emil Hertzka, a précis for a book on counterpoint he called *Das Komponieren mit Selbständige Stimmen* (hereafter, *KmSS*).[1] Though Schoenberg never finished this book, it would seem that he intended his new text to be a companion to the *Harmonielehre*; together they would further flesh out his *Kompositionslehre*. Schoenberg did return to counterpoint in various manuscripts, including *Coherence, Counterpoint, Instrumentation, Instruction in Form: Zusammenhang, Kontrapunkt, Instrumentation, Formenlehre* (*ZKIF*),[2] the *Gedanke* manuscripts,[3] and *Preliminary Exercises in Counterpoint*.[4] But even this latter work, essentially a textbook on species

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[1] Schoenberg's original documents, catalogued at T37.03 and T57.14 at the Arnold Schönberg Center (ASC) in Vienna, are dated 29 June, 1911. They are transcribed as Stephan (1972).

[2] Schoenberg (1994).

[3] The longest of these was published posthumously as Schoenberg (1995).

[4] Schoenberg (1963).

counterpoint, does not realize what Schoenberg had planned for *KmSS*.[5]

Schoenberg's interest in counterpoint in the summer of 1911 stands in inverse relationship to his employment of polyphonic textures in his compositions contemporaneous with and immediately preceding it. The works of 1909–1911, including the piano piece, Op. 11, No. 3; *Erwartung*, Op. 17; the Six Little Piano Pieces, Op. 16; and *Herzgewächse*, Op. 20, favor a highly variegated and expressionistic approach that eschews contrapuntal presentation.[6] Therefore, the reemergence of counterpoint in *Pierrot lunaire*, composed in March through July 1912, less than a year after Schoenberg penned *KmSS*, marks a departure from Schoenberg's compositional approach in these preceding years, and at the very least, proves noteworthy.[7]

A discussion of counterpoint in *Pierrot* is certainly not new. Many authors have pointed to it,[8] and Schoenberg himself referred to the songs "Nacht," "Der Mondfleck" and "Parodie" as "contrapuntal studies."[9] What has not been previously discussed is how *KmSS*, and by extension, Schoenberg's writings on counterpoint in general, could serve as a context for better understanding these *Pierrot* songs. In this article, I will reconsider some passages from "Nacht." The focus on "Nacht" seems appropriate given that in the early reception of atonal period music within Schoenberg's circle, "Nacht" emerged as a seminal work largely because it was seen as a harbinger of things to come. As Alban Berg wrote on his personal copy of "Nacht," "im Zusammenhang des Zwölftonwegs sprechen," or "speak about this in connection to the twelve-tone path."[10] Reconsidering this early reception of "Nacht" will lead to analysis of passages from "Nacht." I will then conclude the article with some thoughts about what this analysis suggests about the analysis of Schoenberg's atonal compositions in general.

1. Entwicklung and Abwicklung

In *KmSS*, Schoenberg explained that:

> *Homophony and polyphony are only two different forms of the same thing: two style principles.*
> But *the same thing*:
> a) art
> b) music
> therefore:
> same laws, but *different* implementation
> that is:
> Homophony: structuring, harmony bound through melody.
> Polyphony: melody bound through harmony.
> The nature of the multi-voice compositions is such that:
> *the independent voice has the responsibility for what happens in the form. The harmony is only control, control of taste.*[11]

Schoenberg continued to think of homophony and polyphony as two sides of the same coin throughout his life. In the *Gedanke* manuscripts, he distinguished between the manners of presentation appropriate to homophony and polyphony, referring to them as *Entwicklung* (or *Entwicklende Variation*) and *Abwicklung*, respectively.[12] The prevalence of *Entwicklende Variation*, or "developing variation," as a topic in Schoenbergian scholarship has not only made it a familiar term, but also may have created a perception that developing variation is the only manner of presentation of a musical idea that Schoenberg advocated. However, in various texts Schoenberg makes clear that he reserved development, or *Entwicklung*, for homophonic compositions.

[5] A comprehensive study of Schoenberg's writings on counterpoint, edited by Severine Neff, is forthcoming from Oxford University Press as part of the series "Schoenberg in Words."

[6] In regard to Opp. 17, 19, and 20, Joseph Auner writes, "in both *Erwartung*, and other works of the period such as the *Six Little Piano Pieces* and *Herzgewächse*, unvaried motivic or thematic repetition, a traditional approach to form, and imitative counterpoint are carefully avoided" (1991, 5). See also Haimo (2006, 346–359). On the Piano Piece, Op. 11, No. 3, see Heneghan (2008), and for a contrary view, Boss (2015).

[7] Auner believes that "the reemergence of imitative counterpoint, including such devices as augmentation, inversion, and retrograde" is "perhaps the most notable feature of *Pierrot* in comparison with the athematic and aphoristic works" (1991, 301–302). Bryan Simms concurs: "'Nacht,' 'Parodie', and 'Der Mondfleck' fully dispense with the intuitive or unreflexive approach to composition that Schoenberg has used since the summer of 1909" (2000, 135).

[8] See, for example, Antesberger (1974, 121–124), Auner (1991, 302), Austin (1966, 209), Bailey (1977, 93–107), Bauer (1986, 323), Beinhorn (1989, 186, 194–198), Berkowitz (1987, 133–135), Boss (2009, 252–260), Bray (1974, 56–58), Crawford (1963, 275–277), Delaere (1993, 147, 150, 158), Demuth (1975, 221–222), Don (1991, 128–130), Doyle (1981, 74–90), Dunsby (1992, 64–67), Gray (1927, 177), Haimo (2004, 154), Henry (1965, 86–103), Hodeir (1975, 48), Jakobik (1983, 75), Krones (2002, 312, 316–318), Lessem (1979, 149–148, 156–159), Liebowitz (1949, 93–95), Lohman (1981, 199–200, 297–300), Morgan (1991, 75), Nelson (1964, 146), Odegard (1964, 53–55), Paz (1958, 87), Peck (2003, 3–5), Perle (1991, 310–312), Perle (1991, 31), Pillin (1970, 101–107), Raab (1993, 411–416), Reich (1971, 75), Rosen (1996, 54–55), Simms (1999, 171–173), Simms (2000, 135–139), Stein (1924, 294), Stein (1953, 66), Stuckenschmidt (1957, 66–67), Stuckenschmidt (1959, 67–68), Stuckenschmidt (1974, 182), Stuckenschmidt (1978, 198–199), Tenschert (1925, 592), Weber (1993, 364–370), Wellesz (1925, 140–142), and Weytjens (2003, 139–153).

[9] Schoenberg (2010, 94).

[10] Berg's score of *Pierrot lunaire* is located in the Austrian National Library, Music Collection, call no. F21.Berg.157. The transcription of his commentary is found in Grünzweig (2000, 177).

[11] T37.03 ASC. See also Stephan (1972, 247–248). Translations are mine, with Schoenberg's underlining rendered in italics. References to Stephan (1972) are given for readers' convenience.

[12] Schoenberg (1995, 136–137). The distinction between these two methods of presentation is bound up with Schoenberg's view of music history. See Schoenberg (2010, 115–118).

On the other side of the coin, Schoenberg defined *Abwicklung* as the manner of presentation appropriate for polyphonic compositions. In German, *Entwicklung* and *Abwicklung* make a nice pairing, but Schoenberg's idiosyncratic use of the word *Abwicklung* has caused some confusion for German speakers—and some difficulty for English translators. In Schoenbergian scholarship, *Abwicklung* has been translated as "unraveling," "unfolding" (which is not the same as Schenker's conception of *Ausfaltung*), and also "envelopment."[13] To avoid confusion, in this article I will use *Entwicklung* to refer to presentation in a homophonic context, and *Abwicklung* to refer to presentation in a polyphonic context.

