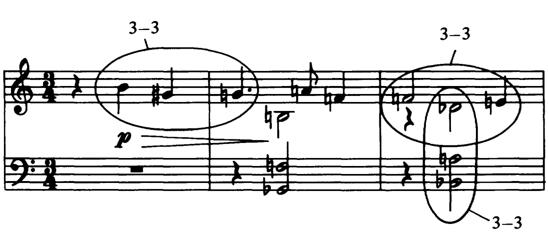
Analytic Approaches to Twentieth-Century Music
by Joel Lester
New York: W. W. Norton & Co., 1989
xii, 308 pp.

REVIEWER

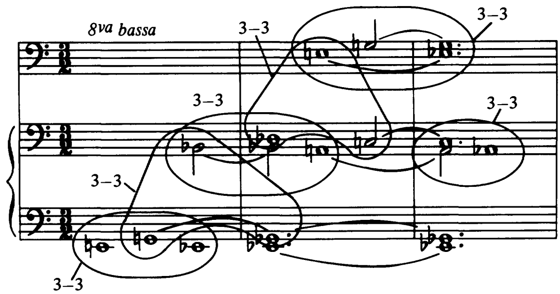
Jack Boss

Joel Lester's new textbook on the analysis of twentieth-century music seems to grow out of two underlying assumptions. The first is that students in twentieth-century analysis courses will be intuitively familiar with how functional tonal music works, but less familiar or unfamiliar with atonal music. And the second is that the categories once considered standard for twentieth-century music, tonal, free atonal, and serial, are inadequate to describe music written between 1900 and 1945, let alone works postdating World War II.

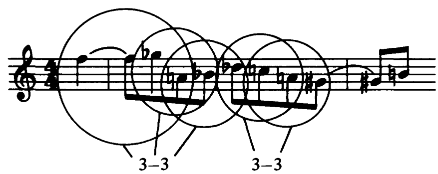
Lester's first assumption, which is a valid one, leads to his pedagogical strategy in Unit One of the book. This, the first of four units, compares how pitch, rhythm, texture, timbre, and form are organized in tonal and atonal music, highlighting both similarities and differences. In chapter 1, Lester characterizes pitch organization in tonal music as a "marriage of motives and themes with tonal harmonic-melodic structure," a formulation reminiscent of parts of Schoenberg's *Theory of Harmony* (see, for example, Schoenberg 1978, 16, 34). In atonal music, functional tonality disappears, leaving the motivic structure to generate melody and harmony by itself. Some readers may be uncomfortable with Lester's claim that pitch-class set relationships are a kind of motivic structure, especially those who know that the same "motives" recur from piece to piece in the atonal music of certain composers. For example, set-class 3-3 (014) is pervasive in the following three incipits from works by Schoenberg:



Example 1a. Schoenberg, *Klavierstück,* Op. 11, No. 1, mm. 1–3



Example 1b. Schoenberg, "Nacht," *Pierrot Lunaire,* Op. 21, mm. 1–3



Example 1c. Schoenberg, "Seraphita," *Vier Lieder für Gesang und Orchester,* Op. 22, mm. 1–2

This example shows that set class, in Schoenberg's music at least, is something different from the unique motto that identifies a particular tonal piece. The analogy between pitch-class set relationships and tonal motivic structure is valuable in that it accounts for the tendency of many atonal composers (including Schoenberg) to build a piece from varied repetitions of the initial pitch-class set(s). But the analogy breaks down after that point.

Discussions of rhythm, texture, timbre, and form in tonal and atonal music in chapters 2–4 follow courses similar to Lester's comments about motivic structure. His chapter on rhythm and meter explains that, in tonal music, regular patterns of strong and weak measures, beats, or subdivisions tend to align themselves with patterns involving harmonic goals and transitions or consonances and dissonances. Since distinctions between harmonic goal and transition or consonance and dissonance disappear with atonal music, atonal composers can choose to retain regular metrical and submetrical patterns, make them irregular by adding and subtracting durations, or do away with such patterns altogether. His chapters on texture, timbre, and form also explain how these parameters coordinate with aspects of tonal harmony, and how they may be organized similarly or differently when functional tonality is taken away.

After acquainting students with some of the ways atonal music is similar to and different from tonal music in Unit One, Lester begins to discuss analytic approaches to preserial atonal music (which can also apply to some partially-tonal music) in Unit Two. He begins with terminology pertaining to pitches, intervals and pitch-class sets in chapters 5–6, ending chapter 6 with advice about how to segment a piece. Chapter 7 introduces the notion of interval content of a pitch-class set and gives some examples of how composers choose from the intervals available to them in certain sets. Chapter 8 focuses on relationships among smaller pitch-class sets: here Lester covers invariant pitch classes under transposition and inversion, relations between subsets and supersets, similarity relations, and the Z-relation (though he does not call it by that name). Chapter 9 considers the use of larger sets such as the diatonic, octatonic, and whole-tone collections as "regions," that is, sources for smaller sets in a passage or piece.

