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Tonal Markers, Melodic Patterns, and Musicianship Training

Part I: Rhythm Reduction

Laurdella Foulkes-Levy

Single-line tonal melodies, notated without accompaniment or harmonic indicators (like those found in sight singing texts) nevertheless contain strong clues which reveal important tonal relationships. Within a single phrase, or a group of phrases, these clues form a relationship that signals a tonal center, just as a group of chords that form a common harmonic progression points to a specific tonic. These melodic configurations consist of pitches that are important in the tonal hierarchy (generally members of tonic and dominant chords), and we recognize them because they are emphasized in an obvious way in the melody. This article discusses two procedures that can be used to identify these important tonal pitches, and suggests ways in which we can use this information to train musicianship skills.¹

In traditional melodic analysis we rely heavily upon our knowledge of harmony and its ability to imply specific connections between chords and melodic pitches. This information in turn directs us to a key center. We are then able simply to identify melodic pitches that either belong or do not belong to an implied harmony. For example, an opening upbeat-downbeat melodic figure of scale degrees (SDs) 5-1 reveals its tonal center partly because of the implied V-I harmony, just as a phrase ending on SD2 reveals its tonal center through the support of an implied dominant

¹The article will be presented in two issues of the *Journal of Music Theory Pedagogy*. Part I, "Rhythmic Reduction," is presented here in Volume 11; Part II, "Contour Reduction," will appear in Volume 12. This research is an outgrowth of the author's doctoral dissertation: "A Synthesis of Recent Theories of Tonal Melody, Contour, and the Diatonic Scale: Implications for Aural Perception and Cognition" (State University of New York at Buffalo, 1996).

harmony. But this harmonic information rarely appears in sight singing texts, and is usually not supplied when melodies are played for purposes of dictation. We therefore need to train students to recognize tonal clues in the melodic lines themselves, just as we teach students to recognize tonality through common chord progressions in their harmonic studies.

I begin this article with three analyses of a melody by Mozart: one uses the traditional analytic technique of labeling harmonic and nonharmonic pitches (passing tones, neighbor notes, appoggiaturas, etc.), the second identifies common surface-level melodic patterns, and the third is a hierarchical analysis that reveals a variety of common melodic patterns on several levels. Following a discussion of these analyses, I present a procedure for reducing melodies that reveals important tonal information. Using this information, I then suggest activities that help to develop musicianship skills in the areas of memory, ear training, sight singing, improvisation, and dictation in an undergraduate aural training program.

THREE ANALYSES OF A TONAL MELODY

The first analysis of Mozart's K. 331, example 1 uses a harmonic-based approach to understanding the tonal features of this melody. The first measure, harmonized by a tonic chord, contains one neighbor note (D_3),² and the second measure, harmonized by a dominant seventh chord, also contains one neighbor note ($C\#_5$). Measure three has only harmonic pitches, while m. 4 has one obvious appoggiatura and another possible one, depending upon the interpretation of the second $C\#_5$ as a member of the cadential six-four chord or as an appoggiatura to B_4 , a member of the dominant chord. The beginning of phrase two repeats mm. 1-2 of phrase one, but the final two measures differ, with a harmonized passing tone (B_4) and a harmonized neighbor note (D_3) in m. 7, and another cadential six-four chord or appoggiatura ($C\#_5$) in m. 8. These labels reflect an interpretation of the melody in which the harmonic underpinning is the prominent feature, yet questions of interpretation arise. Can we

²The notation of pitches is based on the practice of the Acoustical Society of America, where middle C is C_4 .

EXAMPLE 1: Mozart, *Piano Sonata in A, K. 331, I*, mm. 1-8

label B_4 in m. 7 as a nonharmonic on the surface level? It is harmonized with a $V6$ chord, yet has a clear passing function. In this type of analysis each melodic pitch is supposed to be either part of a harmony or not part of it, but the B_4 and the D_5 at the end of the measure appear, respectively, to be passing and neighbor pitches. The same is true for the two cadential $6/4$ s. Are they appoggiaturas or members of a harmony? Labeling harmonic and nonharmonic pitches is a simple concept, yet I submit that students frequently do not recognize implied harmonies, nor can they easily make decisions of interpretation during the process of sight singing or taking dictation. Ultimately, such skill deficits may interfere with their ability to become well-rounded musicians.