In 1925, Schoenberg defined *Abwicklung* as

> the method appropriate for the contrapuntal-polyphonic style. For the essence of this style is based upon the fact that a number of tones are brought (counterpointed) into a mutual relationship of successiveness and simultaneity, so that all gestalten appearing in the course of the piece are already contained, formed or present in this basic gestalt, or are partially determined by its possibilities.[14]

Schoenberg had already expressed this sentiment more succinctly in *KmSS*, when he wrote

> a) main and subsidiary voices,
>
> b) absolute independence of the two voices from one another,
>
> […]
>
> d) relative dependence on each other
>
> 1) through motivic coherence.
>
> 2) through imitation (canon, etc.)[15]

In the *Gedanke* manuscripts, Schoenberg reiterated the definition of *Abwicklung*, contrasting it with *Entwicklung*:

> The contrapuntal idea is distinguished from the homophonic idea by its predisposition toward a different kind of image production. In homophonic (main- or upper-voiced) music images arise through "developing variation," whereby the variation, even if it alters the harmony, still affects the main (or upper) voice almost exclusively; and in spite of this, by this manner of thinking and sounding, something new always has to come into being. The contrapuntal idea provides images that must differ greatly from one another in the total sound (because the same voices meet each other on different harmonies) but differ very little from one another in thematic content, because the same voices, after all, make up [the harmonies].[16]

As this quote makes clear, the distinction between *Entwicklung* and *Abwicklung* becomes evident from the relative importance of the voices in the composition. In homophony there is a primary voice supported by harmonic voices of secondary importance. The motives and *Gestalten* occur in this primary voice. With *Abwicklung* the point of departure is not a single voice, but a *combination* of voices of *equal* importance, such as the subject and the countersubject in a fugue, or a motive and a countermotive in an invention. "Counterpoint—the word—derives ostensibly from the name given the first species of exercises by which this art is learned (point *counter point*: a whole-note against a whole-note.) …counterpoint means an 'opposing point' whose *combination with the original point* is needed if the idea is to exist."[17]

Schoenberg also stipulates that *Entwicklung* and *Abwicklung* require different types of motivic repetition. In *KmSS* he laid out one of his earliest taxonomies of kinds of motivic treatment as exercises that the student could undertake:

> 1. Exercise: a motive that goes through [the exercise] is worked [*gearbeitet*] without variation in a simple schema. The rhythm remains the same, as does the intervals.
> 2. Exercise: the intervals are changed:
>   a) expanded or contracted,
>   b) inverted
> 3. Exercise: also the rhythm is varied:
>   a) through additions (cambiata, appoggiaturas, suspensions, ornaments),
>   b) through abridgements (omission, simplification, reduction of the essential),
>   c) for the purpose of development (splitting off into a new motive, combination of a new motive with the old one)[18]

Later, in *ZKIF*, Schoenberg simplified his categories of motivic repetition to only two: exact and inexact.[19] Then, in *Fundamentals of Musical Composition*, he refined these categories to include exact, modified, and developed.[20] His examples of exact repetitions include interval-preserving operations such as transposition and inversion, order operations such as retrograde, and proportional rhythmic relationships such as augmentation and diminution. Schoenberg also notes that these operations may be coupled with

[13] The translation "unfolding" appears in Schoenberg (1995). The term "unraveling" appears in Schoenberg (2010, 397). Dineen attributes the term "envelopment" to Patricia Carpenter, "as if the subject were wrapped or enveloped in successive counterpoints" (1993, 436), but Schoenberg also used the term. In his manuscript copy of the essay "Bach" (T39.01 ASC), he originally wrote the word "envelopment," but crossed it out and replaced it with "unraveling"; see Heneghan (2006b).

[14] Schoenberg (1995, 18n). The original German text is found in the *Gedanke* manuscript no. 2, (T37.4 and T37.7–8 ASC). See also Schoenberg (2010, 290).

[15] T57.14 ASC. See also Stephan (1972, 252).

[16] Schoenberg (1995, 110–111). See also Schoenberg (2010, 397).

[17] Schoenberg (2010, 289). Emphasis in the original.

[18] T57.14 ASC. See also Stefan (1972, 251).

[19] Schoenberg (1994, 36–37).

[20] Schoenberg (1967, 8–9).

horizontal shifting to produce imitation.[21] The working of a motive "without variation," where the rhythms and intervals are not changed as described in Exercise 1 above, would result in exact repetitions, as would the pure inversions of Exercise 2b.

Developed repetitions maintain certain features of a motive, while altering others. Developed repetitions include intervallic expansion and contraction, alterations in contour, and various changes in rhythm that have developmental consequences. By contrast, modified repetitions include alterations to intervals and rhythms that do not have developmental consequences, e.g., the changes in a Theme and Variations movement required to present a theme in both major and minor, or the intervallic alternations necessary for a tonal answer in a fugue.[22] The expansion and contraction of intervals in Exercise 2a from *KmSS* could result in either modified or developed repetitions. Those described in Exercise 3a are probably modified repetitions while those of Exercises 3b and 3c are most likely developed repetitions.

That being said, it is the distinction between developed and exact repetitions that proves foundational to Schoenberg's understanding of the difference between *Entwicklung* and *Abwicklung*. Schoenberg draws this distinction quite clearly in *Preliminary Exercises in Counterpoint*:

> Repetition and motivic variation, leading to the creation of new motif forms which admit of connexion, produce the material of homophonic music. For this reason I call this style the style of *developing variation*. In contrapuntal composition, on the other hand, motivic variation appears but rarely, and then its purpose is never that of producing new motivic forms. The types of motivic variation which are admissible here do not aim at development but only at producing variety of sound by the changing mutual relationships.[23]

Therefore, in a homophonic context, developed repetitions (including the expansion and contraction of intervals) in the primary voice create new motive statements through which the piece develops. A polyphonic context favors exact forms of repetition that preserve intervals and leave the motive recognizable, even when inverted or retrograded. "Variation" in a polyphonic context only occurs in the sense that a variety of sounds are created by the "changing mutual relationships."[24] Schoenberg articulates this type of change in his essay, "Fugue" when he writes:

> Fugue is a composition with maximum self-sufficiency of content. The more such self-sufficiency is manifest in the form of unity of material, the more all the shapes stem from one basic idea—that is to say, from a single theme and the way it is treated—the more artful it is. In its highest form, which may perhaps be a merely theoretical construction, nothing would claim a place in a fugue unless it were derived, at least indirectly, from the theme. To this extent—and also in many other ways—it also employs the principle of variation in the formulation of two or more forms of the theme (*Dux* and *Comes*), as also in the production of countersubjects and material for the episodes. But the theme's everchanging 'way of accompanying'—through other parts, through transposition of invertible combinations, through the various types of canon, and also through harmonic reinterpretation—all this, too, is best regarded as variation."[25]

To reiterate: the type of motivic repetition, the relative importance of the voices, and the way in which variation comes about in a musical artwork all prove fundamental to the distinction Schoenberg makes between homophony (i.e., *Entwicklung*) and polyphony (i.e., *Abwicklung*).

Schoenberg's theorizing about polyphonic composition, nascent in *KmSS*, but fleshed out further in later writings, unquestionably influenced the reception of "Nacht" among the members of Schoenberg's circle in the 1920s and 1930s. Consider first the anonymous document "Komposition mit zwölf Tönen" (hereafter *KzT*), currently held in the Berg *Nachlass* at the Austrian National Library in Vienna.[26] Though scholars dispute its authorship, Heneghan rightly notes that *KzT* "represents Schoenberg's ideas—most likely his spoken ideas—concerning the prehistory and evolution of his composition with twelve tones."[27] The author of *KzT* recognizes the three contrapuntal studies from *Pierrot*, but stipulates that of these, it is only in "Nacht" that "the development of additional voices is derived from the possibilities of simultaneous sounding sonorities with the main voice. [T]he content of one measure is unfolded [*ausgebreitet*] in the vertical and in the horizontal. That has only now become possible through twelve-tone composition."[28]

In his discussion of "Nacht" as part of the lecture "Komposition mit zwölf Tönen und andere Aufzeichnungen," Berg echoes the analysis in *KzT*: "development of

[21] Schoenberg (1963, 155) and Schoenberg (1995, 110–111).

[22] There has been some confusion about what Schoenberg meant by developed repetition because the published definition of developed repetition in Schoenberg (1967) is actually the definition of modified repetition as found in the typescripts of *Fundamentals of Musical Composition* that date from 1941 (Heneghan 2006a, 37). See also Schönberg (1979, 16). A new edition of *Fundamentals of Musical Composition*, edited by Áine Heneghan, is forthcoming from Oxford University Press as part of the series "Schoenberg in Words."

[23] Schoenberg (1963, 155). See also Schoenberg (2010, 289). Schoenberg's original here is in English, not German, thus the phrase "developing variation" is preserved.

[24] The "individual parts" do not "'develop' thematic material by varying or altering thematic features" (Dineen 1993, 437).

[25] Schoenberg (2010, 297). Note that "variation" here does not mean "*developing* variation."

[26] F21.Berg.121, Music Collection, Austrian National Library. The document is transcribed and discussed in Stephan (1986). See also Ashby (1995), Auner (2003), Heneghan (2006a), Simms (2000), Sichardt (1990), and Shaw (2002).

[27] Heneghan (2006a, 157).

