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Applying Traditional and Proportional Aspects of Form to Atonal Music

Daniel J. Arthurs

Theory teachers can encounter several problems when presenting atonal (and more specifically, twelve-tone) techniques to their students for the first time. Among these problems is the need to find creative ways to motivate student interest in styles which may be unfamiliar, or with which they may be less than favorably disposed. Many students close their ears to the music of Schoenberg, Berg, and Webern when first exposed to it. It takes a considerable amount of time to understand the complexity, wit, and aesthetic thought of the composer who uses twelve-tone technique.

This discussion will present two possible ways to encourage student enthusiasm for twelve-tone music. In the first approach, familiar, traditional aspects of form are related to similar formal features in a twelve-tone piece by Schoenberg.¹ For the purpose of this discussion, I will use a method of graphic representation that shows similarities between sonata form and the form of Schoenberg's *Klavierstück*, Opus 33a. However, this method may be used with other 20th-century pieces in order to pique the novice's interest in the structure of atonal music. By relating Schoenberg's piece to sonata form, the following additional questions might also be treated:

- Why does Schoenberg change rows?
- What accounts for the different groupings of row subsets?
- Why does Schoenberg change meter?
- Why do certain passages contain irregular phrase lengths?

The second approach will examine organic features that are inherent in nature and, consequently, music.² Specifically, the same method of visual aid used in Part I will be used to display symmetry, summation series, and the Golden Section in Part II. As a final twist, the diagram of sonata form from Part I will be juxtaposed with Part II to further illustrate the usefulness of proportions inherent in Op. 33a with regard to the traditional aspects of form.

The diagram that will be presented is adapted from Richard Parks's *The Music of Claude Debussy*.³ While Parks applied this

type of graph specifically to Debussy's repertoire, I have used it in this discussion to show how rows relate to form, in particular, how the manipulation of rows coincides with major sectional changes. If students can see the analogy between sonata form and what happens in this piece, then they can see, by means of the graph, how well thought-out twelve-tone composition really is. In addition, students will be enabled to hear the actual shape of the music rather than, what some may initially perceive to be, a cluster of random notes.

Interestingly, it would appear that Schoenberg wanted this piece performed in the Romantic style.⁴ He emphasized that the technique of composing with twelve-tones was meant to serve the process of composition, and not the other way around.⁵ Therefore, an analysis of phrase structure in this piece not only encompasses just the notes and slurs, but also row units, rhythms, dynamics, tempo changes, and other aspects of the final musical product.⁶

It should be understood that this discussion, until the actual presentation of the graph, is mainly intended for the instructor's study, and that the graph itself is intended for the students. When the graph is first introduced to the students, they should be familiar with combinatoriality and other basics of twelve-tone composition such as creation of the matrix, row subsets, normal form, and prime form.⁷

PART I: TRADITIONAL FORMAL FEATURES IN OP. 33A

HISTORICAL REFERENCES TO SONATA FORM AND OP. 33A

Before examining the analysis itself, a brief discussion of prior references to sonata form as it relates to this piece should be undertaken. Several scholars have noted the similarities between sonata form and Schoenberg's treatment of form in Opus 33a. Both Adrian Jack and Robert Morgan engage in a possible sonata analysis of this piece, but both refute the idea due to a lack of modulation as well as too brief of a development section.

George Perle's discussion says everything but the word "sonata" to describe a sonata form! His brief analysis uses traditional terms like *first subject*, *second subject*, *development*, and *recap*. Perle does

not appear biased against applying analogous terms for this piece but nevertheless uses the form-labeling terms generically.⁹ Eric Salzman identifies a “kind of development section” but goes no further in exploring the form with traditional terms.¹⁰

In one of the more interesting analyses, Joseph Straus avoids a parallel to sonata form altogether, but retains an analogy to a tonal progression with the pattern created by the transposition of row units: A_0 to A_2 to A_7 back to A_0 .¹¹ Quoting Straus, “In traditional terms, this is a motion up a whole-step, then up a perfect fourth, then a final descent by perfect fifth. Obviously Schoenberg has in mind some kind of analogy to the tonal motion I-II-V-I.”¹² He immediately points out that the large-scale motion ($B\flat$ -C-F) composes out the initial melodic idea of the first row. John Gloccheskie’s detailed analysis bluntly states that the piece is a movement in sonata form, whose proportions are three-fifths weighted towards the exposition.”¹³

He focuses much of his discussion on the question of whether this piece was formally or organically conceived to be sonata form, thus going beyond the argument of whether the analogies are appropriate for such a piece. The other authors listed in the bibliography go far beyond exploring the piece in a sonata setting, but they have interesting and complex observations nonetheless.

Figure 1 - Matrix for Schoenberg's Op. 33a.

Row Unit A0, bars 1-27, 32-40															
Hex A - 012367								Hex B - 012367							
Set A - 0127				Set B - 0258				Set C - 0146							
0	7	2	1	11	8	3	5	9	10	4	6				
0	Bb	F	C	B	A	Gb	Db	Eb	G	Ab	D	E			
5	Eb	Bb	F	E	D	B	Gb	Ab	C	Db	G	A			
10	Ab	Eb	Bb	A	G	E	B	Db	F	Gb	C	D			
11	A	E	B	Bb	Ab	F	C	D	Gb	G	Db	Eb			
1	B	Gb	Db	D	Bb	G	D	E	Ab	A	Eb	F			
4	D	A	E	Eb	Db	Bb	F	G	B	C	Gb	Ab			
9	G	D	A	Ab	Gb	Eb	Bb	C	E	F	B	Db			
7	F	C	G	Gb	E	Db	Ab	Bb	D	Eb	A	B			
3	Db	Ab	Eb	D	C	A	E	Gb	Bb	B	F	G			
2	C	G	D	Db	B	Ab	Eb	F	A	Bb	E	Gb			
8	Gb	Db	Ab	G	F	D	A	B	Eb	E	Bb	C			
6	E	B	Gb	F	Eb	C	G	A	Db	D	Ab	Bb			
0	7	2	1	11	8	3	5	9	10	4	6				
Set A - 0127				Set B - 0258				Set C - 0146							

Prime forms of both tetrachord and hexachord groupings are also included in Figure 1.14 Schoenberg utilizes three basic rows that are manipulated with their combinatorial counterparts. Each row can be broken down into hexachords that are combinatorial with the other row, thus the thought-process can be that of three *pairs* of rows used in this piano piece. The relationship of this “hexachordal combinatoriality” is demonstrated in Figure 2a, 2b, and 2c.

Figure 2a, 2b, and 2c - Hexachordal Combinatoriality

Figure 2a, 2b, and 2c illustrate hexachordal combinatoriality through three examples, each showing a prime row (P) and its complement row (R) in two staves.

Example 2a: The top staff shows Row Unit A0, consisting of Hex. A (P0) and Hex. B (R0). The bottom staff shows Hex. C (I5) and Hex. D (R15). Arrows indicate that the first hexachord of the prime row (Hex. A) maps to the second hexachord of the complement row (Hex. D), and the second hexachord of the prime row (Hex. B) maps to the first hexachord of the complement row (Hex. C).

Example 2b: The top staff shows Row Unit A2, consisting of Hex. A (P2) and Hex. B (R2). The bottom staff shows Hex. C (I7) and Hex. D (R17). Arrows indicate that the first hexachord of the prime row (Hex. A) maps to the second hexachord of the complement row (Hex. D), and the second hexachord of the prime row (Hex. B) maps to the first hexachord of the complement row (Hex. C).

Example 2c: The top staff shows Row Unit A7, consisting of Hex. A (P7) and Hex. B (R7). The bottom staff shows Hex. C (I0) and Hex. D (R10). Arrows indicate that the first hexachord of the prime row (Hex. A) maps to the second hexachord of the complement row (Hex. D), and the second hexachord of the prime row (Hex. B) maps to the first hexachord of the complement row (Hex. C).

These examples demonstrate how the three pairs of rows relate to each other ($P_0 - 1_5$; $P_2 - 1_7$; and $P_7 - I_0$). It is understood that the prime row “maps” onto its complement (the inverted row.) These hexachords are aggregates since six pitches are all contained (not in order) in the first hexachord to the second hexachord of its complement row (see Figure 2).

Figure 3 - Tetrachords

The musical score is for a piece titled 'Mäßig' with a tempo of 120 and a 'cantabile' marking. It is in 4/4 time and marked 'p' (piano). The score is written for piano and features a series of tetrachords circled and labeled with letters and symbols. The tetrachords are labeled A, B, C, D, E, F, and RI₅. A bracket connects the first tetrachord (A) to the last (E). The score is written for piano and features a series of tetrachords circled and labeled with letters and symbols. The tetrachords are labeled A, B, C, D, E, F, and RI₅. A bracket connects the first tetrachord (A) to the last (E).

With this in mind, it is more appropriate to relate P_0 to RI_5 with regard to pitch class order (Figure 3, mm. 1-2¹⁵). The labels ('A', 'B', 'C', etc...) around each tetrachord correspond with the tetrachords found on the matrix in Figure 1.

ROW UNIT RELATIONSHIP TO FORM

The transposition of these combinatorial rows creates a pattern that will be explored shortly. However, in order to identify this pattern, each change of rows must be distinguished from the others. This includes the combination of a row with its combinatorial opposite (i.e., P_0 is combinatorial with I_5 as well as their retrogrades). Thus, rather than referring to each individual row as a separate entity, I will label the four rows (P_0 , I_5 , R_0 , and RI_5) A_0 based on the first pitch class of the prime: 0. This holds true for the other combinatorial rows based on P_2 and P_7 , which will be referred to as *row units*, A_2 and A_7 , respectively (see Figure 2).

The previously mentioned groups (A_0 , A_2 , and A_7) can be applied to the form:

A_0	$A_2 \& A_7$	A_7	A_0
mm. 1-27	28-29 1/2	29 1/2-31	32-40

Referring to the above diagram, the two middle groups of rows, A_2 and A_7 , last very briefly—approximately four measures and the first beat of m. 32. In a traditional setting, such a formal division might seem too brief to be justifiable. However, Glofheskie and

Morgan explain that the development and recapitulation exhibit traits of both subjects in a succinct manner, justifying their length.¹⁶ This includes the parsing of rows (into tetrachords and hexachords) as well as the melodic nature of the section. The large-scale motion of the row units throughout the piece creates an interesting pattern that will be discussed shortly.

SUBSET RELATIONSHIP TO FORM

Just as row units can account for formal divisions in twelve-tone music, subsets can also account for aspects of form. In this piece, Schoenberg favors subsets of tetrachords and hexa/trichords. Referring back to mm. 1 and 2 (Figure 3), groupings of tetrachords are established in the opening measures, and while the line becomes more linear thereafter, the groupings consistently stay in four until m. 14: the next major section. Figure 4 illustrates this sectional change.

Figure 4 - Sectional Change

The musical score for Figure 4 is presented in two systems. The first system covers measures 14 and 15, and the second system covers measures 16, 17, and 18. The music is written for piano (p) and includes the marking 'cantabile'. The key signature has one flat (B-flat). The score is annotated with hexachord labels: 'Hex. A' and 'Hex. C' for measures 14-15, and 'Hex. B' and 'Hex. D' for measures 16-18. The notation includes various intervals, accidentals, and dynamic markings, illustrating the sectional change at measure 14.

Here the pitches are clearly grouped in hexachords. The beginning of the development section, m. 28, has clusters of three while still maintaining a hexachord division concurrently. In this piece, the contrast between tetrachordal and hexachordal groupings is analogous to the contrast between first and second themes in a traditional sonata form. Figure 6 will illustrate this relationship as well as row parsing and unit transposition, all related to the phrase structure of the piece.

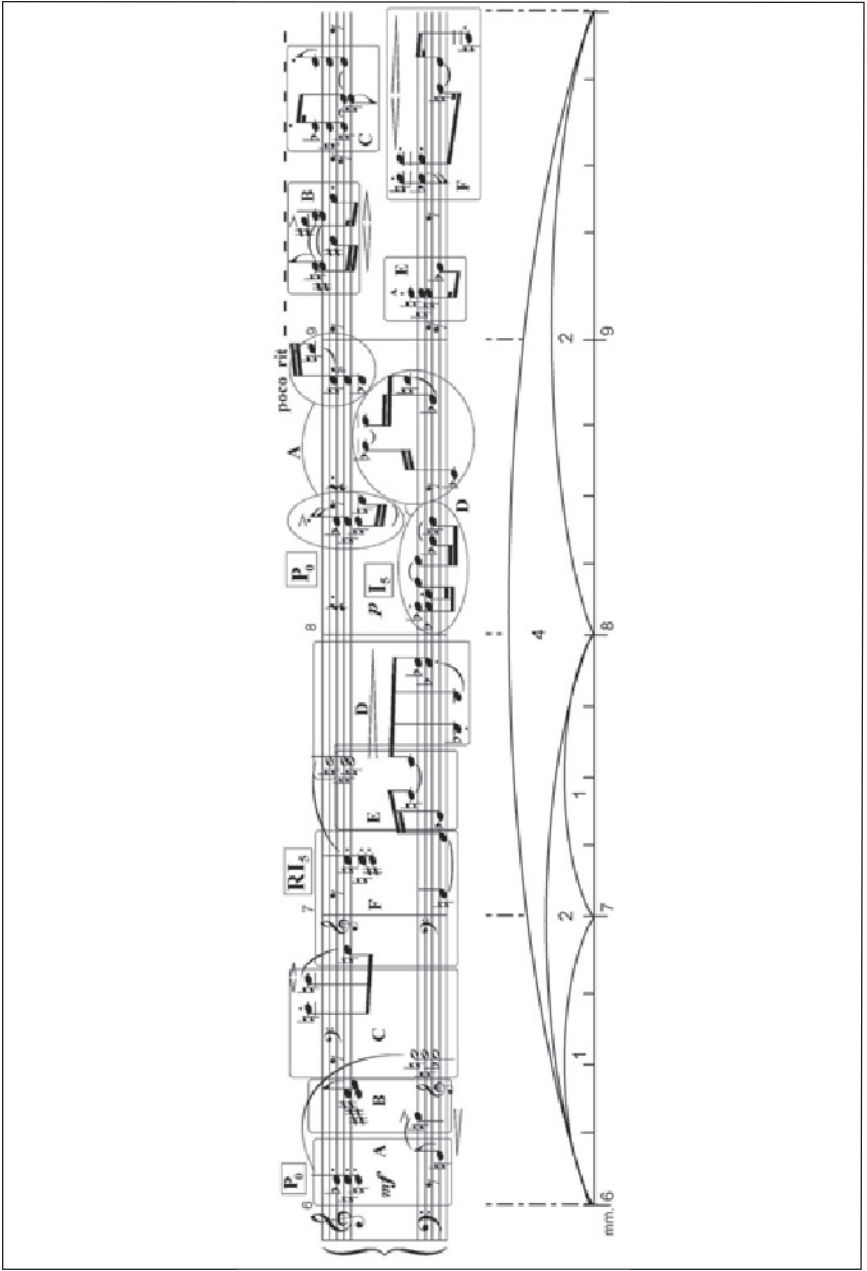


Figure 5 - Sectional Change

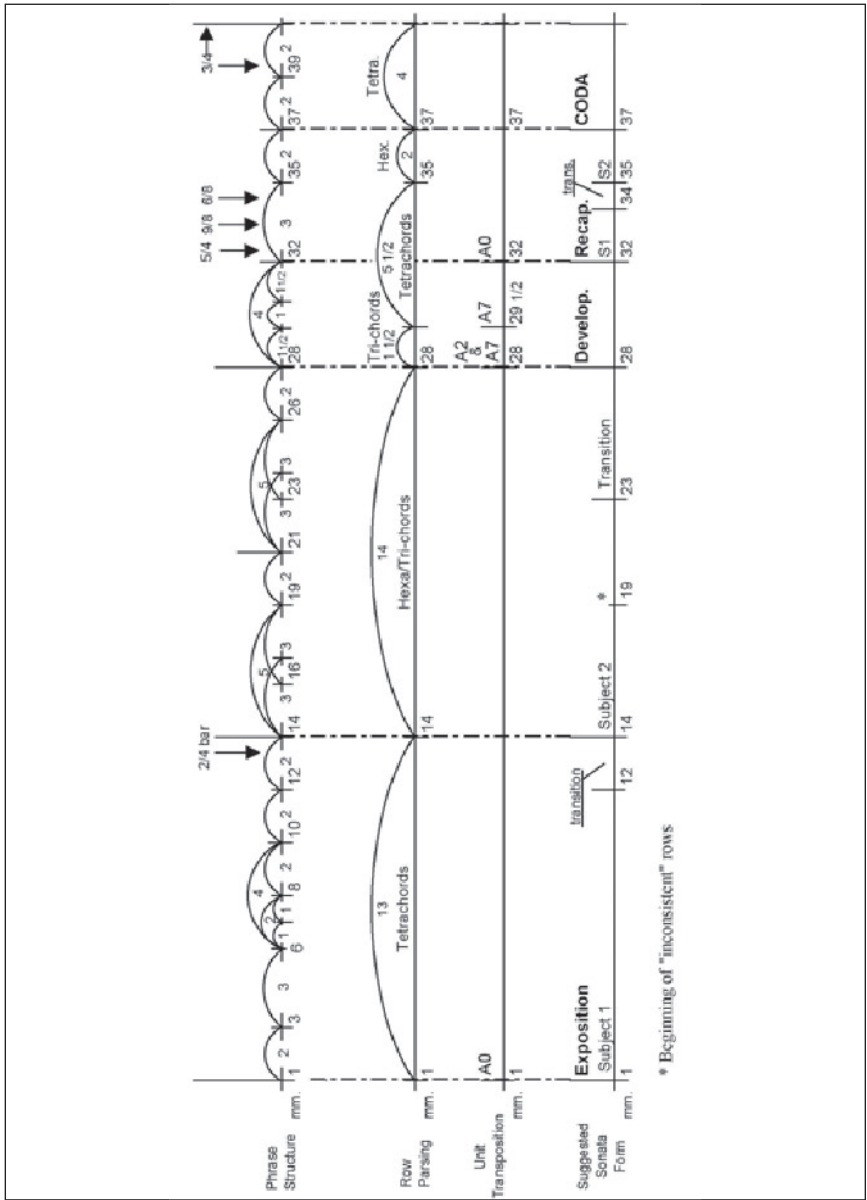
First, however, Figure 5 provides the approximations of phrases by isolating mm. 6-9 with a “zoomed-in” example of the graph coinciding with the score.