One facet of Lester's pitch-class set analyses that will strike some readers as unique is his use of movable-0 rather than fixed-0 in naming pitch classes. Instead of invariably assigning 0 to C, he gives 0 to the first pitch class of the normal form of an initial pitch-class set in a piece. Movable-0 has its advantages: the inversion T_0I of the initial set inverts the set around the first pitch class of its normal form, which seems intuitively more correct than inverting it around C; and it is easier to identify later sets in a piece as transpositions of the initial set (their normal forms will begin with their transposition numbers). But there are also disadvantages: movable-0 makes it difficult for students to assign pitch-class numbers in an analysis, because the number assigned to a specific pitch class keeps changing. And it suggests focal status for the pitch class assigned 0, where such status may not be warranted.

Other parts of Unit Two invite sharper criticism. For instance, Lester's terminology for intervals in Chapter 5 is problematic. It is inconsistent with terms introduced by John Rahn (see Rahn 1980, 20–29) that are becoming standard in the literature. The concepts corresponding to Rahn's ordered pitch interval, unordered pitch interval, ordered pitch-class interval, and unordered pitch-class interval are all present in Lester's discussion on pp. 68–76, and Lester would have forestalled confusion if he had labeled them as such. Instead, he begins on p. 68 by applying the label "interval" to either unordered pitch interval (in the case of simple intervals) or unordered pitch interval minus a multiple of 12 (in the case of compound intervals). On p. 72, "interval class" is defined as the pairing of an "interval" (including its compounds) with its complementary "interval" (and the complement's compounds)—all of this adds up to unordered pitch-class interval. Further down on that same page, both ordered pitch and ordered pitch-class intervals are introduced and labeled "melodic interval." After reading these pages, the student is bound to wonder what concept "interval" actually represents, a question not answered by Lester's subsequent use of the term in analyses. For example, his discussion of the Variations theme in Schoenberg's *Serenade,* Op. 24 refers to the same C4-A♭3 as "interval 8" (the ordered pitch class interval) on p. 73 and "a falling skip of interval 4" (the unordered pitch interval) on p. 74.

Another kind of problem marks Lester's terminology for pitch-class sets and set classes. In chapter 6, he provides the student with a way to find the "lowest ordering" of a pitch-class set (this is almost always equivalent to what Allen Forte and others call "prime form"; see Forte 1973, 4–5, 12–13). He then directs the student to label all pitch-class sets by their "lowest orderings." Nowhere is the other common method of labelling pitch-class sets mentioned, that introduced in Forte 1973. Not even a table translating lowest orderings into set-class names is provided. One purpose of any textbook is to equip its readers to understand the literature on its topic, and by completely ignoring Forte's nomenclature, Lester's book fulfills only part of that goal.

Inadequate, too, is Lester's procedure for identifying invariant pitch classes under different inversions of a pitch-class set (pp. 113–114). He recognizes that each pair of pitch classes in a set will be kept invariant under a transposed inversion whose transposition number equals the sum of the pair (one pitch class maps into the other under such an inversion). But he overlooks the fact that each pitch class in a set will map into itself under a transposed inversion whose transposition number is twice that of the pitch class. Had he instructed the student how to construct an "index vector" based on the sums of pitch classes added to themselves as well as the sums of pairs of pitch classes (as both Rahn 1980 and Forte 1973 do), he would have given the student a more complete picture of inversional invariance, enabling invariances to be located in analysis that might otherwise have been overlooked.

One final characteristic of Unit Two that invites criticism (but also, in another way, merits praise) has to do with the music Lester chooses to analyze. As I mentioned at the beginning of this review, he wants to show that the rigid categories tonal, free atonal, and serial cannot contain all the music written by early twentieth-century composers. Because of this, he focuses on pieces by Bartók and Stravinsky for which pitch-class set analysis is necessary to understand the structure, but which also exhibit remnants of tonality such as focal pitches. (For instance, he returns repeatedly to the opening measures of *Petrushka.*) And he pushes the boundaries of his investigation back even further, to show how pieces or passages with a functionally-tonal framework sometimes contain elements that are best explained as pitch-class sets. His analysis of the opening of Schoenberg's *Chamber Symphony,* Op. 9 (pp. 159–61) is particularly insightful: here he shows that within the broad framework of a $V^{\sharp 5}$–$VII^{4}_{\natural 3}$–I progression in E major, the foreground pitches in mm. 5–10 are derived as transpositions, inversions, or subsets of transpositions from the three initial chords in mm. 1–4.