[28] Shaw (2002, 594). See also Stephan (1986, 298).

the additional voices derives from the possibility of the sounding-together with the principal voice / motive of *three tones*."[29] Additionally, in Erwin Stein's "New Formal Principles," his contribution to the *Festschrift* for Schoenberg's fiftieth birthday, he refers to "Nacht" in his discussion of the formal difficulties that arise in the absence of tonality:

> But in the passacaglia (*Night*) from *Pierrot lunaire*, we find an 'atonal' basic shape; the principal, three-note motif E–G–E♭ serves as a basis for the entire piece. With its transpositions and derivative forms, it occurs far more than a hundred times in this twenty-five bar composition. The other motifs are therefore contrapuntally dependent upon the principal motif, so that the basic shape remains throughout operative.[30]

To summarize, these three authors agree that in "Nacht" subsequent voices arise from the possibility of sounding with the main voice. The author of *KzT* does not determine this main voice explicitly, but Berg calls it a three-tone motive, and Stein defines it more narrowly as the pitches E, G, and E♭, going on to call the other voices "contrapuntally dependent" on this main voice.[31] Furthermore, the author of *KzT* contrasts homophony and polyphony with language that aligns with Schoenberg's, stressing the relative importance of the voices in each: "In homophony the vertical relationship is repressed in favor of the highest voice. In polyphony equal voices replace moving harmonies, which means that the content of the musical idea is spread among simultaneously-sounding voices."[32] The author then unambiguously defines "Nacht" as an example of *Abwicklung* rather than *Entwicklung* when he writes: "In the [*Pierrot*] *Passacaglia* there is already an indication of this."[33]

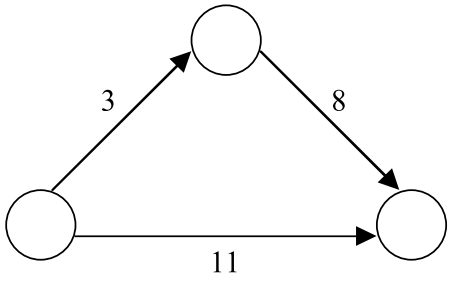


Figure 1. A graphic realization of Lewin's 3PLUS8EQUALS11.

2. Motives and Berg's Analysis

A "motivic" analysis of "Nacht" influenced by pitch-class set theory would likely reveal that many members of 3–3[014] appear on the surface of the composition. Since Schoenberg's conception of *Abwicklung* values exact repetitions, including interval-preserving operations, such a pitch-class set analysis may communicate something about *Abwicklung*. But determining that motive statements in any atonal period composition are equivalent in pitch-class space under transposition or inversion in and of itself does not necessarily indicate that *Abwicklung* is operative. Pitch-class sets are unordered, and while exact repetitions need not necessarily be ordered, for Schoenberg they often are, as his examples of exact repetitions from *Fundamentals of Musical Composition* reveal.[34] Therefore, the analyst interested in motivic repetition within the content of *Abwicklung* will want to consider the order of the pitches of a motive.

In his article "Transformational Techniques in Atonal and Other Music Theories," David Lewin indicates that "the graph associated with the succession E–G–E♭ of the *Kopfmotiv*" of "Nacht" might be called "3PLUS8EQUALS11."[35] While Lewin did not provide an image of this graph, his language suggests the graph in Figure 1. Here, the motive results from an ordered set of operations: a pitch class undergoes T_3, then T_8 to arrive at T_{11} from where it began. In his study of "Nacht," Jeffrey Gillespie (1992) adopts Lewin's "*Kopfmotiv*," but notes that most statements of the three-note motive in "Nacht" follow the path in pitch space such that the first pitch travels up 3 semitones to reach the second, then travels *down* 4 semitones (not *up* 8 semitones) to reach the third.[36] As a result, the last pitch is a semitone lower than the first, rather than some other iteration of T_{11}. Emphasis on the pitch-space realization of

[29] F21.Berg.107/I, Music Collection, Austrian National Library. Transcription in Grünzweig (2000, 291). Translation mine.

[30] Stein (1953, 66). Stein's original German-language passage begins, "Eine aus der Zwölftonreihe gewonnene Grundgestalt finden wir in der Passacaglia des "Pierrot Lunaire" ('Nacht')," (1924, 294). It is translated in Shaw (2002, 594) as "In the passacaglia 'Nacht' from 'Pierrot' we find a basic shape obtained from the twelve-tone row."

[31] Many authors agree that "Nacht" is based on a three-note cell and several also note that E–G–E♭ serves as a referential form of the collection. See, for example, Antesberger (1974, 122), Austin (1966, 209), Bailey (1977, 101), Bauer (1986, 309), Beinhorn (1989, 185), Boss (2009, 253–260), Crawford (1963, 278), Delaere (1993, 147), Dunsby (1992, 47), Henry (1965, 86), Hodeir (1975, 48), Krones (2002, 312), Lessem (1979, 146), Lewin (1982–1983, 335), Lohman (1981, 297), Morgan (1991, 1975), Nelson (1964, 145), Payne (1968, 22), Pillin (1970, 113), Simms (1999, 171–173), Simms (2000, 136–138), Straus (2016, 28–31), and Weytjens (2003, 139). Some analysts argue that the passacaglia of "Nacht" is derived from a ten-note motive, first heard in the bass clarinet beginning in m. 4. See Doyle (1981, 74), Rosen (1996, 52), Stuckenschmidt (1959, 67), and Stuckenschmidt (1978, 198). Eschman argues that it is based on a twelve-note motive, but he does not specify the order of the pitches (1945, 109).

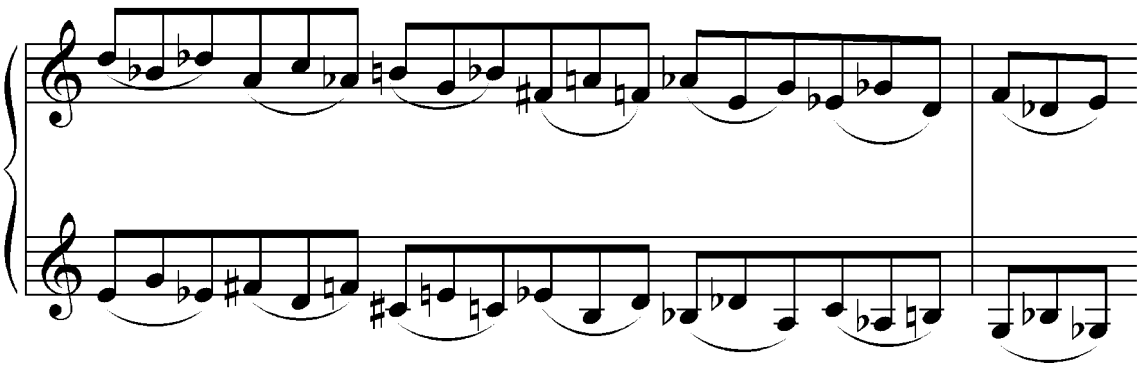
[32] Shaw (2002, 593–594).

[33] Shaw (2002, 594).

[34] Schoenberg (1967, 11).

[35] Lewin (1982–1983, 335).

[36] Analyses that focus on this particular string of intervals, rather than the pitch specific E–G–E♭, include Antesberger (1974, 122), Boss (2009, 253–260), Don (1991, 128–129), Paz (1958, 87), and Straus (2016, 30).



Example 1. Schoenberg, "Nacht," Op. 21, No. 8, piano, m. 19 to beat 1 of m. 20. Score used by permission of Belmont Music Publishers, Los Angeles.

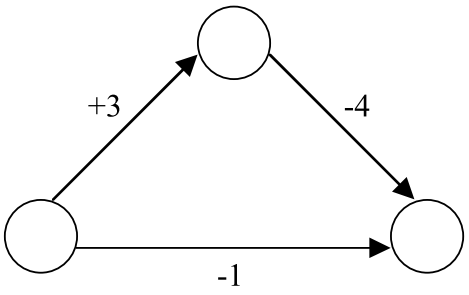


Figure 2. A pitch-space realization of the graph in Figure 1.

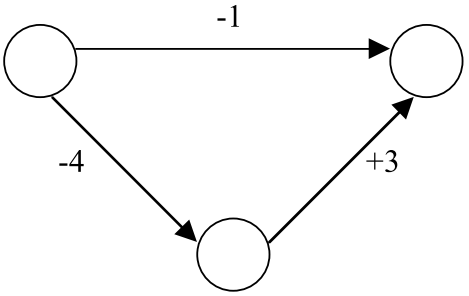


Figure 3. A graph of the retrograde inversion of the three-note motive.

the motive yields the graph in Figure 2. The application of the retrograde operation to the directed intervals of this graph results in the graph shown in Figure 3. Not only do these graphs preserve order of operations, but the restriction to pitch space also enables the analysis to communicate immutability of ordered intervallic relationships from one motive statement to the next, as is required by Schoenberg's strictest conception of *Abwicklung*.

Restricting one's analysis to ordered examples of set-class 3–3[014] only fulfills part of Schoenberg's requirements for *Abwicklung*, however. Recall that *Abwicklung* specifically refers to the exact repetitions of motive statements in a polyphonic context. Therefore, the analysis must show relationships between motive statements in voices of *equal* importance. Example 1, the piano part from m. 19 through beat 1 of m. 20, provides but one example of a contrapuntal approach to motivic presentation in "Nacht." Here, the left hand begins with $\langle E_4, G_4, E\flat_4 \rangle$, the *Kopfmotiv*, while the right hand begins with a retrograde-inverted form of the figure, beginning on D_5. In his Example 9, reproduced here as Figure 4, Jeffrey Gillespie demonstrates how each of these voices separately exemplifies Lewin's RICH operation, forming an RI-chain. He also shows that every other three-note motive is related by TCH, forming a T-chain.[37] Thus, Gillespie's analysis, while indisputable, focuses on the sequential repetition of the three-note motive *within* each voice alone and does not indicate any relationship *between* the two voices, which would be imperative for an analysis of *Abwicklung*. In a different transformational analysis of this passage, Figure 5, pitch-space specific RI-operations join simultaneously sounding statements of the three-note motive in the left and right hands of the piano. The RI-labels correspond to the pitch-space fulcrum about which the simultaneously sounding forms of the motive are (retrograde) inversionally balanced.