For the purpose of the graph as a whole, I chose to demarcate phrases to the nearest measure. However, there are two exceptions: the two elisions in mm. 16 and 23 and the use of half-measures in mm. 28-31. My reasoning for demarcating the two elisions is apparent when viewing the score.

Deciding to demarcate half-measures in mm. 28-31 was a little more troublesome because it contradicted the use of approximations. In the end, however, my decision is based on the placement of row units halfway through the measures. This will become apparent when looking at the “Unit Transposition” graph in Figure 6. In addition, when this section is isolated, one can see that its phrasing is treated in a way that clearly demarcates half-measure divisions.

Figure 6 illustrates all the aspects of form discussed up to this point: the basic phrase structure, row parsing (into tetrachords or hexachords), row unit transposition, and finally, a tripartite form (labeled “suggested sonata form”) that emerges when all three graphs are shown together.

Figure 6 - Composite Graph



Thus far, this discussion has shown how two atonal devices-- row units and row subsets-- mark formal divisions in Op. 33a that are analogous to divisions in a traditional sonata form. Referring back to Figure 6, Schoenberg's row parsing demarcates subsections within the sonata formal scheme: Tetrachords begin at m. 1 (first subject), hexa/tri-chords begin at m. 14 (second subject) and continue into m. 29, beat 2 of the development, and tetrachords overlap with the tn-chords in m. 28, beat 3, left hand. Tetrachords continue into the recapitulation appropriately associated with the first subject, but are then grouped as hexachords for the second subject in m. 35; Finally, they return to tetrachords for the coda in m. 37. Similarly, notice that movement from row transpositions $A_{0'}$ to A_2 and $A_{7'}$ and back to A_0 approximates the way that a traditional sonata form would move from an exposition, to a development, and then to a recapitulation, with these demarcations occurring at mm. 1, 28, and 32, respectively.

ADDRESSING LIMITATIONS TO SONATA FORM ANALYSIS AND INCONSISTENCIES IN THE TWELVE-TONE METHOD

While the observations help to connect the form in this piece to the major divisions of sonata form, the analogy between Schoenberg's form and traditional sonata form obviously has certain limits. For example, Jack and Morgan make the observation that this piece obviously exhibits no "modulation" between first and second themes that were observed to occur at mm. 1 and 14, respectively.¹⁷

A looseness of the twelve-tone rules could suggest a change of major formal sections: The first occurrences of incomplete rows beginning in m. 19 could represent the first "inconsistencies" that stray from the initial row unit. In addition, the development section is filled with incomplete rows, and with the first signs occurring at m. 19, this creates continuity in the piece.

As Glofeheskie points out, the departure from the rules of twelve-tone composition can serve as an expressive gesture, while at the same time, help provide a contrast from the sections that adhere strictly to the rules.¹⁸

To conclude, in the case of atonal music, where the traditional concept of modulation does not apply, the transition from tetrachords to hexachords is just as dramatic as the contrast between opposing themes in different keys.

While on Figure 6, m. 23 is labeled as the beginning of the transition, the first incomplete row occurs four mm. earlier. The question may arise, "Why not label the beginning of the transition in m. 19?" The melodic nature of m. 19 is still very close to the character of the second subject, and paired with its phrasing, it too strongly resembles the second theme to be labeled the beginning of a transition.

In other words, other parameters (melodic contour and rhythmic consistency) must be considered in order to determine more specific sections in the form. Part II will reveal an interesting relationship between these two measures with regard to proportionality in Op. 33 a.

PART II: ORGANIC ASPECTS IN OP. 33A

PROPORTIONAL/SYMMETRICAL ASPECTS

To heighten students' interest and convince them of the organic nature in Op. 33a, I have provided another diagram illustrating the occurrences of three summation series as well as symmetrical phenomena. First, the students should be given a brief lesson on the golden mean (also termed golden ratio and golden section).¹⁹ It is an irrational number represented by the formula $1/2(5 - 1)$ and most commonly rounded to 0.618. Figure 7 provides a geometric illustration of the golden mean.²⁰

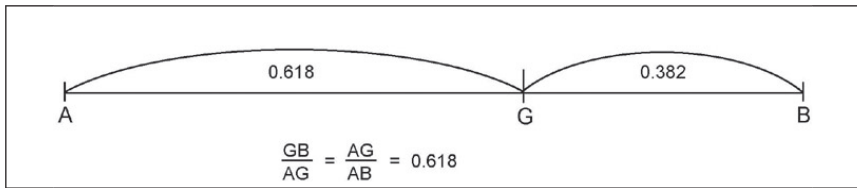


Figure 7- The Golden Mean

In addition, summation series are patterns of numbers whose next number is the sum of the two previous numbers (i.e. 1,1,2,3,5, 8,13,21,34,...). If a ratio is made of each successive pair of numbers, that ratio approaches the golden mean ($8/13 = 0.615$, $13/21 = 0.619$, $21/34 = 0.618$, etc..²¹ This particular example is the Fibonacci series, named for the 13th-century mathematician. Subsequently, all summation series, and not just the one shown above, approach the golden mean when expressed as ratios. Figure 8 illustrates three summation series that emerge from the phrase structure: Fibonacci, Lucas (1,3,4,7,11,18,29,...) and a series found in the music of Debussy that Parks calls the 'N' Series (5,4,9,13,22,35, ...).²²

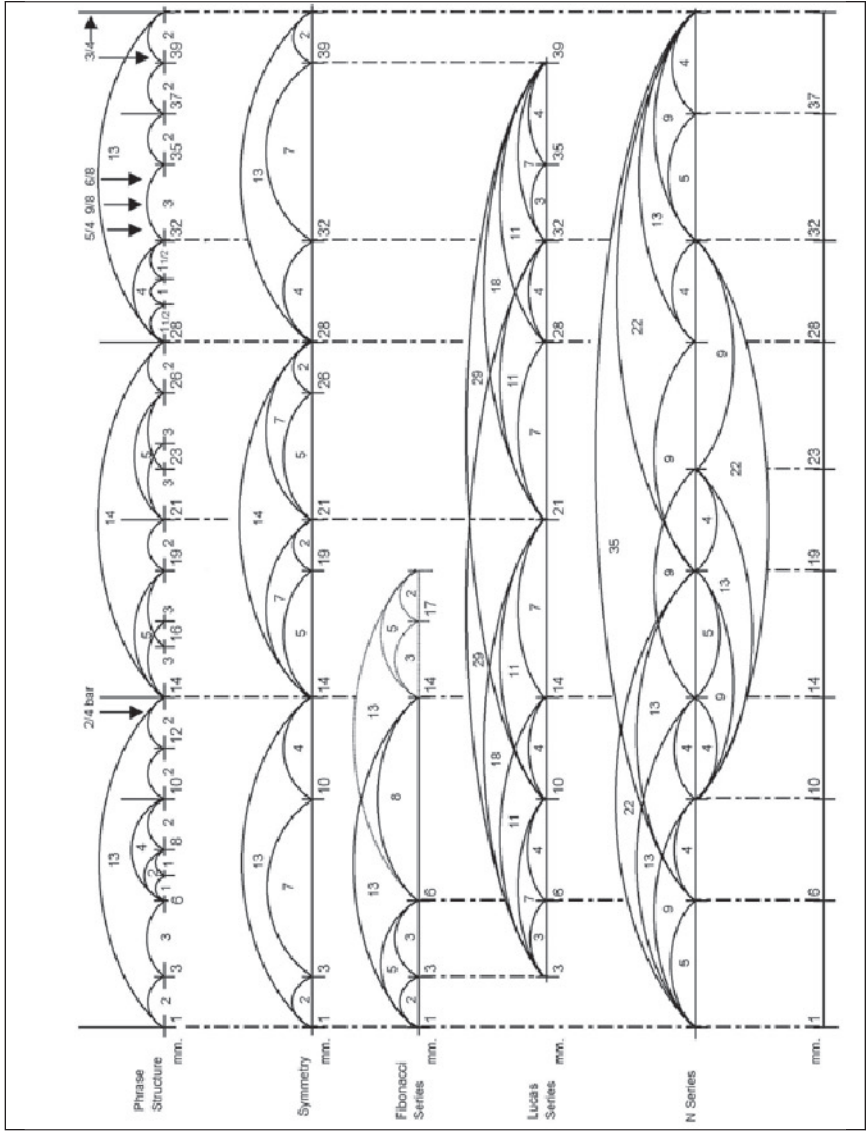


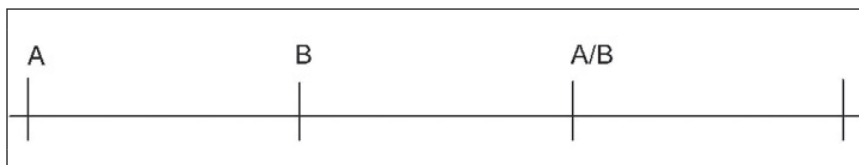
Figure 8 - Summation Series

The three summation series graphs offer several different starting points. In all three, starting points were conceived from the beginning as well as the end. All demarcations on the three summation graphs are based on phrase structure. The dotted lines in the second half of the Fibonacci graph indicates that the phrase structure is only implied due to the elision of phrases at m. 16, thus yielding a 5-mm. unit consisting of two 3-mm. phrases.

The diagrams show the arcs weaving together as each summation unfolds, a process that can be read either from left to right or from right to left. The N series also has a pattern placed beneath the two series in order to avoid confusion. That middle series will have a part in explaining the phenomena of mm. 19 and 23 shortly. Interestingly, it is easy to see symmetrical relationships from the proportion-derived graphs.

Also included in Figure 8 is a diagram of symmetry that emerges over the whole form in Op. 33a. In illustrating this symmetry, it reveals the basic archetype for a tripartite structure that, for this discussion, is associated with sonata form. In this case, the proportions are heavily weighted towards the exposition: 'A' represents the first subject, 'B' represents the second subject, and the return to 'A' represents a combination of both 'A' and 'B' sections with the development, recapitulation, and brief coda. Figure 9 illustrates this tripartite archetype.

Figure 9 - Tripartite Archetype



To illustrate how elements from Part I and Part II cohere, Figure 10 provides a graph of the sonata form with phrase structure, symmetry, and a few golden section ratios that occur amidst the phrase structure.

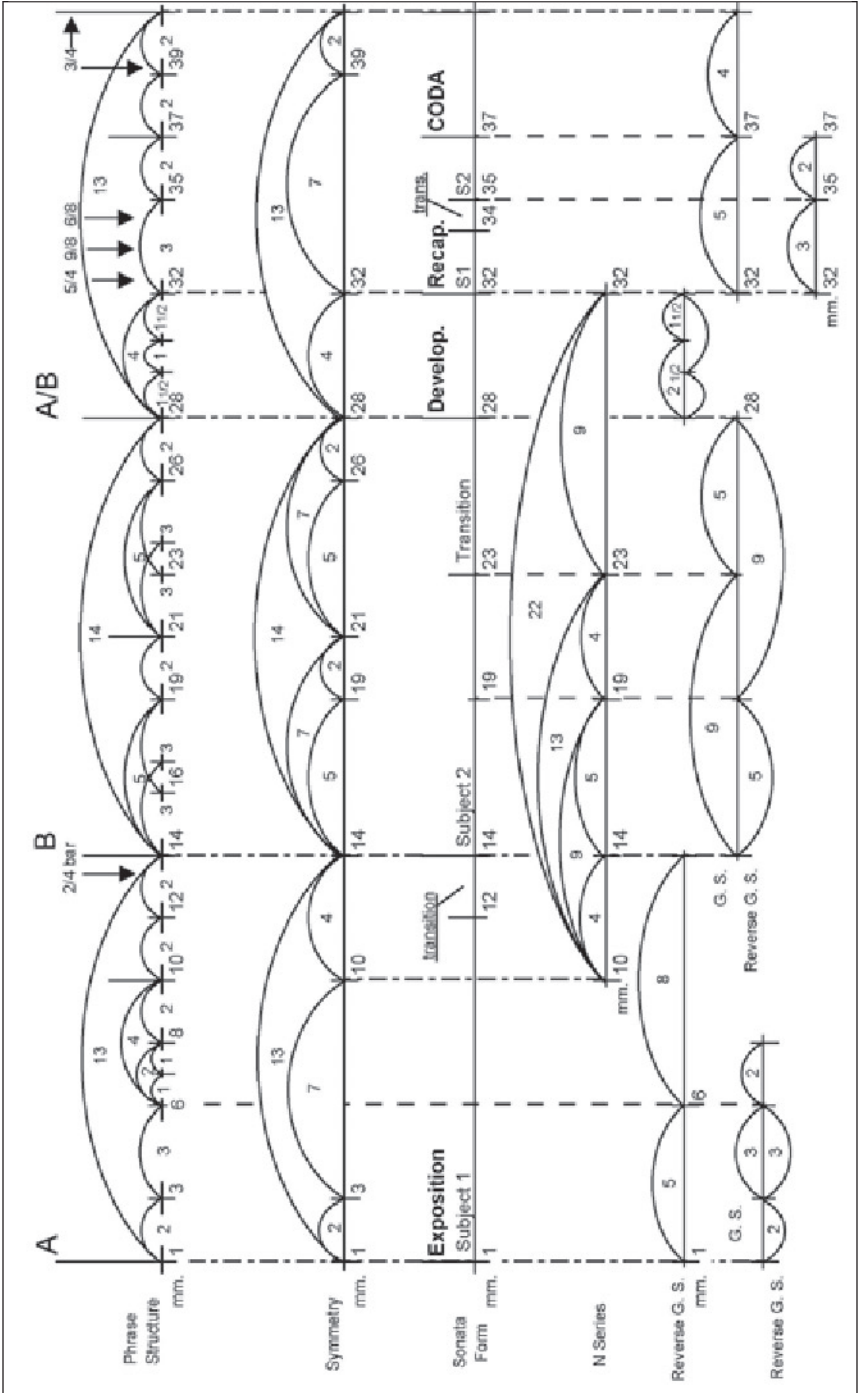


Figure 10 - Sonata Form

With the diagram of sonata form included, golden section ratios are revealed in each of the three major sections of Op. 33a. Schoenberg seems to favor the Lucas and 'N~ series over the Fibonacci. Interestingly, the middle pattern of the N series reveals demarcations over mm. 19 and 23, the two troublesome measures to which analysts have given much attention. Interestingly, in the middle section alone, the golden section and its reverse fall on mm. 19 and 23. As mentioned earlier, m. 19 represents the first "inconsistencies" of incomplete rows.

The actual golden section boundary of this middle section really occurs on m. 22, beat 3; however, the demarcation is simply rounded to the nearest measure (m. 23). Before overlooking this approximation on the diagram, it should be noted that the "wrong" note which has been the subject of much speculation — an A-natural that according to the row should be an A-flat— occurs almost exactly on the golden section boundary (m. 22, beat 3, second eighth note, right hand).²³

Needless to say, this "wrong" note has an aesthetic quality inherent in its natural placement in the music with regard to the occurrence of other inconsistencies" in m. 19.

Figure 10 illustrates several instances of golden-section proportions. With the exception of the development section, each instance is based on whole numbers from their respective summation series. For example, in the Fibonacci series, while 21 would be the golden section for 34, smaller numbers like 3 would be the golden section of 5 despite a 2 percent error.

Similarly, for this discussion, I have taken the liberty of making 5 the golden section of either 8 (Fibonacci-based) or 9 (N Series-based). While mathematically the error-rate increases considerably with this flexibility, as Lendvai pointed out, "Formal logic (controlled by the eye) and real experience (controlled by the ear) differ."²⁴

Thus, it is important to go back and listen to the piece while following along with these diagrams. A *rubato* performance may alter the placement of these more approximate golden sections. Aural perception is one of the most important methods of validating golden section proportions.

CONCLUSION

This application of Parks's method of diagramming offers a convenient way for teachers to show their students how deeply grounded Schoenberg's music is in the formal conventions of the earlier, traditional styles.

Furthermore, this music exhibits proportional traits explained by summation series and the golden section.²⁶ In addition to the music of Schoenberg and his pupils, other 20th-century repertoire, including that of Bartók, Debussy, or Hindemith, might be illuminated by the approach presented here.

Since all atonal music is not based on the method of using twelve-tones, other form-defining parameters must be considered. While I have used unit transposition and row parsing (derived from twelve-tone rules) as a basis for determining demarcations in the form of Op. 33a, similar patterns of pitch-class content commonly emerge in analyses of music by Debussy and Bartók.²⁷

Other chromatic-based scales, such as the octatonic scale, will reveal patterns for creating one's own diagram. In order to convey the patterns and traditional formal schemes in atonal music, the instructor's imagination should guide the process when developing diagrams. While sonata form may not emerge from every piece studied, more basic archetypes such as binary and ternary forms will undoubtedly be revealed.

My analysis of Op. 33a provides an example of this approach one that may be helpful in convincing students that atonal composers were deeply influenced by past traditions. Students sometimes insist upon inventing their own systems of composing before having a well-rounded knowledge of past methods. The visual representations in this study show that innovative compositional methods are often deeply rooted in tradition.

Furthermore, instructors can challenge their students to *hear* traditional aspects of form while following along with graphs and the score in order to better ascertain the aesthetic nature of the music. As students become aware of the connection between earlier and more recent styles, they may be encouraged to expand their own horizons in repertoire, analysis, and even composition.