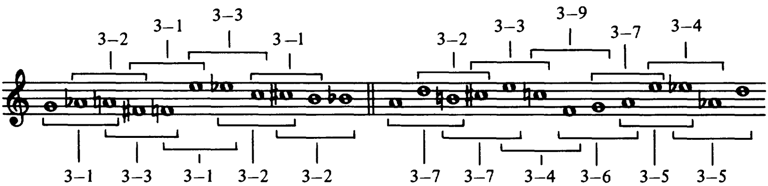
Even though the reader will appreciate Lester's insight into twentieth-century music with a functionally-tonal framework or with only vestiges of tonality, his almost singleminded focus on such repertoire causes him to slight the preserial masterworks of Schoenberg and Berg in which traces of tonality are (for the most part) avoided. Only Webern is represented substantially, with the fourth of the *Movements for String Quartet,* Op. 5. Analyses of excerpts from *Das Buch der hängenden Gärten, Pierrot Lunaire,* or *Wozzeck* would have rounded out Lester's second unit.

Unit Three surveys twelve-tone music and other kinds of serial music. It begins by introducing the four basic twelve-tone operations and their nomenclature, and explaining how to construct a 12 × 12 matrix, in chapter 10. Chapter 11 shows how Schoenberg and Webern use invariant pitch classes between different row forms to connect the forms and create coherent musical statements from them. Chapter 12 explains hexachordal combinatoriality, and illustrates how I5-combinatoriality affects different aspects of Schoenberg's music. Derived series in Webern's music and tetrachordal and trichordal combinatoriality are subjects of chapter 13, which ends with an account of how Babbitt uses multiple derived series in *Composition for Four Instruments* (1948). Chapter 14 catalogues the variety of ways Schoenberg, Berg, and Stravinsky reorder segments of their series or rotate the complete series. And chapter 15 provides an introduction to the *non*-twelve-tone serial music of Schoenberg, Stravinsky and Messiaen, while also covering serialization of rhythm and other parameters.

Unit Three can be criticized and praised on the same grounds as the preceding unit: its descriptions of properties of sets are sometimes incomplete, but it is full of valuable analyses, including analyses of pieces that do not fall squarely into the categories atonal or twelve-tone. In his treatment of hexachordal combinatoriality, Lester neglects to account for those hexachords that are R-combinatorial at transposition levels other than 0; and, although he mentions RI-combinatoriality in passing, his list of combinatorial hexachords (in the Appendix) only lists the transposition levels at which hexachords are P- and I-combinatorial. Lester makes it clear that his purpose is not to describe exhaustively the combinatorial properties of all hexachords, but to enable the student to recognize combinatorial forms in analysis. Fair enough. But remember that one purpose of a textbook is to prepare its readers for further exploration of the literature on a topic—and the student unfamiliar with all four kinds of combinatoriality will be ill-equipped to handle some of the literature that Lester himself suggests as further reading: Babbitt 1955, for example.

On the other hand, some of the analyses in chapters 13–15 are praiseworthy. Lester's treatment of Schoenberg's *Serenade,* Op. 24 on pp. 256–61 is, of necessity, less detailed than his earlier published and unpublished accounts of the work (Lester 1968 and 1970). But it still provides a relatively detailed description of the coda of the third movement, where Schoenberg arranges P0 and I0 of the fourteen-note, eleven-pitch-class series symmetrically around B and A, the pitch classes missing from P0 and I0 respectively, and B♭, the first pitch of both series. And it offers brief characterizations of the other movements as well, which are apparently intended to provide starting points for the student's own work. Another analysis worthy of mention is Lester's approach to Babbitt's *Composition for Four Instruments.* Since Babbitt's piece exemplifies "multiple derived series," Lester begins by listing the master series and three others derived from the trichords of the master series. He then illustrates how register, dynamics, and articulation in the piece highlight both contiguous trichords in the derived series and trichords formed by alternating between derived series that resemble contiguous trichords in the master series.