This latter analysis shifts focus from the horizontal to the vertical, and since it communicates something about the relationship between simultaneous motive statements, it suggests that *Abwicklung* is operative. However, unlike Gillespie's analysis, it lacks any sense of how one pair of three-note motives relates to the next.[38] A second transformational view of this passage, Figure 6, considers that each statement of the three-note motive in the left hand is transposed up six semitones, while each statement in the right

[37] For definitions of RICH and TCH, see Lewin (1987, 180–181).

[38] Lambert shows how passages such as these evidence Lewin's BIND operation (2000, 53–55).

Example 9. Double RICH (DOUBRICH), piano, mm. 19-20.

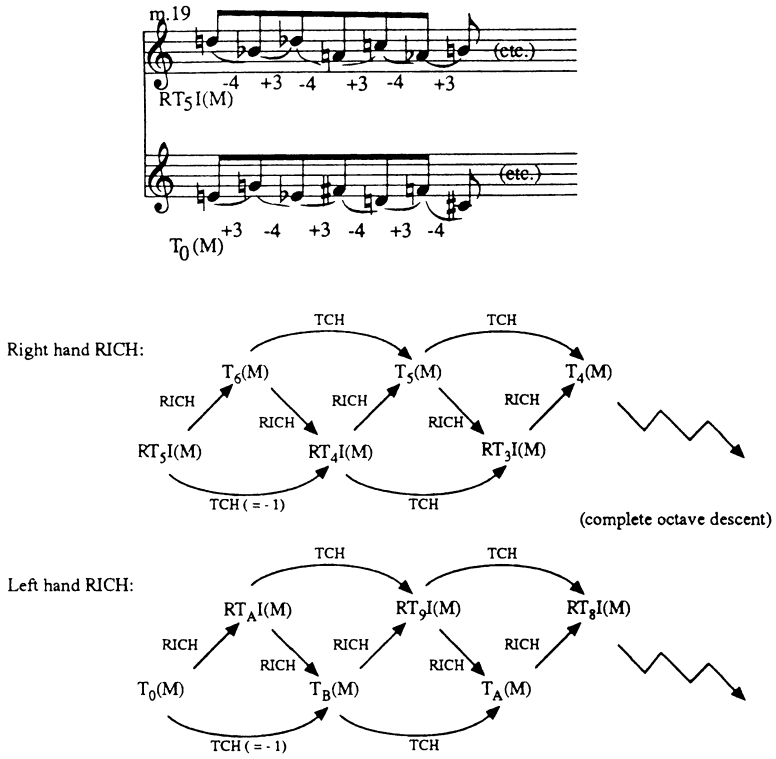


Figure 4. Example 9 from Gillespie (1992, 46). Used by permission of Intégral.

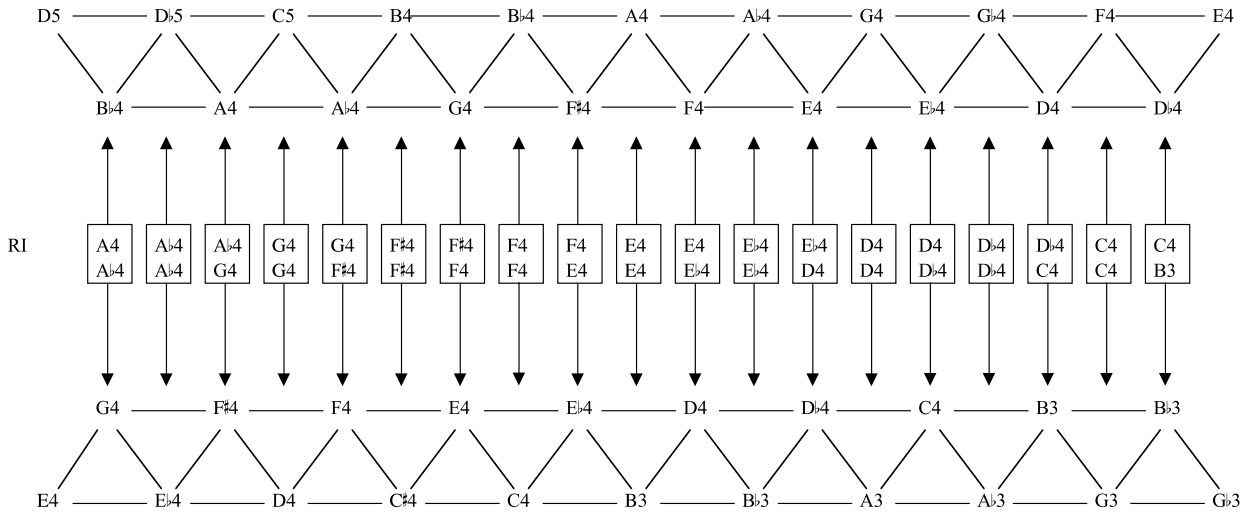


Figure 5. Analysis of m. 19 to beat 1 of m. 20.

hand is simultaneously transposed down seven semitones. After two times through this cycle, each hand of the piano plays a statement of the motive related by T_{-1} to the original statement: in the right hand $\langle D_5, B♭_4, D♭_5\rangle$ becomes $\langle D♭_5, A_4, C_5\rangle$ and in the left hand $\langle E_4, G_4, E♭_4\rangle$ becomes $\langle E♭_4, F♯_4, D_4\rangle$. In this analysis, T_{-1} is not the result of T-chaining: it is not a horizontal move within a single voice, as it was in Gillespie's analysis. Rather, it results from the application of T_{-7} to move the three-note motive into the other voice, followed by the application of T_{+6} to move it back (or vice

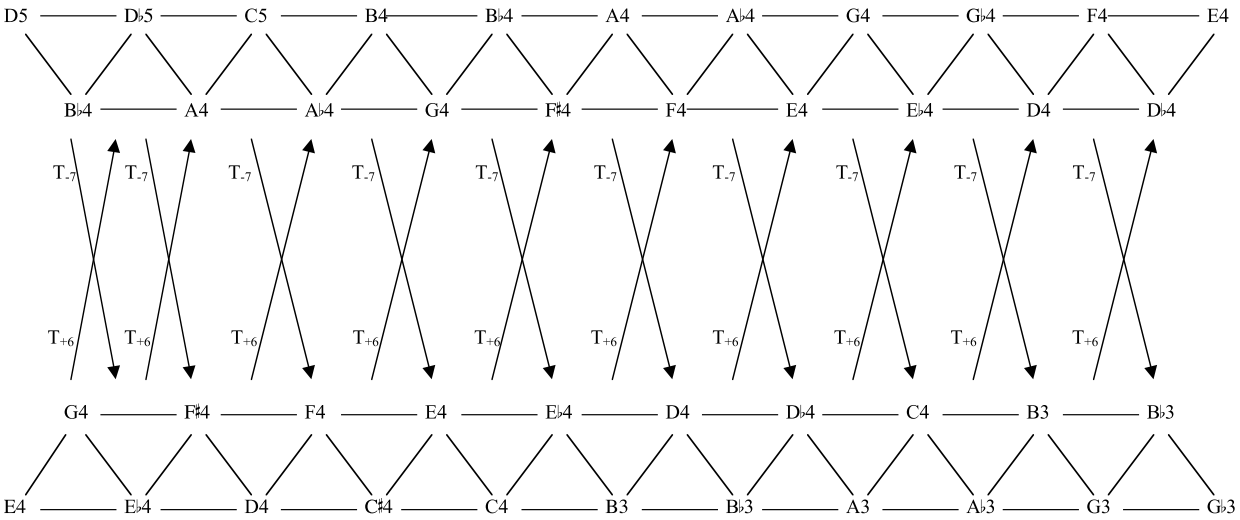


Figure 6. Analysis of invertible counterpoint in m. 19 to beat 1 of m. 20.

versa). Thus, the apparent T_{-1} sequential motion in each voice could be seen as the byproduct of invertible counterpoint. As Schoenberg wrote in *KmSS*, the purpose of double counterpoint is "the pursuit of the inner compulsion of the combination," and the "manifold variable usages of the thematic material."[39] Thus, this analysis not only views the simultaneous motivic statement as a combination, but also suggests one expression of this "inner compulsion" in an atonal context.