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Contention in the Classroom: Encouraging Debate and Alternate Readings in the Undergraduate Theory Class

Matthew Bribitzer-Stull

All too often, core courses in undergraduate music theory are a one-sided affair; the instructor presents the requisite battery of voice-leading rules, chord progressions, and formal paradigms while the students dutifully work to master this material. But classroom opportunities for *meaningful discourse between students* are often rare. Of course, high-level musical discourse is ideally what music theory is all about. If we, as instructors, promote this idea to our students during the first years of study, it will help them realize that achieving the ability to engage in such discourse is exactly what the core curriculum is designed to help them do.

The quality of musical discourse is directly proportional to the quality of empiric evidence used to support it. That is, musical arguments should be supported by data. This is not to say, however, that empiric arguments are “objective” or “true;” it is necessary for us to demonstrate to our students that the spirit of our discipline can be empiric without being unilateral. Despite its “scientific image,” music theory makes no claims to objective truths, but rather seeks to articulate explanatory models for various kinds of music. Given this stance, “music theory” is a somewhat misleading title for the first semesters of undergraduate study—in most cases *analysis* occupies significantly more class time than theorizing does. And, it is analysis, the rigorous process of gathering data and describing musical relationships, that so often strikes our students as objective, mathematical, and uncreative. Most who maintain this position, however, are conflating analysis with description. The analytic act of employing empirically-gathered data to flesh out a musical argument is an interpretive, creative, and open-ended task, not unlike interpreting music through performance.

Engaging and successful music analysis depends upon finely-honed skills. Good analytic skills are one of the best tools we, as teachers, can impart to the future music scholars in our classes. Perhaps more importantly, though, these same skills—skills that require the ability to weigh different alternatives and to present effective arguments—are of great value to all students, the

majority of whom, it goes without saying, will not go on to make a living in music theory. Moreover, engaging students in discourse designed to hone their analytic thinking skills will allow for greater interaction in the classroom and greater variety in written work. Such discourse can break down rigid thinking and foster an environment that welcomes musical ambiguity and multiple interpretations. As Michael Rogers put it:

The natural inclination to weight those aspects of musical experience that are the most “teachable” and “testable” should be carefully examined. Theory teachers, too often, tend to overstress topics or questions that permit only clear-cut right or wrong answers while avoiding those gray areas of ambiguity that can be so treacherous...In the long run, most questions that do have unequivocal answers turn out to be insignificant, whereas those that allow a variety of interpretation have the power to kindle real musical insight.

This paper presents a number of examples and classroom techniques designed to foster high-level musical discourse. By means of an introduction, we will digest some food for thought designed to augment the teaching of music fundamentals. Thereafter, we will continue by addressing three analytic tasks. These tasks—deciding on the tonic key of a passage, making decisions about musical form, and labeling the harmonic function of a chord—all require the use of empiric arguments while still remaining open to multiple interpretations. Each task is accompanied by two examples from the music literature and pieces of evidence that support contrasting readings. In addition, suggested teaching techniques are interwoven throughout the discussion. These new techniques encourage students to collect data and to use it in forming cogent oral, written, or musical arguments. Most importantly, the techniques can inject much-needed energy into tired classroom and assignment formats, while simultaneously inculcating in our students a set of skills and an understanding of music that transcends a basic knowledge of part writing and analysis.

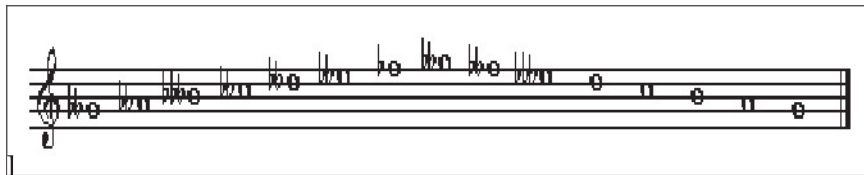
MUSIC THEORY FUNDAMENTALS

Many of the most fundamental topics covered in the first semester of study can be subjected to critical inquiry. The questions listed in Example 1 provide opportunities for engaging student discussion even during the first weeks of class. In music theory courses, these questions can be provided as extra-credit problems to accompany standard workbook assignments. After the homework has been collected, the instructor can spend a few minutes in class discussing various solutions. Many otherwise uninterested students will perk up and participate when asked about the existence of the diminished unison, or the method of finding the major key whose signature has 100 flats. Flouting the tedious, circumscribed exercises endemic to “front-of-the-book” topics creates a sort of free-wheeling music theory counterculture whose purpose is to step outside the mainstream fundamentals study so often burdened by the tedium of busy-work assignments. Of course, understanding these aptly-named “music fundamentals” is the key to mastery of the skills and material at any level of theory study.

Example 1 - Extra credit questions and activities to augment the study of music fundamentals

Scales: Spell a $G\flat$ melodic minor scale, ascending and descending.

Answer:



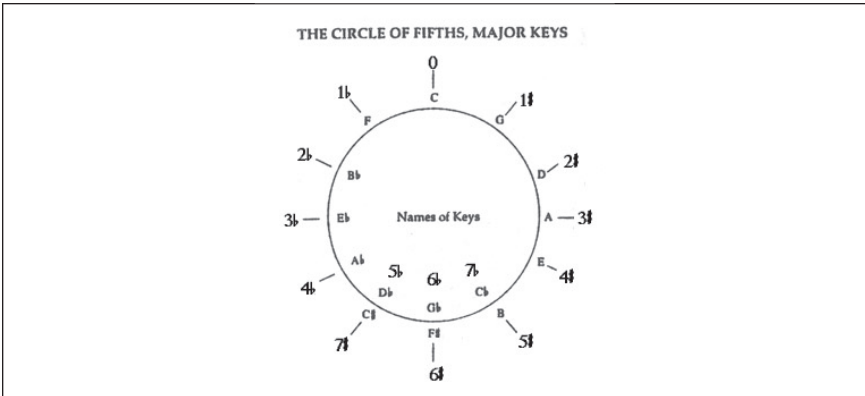
This exercise reinforces the function of accidentals, and drills the whole- and half- step scale patterns in an extreme context. Since the easiest solution is just to “add” two flats to every note in the G melodic minor scale, this exercise also encourages students to think in terms of adding and subtracting accidentals, a skill that comes in handy when doing intervals (e.g., when asked to find a major third above $D\sharp$, the student may find it easiest to find a major third above D ($F\sharp$), and then just “add” a sharp to each note to arrive at the correct answer of $F\ast$).

Key Signatures: What major key has 14 $\flat$ s? 100 $\flat$ s? 101 $\sharp$ s?

How do you figure these out?¹

Answer: $C\flat$ major, B 15 $\flat$ s major, A 14 $\sharp$ s major.

There are many possible methods for arriving at the correct answers, and most engage mod7 thinking. If the students divide the number of accidentals in the problems above (14, 100, and 101) by 7, the quotient will give the number of accidentals to add to the tonic key, and the remainder will indicate how many steps around the circle of fifths one must travel away from C to arrive at this tonic (move clockwise for sharp keys, counter-clockwise for flat keys). Example: $100/7 = 14$ with a remainder of 2. Thus, the tonic is $B\flat$ (two steps counter-clockwise around the circle of fifths) with 14 (the quotient) flats added on = B 15 $\flat$ s Major.

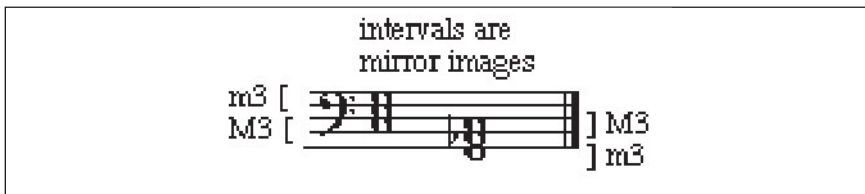


Intervals: What is the inversion of an augmented octave?²

Answer: The simple answer is “a diminished unison.” But, hopefully your students will give this some more thought and try to describe what, exactly, this interval is. Does it even exist? Another possibility is to answer “an augmented unison” since that interval is formed when one of the notes in an augmented octave is moved an octave closer to the other. A third possibility would be to argue that inversions of intervals larger than an octave are left undefined.

Triads: In what sense could we speak of an F minor triad being an “inversion” of a C major triad?

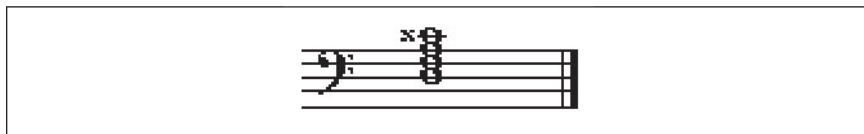
Answer:



Musicians use the word inversion so many different ways in different contexts (interval inversion vs. chordal inversion vs. the inversion of a contrapuntal line) that students often confuse the different usages. Rather than squelching the (mis)application of the term “inversion” in a given context, ask the students to clarify their usage of the term. Here, they can start preparing in advance for Rameau- and Riemann-influenced theories of “undertone” series.

Seventh Chords: Spell a minor-augmented seventh chord built on D. Why is this chord theoretically possible, but practically impossible?

Answer:



Since the augmented 7th is enharmonic to the root of the chord, we hear only three, rather than four, distinct pitch classes.

¹I must thank Norm Carey at the Eastman School of Music for introducing these questions to me.

²Adapted from Michael Rogers, "The Rich Messiness of Music: Teaching Theory in Music with Contradiction and Paradox," *College Music Symposium* 30/1 (1990): 136.

IDENTIFYING TONIC

Returning to basic questions like "What is the tonic key of this passage?" later in the curriculum can be a valuable exercise. If suitable examples are chosen, students will brighten when they realize this stock question doesn't necessarily have a stock answer. In Example 2, I present a passage from *Parsifal* that I discussed with my students in a previous course. At issue was the seemingly simple act of deciding whether bars 45 through 53 were to be heard in A^b major or E^b major. Unfortunately, the example worked too well. Not only did the lengthy debate between the students take more class time than we had to spend, but two individuals kept returning to the question of tonic key to continue arguing their points even when we had moved on to other topics. The points made by both students are summarized below the excerpt.

Example 2 - Tonic in a passage from the prelude to Parsifal (mm. 45–53)
(Excerpt drawn from the Schirmer piano-vocal score)

45

Ab: I vi IV ii V $\frac{4}{3}$ I — vi V $\frac{4}{3}$ /V
Eb: IV — ii V $\frac{4}{3}$ I

51

? < Ab: I V
Eb: IV I

57

(sehr gehalten) *poco rall.* *dim.*

Supporting Evidence for Key Choices:

E $\flat$ Major

- The cadence in bars 48–49 is V $\frac{4}{3}$ – I in E $\flat$, mimicking the identical motion in bars 46–47 that lands on what is unquestionably an A $\flat$ tonic.
- The E $\flat$ chord in bar 52 is supported with a dynamic accent and tutti orchestration.
- The plagal motion into bar 52 is consistent with other plagal progressions throughout the prelude that lend it a spiritual affect.
- The sequential continuation after bar 52 in lieu of continuation into the key of A $\flat$ implies that A $\flat$ – E $\flat$ is a conclusive gesture (IV-I) rather than a half cadence (I-V).

Example 2 - continued...

A $\flat$ Major

- The addition of an eighth-note D $\sharp$ in m. 48 is not sufficient to invoke a sense of modulation. A brief tonicization of V makes more sense here.
- The melodic gesture E $\flat$ – A $\flat$ from strong to weak beats in mm. 50–51 sounds like $\hat{5} - \hat{1}$ in A $\flat$.
- Wagner often implies keys with their dominant harmonies without stating tonic. The sequence of bars 50ff could be an example of this technique.
- A $\flat$ is the home key of the entire prelude. Despite the preceding measures in C minor, mm. 45ff cannot so easily override this sense of A $\flat$ as global tonic.

Our second example for this topic is drawn from Brahms, master of both tonal and rhythmic ambiguity. The Intermezzo, Op. 76, No. 7, while clearly in A minor, opens with a beautiful passage ripe for interpretation. Again, evidence for one of two possible tonic-key arguments is presented below the score in Example 3. Note that the progression of harmonies at the opening (A minor, G major, C major) resembles the tonal structure of bars 1 through 16, summarized in the graph at the bottom of the example. Perspicacious students might use this parallelism to support either side of the argument.

Example 3 - Tonic at the opening of the Brahms Intermezzo Op. 76, No. 7

Moderato semplice

a: i VII⁶ III VI VII III (V)i VII⁶ III
C: vi V⁶ I IV V⁷ I

ii^{o6} V₄₋₅ i

p dolce

Supporting Evidence for Key Choices:

A minor

- The first chord heard is an A minor chord.
- The first reprise clearly closes with a perfect authentic cadence in A minor.
- Tonicization of the relative major is common, almost expected, in minor-mode movements.
- When the opening music returns in bar 38, following an authentic cadence in A minor, the key is not called into question.
- The D[#]-E motion in bars 1–4 implies a tonicization of E as dominant of A.

Example 3 - continued...

C major

- The first three chords form a harmonic progression that sounds like pre-dominant, dominant, tonic in C major.
- Analyzing in C major explicitly acknowledges the tonal ambiguity in these measures, whereas analyzing in A minor does not.
- A perceptual distinction should be made between the hearing of these
- measures at the opening of the piece, and the hearing of these measures at the end of the piece when A minor has already been firmly established.

The image shows a musical score for piano in C major, measures 1-16. The score is written on a grand staff with a treble and bass staff. Above the treble staff, a '5' with a caret (^) is above measure 1, and an 'N' is above measure 10. Below the treble staff, measure numbers 1-8, 10,12, 15, and 16 are circled. Below the bass staff, a box labeled 'a:' is above measure 1, and 'i', 'V7 /', and 'III' are above measures 1, 10, and 15 respectively.

While the instructor may prefer one reading over the other in both of these examples, the focus of the class discussion should be in gathering data and using it to support an argument. If there is a correct, or better, answer among the possible choices, the instructor will naturally add his/her two cents following the students' discussion, but the mere act of engaging in critical discourse is often a more effective learning tool than simply spoon-feeding students the rationale behind the preferred explanation.

MUSICAL DISCOURSE

Rarely do my students enjoy anything more than listening to music when they are in theory class. If it is live music, so much the better. Example 4 sketches out the format for a class session devoted to the interaction between music performance (or listening) and music analysis. Some of my most enjoyable and successful lesson plans have centered on in-class performances. For most students, the act of performing is their most immediate and visceral relationship to music—the reason they elected to study it at the collegiate level. Relating analysis to performance not only connects students with this first love, but it also injects a practical side into a discipline that performers often regard as hopelessly abstract. Many will be familiar with the performance-followed-by-verbal-feedback model from their studio classes. All that need be done in the theory classroom is to encourage students to inject some analytic thinking and terminology into their comments. Those performing, in particular, will often exhibit an elevated level of expressiveness during the second playing, having received their peers' comments. In most cases, there is an audible difference as the performers transcend technique in an effort to interpret and communicate.

Example 4 - The performance and analysis symposium

An effective method for introducing live performance into the classroom and for discussing some of the practical applications of analysis for performing musicians.

- A solo or chamber music piece is selected that can be performed by members of the class (or perhaps one or two willing guests). All students are asked to examine the relevant questions/topics. Performers are asked to consider how their analyses affect their understanding and performance of the piece in question.
- During the next class, open the discussion with a performance of the selected work. Next, ask the performers leading questions about the topic at hand (*Example*: Do you hear the opening of the Brahms Intermezzo in A minor or C major?). After the performers answer and discuss how this

affects interpretation, ask the audience (class) whether the desired effect came across during the performance. If not, is there another analytic interpretation that might improve the performance or are there specific musical actions the performer(s) could take to clarify their interpretation?

- Close with a second performance. Ask the audience (class) how it compared with the first. Did analysis make a difference?

FORM ANALYSIS

Once students begin to study musical form, they are forced from the relatively sterile laboratory of part-writing, figured bass, and Roman numeral analysis into the wild unpredictability of real music. I can think of no other topic native to undergraduate theory study as rich in interpretive potential as form. Even the most typical examples of ternary, rondo, or sonata form exhibit their own peculiarities. And, of course, many works resist formal pigeon-holing much more strenuously. The second movement of Mozart's Symphony No. 39 is a case in point. While many music theorists will hear this as a sonata-without-development, the issue is far from clear, especially to an undergraduate. Certain aspects of the thematic structure, in particular, lend themselves to a rondo-form interpretation. Example 5 comprises a rudimentary form analysis for both interpretations. At the end of the example is the now-familiar list of points students might make in supporting one reading over the other.

Example 5 - Rondo or sonata-without-development? The second movement of Mozart's symphony No. 39 in E $\flat$ Major

Five-Part Rondo in A $\flat$ Major

Measure	1	28	30	39	54	60
65	68	92	96	108	126	132
140	144					137
Section	A		B			
	A		B			
Subsection			trans.		retrans.	
			trans.		false	re-
trans.						
Tonal Plan	I		vi --->	V/V	V	
	I		biii --->	V	I	
			I			

Sonata-Without-Development in A $\flat$ Major¹

Measure	1	28	30	39	54	60
65	68	92	96	108	126	132
140	144					137
Section	EXPOSITION		RECAPITULATION			
CODA						
Subsection	P	T		S ₁	S ₂ (K?)	
K	retrans.	P	False T		S ₁	S ₂
False K	K	"P"				
Tonal Plan	I	----->		V/V	V	V
	I	----->	V	I		
I						

¹The Sonata-without-development form analysis is adapted from William Caplin's *Classical Form* (Oxford: Oxford University Press, 1998): 114–15, 122–23, 181–83, and 217.

