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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?"



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 Buccheri has proposed one solution to this problem based upon teaching students to quickly identify key area and succession.¹ While there is much to Buccheri'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 Buccheri'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 I⁶ then V⁷ (the seventh proves necessary because the F# 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 (^1-^7-^2-^1 in G becomes ^1-^2-^7-^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 $\hat{5}-\hat{5}-\hat{1}$ clues students into a cadential $\frac{6}{4}$; the $\hat{1}-\hat{7}-\hat{1}$ suggests an opening motion $I-V^6$ (or $\#$)- I ; the $\hat{1}-\hat{2}-\hat{3}$ 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

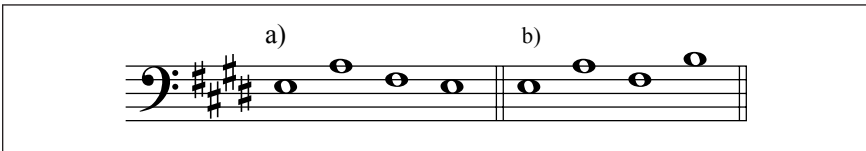
Part I: For each bass pattern, supply a single set of possible Roman numerals (key signature holds throughout).
Key: _____.



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.

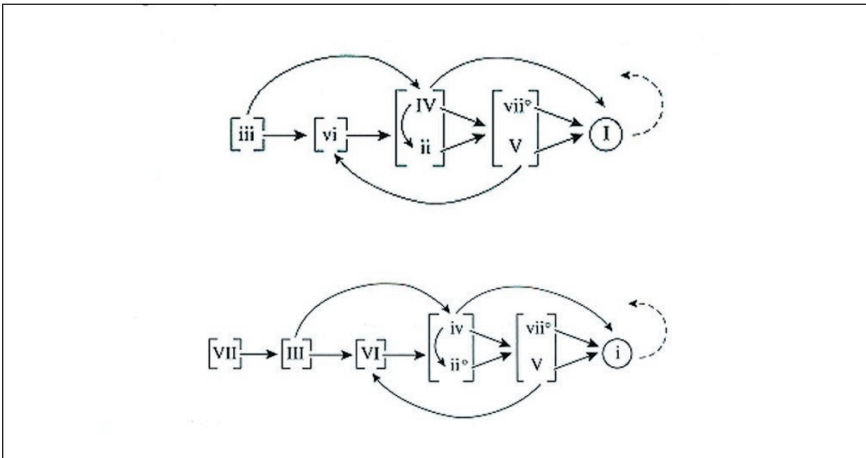
Example 5 - Quiz B

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

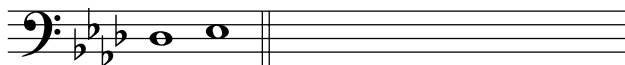
Other quiz formats attend to the divergent harmonic implications of initially similar bass patterns. Examples 6a and 6b present similar cells (both have fa-re or $\hat{4}-\hat{2}$) that possess quite different harmonic meanings. The first is typically harmonized I-IV-vii^{o6}-V (also possible is $V\frac{3}{4}$ 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

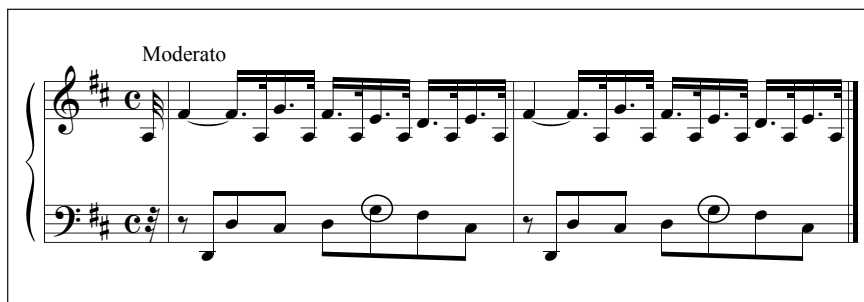
On the staff below, write out eight common bass patterns (2-4 notes) in the key of Ab Major. Supply Roman numerals and briefly note standard voice-leading rules (typical doublings, contrary motion, etc.) that apply to each. The first is done for you.



IV - V(7)
ii6 - V
contrary motion

Example 8 - Quiz D

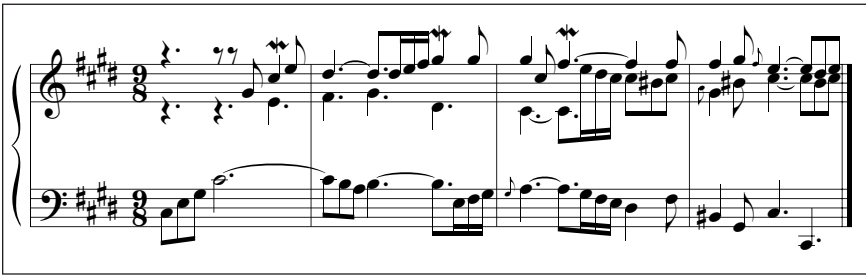
3. Excerpts from the literature: To reinforce the above, and more importantly, demonstrate its practical relevance, I introduce short excerpts from the standard literature. Owing to the nature of the method, examples may be both simple and complex, the harmony either residing entirely within the framework 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.



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.

The image shows a musical score for a piano piece in C# minor, 9/8 time. The score is written for both the right and left hands. The right hand has a complex, rhythmic melody with many sixteenth and thirty-second notes. The left hand has a more regular, descending bass line. Two bass notes are circled in the original image, representing chords not included in the limited palette mentioned in the text. The key signature has three sharps (F#, C#, G#) and the time signature is 9/8.

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 $i-v^6-iv^6-V-i$ (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.

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

Pacun: Scanning Bass Patterns - A Middleground Path to Analysis
 SCANNING BASS PATTERNS

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)

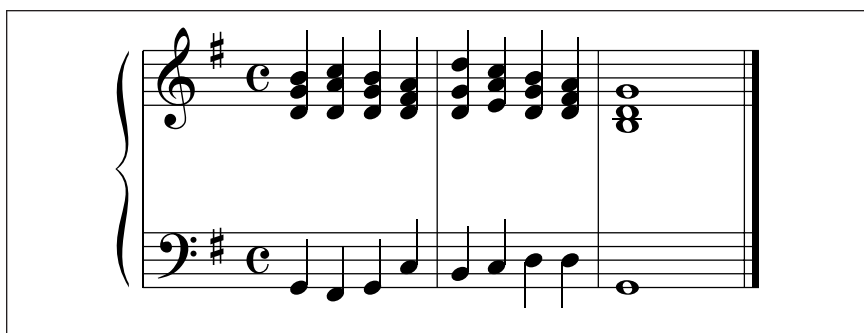
Example 10 - Quiz E

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^7 ?"), 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^7 ? 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. It consists of two systems of music. The first system is marked 'Andante' and 'p'. The treble clef part has a melodic line with a long note in the first measure, followed by a series of eighth notes. The bass clef part has a bass line that is essentially diatonic, moving stepwise from F2 to F3. The second system continues the same parts. The bass line continues its stepwise ascent. The treble line features chromaticism and secondary dominants.

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)

p

f

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 ($\#^4$) 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 Buccheri’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 Schachter, *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)