Though the motive in a contrapuntal composition must combine with at least one other voice, these voices need not sound at the same time. In fact, in *KmSS* Schoenberg writes that main and subsidiary voices can show "relative dependence on each other through imitation (canon, etc.)."[40] The webs of canonic statements of the motive heard in the opening and closing measures of "Nacht" exemplify how exact forms of repetition interact with horizontal shifting in *Abwicklung*. Successive prime and retrograde-inverted forms of the motive are heard both simultaneously and successively, in a polyphonic texture of lines of equal importance. In addition to the more obvious canonic and simultaneous motive statements, Figure 7 shows that as in mm. 19–20, apparent T_{-1} relationships within a single voice in mm. 24–25 can be thought of as the result of invertible counterpoint between voices, requiring the composite operations $T_{+3}(T_{-4})$ or $T_{-4}(T_{+3})$.

These moments in "Nacht" belie Schoenberg's interest in polymorphous canons. In *KmSS*, Schoenberg included polymorphous canon among the exercises students should do in order to learn invertible counterpoint, and he continued to write about them through the 1920s and early 1930s.[41] Polymorphous canons include inversions, retrogrades, and retrograde inversions of motivic material, as long as the results continue to make contrapuntal sense. In combining prime and retrograde inverted statements of the motive with double counterpoint, Schoenberg can be seen to be further investigating the contrapuntal possibilities of this atonal motive.

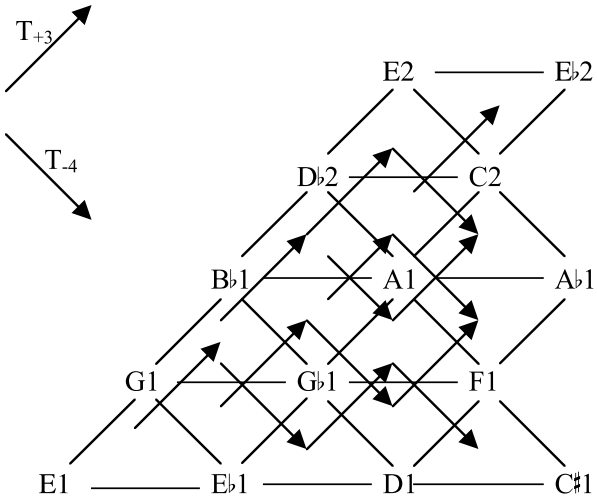
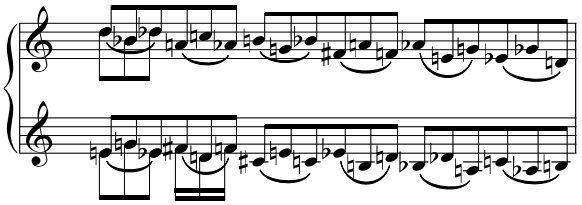


Figure 7. Analysis of invertible counterpoint in mm. 24–25.

Berg's analysis of "Nacht" in the Berg *Nachlass* at the Music Collection of the Austrian National Library also focuses on contrapuntal motivic treatment, and serves as an important document for our understanding of the early

[39] T57.14 ASC. Stephan (1972, 253).
[40] T57.14 ASC. Stephan (1972, 252).
[41] T57.14 ASC. See also Stephan (1972, 253).



Example 2. Transcription of Berg's analysis of "Nacht," m. 19, piano. Score used by permission of Belmont Music Publishers, Los Angeles.

reception of the work.[42] Not surprisingly, Berg begins by pointing out transpositions of the *Kopfmotiv* in mm. 1–3, and while this motive remains the focus of his attention, he demonstrates how "Nacht" exemplifies in many ways the processes Schoenberg writes about in *KmSS*. The transcription in Example 2 shows that he marks the passage in m. 19 with stems and beams that show simultaneous and successive three-note figures related by (retrograde) inversion, writing "Umkehrung" or "inversion." Example 3 shows that Berg also points out how Schoenberg combines augmented and diminuted forms of the motive in mm. 11–12. Additionally, he shows, in Example 4, how a pitch-space alteration of the motive in m. 17 relates to the original motive. The final pitch of each motive statement here *is* eleven semitones above the first, but the order of the pitch classes has not changed. With downward stems and beams, Berg makes the relative immutability and derivation of this motive statement clear.

Perhaps Berg's most interesting analytical insights relate to those voices not obviously engaged with the *Kopfmotiv*. In *KmSS*, Schoenberg outlined that voices added to a two-voice contrapuntal texture could be

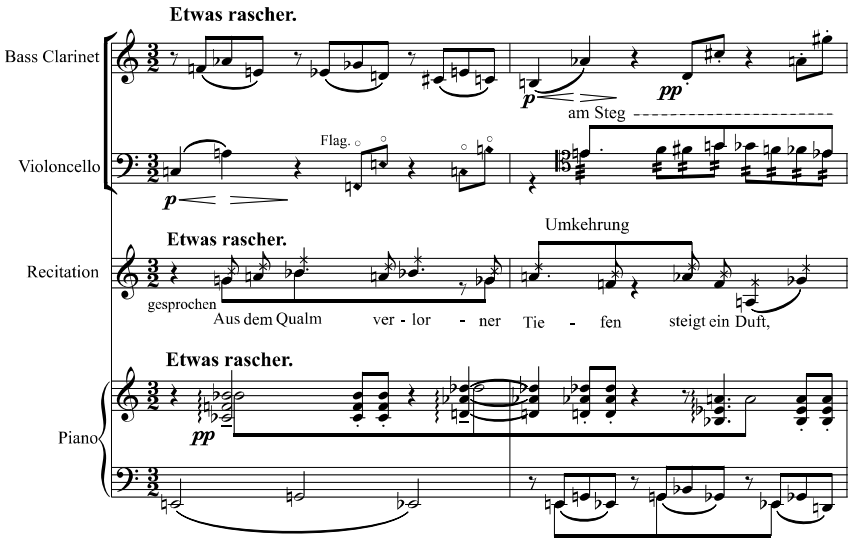
a) a ripieno voice; the voice, which brings those notes that fill out the texture, makes the work fuller, and is relatively melodic, without motive, without pronounced *gestalt*;
b) an independent voice in which its own motive is worked through or a motive from one of the two other voices is adopted;
c) a mixed form of both; ripieno voice with occasional motivic connection (best extracted by imitating the two main voices).[43]

Berg's analysis shows that the *Sprechstimme*, an independent voice for much of the song, includes examples of "occasional motivic connection (best extracted by imitating the two main voices)" by highlighting motive statements in mm. 8–9, 11, 12, 15–16, 18, and 19. Examples 5a and 5b include three-note motive statements that are modeled by the transformational graph in Figure 2. Example 6 shows a retrograde inversion modeled by Figure 3. Examples 7a, 7b, and 7c show motive statements that are also modeled by the transformational graph in Figure 2, but that also include intervening pitch-classes that elaborate on the $\langle +3, -4 \rangle$ intervallic skeleton of the motive, providing variations "through additions (cambiata, appoggiaturas, suspensions, ornaments)," as Schoenberg prescribed in *KmSS*.[44] These motive statements do not participate in contrapuntal combinations: they are not related to other motive statements in the texture through imitation, invertible counterpoint, or other means of *Abwicklung*.

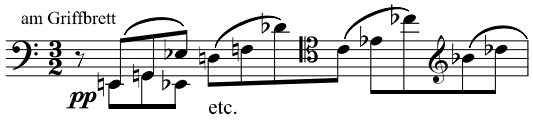
In addition to Schoenberg's use of the motive in the *Sprechstimme*, Berg notes a "ripieno voice" in m. 17 that includes a new motive form, $\langle A_3, A\flat_3, C_4 \rangle$, shown in Example 8. While it is certainly true that this motive is a member of set-class 3–3[014], it does not derive from the original motive as a transposition, inversion, retrograde or retrograde inversion. Thus, it is not truly an "exact" repetition in the Schoenbergian sense. I can only speculate, but the fact that Berg marks this motive statement with a triple beam suggests that it is somehow different than the myriad other three-note motives he has uncovered. In the language of *KmSS*, it is perhaps a ripieno voice with a motive that is adopted from, but not identical to, the original motive.

As fruitful as the analytical approach that focuses on the three-note motive and its participation in contrapuntal combinations for an understanding of *Abwicklung* in "Nacht" would be, I make no claims of completeness. And while the analysis may be incomplete, a focus on contrapuntal presentation in "Nacht" remains important. Recall that the authors in Schoenberg's circle focused on "Nacht" as a precursor to the twelve-tone method because they viewed the twelve-tone method as reclamation of the polyphonic art. In Berg's lecture notes, he left behind the diagram shown in Figure 8, which encapsulates how *Entwicklung* and *Abwicklung* were bound up with their view of music history.[45] As Erwin Stein wrote, "the crisis of musical form through which we are going to-day may be compared to the transition period between Bach's polyphony and the homophonic style of the classics. Only, the relation is reversed now: we are returning to a polyphonic style."[46] Thus, of all Schoenberg's atonal compositions, these authors focused on "Nacht" because of the polymorphous canon and

[42] F21.Berg.157, Music Collection, Austrian National Library. See also Hall (2011, 103–105).
[43] T57.14 ASC. See also Stephan (1972, 252).
[44] T57.14 ASC. See also Stefan (1972, 251).
[45] F21 Berg 107/I, Music Collection, Austrian National Library, also transcribed in Grünzweig (2000, 289).
[46] Stein (1953, 59–60). See also Stein (1924, 288).