Supporting Evidence for Form of Second Movement

Five-part Rondo:

- The F minor material beginning at m. 28, if read as the transition in a sonata form, reappears, strangely, in m. 92 as a false transition in B minor. (enharmonically, $\flat$ iii) in the “recapitulation!”
- Mm. 1 - 27 constitute a two-reprise form, usually an opening gambit for a rondo or theme and variations.
- The tonally- and thematically-unstable nature of the two episodes and the abbreviated A' refrain as well as the expanded A'' refrain are not unusual for rondo form.

Sonata without Development:

- The five-part rondo usually features *new material* (C section) for the second episode. Here it is B' material, the first portion of which is transposed a tritone away from its original statement and the second portion of which is transposed down a perfect fifth from its original statement.
- Neither the incomplete return of the primary thematic material at the opening of the recapitulation (mm. 68 - 92), nor the fact that the false transition begins in a remote key ($\flat$ iii), disqualifies this as a sonata form. What is important is that the material considered to be part of the second tonal area and closing area in the exposition (in the key of V, mm. 53 - 67) is transposed down a fifth into the tonic key in the recapitulation (mm. 125 - 143), realizing the sonata principle.
- The return of the principal thematic idea at the end of the movement can be explained as a coda in which the theme is finally purged of modal mixture.

Example 6 provides another excellent focus for form discussion. While the form itself (double-exposition or concerto form) of the first movement of Mozart's Piano Concerto in A Major, K. 488 is not ambiguous, the location of the development section is. Example 6 proposes four viable possibilities. While scholars seem to agree that the development begins with the new theme in m. 143, many pieces of evidence undermine this reading. Not only is this new theme recapitulated in the tonic as part of the closing group in the recapitulation, but following m. 143, there are two more authentic

cadences in the secondary key of E major, as well as two rather striking changes in texture that could signal the onset of the development. Possible arguments in support of the four readings are provided at the end of Example 6.

Example 6 - Placement of development in Mozart's Piano Concerto in A Major, K. 488, first movement

Supporting Evidence for Possible Location of Development:

m. 137

- All four expected sections of the second exposition (principal tonal area, transition, second tonal area, and closing) are completed right at this point.
- A perfect authentic cadence in the new key, complete with the stereotypical bar-long trill confirms this as the closing cadence of the exposition.

m. 143

- The material from mm. 137–142 is the return of the transition material from the exposition which, in this piece, serves as a sort of echo of the Baroque ripieno. Its presence here is still transitional in that it takes us to the opening of the development.
- It is not unusual for classic-era sonata forms to open the development with a “new” thematic idea.
- The rests on the downbeat of m. 143 are a rhetorical signal for the opening of a new section of the form.

m. 149

- There is no conclusive authentic cadence in m. 142, a necessity for the end of the exposition. Such a cadence does occur in m. 149.
- The material from mm. 143–148 is recapitulated in the tonic in mm. 261ff, as if this were originally part of the exposition.
- The change from a tutti to a solo texture in m. 149 is a rhetorical signal for the opening of the development.

m. 156

- Exposition closing sections often include multiple authentic cadences in the new key, the final one occurs in m. 156.
- After m. 156 we begin to hear stereotypical developmental techniques such as quick modulations, thematic development, and rapid alterations between soloist and orchestra not present earlier in the music.

WRITTEN DISCOURSE

Getting students to articulate their views in a cogent and effective way through written prose can feel like pulling teeth for all parties involved. Recent research suggests that prose writing may aid in learning music theory less well than it does for other subjects. Nevertheless, encouraging our students to improve their written communication skills does them a great service outside the theory classroom.

Even operating merely within the world of music study, most students will be called upon to write papers of substantive length in their upper-level theory and music history courses. But, as any teacher who has read such papers knows, undergraduates who have spent considerably more time with Will and Grace than with Strunk and White are often woefully inept at effective writing.

My own experiences in teaching upper-level courses have led me to believe that writing should be introduced as early as possible in the theory curriculum. After receiving a number of ten-page papers from senior music majors, I was horrified to find that one had, as far as I could tell, made the thesis of her analysis of *Ein Heldenleben* the argument that Richard Strauss was a romance nut. Of course, this paled in comparison to the next paper whose author had, in a laudable attempt at describing musical ambiguity, stated “of course I know this is transition material, but the first time I heard it my dumb <expletive deleted> thought it was the development.”

Egregiously poor examples of formal writing such as these should be culled out in the early stages of the curriculum when mechanics and organization can be addressed in short papers. Upon reaching upper-level courses, students will be free to concentrate on the particular challenges inherent in structuring a more extended argument. Example 7 provides a template for these shorter, introductory assignments in which writing and critical

thinking skills can be exercised. Posting a few papers and eliciting comments on them in a follow-up assignment is a good way to maintain the spirit of discourse between students even in this written medium.

Example 7 - The position paper

An alternative to typical part-writing or analysis assignments.

- Students are presented with a score (or portion of a score) and asked to take a position on one or more debatable issues in a written format using musical examples and citing appropriate evidence supporting their position(s). *Suggested length: 2-3 pages.*
- *Example:* Given the score to Mozart K.488, first movement, address four potential locations for the beginning of the development: m. 137, m. 143, m. 149, or m. 156. What are the merits and deficits of each possibility? Consider evidence based on key areas (and cadences), thematic statements, other sonata or concerto (double-exposition) forms we have explored in class, and how your decision affects your understanding of the recapitulation.
- Grading should be based more on the quality of the student's argument, and less on whether or not he/she arrived at the "correct" answer (if there is one).
- Instructors might consider extending the assignment by posting some good papers on a class website and asking all students to write a paragraph-long response to an aspect of another paper with which they disagree.

LABELING HARMONIC FUNCTION

The final duo of examples treats the task of labeling the harmonic function of a given sonority. In Example 8, a second-inversion triad serves as the analytic focus. Undergraduates have plenty of trouble with $\frac{4}{4}$ chords without our adding fuel to the fire but, as with the other topics treated thus far, learning to provide empiric support for a given interpretation will serve students better in the long run than simply memorizing tables of the various passing, neighboring, and cadential $\frac{4}{4}$ s. The D minor $\frac{4}{4}$ in m. 74 of this excerpt from the Overture to Wagner's *Flying Dutchman* can be read as either a cadential $\frac{4}{4}$ (with an interpolated $ii^{s\frac{4}{4}}$) or as a passing chord that expands supertonic harmony. Again, evidence for both readings is provided below the excerpt.

Example 8 - Harmonic function of the $\frac{4}{4}$ chord in the LONGING FOR DEATH theme in Wagner's *Overture to Der Fliegende Holländer* (Excerpt drawn from the Schirmer piano-vocal score)

65

Andante. ($\text{♩} \approx 100$)

pp Cor anglais, Hrn. & Bass.

ritard.

a tempo

pp Ob., Cl. & Bsn.

70

Fl.

a tempo

Cor anglais.

ritard.

pp

$\frac{4}{4}$?

76

animando un poco

pp

Hrn.

p

p Tromb.

$V^{\frac{4}{4}}$ $III \quad bII^6(ii^{s\frac{4}{4}}) \quad V^{\frac{4}{4}} \quad \text{---} \quad \frac{5}{4} \quad \text{---} \quad \frac{4}{4}$

Supporting Evidence for Harmonic Function of $\frac{4}{4}$ Chord:

Cadential $\frac{6}{4}$

- The chord falls on an accented (down) beat.
- The following $ii^{\#4}_3$ could be heard as a harmonization of a half-step upper neighbor in the bass line—this half-step upper neighbor is an important motive on a number of tonal levels in the overture.
- The consequent phrase presents the same chord, unambiguously, as a cadential $\frac{6}{4}$.
- The V itself is expanded in a similar way, with an interpolated iv.

Passing $\frac{6}{4}$:

- A voice-exchange supports the hearing of an expanded ii chord.
- In the antecedent phrase, we begin hearing this music in F major. Thus,
- the $\frac{6}{4}$ chord sounds like some kind of deceptive tonic substitute for an F
- major I^6 chord, not a dominant-functioned chord in D minor.
- Hearing the pre-dominant function expanded through mm. 73–74 allows for the final dominant to be the goal of the phrase.

Finally, in Example 9 we confront a tonic whose function is called into question at the conclusion of a movement. Moussorgsky's use of texture and harmony, most prominently the common-tone augmented-sixth chords that resolve to the dominant, lend the dominant F# a measure of "tonic-ness." The final B major triad sounds suspiciously like a IV chord despite its role as tonic earlier in the movement. With luck, students examining this passage will realize the difference between "eye-theory" in which the B major chord on paper is clearly the tonic in an authentic cadence, and "ear-theory" in which the aural experience of the music is a different story altogether. Again, pieces of evidence in support of either reading are appended to the score in Example 9.

Example 9 - Harmonic function of the final chord in "Con mortuis in lingua mortua" from Moussorgsky's *Pictures at an Exhibition*

tranquillo
pp
il canto cantabile, ben marcato

b: f#: ? CT +6 V (I?) CT +6 V (I?)

+6 RESOLUTION

15
rit. e perdendosi
rit. e perdendosi

CT +6 V I? CT +6 V I? I IV?

+6 RESOLUTION

Supporting Evidence for Harmonic Function of Final Chord:

Tonic (I) Chord:

- The key signature implies that b minor is tonic.
- The promenade tune at the opening of the "Con mortuis" clearly established b minor as tonic.
- B is the lowest note heard throughout the movement, giving it a sort of tonic accent.
- Ending a movement with a IV chord would be very unusual.

Subdominant (IV) Chord:

- The consistent presence of an upper-voice F# "pedal" for the final ten bars gives this tone an agogic accent.

- The common-tone augmented-sixth chord that repeatedly leads to F# gives the F# chord a strong tonic feel.
- The B in the bass in bars 16, and 18–20 doesn't actually support B major harmony until m. 19.
- The plagal feeling at the end of this movement is appropriate, given the program.
- The B major "IV" chord actually does "resolve" plagally to the F# that opens the next movement, "Hut of the Baba Yaga."

ORAL DISCOURSE

Our final classroom technique encourages the use of contentious yet respectful discussion. Growing up in a family of teachers, I learned the value of such discussions at a young age as my sister and I were subjected to many dinner-time debates instituted by our parents for our edification. These ran the gamut from practical ("Should women be drafted into the military the same as men?") to philosophical ("If a tree falls in the forest and no one is there to hear it, does it make a sound?") to aesthetically banal ("Should Dorothy's slippers in *The Wizard of Oz* be silver, the way Frank Baum intended, or ruby, the way they appear in the motion picture?"). For better or for worse, many music majors probably did not experience this kind of training in their family lives. Nevertheless, the skill remains a valuable one both in and out of the theory classroom.

Example 10 presents a "panel discussion" classroom format. Unlike the typical "teacher-at-the-front-of-the-class" group analysis sessions, this format requires a small number of students to take the lead. Imitating the format of political and academic conferences, a panel of experts (students who have, ideally, carefully studied the assigned piece) are set up in front of their peers to answer questions and debate the merits and shortcomings of various solutions amongst themselves. If appropriate excerpts are chosen and the class environment feels "safe," a lively discussion will usually ensue with only moderate intervention from the instructor needed to keep things moving on track. I once used this technique with the Mozart Piano Concerto movement presented in Example 6, above, with a class of sophomores and found to my surprise and delight that not once, but twice, during two separate class sessions, we ran out of time before the students ran out of things to say.

Teaching a required course like undergraduate music theory can present moments of disappointment. The lecture format supplemented by workbook and reading assignments rarely inspires in our students the enthusiasm we feel for the inner workings of tonal music. When we enable the students to become animated and excited about some aspect of the material however, an almost palpable beam of light breaks through the dreary clouds that hang low over the classroom during that mid-November discussion of inverted V^7 chords. Not only do such moments of enthusiasm energize the students and engage them with the material, thus aiding the learning process, they make the act of teaching itself immeasurably more rewarding.

Example 10 - The Panel Discussion

An effective method for encouraging discussion and debate in class without putting one student on the spot. Also, a refreshing change from the usual classroom format.

- The entire class is presented with an analytic homework assignment (Example: label chords and chord functions in the Overture to Wagner's *Der Fliegende Holländer*, mm. 73 – 80). Four students are notified that they will need to spend extra time thinking about this music since they will sit on a "panel of experts."
- During the next class period, the panel sits in front of the room:
- The instructor invites questions from the class regarding the topic at hand and acts as moderator while the panel discusses each question. Each panel member can be given a homework grade based on the quality and quantity of their contributions to the discussion.

ENDNOTES

- ¹ See, for instance, Carl Schachter "Either/Or," in *Schenker Studies*, ed. Hedi Siegel (Cambridge: Cambridge University Press, 1990): 165–79. Schachter advocates using evidence to establish a preference for one of a number of syntactically correct readings. While Schachter's aim in his examples is to arrive at a preferred reading, the spirit of the article encourages multiple interpretation and an empiric approach towards supporting those interpretations.
- ² See Matthew Brown and Doug Dempster, "The Scientific Image of Music Theory," *Journal of Music Theory* 33/1 (1989): 65–107, and Matthew Brown, "Adrift on Neurath's Boat: The Case for a Naturalized Music Theory," *Music Theory Online* 2/2 (1996). In both articles, the authors make a distinction between positivism and empiricism, arguing that analysis cannot make claims to absolute truths, but is, rather, most successful when making claims based on observable phenomena.
- ³ David Lewin makes the distinction between theory and analysis in his "Behind the Beyond," *Perspectives of New Music* 7/2 (1969): 59–69. He also claims that the goal of analysis "is simply to hear the piece better, both in detail and in the large." (*ibid.*, 63, emphasis in the original).
- ⁴ Description, the articulation of rudimentary data, is only the first step in true analysis, an activity that seeks to draw musical relationships between the piece in question and its larger sound-universe. *Ibid.*, 68.
- ⁵ Allen Winold, "Music Analysis: Purposes, Paradigms, Problems," *Journal of Music Theory Pedagogy* 7 (1993): 38–39 argues that we, as instructors, must work to legitimize ambiguity and accept multiple interpretations.
- ⁶ Michael Rogers, *Teaching Approaches to Music Theory* (Carbondale: Southern Illinois University Press, 1984): 5. See also Rogers's comments throughout "The Rich Messiness of Music: Teaching Theory in Music with Contradiction and Paradox," *College Music Symposium* 30/1 (1990): 131–41.
- ⁷ Sonata-without-development is the choice William Caplin makes for this movement in his *Classical Form* (New York and Oxford: Oxford University Press, 1998). See, in particular, pp. 39, 114–15, 122–23, 181–83, and 217. The analysis of this movement as sonata-without-development presented in Example 5 basically conforms to Caplin's reading.

- ⁸ Joel Galand remarks upon the many and varied ways that sonata/rondo fusions occur in classic-romantic music. See Joel Galand, "Form, Genre, and Style in the Eighteenth-Century Rondo," *Music Theory Spectrum* 17/1 (1995): 51. Analyses of other examples of Mozart movements that straddle the hazy line dividing sonata form from rondo form appear throughout the article.
- ⁹ Both Charles Rosen, *Sonata Forms* (New York: W.W. Norton & Company, 1980): 276 and William Caplin, *Classical Form*, 276n. 40, mark the beginning of the development at m. 143. Caplin considers this new theme as a tightly-knit, pre-core, introductory section to the development core proper.
- ¹⁰ In a study of the writing-to-learn program, Bruce Kelley found that prose-writing exercises were not as beneficial for writing, *Prose Writing: An Investigation of Writing-to-Learn in the Music Theory Classroom*, *Journal of Music Theory Pedagogy* 13 (1999): 65–87.
- ¹¹ See Deron McGee, "The Power of Prose: Writing in the Undergraduate Music Theory Curriculum," *Journal of Music Theory Pedagogy* 7 (1993): 85–104, especially 93–94, which stress the greater efficacy of short writing assignments.
- ¹² Chords can have more than one workable function given the local key context in which they are heard. This ambiguity is most effectively understood as a richness of meaning rather than an indeterminacy of meaning. See Charles Smith, "The Functional Extravagance of Chromatic Chords," *Music Theory Spectrum* 8 (1986): 100–01.
- ¹³ While the spellings and resolutions of these augmented-sixth chords are non-standard, the voice leading energy in the resolution of the augmented sixth interval itself brands them as members of the augmented-sixth family. See Daniel Harrison, "A Supplement to the Theory of Augmented Sixth Chords," *Music Theory Spectrum* 17/2 (1995): 184–85. The augmented sixth built on the ^4-^3 semitone in m. 15 of Example 8 is described *ibid.*, 174.
- ¹⁴ This type of harmonic ambiguity is very close to the reciprocal process in which the alternation of I and iv in a minor-mode piece is confused for V and i or vice versa. See Deborah Stein, *Hugo Wolf's Lieder and Extensions of Tonality* (Ann Arbor: UMI Research Press, 1979): 23–24.
- ¹⁵ It is not surprising that both examples of harmonic ambiguity are drawn from mid- to late-nineteenth-century literature. This is not to imply that such ambiguities do not occur in earlier music. Ambiguous $\text{\text{♯}}$ chords, for example, occur in many earlier styles. Some excellent examples from the music of Beethoven and Chopin are presented in David Beach, "More on the Six-Four," *Journal of Music Theory*

34/2 (1990): 281–290. Another intriguing Beethoven treatment of the $\frac{5}{4}$ occurs at the opening and close of the second movement of his seventh symphony. For a fascinating large-scale explanation of this chord see Robert Gauldin, “Beethoven’s Interrupted Tetrachord and the Seventh Symphony,” *Intégral* 5(1991): 45–65. Classic-era concerto cadenzas also contain ambiguous uses of the $\frac{5}{4}$ chord. One of Mozart’s cadenzas for the first movement of his Piano Concerto in A Major, K. 414 includes $\frac{5}{4}$ chords in bars 9–15 that might be heard as cadential, tonic, or passing in function. (This cadenza is printed in the Dover full-score edition of Mozart’s Piano Concertos Nos. 11–16 as the second of Mozart’s cadenza for this concerto.) Finally, $\frac{5}{4}$ chords in Bach’s music for plucked strings are often handled in matters idiomatic to both an earlier style and to the instrument in question. For examples, see Hans David, “The Six-Four Chord Without Theory: An ‘Unofficial’ History,” *Bach* 2/3: 7–14 (1971). This brief look at $\frac{5}{4}$ chords illustrates that the classroom debate encouraged thus far in the article need not be restricted to the development of critical thinking; it can also be a useful pedagogical tool for exploring the differences between styles, or between convention and the practices of individual composers.