Unit Four is a brisk survey of compositional trends since World War II. Lester's most detailed analyses in this unit are of Peter Maxwell Davies's *Ave maris stella* (1975) and Mario Davidovsky's *Synchronisms No. 2* (1964). The Davies analysis is convincing, because Lester identifies those features that make the work, based on pitch and rhythm series, accessible to the listener. Such features are triad outlines in the pitch series and dynamic and accentual emphases at those points where the rhythm series aligns with the notated meter. The Davidovsky analysis is less convincing, because of Lester's claim that pitch is "freely structured" (p. 286). It may well be that timbre is just as important an organizational force as pitch in the excerpt Lester analyzes (mm. 1–16), but pitch also evinces definite patterns that should not be ignored. A specific example: the opening pair of phrases in the clarinet (mm. 1–6) demonstrates a clear shift from trichords containing 2 or 1 semitones (3-1, four times; 3-2; and 3-3) to trichords containing 0 or 1 semitones (3-7 appears three times). Moreover, the semitones appear as ordered pitch-class intervals 1 or 11 between adjacent pitch classes in phrase 1, while those in phrase 2 are formed mostly by non-adjacent pitch classes. See Example 2. This shift in (unordered pitch-class and ordered pitch-class) interval content contributes to the sense in which the second phrase moves forward from the first, and ultimately to the sense in which the clarinet solo opens the movement.



Example 2. Davidovsky, *Synchronisms No. 2,* pitch classes in clarinet, mm.1–6

Unordered pitch-class interval content of trichords:

3–1: [210000]	3–4: [100110]
3–2: [111000]	3–5: [100011]
3–3: [101100]	3–6: [020100]
	3–7: [011010]
	3–9: [010020]

Ordered pitch-class intervals:

1 1 9 11 11 11 9 1 10 11 ‖ 5 9 2 3 8 5 2 2 7 11 5 6

Analytic Approaches to Twentieth-Century Music is an important addition to the introductory texts on this topic, primarily because of the quality of some of its analyses and its commitment to enabling students to approach that twentieth-century repertoire that cannot be categorized easily. It will serve well as a reserve-shelf supplement or secondary text for any twentieth-century analysis course. But the instructor who contemplates using it as a primary text should be warned that he or she will need to supplement it in certain areas: interval and set nomenclature, properties of sets such as invariance under inversion and combinatoriality, and analysis of the preserial music of Schoenberg and Berg.

LIST OF WORKS CITED

Babbitt, Milton. 1955. "Some Aspects of Twelve-Tone Composition," *The Score and I.M.A. Magazine* (June 1955): 53–61.

Forte, Allen. 1973. *The Structure of Atonal Music.* New Haven: Yale University Press.

Lester, Joel. 1968. "Pitch Structure Articulation in the Variations of Schoenberg's *Serenade*," *Perspectives of New Music* 6: 22–34.
———. 1970. "A Theory of Atonal Prolongations as used in an Analysis of the *Serenade*, Op. 24 by Arnold Schoenberg." Ph.D. dissertation, Princeton University.
Rahn, John. 1980. *Basic Atonal Theory*. New York: Longman.
Schoenberg, Arnold. 1978. *Theory of Harmony*, translated by Roy E. Carter. Berkeley and Los Angeles: University of California Press.

Introduction to Post-Tonal Theory
by Joseph N. Straus
Englewood Cliffs, New Jersey: Prentice Hall, 1990
vi, 218 pp.

REVIEWER
Catherine Nolan

During the past decade, an introduction to the basic principles of pitch-class set theory has become increasingly a more regular component of undergraduate core curricula in music theory in North American colleges and universities. The need for good textbooks specifically directed to this level has expanded accordingly. *Introduction to Post-Tonal Theory* by Joseph N. Straus is designed to meet this need, and does so with sensitive insights into the background with which the intended readership of senior undergraduate students confronts the subject of analysis of twentieth-century music. Appearing exactly a decade after the publication of John Rahn's *Basic Atonal Theory* (Rahn 1980), Straus's book indicates a renewed concern for a clear, concise presentation of set-theoretic principles and applications for the novice student. Straus's approach diverges from Rahn's, among other things, in its express emphasis on analytic, rather than compositional, applications and its less mathematical presentation.[1]

Introduction to Post-Tonal Theory consists of six chapters that incorporate three main categories of post-tonal music: so-called free atonal music, twelve-tone music and centric music. (More will be said about this third category in particular later.) Each chapter introduces theoretical concepts and illustrates them with a wide selection of well-chosen musical examples from the pre-1945 repertoire of Schoenberg, Webern, and Berg, as well as Bartók and Stravinsky. (Examples by Boulez and Babbitt are included in the section on integral serialism in the last chapter.) Chapter 1, entitled "Basic Concepts and Definitions," introduces the axioms of octave and enharmonic equivalence, the notion of pitch class, integer notation and modulo 12 arithmetic, as well as ordered and unordered pitch and pitch-class intervals. These