Example 3. Transcription of Berg's analysis of augmented and diminuted forms of the motive in "Nacht," mm. 11–12. Score used by permission of Belmont Music Publishers, Los Angeles.



Example 4. Transcription of Berg's analysis of "Nacht," m. 17, cello. Score used by permission of Belmont Music Publishers, Los Angeles.

the emphasis on at least two voices of equal importance, elements derived from a polyphonic style which evidence themselves so clearly in this song. These factors would not only serve as the theoretical basis of hexachordal combinatoriality, but also feed a narrative of Schoenberg as the logical outcome of his German musical past. Therefore, an analysis of "Nacht" that focuses on *Abwicklung* leads to a greater appreciation for its early reception.

3. Methodological and Analytical Choices

If "Nacht," a composition with many members of the same set class on the musical surface, proves a rather straightforward example of *Abwicklung*, then how are we to understand how pitch-class sets relate in an example of *Entwicklung* from Schoenberg's atonal period music? Joseph Straus suggests one approach in his book *Remaking the Past*.[47] Straus's motivation, in part, comes from his reading of Claudio Spies's translation of Schoenberg's radio address about Op. 22. Schoenberg's original passage reads:

> Ihre ersten drei Noten sind wieder diese Aneinanderreihung der Sekunde und Terz, die wir schon gehört haben. […] Beachten Sie, wie diese drei Töne eine meist am Anfang Verszeile vorkommende ständige, motivartige Figur bilden, welche aber auch innerhalb der übrigen Phrasenteile eine Rolle spielt.[48]

Spies's translation reads:

> The first three notes are once again in the sequence of minor second and third that we have heard before. […] Notice that the three notes constitute a fixed motivic unit which occurs most frequently at the beginning of text lines, but which also plays a part in the remaining portions of phrases.[49]

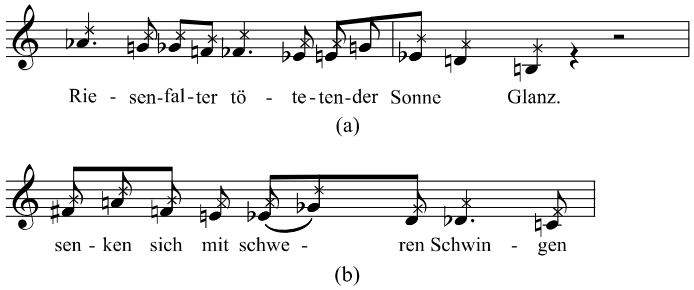
Straus demonstrates his interpretation of this quotation in reference to the beginning of the piano piece, Op. 11, No. 1, Example 9, a texture that is undeniably homophonic. Identifying the first three pitches in the melody in Example 9 as a member of 3–3[014], Straus also shows additional examples of 3–3[014] on the surface of the music, including the simultaneity on beat 2 of m. 3 and all the pitches in the treble-clef staff in m. 3, noting that these "are different from one another in their manner of presentation, but they all have the same total interval content, and they all represent the same set-class."[50] Straus

[47] Critiques of Straus's approach include Taruskin (1993) and Heneghan (2006a, 35–36). One might also critique this approach along the lines of Haimo (1996).

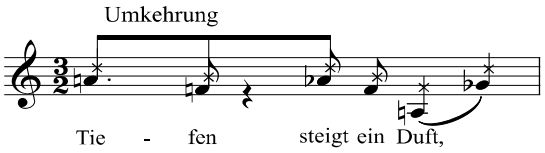
[48] T17.01 ASC. See also Schoenberg (1967, 289).

[49] Schoenberg (1965, 6–7).

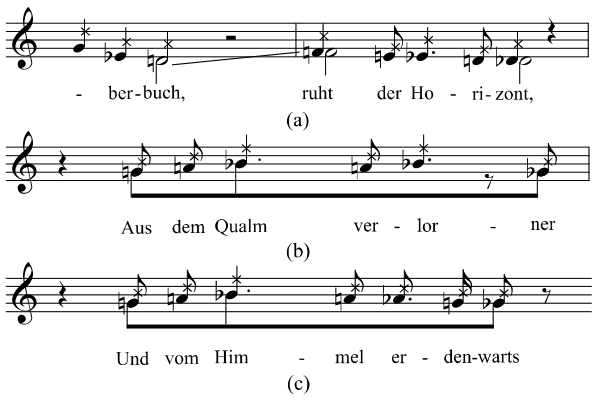
[50] Straus (1990, 24).



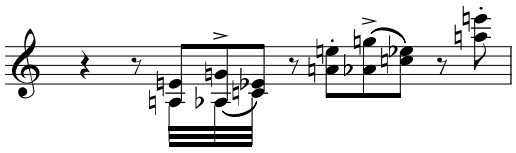
Example 5. Transcription of Berg's analysis of "Nacht," (a) mm. 15–16; (b) m. 19; voice. Score used by permission of Belmont Music Publishers, Los Angeles.



Example 6. Transcription of Berg's analysis of "Nacht," m. 12, voice. Score used by permission of Belmont Music Publishers, Los Angeles.



Example 7. Transcription of Berg's analysis of "Nacht," (a) mm. 8–9; (b) m. 11; (c) m. 18; voice. Score used by permission of Belmont Music Publishers, Los Angeles.



Example 8. Transcription of Berg's analysis of "Nacht," m. 17, piano. Score used by permission of Belmont Music Publishers, Los Angeles.

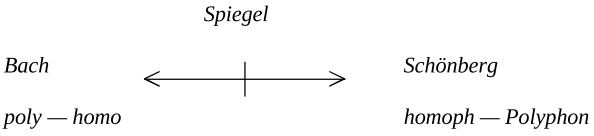
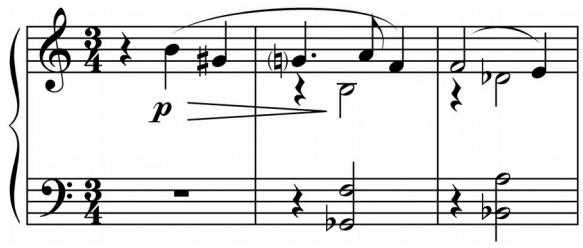


Figure 8. Transcription of a diagram from Berg's lecture notes.

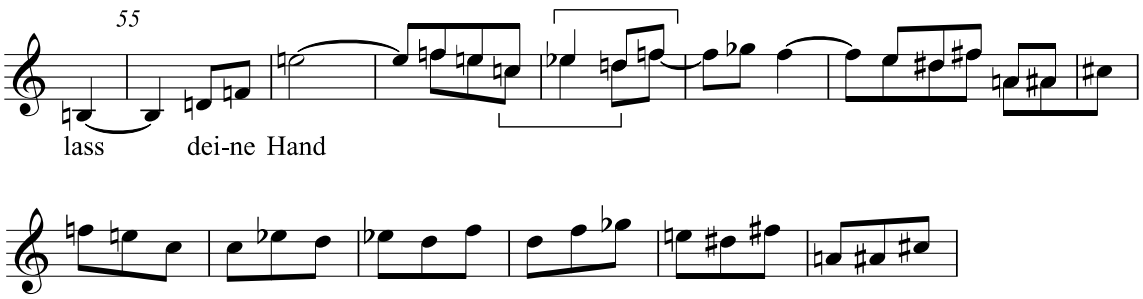


Example 9. Schoenberg, Three Piano Pieces, Op. 11, No. 1, mm. 1–3. Score used by permission of Belmont Music Publishers, Los Angeles.

goes on to argue that these various manifestations of 3–3[014] reveal what Schoenberg meant when he wrote that the "fixed motivic unit" is "varied and developed in manifold ways."[51] "Schoenberg presents a musical idea, then *develops* it throughout the passage. In this way the music is made motivically coherent."[52]

Although the different statements of 3–3[014], the "fixed motivic unit," evidence a variety of surface presentations in Op. 11, No. 1, Straus seems to understand that they remain "fixed" in terms of their total interval-class content and set-class membership. This understanding introduces a connotation distinct from Schoenberg's original text. Recall that Spies translates "ständige, motivartige Figur" as "fixed motivic unit." "Ständig" can mean "constant," "permanent," "perpetual," or "consistent." In using this term, Schoenberg refers to the fact that the motive he has identified in Op. 22 is a constant presence in the music, not that the motive itself is fixed—at least not in regards to interval-class content.

[51] Schoenberg (1965, 7), quoted in Straus (1990, 23).
[52] Straus (1990, 24).



Example 10. Transcription of Example 32 from Schoenberg's Op. 22 radio address, T17.07 ASC. Used by Permission of Belmont Music Publishers, Los Angeles.