Some Personal Reflections On Past Methods Of Teaching And What They Can Tell Us About Current And Future Initiatives

Robert Gauldin

I have been active in the teaching of theory for close to fifty years, dating back to my graduate assistant days at Eastman in 1956. During this not inconsiderable span of time I have been fortunate not only to observe the remarkable evolution of music theory as a separate scholarly discipline, but also to participate in the changing philosophies and technological advances employed in its teaching. In this article I will attempt to draw on that experience and knowledge in presenting a broad historical survey of theory pedagogy in America during the last half century. While you may not find your favorite author among the selection of undergraduate texts in the appended bibliography, I believe the books on this list serve as representative models which typify the different approaches prevalent during the successive decades from 1950 to the present. Following this chronological overview, I will address some issues raised in the recent College Music Society's Initiatives in Music Theory drawn up by Severine Neff, the Board Member for Music Theory in that society. (A copy of these Initiatives is available on the CMS web site.) Although these remarks will attempt to incorporate the achievements and failures of the past in evaluating the potential success of these Initiatives for the future, I remind you that anything I say in this regard stems from a purely personal bias.

The initial pair of bibliographical entries provide some general background for the succeeding chronological breakdown into subsequent decades. While David Thompson's *A History of Harmonic Theory in the United States 1897-1966* (1980) culminates in the mid 60s, Michael Rogers' *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (1984) explores more contemporary pedagogical approaches.

Two textbooks of strikingly differing philosophies dominated the market during my own undergraduate days in the early 50s. Even though the venerable Walter Piston *Harmony* (first edition, 1941) continued to perpetuate certain traditions inherited from earlier English manuals such as Kitson or Prout, it nevertheless

broke new ground by relieving the obligatory pages of endless half-note progressions with short examples of *real* music from a surprising range of tonal literature. The Allen McHose *Contrapuntal Harmonic Technique of the 18th Century* (1947), on the other hand, really amounted to a statistical stylistic study of two specific historical genres—the chorales and chorale preludes of J. S. Bach—with particular emphasis on their harmonic and functional tendencies. This “green bible,” used by Robert Ottman in my sophomore theory class at North Texas University, was supplemented with sight singing, keyboard, and dictation manuals (all Eastman oriented and all green), insuring that the student could both write, play, sing, and hear Bach chorales with equal aptitude. This four-pronged approach to practical musicianship with its stress on empirical simulation as well as writing and aural skills was admirable. But unless the curriculum included a junior-level “form and analysis” course (and many did not at that time), the two-year extent of undergraduate theory courses never succeeded in escaping the confines of the Baroque period, leaving students to cope as best they could with later music (of which, obviously, there was quite a bit). Never mind even mentioning twentieth-century procedures—a topic wholly relegated to a few scattered graduate offerings, but usually of interest to only those “weird” composition majors.

The impact of events during the 60s on theory teaching was four-fold. The possibility of inexpensive multiple copies, resulting from improvements in reproductive technology (mimeograph to overhead transparencies to xerography), vastly increased the range of music literature available to students in the theory class. No longer were teachers forced to rely on tattered class copies of Schirmer sonatina collections to supply examples of stereotypical Classical forms. This new-found accessibility of different genres and composers (even twentieth-century) spawned a corresponding interest in *analysis* “for analysis sake,” an evolving discipline which gradually began to erode the older traditional skills courses, such as stylistically-oriented counterpoint. In turn, this redirected interest gave rise to the first generation of theory-class anthologies, as opposed to the older musicological collections such as HAM.¹ Two early examples immediately come to mind—the historically oriented Charles Burkhart *Anthology for Music Analysis* (first edition, 1964), which featured a selection of complete pieces spanning 18th through 20th-century composers arranged in chronological order,

and the Howard Murphy-Robert Melcher-Willard Warch *Music for Study* and *Music for Advanced Study* series (1960/65), whose shorter tonally-oriented excerpts were organized by specific chord function or device. Future anthologies tended to follow these prototypical layouts.

The reforms of the “new education and open classroom” in primary and secondary public schools during the late 50s eventually spilled over into the collegiate arena during the 60s. Nowhere was this transfer more clearly exemplified than in the Contemporary Music Project, sired by the Music Educators National Conference and funded by the Ford Foundation. A number of experimental pilot theory programs sprouted up in selected universities around the country, headed by faculty who were often more compositionally than theoretically oriented. Although each project was allowed to establish its own goals and pursue its own individual objectives, as a whole the pilot programs were encouraged to integrate the various disciplines of theory, history, and performance as much as possible through cross reference or team teaching. The strong emphasis on compositional techniques encouraged students to relate seemingly dissimilar historical periods, such as the use of isorhythm by both Machaut and Messiaen, or the striking similarities between a Baroque continuo and a jazz rhythm section. In my own pilot class of fourteen music education majors at Eastman, which intentionally included one student of each orchestral instrument, I stressed short original composition assignments that explored one or more specific musical idioms or devices. As a final sophomore project, each student took the lead sheet of a popular ballad of their choice and made a complete arrangement for studio orchestra, which the class then performed and recorded. A retrospective evaluation of these pilot programs revealed that while this more adventuresome methodology doubtless stimulated the students to a greater extent than an endless parade of figured-bass exercises, it also sometimes smacked of a superficial, almost dilettantish approach to the acquisition of solid musical skills.

As a means of evaluating and propagating the results of these pilot programs several years after their initiation, a number of conferences and workshops were held across the country during the summer months. These meetings had the effect of drawing together well-known scholars from various disciplines and institutions, often for the first time. From the ensuing discussions and interactions arose the need for some form of permanent

organization that would insure a continuation of this dialogue. One of the first resulting regional societies (the Music Theory Society of New York State, founded by John Hanson in early 70s) eventually lead to the formation of the national organization The Society for Music Theory in the mid 70s, encouraged by generous financial support from the College Music Society.

Although several textbooks and anthologies published during the 1970s were the direct product of pilot CMP programs, none proved particularly big sellers on the market. These included the Robert Cogan/Pozzi Escot *Sonic Design* (New England Conservatory, 1976), with its eclectic emphasis on such secondary parameters as texture and tone color, the Leo Kraft *Gradus* (Queens College, 1976), with its cyclical approach to the presentation of material, and the David and Susan Ward-Steinman *Comparative Anthology of Music Forms* (San Diego State College, 1976), with its analogue correlations to the visual arts. Meanwhile, a new problem was arising—the almost exponential increase of enrollment in collegiate music programs at larger state universities. In their search for a solution, the faculty at Michigan State in general and Paul Harder in particular turned to the programmed text, which would allow individual students to work at their own pace without the necessity of tying up large numbers of faculty in small classes. Since his resulting *Harmonic Materials in Tonal Music: a Programmed Text* (1968) seemed an desirable way out of the dilemma of hiring more and more staff, several hundred students were sometimes herded into auditoriums to sight sing, take dictation, and listen to lectures. Or, as the case in several institutions (which will remain anonymous), they were assigned cubicles equipped with playback tape recorders and expected to show up each morning at 8 AM to operate these machines on their own; individual “faculty conferences” were scheduled about once a month. Well, you can imagine how well that worked, and what would happen in the week immediately preceding the final exam. Nevertheless, despite their initial problems these early programmed texts and tapes paved the way for the sophisticated computer software presently existing in these areas.

About the same time, testing at the Universities of Michigan and Cincinnati convinced Paul Cooper of the feasibility of teaching basic undergraduate theory through a historical-chronological approach. His resultant text, *Perspectives in Music Theory: An Historical-Analytical Approach* (1973) and its methodology, were also

reflected in the “Literature and Materials” curriculums at Juilliard and Indiana, as well as such later books as John Baur’s *Music Theory through Literature* (1985).

I view the pedagogical trends of the 80s and 90s as splitting in two divergent directions. The first, represented by the Edward Aldwell-Carl Schachter text, signaled a return to the “old fashioned” tonal harmony text with a novel twist. Building on the foundation laid by Allen Forte’s *Tonal Harmony in Concept and Practice* in the mid 60s, a book which unfortunately never received wide circulation, their *Harmony and Voice Leading* (first edition, 1978) placed an increased emphasis on the melodic or linear aspect of music by evoking basic principles of Schenkerian reductive procedures while stopping short of actually incorporating extensive voice-leading graphing. Due to its excellent topical organization, careful selection of musical examples, inclusion of keyboard exercises, and limited historical scope (no twentieth-century material), it proved an unqualified boon for those music schools with more advanced or sophisticated students. Coupled with a species counterpoint course and a solid aural skills program, it suggested a return to the skill-oriented theory programs in the 40s, albeit incorporating a much broader analytical outlook and range of music literature.

However, the Aldwell-Schachter failed to meet the demand of a more readily *accessible* and at the same time more *comprehensive* text for larger state universities, who now expected their students to cover both the tonal and nontonal repertoires in only two years. This void was filled by two books which proved to be very popular—the Bruce Benward *Music in Theory and Practice* (first edition, 1977) and the Stefan Koska-Dorothy Payne *Tonal Harmony with an Introduction to Twentieth-Century Music* (first edition, 1984). Both featured a writing style that was readily comprehensible, along with self-tests, extensive workbooks, and even tapes of the musical examples. Needless to say, they have gone with several subsequent editions.

Although I hesitate to include my own book on this illustrious list, it does exhibit several elements that demonstrate some current trends in theory teaching. In addition to raising the ante of the Aldwell-Schachter by including actual voice-leading graphing, *Harmonic Practice in Tonal Music* (1997) extends the Western musical canon to include such heretofore neglected genres as Strauss waltzes, Sousa marches, Joplin rags, gospel hymns, jazz standards, and even a little of the Beatles (no Eminem yet), all of which are

aurally accessible on a accompanying CD.² Renewed emphasis is placed on more creative projects such as melody harmonization, as well as keyboard skills and current terminology (such as pitch class, interval cycles, commercial chord symbols, “tritone substitution,” etc.). I conclude with mention of the new theory kit by Steven Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening* (2003). Curiously enough, its completely integrated approach cycles back to McHose’s original concept some fifty years earlier. Finally, I would be remiss if I did not acknowledge the increasingly sophisticated software that extends not only to aural skills but general information and musical examples (both notated and performed) as well.

I trust this brief survey has at least partially succeeded in laying the groundwork for a consideration of the recent CMS Initiatives in Music Theory. Perhaps if nothing else, it may aid in deterring us from being “condemned to repeat the mistakes of the past.” I will not attempt to paraphrase the contents of Severine Neff’s position paper but instead select certain portions on which to base my comments.

Let me begin by stating that these remarks are confined only to those courses which constitute part of the *undergraduate* core curriculum—usually two years of freshman-sophomore theory followed in some cases (if you are lucky) with a “form and analysis” or even counterpoint class. One might even wish to make a further distinction—separating bona fide majors at a school of music, who desire to make music their profession, from non-majors, who are opting for elective theory courses in a music department. In the latter case the students are frequently learning to play an instrument, such as guitar or keyboard, and tend to enroll in these courses to increase their knowledge of notation, rudiments, and chords while acquiring some practical skills in harmonization (whether they really get what they want is another issue). In the former instance, the policies of the particular school of music in question determine the contents of the theory courses for their music majors.

As Severine Neff has so forcefully underscored, the typical core theory sequences for majors in many music schools or departments have frequently shrunk to a total of not more than three or four semesters. Consequently, it is extremely crucial that within this abbreviated framework we must be dead certain that *what we do* teach is absolutely essential to the education of a well-rounded

musician. I wish to underscore this point, since in reading the Initiatives report, I keep encountering such expressions as “non-Western,” “intercultural and interdisciplinary approaches,” “non-canonical studies,” “feminist philosophies,” and “documentary and sketch studies.” This diversity, while providing admirable areas of study for upper-division or graduate courses, may give rise to two problems I feel are sometimes all too common in freshman-sophomore theory classes.

Permit me to illustrate the first scenario. I recently taught a graduate music history seminar for DMA students entitled “The Russian School.” On the first day of class I handed them the titles of about twenty lesser known musical compositions from that country and asked if they could identify the genre and composer. Although two students were from the Ukraine, three from Bulgaria, and one from Turkey (all geographical locations that would suggest at least a passing acquaintance with Russian music), no one person in the class knew more than four! I then asked for a definition of a “seminar” and received this approximate explanation: “A seminar is a group of individuals knowledgeable on a particular topic who periodically come together to discuss issues and deliver reports of their research.” Now I ask you—how could my “Russian School” class qualify as a seminar? It seems more likely to me a 101 rather than a 590 course. If one encounters this situation with doctoral-level students in a respected music school, how much can we expect from raw high school graduates coming into freshman theory for the first time? Perhaps the most frequent request I received during the second-edition revisions of my harmony text was the need for additional drills and exercises—in guess what? Fundamentals! I fear we faculty members are sometimes guilty of teaching what interests *us* at the moment rather than catering to what the students actually need. I personally know of many such instances with teaching assistants, who cannot wait to get out of their graduate seminars to inflict the latest concepts of set similarity relations or transformational networking on their poor unsuspecting sophomores.

As to the second problem, is it really necessary that we teach undergraduates about *everything* in their first two years? By gradually accepting everyone else’s responsibilities over the years (“let theory teach that”), we are now expected during this abbreviated time span to cover everything from key signatures to combinatoriality (not to mention counterpoint and form). We are

beginning to resemble that proverbial camel with the huge load in its back trying to get through the “eye of the needle” gate. I am here to plead that we don’t need anything *else* to teach. We just need to do a better and more efficient job with the material we already have.

The apparent distinctions between “voice leading in Beethoven,” “popular music,” and “nonwestern cultures” found in the Initiatives also trouble me. There is a vast stylistic gulf existing between the first two and the third, as exemplified in that misleading expression “Music is the international language.” As Leonard Meyer has convincingly demonstrated, music may communicate through referential and psychological means, but it lacks the specific exactitude or concrete definitions that words in a language possess. And musical communication is certainly not *international*, unless we can prove our expertise in the social/ artistic mores of such widely differing countries as Korea, Libya, Tibet, or New Guinea. Granted, the musics of these nations may share some common “universals” in their underlying basic materials, but their embodied music meaning is something else again. Interesting as these topics are, we simply do not possess the time or knowledge during a student’s first two years to wander into these “dragon-infested” waters unless we are terribly naive about the results.

On the other hand, provided we confine our studies to *Western* musical literature, regardless of its locale, type, composer, or origin, we are on safer ground. I personally fail to see the difference between the voice-leading procedures in a Beethoven slow movement and those of a popular jazz ballad, since *both* are underpinned by the same tonal foundations. In addition to Allen Forte’s ground breaking book in the latter area, published Schenkerian analyses of Paul Simon, Charlie Parker, John Coltrane, and the Beatles only serve to confirm this. I am all for “expanding the canon” to include heretofore neglected and prejudiced genres and composers, provided they partake of the common spring of Western compositional techniques---techniques that form the basic pillars of freshman and sophomore theory. In a *Symposium* article several years ago,³ I tried to make this case by demonstrating how the scherzo of Beethoven’s Piano Sonata Op. 14, No. 1 in E major and George Harrison’s *Something* employ an almost identical hierarchical use of motivic parallelism, or how the *Tristan* Prelude and the second side of Beatles’ *Abbey Road* both utilize a similar “double-tonic complex” of A and C. In the process I proposed

that often the best way for a student to remember the point you are making is to illustrate it with an musical quotation from an “unexpected” source. The market is already overloaded with harmony texts whose examples are largely devoted to the piano literature of Mozart, Beethoven, and Schubert. On the other hand, you can count on the fingers of one hand the number of such books that list commercial chord symbols (symbols which appear on almost every piece of popular sheet music), much less include actual citations from popular or jazz standards.

Let me assure you that I have nothing against art history, interdisciplinary or sketch studies, and feminist philosophies. I would certainly hope and expect that such topics would be reflected in our upper undergraduate or graduate offerings. However, as the risk of inciting the wrath of scholars in these fields, I really must confess that they seem to have little place in undergraduate theory. If it is all that necessary to find *other* things to teach, then by all means let’s do some more dictation or keyboard or sight singing--fundamental skills which unfortunately have experienced a gradual and discouraging decline in recent years.

In closing, let me admonish you to be wary of continually copying the pedagogical techniques of others, no matter how successful they *appear* to be. Rather, be yourself and do what you are most comfortable with—as Polonius advises us, “To thine own self be true.” Some teachers always seem to be preoccupied in a continual and futile search for what I call “El Dorado,” that mystical textbook or packet of materials that will somehow miraculously teach itself. As the field of music education has sometimes demonstrated to its own detriment, we can easily become too entangled in “methods.” Maintain your curiosity about music, and when you find something interesting, write it up and present it at conferences. I would hate to think that our discipline consists of two separate camps---pedagogues on the one hand who disdain research, and speculative theorists and analysts on the other who disdain undergraduate classroom teaching. Rather, we should be all strive to become theorist musicians in the fullest sense of the term.

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(Increasing use of computer programs for aural skills and fundamentals)

ENDNOTES

¹ Archibald T. Davison and Willi Apel, eds. *Historical Anthology of Music*, 2 vols. Cambridge, MA: Harvard University Press, 1946-1950.

²Without slighting women composers this time around, the new edition will include even more such selections on a CD-ROM disc accompanying each textbook.

³"Beethoven, *Tristan*, and the Beatles," *College Music Symposium* 30/1 (Spring 1990), 142-52.