Schoenberg's musical examples support this interpretation. Example 10, a transcription of Schoenberg's Example 32 and representative of the kinds of transformations of the three-note figure he identifies throughout his radio address,[53] shows statements of the three-note figure found in one phrase of the melody. Schoenberg's three-note figures vary from Straus's understanding of motive in important ways. Each one has a minor second and some kind of third, but because the type of third varies and the contours vary, the three-note figures do not have the same intervallic content. Thus, they are not all members of the same set-class. Some are members of 3–2[013], some are 3–3[014] and some are 3–4[015]. In other words, the three-note figure recurs, but its intervallic makeup is not fixed. The translation of "Figur" as "unit" reinforces the connotation of immutability. Given Schoenberg's analytical examples, rather than translate "ständige, motivartige Figur" as "fixed motivic unit," I prefer the translation "recurring motive-like figure."[54]

The interpretation of the "ständige, motivartige Figur" as recurring rather than fixed, and the reference to Schoenberg's examples, brings into question the reliance on set-class membership as a model of motivic development and coherence in Schoenberg's atonal music. Another important difference between Schoenberg's motive-like figures and Straus's pitch-class sets lies in segmentation. While Straus's motives involve entities that are melodic, harmonic, and some mixture between the two, Schoenberg's figures are solely melodic entities, and this focus on the horizontal holds almost without exception throughout the radio lecture. Schoenberg's motives are not "concealed" within the texture.[55] Unlike some of Straus's segmentations, they do not combine pitches of the principal voice with selected pitches of the accompaniment. To capture something about *Entwicklung* in a homophonic atonal context, the analytic approach would trace development in the principal voice and view accompanimental voices as subsidiary, striving to keep the two related but distinct.

Furthermore, while Schoenberg's motive statements are not ordered in the sense of a twelve-tone row, there is something about their shape that leads Schoenberg to see equivalency among them. To view a motive as a pitch-class set, one must "boil away" or disregard the identifying characteristics of rhythm, register, and order inherent in the motive.[56] The danger of this level of abstraction is that we lose the homophonic context, and "development" can take on a different meaning from *Entwicklung*. When we focus predominately on set-class membership, we will likely find equivalencies that do not correspond to the motivic relationships Schoenberg identified in his own analyses, and we will also likely miss relationships that he did identify. In short, Straus's analysis of the opening of Op. 11, No. 1, while certainly valid, does not seem to capture motivic development in a homophonic context as Schoenberg wrote about it.

Straus (2003) himself offers another perspective on this same example that I would argue is more in line with Schoenberg's concept of *Entwicklung*. Schoenberg defined a motive as a phenomenon in which "often a contour or shape is significant."[57] The opening pitches of the melody in Example 9, $\langle B_4, G\#_4, G_4 \rangle$, create a unidirectional descending contour with a leap of a third followed by a half step. The next three pitches, $\langle A_4, F_4, E_4 \rangle$, create a motive statement that follows the same contour, ends with a falling half step, but in which the initial third is expanded

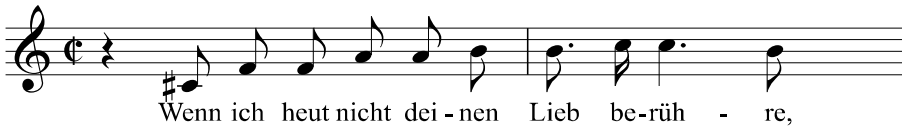
[53] T17.01 ASC. Example 32 from Spies's translation introduces statements of the three-note motive not found in Schoenberg's original, and one of his three-note groups introduces octave displacement. While Schoenberg's original example does not include any motive statements that involve octave displacement, he does include octave displacement elsewhere in the Op. 22 radio address. For an analysis of atonal motives inspired by the radio address that takes octave displacement into account, see Boss (1992).

[54] Jenkins (2016, 223).

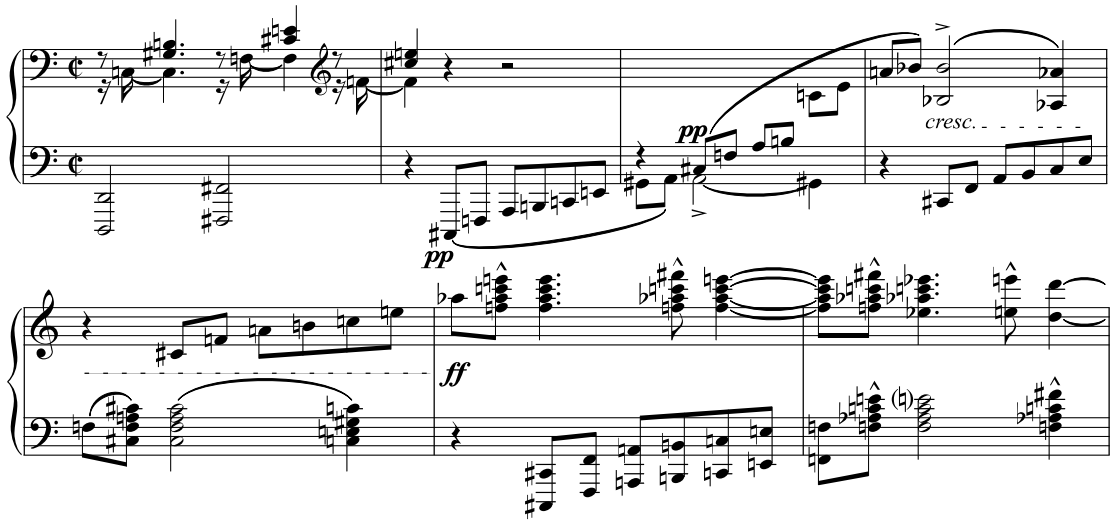
[55] Straus (1990, 22).

[56] Straus (1990, 24) and (2016, 43).

[57] Schoenberg (1967, 9).



Example 11. The opening gestalt of Op. 15, No. 8, mm. 1–2, voice. Score used by permission of Belmont Music Publishers, Los Angeles.



Example 12. Op. 15, No. 8, mm. 13–19, accompaniment. Score used by permission of Belmont Music Publishers, Los Angeles.

from three to four semitones. Because the intervallic content of these two motive statements are not identical, they are not members of the same set class: the first is a member of 3–3[014] and the second is a member of 3–4[015]. But given Schoenberg's statements about developed repetition in a homophonic context, it is very difficult not to hear the second one as a development of the first.

Building on an analysis presented in Haimo (1996), Straus (2003) employs a fuzzy transformation to model this relationship. In this analysis, rather than privilege set-class membership, Straus chooses to emphasize the near transposition that links the two, $*T_9$.[58] Such a fuzzy operation communicates that the two motive statements are similar enough for listeners to note a developmental relationship from one to the next, and the lack of a strict operation indicates that the intervallic change required for *Entwicklung* has not been stunted by exact repetition. Straus renders his analysis in pitch-class space, but I would argue that it is the pitch-space realization of the motive statements, $*T^{p}_{-3}$, and the order of the pitches, that more strongly suggests a connection between them.[59]

Given the analytical results, $*T_9$ and $*T^{p}_{-3}$ may not seem substantively different. But specifying whether the analysis of motivic transformation takes place in pitch, rather than pitch-class, space can have important consequences. Consider Schoenberg's Op. 15, No. 8, "Wenn ich heut nicht." The opening gestalt in the voice, shown in Example 11, is marked by two identifying features: an upward ascent that begins with an augmented triad and progresses through ever smaller intervals without reaching the upper octave, and a descending semitone ending. Not only is this gestalt repeated in mm. 4–5 in the piano and mm. 12–13 in the voice, it receives an imitative treatment in mm. 14–18, shown in Example 12. The gestalt starting on C_4 in mm. 15–16 is particularly interesting because it is the first one of these examples not to begin with an augmented triad. The augmented triad plays an important role, not only in this passage, but throughout the song, and here it has been turned through intervallic expansion into a minor triad. The gestalt reaches $B♭_4$, a minor seventh above where it began and a semitone shy of the corresponding major seventh of the original gestalt. Then the gestalt descends a *whole* tone, whereas every other iteration of this gestalt to this point in the song descends by semitone.

A pitch-class set analysis of this passage reveals that for all the surface differences between the original gestalt

[58] Straus (2003, 347).

[59] Boss (2015) employed pitch-space operators in his analysis of this same passage, which focuses our attention on the surface factors that influence his segmentation, including order.

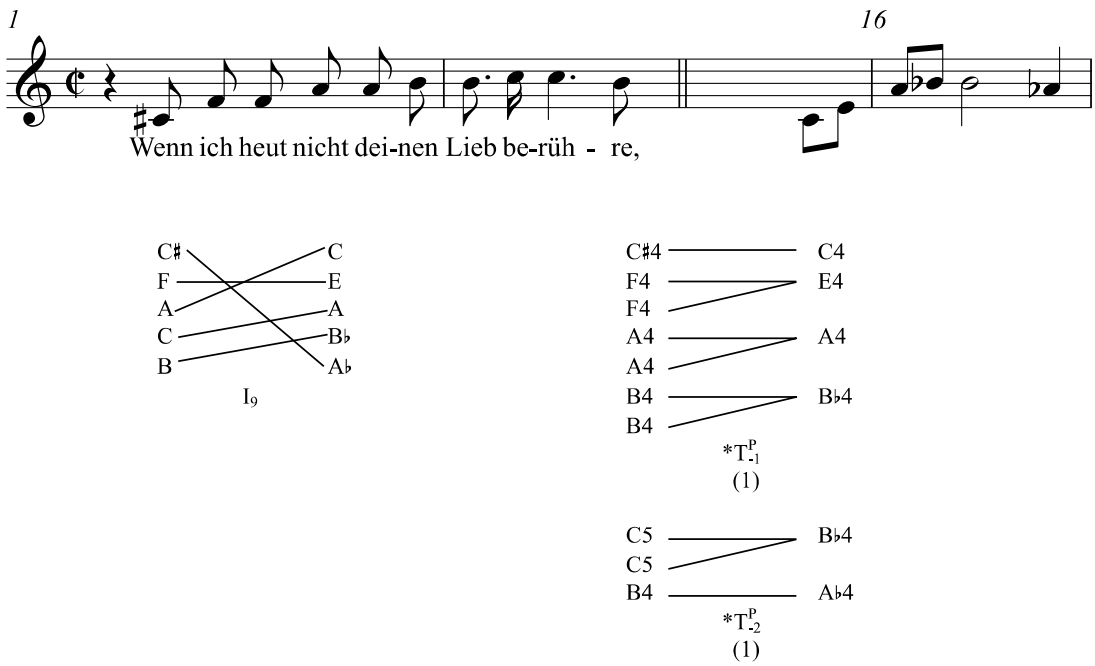


Figure 9. Transformation from the opening gestalt to the gestalt in mm. 15–16 as strict inversion in pitch-class space and as fuzzy transposition in pitch-space. Score used by permission of Belmont Music Publishers, Los Angeles.

and this statement, they are members of the same set class, 5–13[01248]. This fact supports the idea that motivic development can be determined by set-class membership in the vein of Strauss (1990). On the other hand, as the first analysis in Figure 9 shows, if we understand motivic development as transformation, we see that the transformation that maps one gestalt to another is I_9, and the resulting pathways do not preserve the pitch-space correspondences that suggests that the second is a variation of the first. That is not to say that the I_9 hearing is not possible or even not preferable, but it does not resemble the kind of motivic derivation found in Schoenberg's own analyses. The other analysis in Figure 9 employs fuzzy transformation and multisets in pitch space. Here, the gestalt is divided into two motives, the rising seventh (including the opening triad) and the descending second. This reading emphasizes transposition, rather than inversion, and the offsets communicate the differences between augmented and minor triads in statements of the first motive, and semitone and whole tone of the second motive. In focusing on the order and pitch-space presentation, this analysis attempts to model Schoenbergian motivic transformation.

Conclusion

In addition to *Entwicklung* and *Abwicklung*, Schoenberg also wrote about a third form of presentation, *Juxtaposition*. In the *Gedanke* manuscripts, Schoenberg refers to *Juxtaposition* as the method of presentation appropriate to popular music.[60] His analysis of the "Merry Widow Waltz" shows that the melodic units do not develop, but are simply placed one after the other.[61] He writes "nicht sehr logisch" on the score, and communicates that he finds nothing developmental that motivates the connection between the first idea and the second idea of the song. They are like pearls on a string.

As Schoenberg also made clear on more than one occasion, he and his followers turned to juxtaposition as a means of presentation during the atonal period.

> Soon thereafter I glided to the opposite system of lengthy compositions:[62] the extreme short forms. I did not dwell very long in this style. However, it had taught me two things: first, to formulate ideas in an aphoristic manner, which did not require continuations out of formal reasons; secondly, to link ideas together without the use of formal connectives, just by juxtaposition.[63]

Many scholars have pointed to a letter Schoenberg sent to Busoni in August 1909 where he wrote "weg von der 'motivischen Arbeit,'" translated by Antony Beaumont

[60] Schoenberg (1995, 300–301).
[61] Schoenberg (1995, 306).
[62] Examples of the "lengthy style" include *Verklärte Nacht*, Op. 4; *Pelleas und Melisande*, Op. 5; and the First String Quartet, Op. 7.
[63] Schoenberg (2010, 78).

as "away with motivic working-out,"[64] as evidence that the works written around this time, including the Piano Piece, Op. 11, No. 3; Five Orchestral Pieces, Op. 16; *Erwartung*, Op. 17; and perhaps the Six Little Piano Pieces, Op. 19; and *Herzgewächse*, Op. 20, represent those works where Schoenberg abandoned motivic development as "formal connectives" and opted for an "intuitive" aesthetic. In technical terms, this would result in the juxtapositional presentation of musical ideas.

While some would argue that not all the works listed above represent juxtapositional presentation, Schoenberg does admit that at some point he did dabble in a compositional approach that eschewed motivic repetition. Therefore, it is reasonable to believe that at least some of these works represent this approach. If pitch-class sets model motives, and if consistent set-class membership within a work is highly valued by some analysts, then what would it mean to analyze a juxtapositional work—a work not based on motivic repetition—using pitch-class sets? One might find several instances of the same set class in a section of one of these works, but does that automatically determine they are related, any more than the 3–3[014] of "Nacht" and the 3–3[014] of the opening of Op. 11, No. 1, could be related? This surely remains an open question, but it is one that analysts who choose to believe Schoenberg when he says he abandoned motivic working out must eventually confront.

I must make it explicit that I find no difficulty in using pitch-class sets to label atonal motives. However, a focus on the three forms of presentation—*Entwicklung*, *Abwicklung*, and *Juxtaposition*—and a determination as to which of these is operative in a given piece of atonal period music, has led me to believe that set-class membership may not, *a priori*, always be the most important relationship between two musical figures. Within the context of *Entwicklung*, as both Schoenberg's examples from Op. 22 and the discussion of the opening of Op. 11, No. 1, attest, motives will often involve intervallic expansion and contraction that may or may not result in the same set class. While fuzzy operators can prove useful in this context, we must resist the desire always to view strict transformations as evidence of *Abwicklung* and fuzzy transformation as evidence of *Entwicklung*, even if our analyses take place in pitch space. Fuzzy transformations do not always indicate developed repetition. In the case of the two *Gestalten* of Op. 15, No. 8, fuzzy transformations were employed, but is that passage developmental in the strict sense? One might argue, given the imitative texture, that the transformations here model modified rather than developed repetitions. In fact, Schoenberg might have called this passage "semi-contrapuntal,"[65] a texture in which the appearance of counterpoint is subsumed within a large work that is best understood as the result of *Entwicklung*. Even in a polyphonic context, when exact forms of repetition often govern motivic transformation, not all members of a given set class are a result of *Abwicklung*, as Berg's analysis of the *Sprechstimme* in "Nacht" showed. We cannot say that strict transpositions and inversions in pitch-class space are always exact repetitions and that near transformations are always developed (or modified) repetitions. These determinations must be left to the interpretation of the analyst. But whatever methodologies we choose to employ in the analysis of Schoenberg's atonal period music, I am of the opinion that the path to greater understanding of this music lies in an acknowledgment that all three forms of presentation played a role during this period and that motivic treatment within a work is conditioned by which form of presentation is operative.

In closing, I note that a focus on *Entwicklung*, *Abwicklung*, and *Juxtaposition* has changed the way I hear some of Schoenberg's atonal works, but I freely admit that I cannot account for all pitches in all of his atonal compositions with an analytic orientation towards forms of presentation. And while I find this situation frustrating, I am reminded of Schoenberg's reaction when analyzing Bach's fugues:

> The author knows full well that he cannot solve all problems, but he finds it necessary to formulate his theory all the more precisely the less complete it is: in order to produce clarity, making further work easier. For example, having asserted that a fugue is a contrapuntal composition and that it therefore must elaborate contrapuntal combinations (for example, a two- to four-voice canon, or two to four countersubjects in double to quadruple counterpoint), if I find this assertion refuted often enough by the fugues of Bach (upon which I rely), I can only conclude that my assertion is incomplete, that there are still other contrapuntal tasks and problems and still other methods for their development that are unknown to me.[66]

And I carry forth.

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[64] Busoni (1987, 389). See Boss (2015) for others sources that draw on the letter, as well as a critique of their conclusions.

[65] Imitations in a homophonic work are often semi-contrapuntal, resulting in transformations that are either exact or near exact (modified). "Real counterpoint is based on invertible combinations; but in homophonic music one more often find the semi-contrapuntal technique of providing counter-melodies, repetition of imitative figures, etc., which vary the accompaniment to the main voice" (Schoenberg 1967, 125n). For more on semi-contrapuntal treatment, see Schoenberg (1967, 84–86).

[66] Schoenberg (1995, 91).

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