Scanning Bass Patterns: A Middleground Path to Analysis

David Pacun

Many of us have probably faced something like the following situation: after two years of course work, a good, knowledgeable student panics when asked to describe harmonic and tonal features in a relatively simple but real piece of music, such as the opening of the first movement of Haydn's Piano Sonata in G Major shown in Example 1. Absent a set of leading questions and clues as to what to look and listen for ("What is the harmony in m. 2?" "What key does Haydn modulate to in m. 23 and how?"), the student wobbles and shakes on what was the terra firma of harmony and voice-leading. Surface features confuse: "Don't we modulate to E minor in m. 18?" "How do you figure out the harmony in m. 7? Is that a ii or V chord? If it is a V⁷ chord, why is the F# is missing?"

The image displays a musical score for the first movement of Haydn's Piano Sonata in G Major, measures 1-12. The score is written in 2/4 time and G major. It consists of two systems, each with a grand staff (treble and bass clefs). The first system covers measures 1-6, and the second system covers measures 7-12. The bass line is particularly complex, featuring many triplets and a trill in measure 7. The treble line is more melodic, with some grace notes and slurs. The key signature is one sharp (F#), and the time signature is 2/4.

Example 1 - Haydn, Piano Sonata in G Major, Hob. XVI:27 first movement mm. 1-12 (Sämtliche Klaviersonaten: Band II, ed. Georg Feder, G. Henle Verlag, 1972)

In such cases, students undoubtedly feel if as the rug has been suddenly pulled from underneath them. Despite their considerable abstract and tactile knowledge of chords, Roman

numerals, and voice-leading, they have no quick means to grasp what is happening harmonically in a piece of music. In the common parlance, they miss the forest for the trees.

Recent theory texts, though impressive in their own right, do little to ameliorate the situation. Most authors divide their time between detailed voice-leading rules, such as doublings and resolution of tendency tones, and larger, Schenkerian-based issues, such as prolongation and middleground voice-leading structures. Both approaches are critical to understanding tonal music, yet neither specifically addresses the issue at hand.¹ In a recent paper, John Bучери has proposed one solution to this problem based upon teaching students to quickly identify key area and succession.¹ While there is much to Bучери's elegant and convincing method, it may not enable students to fill the gap between knowing a work's key structure and understanding its local harmony. Hence, although we devote much energy to specific matters (doublings, voice-leading motions) and large-scale concerns (structural harmonies), we often dedicate little time to showing students how to apply these techniques and concepts outside of the classroom.

As a bridge between Bучери's 'forest' method and the more common 'tree' approach that students too often absorb from their theory studies, I would like to propose a pedagogic middleground path. My method is not entirely new, and it is based upon Schenkerian analysis. Nevertheless, it proves relatively quick to implement and relies on little of Schenker's specific conceptual formulations and terminology. Thus it may be incorporated into different course methodologies and used alongside numerous textbooks. What I propose is a series of techniques for teaching students how to 'scan' harmonic motion much in the same way that we scan poems for meter, end rhyme, and such.

To begin, let us return to the Haydn sonata and hypothesize how a theory teacher might go about producing not a formal, full-fledged paper, but a rough, even unformed analysis, as if we were looking for a movement to use as an introduction to sonata form. How would we scan the music? Focusing purely on harmony (my limited topic here), we would probably pass over much until m. 7: the progressions in mm. 1-6 are elaborations of the tonic, first simple neighbor motions around G (mm. 2 and 4), then a neighboring motion over a tonic pedal (mm. 5-6). Measure 7 departs from this harmonic stasis with a rapid ascent through I⁶ to a V-I cadence in mm. 7-8. (The analysis is far from complete but that is not our intended goal.)

Most of us would pay little attention to the Roman numeral sense of passage; that is we wouldn't 'worry' the harmony. In a two- and three-voice setting, much is omitted or implied. In addition, none of the harmonies in this opening should surprise us, even though they are used with great delicacy. Neighboring bass motions around the tonic, and neighboring voice-leading motions above the tonic bass are common at the start of classical phrases; likewise, the concluding cadence with the rise to I^6 then V^7 (the seventh proves necessary because the $F\sharp$ is absent or vice versa) is standard fare. If anything in the harmonic realm attracts our attention, it would be how the surface chromaticism (m. 17+) and increase in harmonic rhythm (compare m. 22 with mm. 7-8) prepare the modulation to V at measures 23-24, and how the subsequent D-major bass line reverses the measure 2 motion ($\wedge 1-\wedge 7-\wedge 2-\wedge 1$ in G becomes $\wedge 1-\wedge 2-\wedge 7-\wedge 1$ in D).

Looking back over this rough analysis, three features become apparent: first, we tend to read the harmonic motion from the bass; second, we tend to group bass notes into small patterns; and third, we expect certain types of bass motions (the above-noted patterns) to occur in certain places, roughly stated, at the beginning, middle, and end of phrases.² In these terms, the above analysis might read something like this: opening motion around G, extension on G, ending ascent to B and D-G cadence. (Example 2: the note values approximate the surface rhythms.)

nts around G ext. on G ascent and cadence

Example 2 - Informal bass-motion analysis of the Haydn G Major Sonata, mm. 1-8.

While this type of analysis derives clearly from Schenkerian methods, it requires no specifically Schenkerian terminology (prolongation, bass arpeggiation) and includes the idea of place within a phrase without an explicit reductive component. Or better, the reductive component is remarkably explicit: the harmonic sense of the passage and the actual bass notes (pitch-classes) are one and the same.

For the past two years I have attempted to teach the above scanning technique through the following series of methods.

- | | |
|----|---------------------------|
| a) | <i>do - sol - do</i> |
| b) | <i>do - mi - fa - sol</i> |
| c) | <i>sol - fa - mi</i> |

Example 3 - Sample Flashcard bass patterns

1. Flashcard bass patterns: I usually begin classes with a quick review of the three- and four-note bass patterns encountered thus far in the course.³ I print these in large type on 8.5"x11" paper so that all can see, and add to the stack as the semester progresses and the chord choices expand. (Example 3 displays three bass patterns. Appendix 1 provides a more comprehensive list.) Since we work primarily in solfège, I write out the patterns with syllables, but scale-degree numbers would work just as well. Students must sing the bass line, provide multiple harmonizations for each pattern (for instance I-V-I or I-V⁷-I in Example 3a, I-I⁶-IV-V or I-iii-IV-V in Example 3b, etc.), and notate each bass line in specific keys. I also ask where in a phrase given patterns tend to occur, and quickly review voice-leading points such as identifying the seventh of V⁷ in E minor and how it will resolve, what note to double in I⁶, etc.

2. Bass-pattern quizzes: As the semester progresses and the possible chord progressions expand, I begin to quiz students on the above patterns with a slight twist. I first compose a typical bass line of 4-8 measures, then cut it into short three- and four-note segments (the patterns shown on the flashcards). For the quiz, students must determine the key, provide possible Roman numerals for each bass note in the pattern, then reassemble the pattern into a functional bass line. (Example 4. Some possible answers are given below each pattern. Patterns can overlap on the same note and different bass lines are possible.) While the first two tasks reinforce knowledge of the flashcard patterns, the last forces students to differentiate between typical beginning, middle, and ending progressions/patterns.

In Example 4, the repeated $\wedge 5-\wedge 5-\wedge 1$ clues students into a cadential $\frac{6}{4}$; the $\wedge 1-\wedge 7-\wedge 1$ suggests an opening motion $I-V^6$ (or $\#$)- I ; the $\wedge 1-\wedge 2-\wedge 3$ suggests a midphrase ascent to I^6 . However, I do not restrict such placements (exceptions are common in actual music) nor introduce reductive techniques. Each pattern represents an actual, if prototypical, bass motion. Although do-ti-do ($I-V^6-I$) may prolong the tonic and do-fa-sol-do ($I-ii^6-V-I$) may underlie a complete phrase, my focus here is on the preliminary stage of analysis, on getting students to quickly locate and hear basic surface motions. Nevertheless, middleground and background intuitions may develop directly from these exercises as will be seen below.

Instructions: Name the key, then supply a set of possible Roman numerals for each bass pattern. Finally, assemble the bass patterns into a functional bass line in triple meter. Be sure to use correct rhythms and metric placement. (Bass patterns may overlap on common pitches.) Key: _____



(sample answers)

$V_4^6 \text{---} \frac{5}{3}$	I	I	V^6	I	I	V_4^6	I^6
$V_4^6 \text{---} \frac{7}{3}$	I	I	V_5^6	I	I	v_3^4	I^6

Sample bass line solution:



Example 4

Part I: For each bass pattern, supply a single set of possible Roman numerals (key signature holds throughout).

Key: .



Part II: Assemble the above patterns into a coherent bass line: common pitches can overlap. Try to place each pattern in its characteristic location (beginning, middle, end). Use appropriate meter and rhythms.

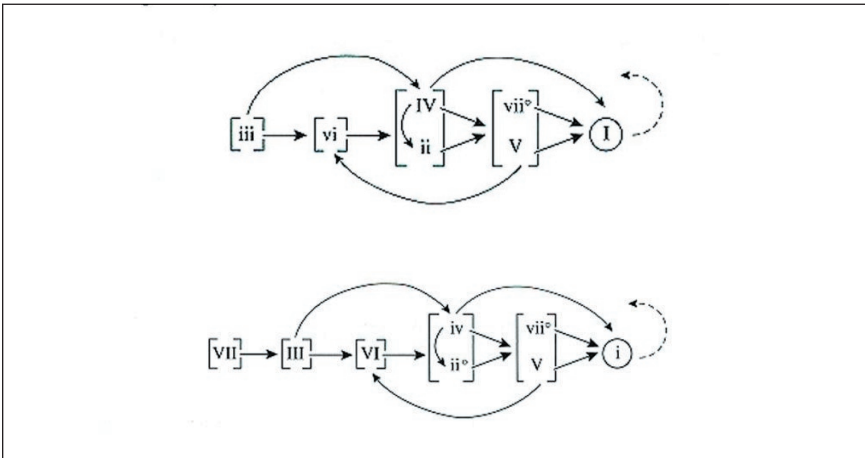
Example 5 - Quiz B

Example 5 displays a later quiz, one with more complex (yet still diatonic) harmonies and more varied patterns. To simplify the second part of the quiz (assembling the bass patterns into a coherent bass line), one can request that only a limited number of the patterns be used, or even supply a harmonic rhythm. Alternatively, one can also ask for several possible harmonizations of the same cell. Depending upon the point in the semester, there might be for two or three possible ways to harmonize do-re-mi/e using V_4^6 , V_3^4 and vii^{o6} .



Examples 6a and 6b - Quiz C

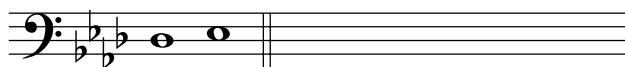
Other quiz formats attend to the divergent harmonic implications of initially similar bass patterns. Examples 6a and 6b present similar cells (both have fa-re or ^4-^2) that possess quite different harmonic meanings. The first is typically harmonized I-IV-vii^{o6}-V (also possible is $\text{V}\frac{3}{4}$ in place of vii^{o6}), the latter I-IV-ii-V. The example is simple, yet students learn that they must look to the bass note and chord that follows (the do/I or sol/V respectively) in order to accurately gauge the harmonic meaning of re. This exercise not only tests the bass patterns; it also reveals how much harmonic function depends upon context. Thus while I find value in charts of harmonic progressions such as those shown in Example 7, the variety of paths proves too broad and complex to aid in harmonic analysis.



Example 7 - Harmonic progression flow charts for major and minor mode. Taken from Stefan Kostka and Dorothy Payne, *Tonal Harmony: With an Introduction to Twentieth-Century Music* 5th ed., (Boston: McGraw Hill, 2004), 109.

Finally, Example 8 presents an alternate quiz format that emphasizes constructing bass-line patterns and larger progressions in specific keys.⁵

On the staff below, write out eight common bass patterns (2-4 notes) in the key of Ab Major. Supply Roman numerals and briefly note standard voice-leading rules (typical doublings, contrary motion, etc.) that apply to each. The first is done for you.



IV - V(7)
ii6 - V
contrary motion

Example 8 - Quiz D

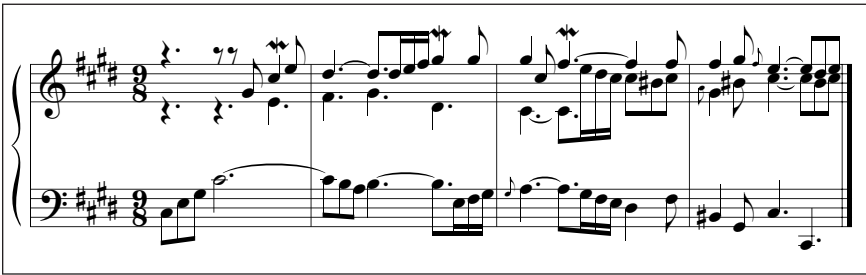
3. Excerpts from the literature: To reinforce the above, and more importantly, demonstrate its practical relevance, I introduce short excerpts from the standard literature. Owing to the nature of the method, examples may be both simple and complex, the harmony either residing entirely within the framework of given triads or pushing beyond these points. Hence Examples 9a-c were presented to my second-semester theory class at a point where we had covered only root and first inversion I, IV and V(7) chords.

Moderato

Example 9a - Haydn, Piano Sonata in D Major, Hob. XVI:19 mm. 1-2

The two circled bass notes in example 9a represent bass pitches underlying chords not included in this limited palette. ≠Despite this occasional restriction or limitation, I provide no blanks beneath the score to indicate the harmonic rhythm or the structural bass notes. Students must intuit these from their knowledge of harmony (including the bass patterns) and from close listening. ≠For a weak class, however, one can always provide an initial harmonic rhythm or warm-up with flashcards patterns using the same key as the example.

When students work under time constraints, their answers can and do vary. Yet these differences form a critical component to the exercise. ≠In Example 9a for instance, the C# represents V⁶, though quick students may see the melodic G as the seventh of the dominant. Depending upon the class, one can then use this opportunity to introduce inversions of V⁷. Even for those who struggle, the method will usually enable them to find the I and I⁶ chords and to understand the phrase/segment as centering or cycling around these two tonic poles.



Example 9b - Bach, Prelude in C# Minor, WTC Book II mm. 1-4

In the case of complex surface figuration (Example 9b), many students still scan the descending bass line and cadential motion and hence are able to rough in i-v⁶-iv⁶-V-i (the subsequent half-cadence is not shown here). ≠ Discussion points include better choices for the m. 3 le-re-fa (hence introducing the supertonic chord), but the underlying harmonic progression rises to the fore, even though the complex surface outstrips their harmonic and figurative vocabulary.

Menuet

Rns in old key: _____ modulates to _____

Rns in new key _____

Example 9c - Haydn, Piano Sonata in C Major, Hob. XVI: 3, Minuet, mm. 1-8

Finally, Example 9c introduces modulation to the dominant as a function of the bass line in conjunction with Bucchini's methodology: one sharp suggests G major and, in support, the bass line moves fa-mi-fa-sol-do in G. (Section 6 considers bass patterns in chromatic settings in greater detail.)

Example 10 presents the same drill in an alternate, ungraded quiz format. Here, students make two passes through each excerpt, the first under time constraints (30 seconds to 1 minute depending upon the music), the second a more leisurely take. Again, I supply no blank spaces to suggest harmonic rhythm, nor do I circle specific chords or non-chord tones. Between the two passes, I write different students' answers on the board and use these to generate discussion and as the basis for the second reading.

For instance, in m. 2, most students will locate the supertonic (ii), but given the G [suspension] to F in the upper voice, V_4^4 and V_3^4 are not an uncommon answers.⁶ Even ii-IV may arise as a possible choice. Without reference to the score, the class then evaluates these choices: if the harmony is V_4^4 or V_3^4 , what bass note should they expect next? What is 'wrong' (or uncommon) about ii-IV. What might be a better choice? With these options in mind, students then make a second pass through the excerpt. Those who finish quickly move on to identify non-chord tones and special features regarding harmonic rhythm, motivic development and phrase form (if applicable).⁷

1st movement mm. 1-6

Pass 1)
Pass 2)

2nd movement mm. 1-6

Pass 1)
Pass 2)

3rd movement: mm. 5-14

Pass 1)
Pass 2)

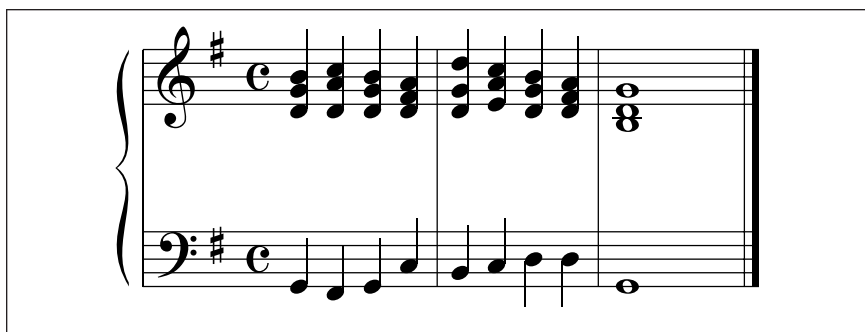
Example 10 - Quiz E

Each of the three excerpts from Haydn's Piano Sonata in C Major, Hob. XVI:21, presents its own analytical problems including sequences, varied harmonic rhythm, and novel chords. First scan the bass for expected RNS, most importantly at the cadential points. Then make a second pass, focusing attention on the melodic line as well. Envision typical non-chord tones (APP, ET, PT, NT, etc. cadential ♯). Place detailed RNS underneath. A final stage would be to circle and identify the NTs.

The exercise stresses the correct answer, but it also demonstrates how to query and evaluate real music. Choosing excerpts from multi-movement pieces as in Example 10 also introduces the idea of unity and syntax on a broader scale. As an added bonus, the

second and third movements of this Haydn sonata revisit issues that arose in the first. The second movement opens with an apparent ii^6-I^6 motion ('why doesn't ii^6 go to V^6 ?'), while the third begins $I-V\frac{3}{4}-I^6$ (do-re-mi in the bass in place of the first movement do-re-fa-sol).

In general, I have found that speed drills prove difficult the first time through. Students do not trust their own abilities to expect certain things to happen and, during the first pass, constantly refer to the upper voices, wasting valuable time. They simply do not realize how systematic (in a way) bass motions are. In addition, knowing from experience that each missed harmony lowers their score by a point impairs their often impressive harmonic vocabulary. The ungraded two-tiered format helps to free such inhibitions and highlights the need to establish a general background context before proceeding with detailed analysis.



Example 11 - Harmonic dictation

4. Harmonic dictation (bass line and Roman numerals) from both keyboard progressions and real music. By providing an initial and specific set of expectations or possible answers, bass patterns also aid in harmonic dictation.⁸ For instance, given the keyboard progression in Example 11, students may initially hear only brief segments such as the opening do-ti at the beginning, the fa-based chord in the middle, and the phrase sol-do ending cadence. Yet each segment contains potent clues as to the actual progression: Is the opening $I-V^6$ or V^6 ? Does the bass line continue its stepwise descent, or resolve back to I (do-ti do versus do-ti-la-sol), or even progress elsewhere (do-ti-re)? The rough direction of the bass line may be all that is necessary to find (and learn to hear) the correct answer. Conversely, chord quality becomes immediately pertinent

when set within or against possible bass patterns: Is the chord that harmonizes fa (m. 1, beat 4) major, minor or an inversion of V^7 ? While this methodology does not guarantee the correct answer, it tends to produce bass lines and Roman numerals that fit within standard harmonic paradigms and guides students toward hearing how progressions create and fulfill expectations ($V^{\frac{1}{2}}$ goes to ____?).



Example 12 - Bach, Unaccompanied Cello Suite in D Minor, Menuet I. *Six Suites for Unaccompanied Violincello* ed. Janos Starker (New York: Peer International Corporation, 1971)

5. Advanced topics: Music for a solo string or wind instrument often presents difficult problems, as students must extract harmonic and voice-leading implications from a 'single' melodic line. Example 12 shows the first twelve measures of Bach's Cello Suite in D Minor.⁹ As with previous quizzes and exercises, students first provide a rough outline of the harmony based on the largely observable bass notes (many notated in the score with downward stems). Hopefully, they will find the descending tetrachord in mm. 1-4, then locate the stepwise ascent and cadential progression in mm. 5-8. In mm. 9-12, the critical feature is the stepwise descending bass line from sol. There are still decisions to make regarding specific harmonies, and they will likely have missed the tonicization of F across mm. 6-7, which I bracket in my handouts for that reason. At the same time, they now possess a framework within which to evaluate and understand each harmony, and more importantly, to gain access to Bach's melodic figuration. Questions for class discussion include: if m. 2 is v^6 , what are the non-chord tones? What might be the role of the F/E in m. 3? What is unusual about the C4 (te not ti!) in m. 6 (leading to the idea of $V^\#$ of F)? Is it VI or iv^6 and iv or ii^{o6} in m. 7?

While these resemble standard test and homework questions, they reverse the typical presentation: in place of the instructor circling the B $\flat$ and G in m. 2 and asking ‘what is the harmony?’, students first intuit an underlying harmonic progression, then ask what are the non-chord tones, and do their harmonic and non-chord tone choices make sense. The method in fact replicates tasks they must perform once they step out of theory classes into the real world of making and teaching music.

6. Chromatic harmony: The above method is designed principally for teaching diatonic harmony, but it may also be applied to both altered chords, tonicization, and, in a more limited context, to modulation.

The image shows a musical score for Chopin's Nocturne in F Minor, Op. 55, No. 1. The score is written for piano and is in F minor (three flats) and 3/4 time. It is marked 'Andante' and 'p' (piano). The melody in the right hand is chromatic, while the bass line in the left hand is diatonic, moving stepwise up from F to C. The piece consists of eight measures.

Example 13 - Chopin Nocturne in F Minor, opus 55 no. 1 (From Mary Arlin et. al., *Music Sources: A Collection of Excerpts and Complete Movements* 2nd. ed., [Englewood Cliffs: Prentice Hall, 1989], 223)

For instance, in the Chopin Nocturne given in Example 13, the bass line is essentially diatonic and may be read as such (at least initially), the point being to grasp the traditional aspects of the harmonic design--an eight-bar stepwise rising line that cadences to the tonic. Reading a ‘diatonic’ sense into the music also helps pinpoint exactly what is chromatic and distinctive: the secondary dominants built on G (E $\flat$ $\flat$ $\flat$) and later, the Neapolitan sixth built upon B $\flat$ (G $\flat$ $\flat$ $\flat$).

Thema (Andante)

The musical score is for a piece titled 'Thema (Andante)'. It is written for a single instrument, likely a cello or viola, in D minor (two sharps) and 3/4 time. The score is divided into two systems. The first system is marked with a piano (*p*) dynamic. It begins with a half note D4, followed by a quarter note E4, and then a series of eighth notes: F4, G4, A4, B4, A4, G4, F4, E4, D4. The second system is marked with a forte (*f*) dynamic. It begins with a half note D4, followed by a quarter note E4, and then a series of eighth notes: F4, G4, A4, B4, A4, G4, F4, E4, D4. The piece ends with a double bar line and repeat dots.

Example 14 - Bach Unaccompanied Suite in D Minor for Violincello, Minuet 1 mm. 1-12

Bass scanning also applies to tonicizations which use chromatic ‘passing’ and ‘neighbor’ notes in the bass. Just as do-mi is filled in diatonically to create do-re-mi, a simple motion like fa-sol can be filled in chromatically to yield fa-fi-sol, with the fi ($\sharp^4$) harmonized by a secondary dominant. Since the specific chord for fi can vary (as do the harmonizations for re), one can create chromatic flashcard pattern(s) based upon the original diatonic versions. For instance, do-mi-fa-sol transforms into do-mi-fa-fi-sol or more simply do-mi-fi-sol.

Bass patterns have a more limited application to modulation. For instance, in the theme to the third movement of Mozart’s Piano Sonata in D Major, K. 284, the bass line begins typically (do-la-fa-sol...) but can be seen as moving outside the orbit of standard D-major patterns in mm. 6-8. Nevertheless, it is the G#’s that provide the strongest clue that the phrase-ending D-E-E-A fits best within A major. Thus bass-pattern analysis applies here only in the negative sense (‘this doesn’t seem to work in D’) and (over)reliance on the bass line may confuse rather than aid analysis. For this reason, all the quiz formats given thus far require students to establish the key before proceeding with Roman numerals.

To conclude, the above method was designed specifically to fit the music curriculum at Ithaca College, whose overall program is weighted toward music education and performance. Owing to hefty New York State requirements, music education students need to develop their theory skills quickly and efficiently with obvious practical benefits. For a program oriented more explicitly toward Schenkerian analysis, or, conversely, toward specific vertical chord types, bass scanning may prove a step back or to off to the side. Alternatively, programs oriented toward two-voice frameworks and keyboard progressions may find some benefit in isolating the bass line as a preliminary stage in analysis and harmonization.¹⁰

Some theorists may also complain that the bass-scanning method seems too much like Schenker-lite. To be sure, bass scanning omits concepts such as prolongation and composing out, yet both are strongly implied by my choice of bass patterns. Bass scanning may even serve as a prelude to upper-level classes devoted specifically to Schenkerian analysis. In addition, it must be admitted that for some students, advanced theoretical concepts hinder rather than help. Since many assignments involve analyzing preexisting music or harmonizing preexisting figured and unfigured bass lines, whatever “composing out of the tonic” there is already seems (to such students) to have been done: what they need is a method to find the I and I⁶ harmonies without checking every note in the piece. Once this happens, the idea of prolongation may appear to be self-evident, perhaps even interesting.

In summary, bass scanning is intended as a complement or a middleground path between top-down approaches such as Bacher’s and the more detailed focus of traditional harmony and voice-leading courses. It cannot substitute for either. In my own classes, I have noticed numerous practical benefits, most importantly that students group or chunk chords rather than read them individually and that they come to pieces with specific expectations as to what they will find and where they will find it. Since they can often predict what will come next, locating cadences becomes easier enabling both a quicker grasp of phrase form and a better sense of where on the surface to focus additional attention. With a little practice, the forest and trees come into focus together.

ENDNOTES

See for instance, Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening*, (New York and Oxford: Oxford University Press, 2003). Laitz's two-voice frameworks (on pp. 197-198) replicate the bass component in the patterns and harmonic variations I use in bass scanning. #However, Laitz provides no subsequent follow-up. See also Miguel A. Roig-Francoli, *Harmony in Context*, (Boston: McGraw Hill, 2003) and Robert Gauldin, *Harmonic Practice in Tonal Music*, (New York: W.W. Norton and Company, 1997). Two-voice frameworks may be found in these texts as well, but they tend to serve more formalized ends. Importantly, this paper concerns the preliminary stages of analysis.

² John Buccheri, "Mental Rehearsal, Learning Music and the Theory Classroom" paper presented at the Northeast Chapter Meeting of the College Music Society, (Boston, April 2002).

³ My approach here derives in large part from ideas presented in Jeanne Shapiro Bamberger, *The Mind Behind the Musical Ear: How Children Develop Musical Intelligence* (Cambridge: Harvard University Press, 1991). The notion of beginning, middle, and end progressions may be related to Bamberger's structural simples; similarly my bass patterns and the notion of paths through the harmonic structure mirror Bamberger's 'tune building' with tune blocks and Montessori bells.

⁴ These patterns are closely modeled on voice-leading reductions found in Heinrich Schenker, *Free Composition*, tr. and ed. Ernst Oster, (New York: Longman Inc., 1979), and Edward Aldwell and Carl Schacter, *Harmony and Voice Leading* 2nd. ed., (New York: Harcourt, Brace, Jovanovich, 1989). Another excellent source is William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*, (New York and Oxford: Oxford University Press, 1998), 23-31. For teaching basic patterns in a melodic realm see Laurdella Foulkes-Levy, "Tonal Markers, Melodic Patterns, and Musicianship Training Part I: Rhythmic Reduction and Part II: Contour Reduction," *Journal of Music Theory Pedagogy* 11 (1997), 1- 26 and 12 (1998), 1-24.

⁵ Possible assignments and drills do not end here. For instance, one can also test multiple bass line patterns in different keys, for instance D $\flat$ -E $\flat$ -F in D $\flat$ major, B-A-G in E minor, etc.

⁶ Again, one can use the measure ending C5 to touch on supertonic seventh chords.

⁷ In the first movement, the recurring suspensions are critical. I also use bass patterns in conjunction with sentential and periodic melodic structures as defined by William Caplin (*Classical Form*, pp. 35-58). However, it is important to stress that bass scanning serves as a preliminary stage in analysis, and that instructors can design their own follow-up routines depending upon class, level, and program.

⁸ Gary Karpinski notes the critical role of the bass line in harmonic dictation in *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians*, (New York and Oxford: Oxford University Press, 2000), p. 120. See also his extended discussion of 'chunking' pp. 73-77 and pp. 173-174.

⁹ It is useful to compare the pedagogical reading given here to Karpinski's discussion of the issues involved in sight reading the more complex Courante movement from the E $\flat$ Major Suite, BWV 1010. As Karpinski notes, "[t]his kind of [sight reading] skill depends greatly upon each reader's theoretical knowledge and ability to read and interpret harmonic implications in real time." *Aural Skills Acquisition*, p. 182.

¹⁰ In certain cases, upper-voice motions can prove to be as systematic as those found in the bass. Owing to the added complexity of working with both upper-voice and bass-line patterns, I have not formally incorporated them into the bass-scanning method. However, my colleagues at Ithaca College, John White and Craig Cummings, are currently developing such an approach. Focusing on short progressions rather than complete phrases or single, isolated chords, may help students to see voice-leading in a slightly larger context.

APPENDIX 1

Diatonic bass patterns from Theory II. The larger patterns may be broken in two. Several patterns contain common bass note / chord pairs. This list is not exhaustive.

<i>do-re-mi/e</i>	<i>do-fa-sol</i>	<i>do-do-do</i>
<i>do-la/e-mi/e</i>	<i>do-ti-do</i>	<i>do-fa-re-sol</i>
<i>do-fa-do</i>	<i>do-ti/e-la/e-sol</i>	<i>do-fa-re-do</i>
<i>do-sol-do</i>	<i>do-ti-re-do</i>	<i>do-mi-fa-do</i>
<i>do-mi-sol</i>	<i>do-fa-mi</i>	
<i>sol-fa-mi</i>	<i>fa-sol-la/e</i>	<i>mi/e-fa-mi/e</i>
<i>sol-sol-(do)</i>	<i>mi-fa-sol</i>	

Some common sequential patterns: may begin and end at any point.

do-fa-ti/e-mi/e-la/e-re-sol-do (5ths)

do-sol-la/e-mi-fa-do - etc. (Retrospective looking 5ths)

do-re-mi-fa-sol or *do-ti/e-la/e-sol-fa* (parallel 6/3s)



Joseph N. Straus, *Elements of Music*

Reviewed by Michael Buchler

INTRODUCTORY COMMENTS

Let's be frank: identifying intervals, writing scales, and finding B $\flat$ below middle C on an alto-clef staff are hardly musical activities. They might be important precursors to attaining musical literacy, but what good is musical literacy if it isn't partnered with a strong connection to aural experience? Teachers frequently broach such elemental topics as abstractions that must be mastered before moving on to any genuinely musical applications. Such musical applications, then, become a carrot dangled before the student as she or he attempts, once more, to spell that diminished sixth above A $\sharp$.

But in fundamentals classes, it seems rare that students advance to the point of claiming any real musical prizes. This is particularly unfortunate for non-music majors who take fundamentals classes not to fulfill degree requirements or as prerequisites to first-year theory (often considered the first "real" theory class), but as their single elective that might help them acquire the skills needed to sing in a choir, read from a fake book, or otherwise gain an active musical avocation. For such students, especially, the material they cover in a fundamentals class may mean the difference between participating in music as an adult and not doing so.

I am, therefore, skeptical of both fundamentals courses that cover only written skills and of resources that cater to such curricula. Thankfully, Joseph Straus has given us a new textbook for fundamentals courses: one that fully assimilates aural, performance, and written skills. Moreover, the book's assignments generally foster musical understanding and show why those concepts that we describe as "fundamental" truly are so. Of course, his is not the first textbook to integrate conceptual and aural skills, but it might well be the first to teach these concepts through a limited and well-chosen set of repertoire. Music is thoroughly woven through *Elements of Music*, and the text is accompanied by a compact disc that contains recordings of all featured compositions.¹

Straus has a canny sense of what material is and is not important in a fundamentals class. *Elements of Music* contains nothing on the harmonic series and other topics in musical physics, there are no grandiose essays on why we study music or on the emotional

content of music, and there is no pretense that sheer nominalism lies at the core of musical understanding. The tone and appearance of Straus's book are also wonderfully appropriate. Quite a number of current fundamentals books look like pre-high school textbooks, and their prose similarly (and more distractingly) condescends. Straus writes clearly, doesn't eschew more sophisticated prose, and steers clear of unnecessary bells and whistles. I cannot convey how happy I am to see a book that takes such a direct and simple path, that shows how genuinely musical the basics are, and that provides more than enough sensible exercises to engage the students' minds and ears.

I do not mean to imply that this book is flawless: I don't always agree with Straus's musical and pedagogical choices, sometimes I think he aims a bit too high, other times too low, and I wish that his musical examples had ventured farther into twentieth-century concert music. The big picture, however, is remarkably good, and were I choosing a fundamentals textbook right now, I'd undoubtedly pick this one. For the remainder of this review, I will write more specifically about the book's content, elaborating on the critical issues just raised.

SYNOPSIS

Six large chapters, with multiple "lessons" per chapter, form this book's core. The final sixty pages comprise a significant anthology of pieces that are excerpted throughout the book. While I don't want to merely list the chapter and anthology contents, as of this time the table of contents appears on neither Amazon's nor Prentice-Hall's web sites.²

The book is broadly divided as follows:

- Chapter 1: Pitch
- Chapter 2: Rhythm and Meter
- Chapter 3: Major and Minor Scales
- Chapter 4: Intervals
- Chapter 5: Triads and Seventh Chords
- Chapter 6: Fundamentals of Harmony
- Anthology

Each chapter is divided into between four and six primary lessons and a single "supplementary" lesson (some of which seem

more primary than supplementary, frankly) for a total of 41 lessons. Most lessons could comfortably be tackled in a single fifty-minute class period, and so the book should be about perfect for someone teaching three days a week in a fifteen-week semester. Each lesson includes a variety of “in-class activities” and “exercises.” The former include singing, playing, and dictation activities (most of which could — and should — be practiced outside of class as well; I don’t quite understand why they have been pigeonholed as things to be done “in class”); the latter include written assignments. There are far too many written and aural tasks to assign, and while abundance is certainly a good thing, I would personally have a difficult time deciding which exercises to skip. Staying on pace would be enormously challenging if, for every topic, one assigned some exercises of each sort (singing, hearing, playing, writing). Those who are fortunate enough to teach fundamentals five days a week should safely manage to get through the entire book without worrying about whether to forgo aural skills for written ones, or vice versa.

The musical anthology includes scores to the following complete pieces:

Harold Arlen and E. Y. Harburg, “Over the Rainbow” (including the introductory verse)

J. S. Bach, *WTC I*, Fugues 15 and 16 in G Major and G Minor

J. S. Bach, Two chorales from St. Matthew Passion

Chopin, Preludes, op. 28, in A Major and C Minor

“Duke” Ellington and Irving Mills, “It Don’t Mean a Thing (If It Ain’t Got That Swing)” (including the introductory verse)

W. C. Handy, “St. Louis Blues”

Haydn, String Quartet, Op. 76, No. 3, third movement (minuet), arranged on two staves.

Scott Joplin, “The Entertainer”

Josephine Lang, “Ob ich manchmal dein Gedenke” (song)

Fanny Mendelssohn, Trio for Piano, Violin, and Cello, Op. 11, second movement

Mozart, Piano Sonata in A Major, K. 331, first movement, theme and variations 1, 3, and 6

Mozart, “Dove Sono” from *The Marriage of Figaro*

Matos Rodrigues, “La Cumparsita” (tango)

Schubert, “Der Tod und das Mädchen” and “Heidenröslein”

Schumann, “Wenn ich in deine Augen seh” from *Dichterliebe*

It is probably this anthology and its accompanying compact disc that most obviously distinguishes Straus's book from its competitors. The repertoire is diverse, and every chapter includes multiple examples drawn from the literature.³ In fact, there are no musical examples that are *not* drawn from this anthology, which seems great in principle, though perhaps a bit limiting in practice. I occasionally found myself wondering why one composition was used in a particular context when some other (non-anthologized) one might better do the job. However, the overwhelmingly positive effect of having students actually learn a small body of music by listening to and studying the same pieces repeatedly — each time attuned to different musical elements — trumps any troublesome aspects of not always having exactly the right piece for the task at hand.

Straus's repertoire is generally well selected, representing a cross-section of musical styles and genres, but I do wish that he had included at least one twentieth-century modernist work and one relatively contemporary composition in his anthology. With two thirds of the book devoted to topics that are *not* uniquely tonal or tertian, he could have made great use of one or two short post-tonal compositions. Students could have found intervals or labeled pitches, and those tasks could have been more closely translated into genuine analytical statements (about pitch focus, motive, or intervallic prominence) than could similar tasks in pieces that adhere to tonal syntax. Moreover, he could have further expanded students' musical horizons by introducing styles that they might not haven't encountered in any other cultural outlet.

The accompanying compact disc contains wonderful performances of the anthologized repertoire, but it does seem that Straus (and/or his editors) selected performances for their quality and/or cultural importance rather than for how clearly or accurately they realized the printed scores. In particular, Nelson Freire's performance of Chopin's C Minor Prelude uses a C major triad at the end of bar 3, rather than a C minor triad, as found in Straus's edition. This is a well-known conflict, and it would have been easy to find performances that agree with the score. Who can fault Straus for providing one of Judy Garland's performances of "Over the Rainbow" and one of Duke Ellington's versions of his own "It Don't Mean a Thing (If It Ain't Got That Swing)"? Yet neither recording includes the respective song's (little-known) introductory verse. Both verses are included in the anthology

and both serve as fodder for exercises within the book. Perhaps in future editions, he will consider including alternate performances (without omitting Garland or Ellington) that stay closer to the score.

MORE SPECIFIC COMMENTS ABOUT THE BOOK

Elements of Music is unique enough to warrant documenting some facets that either set it apart from its competitors or at least place it in very select company. I will proceed chapter by chapter (keeping in mind that Straus's six chapters might constitute major sectional divisions in other texts), highlighting some aspects that I found pedagogically intriguing, clever, and occasionally problematic.

Chapter 1 covers basic aspects of pitch, including lessons on notation and navigating the keyboard. The very first lesson includes a clear introduction of steps and leaps, and their placement on the staff. From the outset, Straus produces good and creative in-class activities. It is often difficult, especially with this rudimentary material, to reinforce conceptual topics with genuinely musical applications. Even before any clef has been introduced, Straus suggests three useful activities: vocally matching pitch; simple contour dictation with the classifications "up/down," "step/leap," and their combination; and slightly more elaborate contour dictation using the words "low," "middle," and "high."

The second lesson introduces the piano keyboard layout. Whenever I see the keyboard introduced early in a fundamentals book, I worry about its potential use as a crutch. Straus, however, provides the students with clear exercises for hearing and reproducing octave equivalence and diatonic stepwise motion on the keyboard. Teachers who follow these plans will immediately force students to engage with the music and experiment with the concepts at hand: pitch naming, the keyboard layout, step, leap, and octave. Straus's musical involvement of the keyboard differs markedly from countless books that merely use the keyboard as a topographical model to demonstrate pitch and interval relations. Such books often unintentionally foster critically destructive student behaviors like drawing little keyboards above each assignment.⁴

Consigned to the chapter's "supplementary lesson" (that occupies only two pages) are alto and tenor clefs, the octave sign, double flats and double sharps. The introductions to these topics

are pithy, and no exercises or activities follow. Some teachers might be troubled by Straus's marginalization of double sharps and C clefs, but in my experience, fundamentals classes are best when they focus on the most important materials for musical literacy and understanding. While I would prefer a few short exercises to reinforce these topics, I find Straus's approach to be far better than those that artificially conflate little-seen notational conventions.

Chapter two, on rhythm and meter, is well done throughout. Exercises that have students setting poetic excerpts to rhythms seem especially valuable in establishing strong connections between musical and poetic meter, and ultimately, between music and text. Also, they foster genuinely musical thinking even before students know enough to construct simple melodies.⁵

The third chapter, on scales, seems a bit quirkier than earlier material and, while it should unquestionably accomplish its goals, I wonder whether some of the tasks might have been achieved a bit more efficiently. Straus begins by drawing a quick distinction between diatonic and chromatic semitones, illustrating them at first on a keyboard drawing, and then in musical notation.⁶ It might have been more prudent to start with the chapter's second lesson (on the C major scale) and show semitones and whole tones in that scale, thus moving from the scale itself to the intervals it contains. Such a plan could have emphasized the scale as a singular entity rather than as the sum of its intervallic parts.

Straus's narrow focus on the C major scale (and later on the C minor scale) allows him to lead students toward musical explorations before introducing all the transpositions and the notion of key.⁷ He invites students to compose their own melodies using the C major scale, and he draws clear connections with the previous chapter by suggesting that students work with their previously rhythmicized texts. Straus's use of a text and the simple discussions of melodic tendencies should be all that is required for students to feel like they are actually composing music. Best of all, the scale is presented as a musical construct, not as a tedious exercise to be mastered for the next test.

While I love this chapter's written exercises, I worry about Straus's choices for sight-singing melodies. He starts off simply enough, with three-note neighboring and passing motions (p. 119) followed by Czerny-like exercises that traverse the entire scale. However the third sight-singing exercise in this lesson (still on

p. 119) has students singing an adapted version of Mozart's aria "Dove sono" from *The Marriage of Figaro*. This tune involves not only the types of stepwise motion drilled in exercises 1 and 2, but also numerous skips (including non-tonic triad skips such as *ti-re-fa* and *mi-do-la-re*). This, as well as the even less conjunct Haydn string quartet excerpt (from op. 76, no. 3, mvt. 3) that follows it (and requires students to sing an octave and a sixth range), amounts to a significant conceptual leap from the appropriately simple singing exercises that have preceded it.

The sight singing improvisations and the dictation and playing exercises that follow these two more difficult melodies are, again, entirely sensible and creatively foster multidimensional musical understanding. While I admire Straus's goals of weaving real music into each lesson and using a select repertoire from his anthology of pieces, students would be better served at this point singing either derived exercises or simpler works from the literature.

Straus's introduction to minor scales is a bit unconventional. Many people have questioned the pedagogical utility of the harmonic and melodic minor scales, but very few other textbook authors have seemed willing to do away with them in their introduction to minor.⁸ He certainly deserves congratulations for subverting one of the least helpful heuristics in early theory training: the notion that there *are* three different minor scales. The artificial construction of three minor scales at least implicitly endorses the notion that minor tonality is trivalent. That familiar pedagogy almost invariably leads some students to utter bizarre turns of phrase such as "this piece is in D harmonic minor" or to ask questions such as "how do I know when to raise the submediant when I'm writing in melodic minor?" Harmonic and melodic minor scales do appear, but only in the chapter's supplementary lesson. This marginalization seems an appropriate compromise for the many teachers who, I suspect, will be loath to abandon these concepts.

The fourth chapter covers intervals. Straus begins with generic intervals and branches out to cover the varieties of seconds and thirds, then sixths and seventh, then fourth and fifths. By starting with generic distances, he not only simplifies matters by separating size and quality, but he subtly lays the groundwork for developing a fairly sophisticated musical understanding. Example 21-4 features an excerpt from the introductory verse of Harold Arlen's "Over the Rainbow." Students are asked to label all melodic intervals and

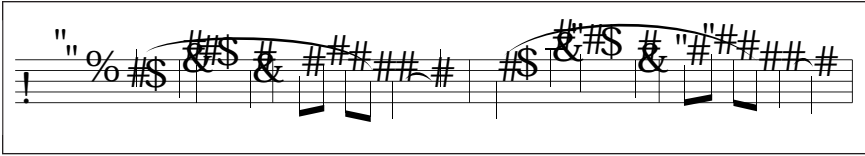
parenthetically told that “each measure contains a leap down from B-flat, and the leaps get bigger each time” (217). The next exercise produces the bass line from Chopin’s C Minor Prelude. This time, Straus incidentally mentions that “this bass line features wide leaps, mostly fourths and fifths” (217). Such analytical observations foster a sense of common types of musical motion.

Another very smart use of intervals to teach tonal concepts comes in Lesson 25 (“Intervals in a major key”). A playing exercise cleverly links diatonic intervals to voice leading, before that topic has been broached:

You are given an augmented fourth (which represents scale degrees $\hat{4}$ and $\hat{7}$ in one key) and its enharmonic equivalent, a diminished fifth (which represents scale degrees $\hat{4}$ and $\hat{5}$ in a different key). Play the resolution of each interval to scale-degrees $\hat{4}$ and $\hat{5}$ in the appropriate key. (260)

Students not only discover that tritones are dissonant, but they learn how to resolve them even before harmony has been introduced. It is too bad that this task is not replicated in the written exercises, since many teachers will not have the resources (either physical or staff) to utilize the many great playing exercises in this book.

The biggest problem with this chapter again concerns the literature provided for sight singing. In Lesson 23 (Sixths and Sevenths), the melodies not surprisingly involve larger leaps. Not only does the music seem more difficult than students of this level can handle, but in the context of this lesson, the book clearly encourages intervallic singing. Especially after the excellent emphasis on scale degree and movable-do solfège in the previous chapter (on scales), intervallic singing seems both unwise and out-of-line with the book’s central pedagogical tack. Below, I have reproduced singing exercise 2f (p. 235) from Fanny Mendelssohn’s Trio for Piano, Violin, and Cello, op. 11, mvt. 2. By virtue of its chromaticism, non-tonic leaps, and contour, I would think that this melody would be better suited for second-semester freshman or first-semester sophomores (in a standard core curriculum). Thankfully, the sight-singing exercises return to a more viable level in the fifth chapter, on triads and seventh chords.



Mendelssohn Trio Example

Chapter five covers all triad and seventh chord types, though Straus downplays the significance of the augmented triad, and his lesson on seventh chords covers only dominant-type (major-minor) seventh chords, relegating all others to the short concluding supplementary lesson. Among seventh chords, it seems reasonable to give greatest emphasis to the major-minor quality, but I found his short explanation of the other four seventh-chord varieties a bit too cursory. In his short (two-page) supplementary lesson, Straus does not effectively convey which seventh-chord types and seventh-chord inversions occur commonly, nor does he make clear which scale degrees commonly support seventh chords. For example, he lists I^7 chords in major and minor, and shows anomalies such as third-inversion major-major and fully diminished seventh chords. I maintain that one of this book's great strengths is the way it sifts the most important concepts; I simply thought that his sieve seemed just a bit too coarse in this chapter.

A particularly nice moment comes in Lesson 28, on triads in inversion, when Straus provides a helpful generalization to teach students why and when the fourth is dissonant. In the previous chapter (in Lesson 25), Straus explained the relative consonance of the fourth as follows:

[All perfect intervals are consonant], with one partial exception: the perfect fourth, which is only consonant when a major or minor third or perfect fifth is sounding below it. When the lower note of the perfect fourth is also the lowest sounding note, the perfect fourth is usually treated as a dissonance. (256)

In Lesson 28, he uses this concept to explain why six-four chords are wholly different entities than root-position or first-inversion triads. Straus illustrates the location of the fourth in every position of a triad (including root position, in which he doubles the root in the soprano) and further generalizes:

The first inversion of a triad is usually a weaker, less stable version of the root position. The second inversion, however, involves a significant difference. Recall that the interval of the perfect fourth is considered either consonant or dissonant, depending on the circumstances. In root position and first inversion, fourths occur among the upper voices and are thus consonant. In the second inversion, however, the fourth occurs between the bass and one of the upper voices—now there is nothing sounding below it and it is considered dissonant. As a result, a triad in second inversion is usually treated as a dissonant chord, and is used only under special circumstances, to be described later. (287)

The final chapter takes on a Promethian task: introducing the “fundamentals of harmony” in about sixty pages. Many introductory textbooks attempt exactly this (often in even less space) and invariably some things are left out while other concepts appear before they should. In many ways, the exposition of functional harmony in *Elements of Music* is both better refined and more useful than in any similar text. Straus begins by cogently explaining the relationship between tonic and dominant; he then skillfully introduces expansions of tonic and dominant in the context of passing and neighboring chords. These two lessons alone seem more musically germane than many (especially older) harmony textbooks’ explanations of the same concepts. Triads and dominant seventh chords are freely mixed, and the emphasis is distinctly on function, not on intervals and chord structures. The only element that seems misplaced is the early introduction of the cadential $\frac{4}{2}$ in the lesson on “Expanding I and V.” While I am heartened that he introduces it as a dominant chord (using the common notation $V\frac{4}{2}$), it seems ill advised to introduce this formation before addressing suspensions and before introducing predominant-functioning chords.⁹

The very next lesson, on “approaching V,” illustrates the proper use of supertonic and subdominant harmonies.¹⁰ Every progression is paradigmatic and students should come away with a solid sense of how to build straightforward tonic–pre-dominant–dominant–tonic progressions.¹¹ The penultimate lesson introduces simple notions of phrase and cadence, providing students with

some crucial ways to categorize and understand simple musical structures. Straus avoids more elaborate taxonomies, such as those used by Douglass Green and Steven Laitbz, instead adhering to straightforward designations like “authentic cadence” and “parallel period.” Such broad terms are appropriate to a fundamentals book, and should not contradict the way most teachers explain standard small structures in more advanced theory courses.

CONCLUSIONS

Elements of Music certainly is a wonderful and welcome contribution to the field. It is challenging, well planned, invariably musical, and elegantly written. Joseph Straus not only sets a new standard for music fundamentals textbooks, but he arguably does something far more important. When a senior scholar, best known for creative research, produces a book on the most rudimentary topic college theory professors are asked to teach, it sends a clear signal that (even) this topic should not be taken lightly.

ENDNOTES

¹ The back cover of the book (which is also quoted on web sites such as Amazon.com) deceptively claims that it “comes with an interactive CD.” This compact disc neither comes with the book, nor is it interactive. The disc is sold separately, carrying a different ISBN; and it is difficult to imagine ways in which recordings are “interactive” (even granting that this word has taken on a rather broad meaning).

² I hope Prentice-Hall remedies this situation since the book features a fantastically descriptive table of contents that lists all the concepts (not just the broad topics) that are introduced in each lesson. One would plan their semester using little more than the table of contents.

³ While the book makes constant use of examples drawn from the anthology, the references are not always made explicit. For example, on p. 87 there are three examples of triple meter. The references are to “Schumann, Song;” “Lang, Song;” and “Haydn, Quartet.” Each of these pieces can be found in the anthology, but why not take just a bit more space to properly document the reference? Surely, we don’t want our students referring to “Der Tod und das Mädchen” simply as Schubert’s “song.”

⁴ Seemingly aiding the (negative) cause of tying musical relations to keyboard design, Thomson Publishing — which includes Schirmer and Wadsworth — is now including life-sized fold-out cardboard keyboards in many of their fundamentals texts. If these recyclables serve a pedagogical utility, it is lost on me.

⁵ In the following chapter, these rhythmicized texts reappear as templates for simple melodic construction.

⁶ Beginning students could potentially be confused by Straus's partial list (in musical notation) of diatonic and chromatic semitones: the text never mentions that the list is incomplete.

⁷ In the second edition of his *Foundations of Music and Musicianship*, David Damschroder similarly limits himself to only three major keys (C, F, and G) when introducing scales in his second chapter. By contrast, he introduces the idea of key at the same time as he presents scales.

⁸ Again, Damschroder represents a notable exception. Happily, his textbook shares many of the most positive features of Straus's text.

⁹ This tricky matter of ordering is also a (rare) problem that I encountered when using Steven Laitz's terrific new core theory textbook, *The Complete Musician* (Oxford University Press, 2003).

¹⁰ It would therefore be easy to reorder topics to cover these chords before teaching the proper use the cadential six-four.

¹¹ I did, however, wonder why Straus included the (sadly) usual left-hand keyboard harmony version of I-"IV"- "V⁷"-I (using the neighboring $\frac{5}{4}$ "IV" chord and V $\frac{5}{4}$). I have long thought that theorists should work to eradicate this sorry "harmonic pattern" that is propagated in class piano labs. Straus's labeling also ignores the proper figures, and given that Straus uses the voice-leading explanation of the cadential $\frac{6}{4}$, one wonders why he doesn't acknowledge the purely neighboring function of the "IV $\frac{5}{4}$ " chord. This little anomaly simply isn't in keeping with the excellent theoretical background that Straus establishes.

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GUIDELINES FOR CONTRIBUTORS

1. Articles on any aspect of teaching or learning music theory will be welcome. Contribution will be judged on originality, relevance, interest to a diverse audience, and clarity of writing.
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3. The author or an accepted manuscript will be asked to revise the article (if necessary) to fit the style guidelines of the journal and to submit it electronically in either Windows or Macintosh formats. Authors will be sent guidelines for style and guidelines for electronic manuscripts. Please do not send disks until requested to do so.
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