Another interpretation of the K. 331 melody, shown in Example 2, still maintains a link to harmonic implications, but emphasizes surface-level melodic patterns, as shown by the brackets. The first measure contains a complete upper neighbor note pattern ($C\#_5$ - D_5 - $C\#_5$), followed by a triadic leap ($C\#_5$ - E_5). The same appears in m. 2 only a step lower (B_4 - $C\#_5$ - B_4 and B_4 - D_5). Mm. 3-4 contain a scale segment (A_4 - B_4 - $C\#_5$), a triadic leap ($C\#_5$ - E_5), and a descending scale segment (E_5 - D_5 - $C\#_5$ - B_4). The second phrase opens the same way as the first phrase, but the final two measures consist of an ascending scale segment (A_4 - B_4 - $C\#_5$), upper neighbor note pattern ($C\#_5$ - D_5 - $C\#_5$), and a descending scale segment ($C\#_5$ - B_4 - A_4). This interpretation hinges on a close interlocking of melodic patterns through common tone connections, the final note of one pattern serving as the beginning of the following one.

EXAMPLE 2: Mozart, *Piano Sonata in A, K. 331, I, mm. 1-8*

While much is the same in these two interpretations, the second focuses on the melodic features that reveal and emphasize the tonality. Notice how frequently members of the tonic triad (A_4 - $C\#_5$ - E_5) appear at the beginning and/or ending of each of these short patterns. One cannot help but recognize the clear tonal features of a melody when analyzing the melodic patterns as compared to labeling each pitch as a member of an implied harmony or not.

Another essential feature of the study of tonal melody is its hierarchical nature. Again the same melody by Mozart is rewritten as Example 3, now with several structural levels shown. The downbeats of mm. 1-3 present $C\#_5$ - B_4 - A_4 , a melodic pattern found on the surface in the final measure of this period structure. By including the last pitch of each phrase, a higher level reading of this period structure is $C\#_5$ - B_4 - A_4 - $C\#_5$ - B_4 and $C\#_5$ - B_4 - A_4 - $C\#_5$ - A_4 , as shown on the top staff (labeled as the dotted half-note level). These pitches reinforce the periodic nature of the melody with motion from tonic to dominant in the first phrase and a return to the tonic at the end of the second phrase. The melodic patterns on this level consist of scale segments ($C\#_5$ - B_4 - A_4 and $C\#_5$ - B_4) and triadic leaps (A_4 - $C\#_5$ and A_4 - $C\#_5$ - A_4).

The dotted quarter-note level, a level just above the surface, reveals another melodic pattern, a sequence ($C\#_5$ - E_5 / B_4 - D_5 / A_4 - $C\#_5$). It is clearest in mm. 5-7, but also appears in mm. 1-4, even though the final interval (A_4 - $C\#_5$) is less obvious with the passing tone (B_4) inserted in m. 3. Again notice that the opening and closing members of the sequence ($C\#_5$ - E_5 and A_4 - $C\#_5$) are members of the tonic triad.

EXAMPLE 3: Mozart, *Piano Sonata in A, K. 331, I*, mm. 1-8

The type of melodic analysis presented in this paper and its sequel hinges on two essential issues: the hierarchical nature of tonal melody, and the patterns found on levels that appear on and close to the surface of the melody. Since we must work on these foreground levels to train skills such as sight singing, improvisation, and dictation, there is no attempt to study any background features of tonal melody. Quite frequently only short portions of compositions are used in sight singing and dictation practice, making it impossible to discuss issues such as background structure and unity. In some of the melodic examples below, structural importance is shown through the use of stemmed and unstemmed noteheads, open and closed noteheads, slurs, and beams. Although these symbols are associated with Schenkerian notation, they are not used here to pursue the goals of formal Schenkerian analysis.

At the intersection of the melodic patterns and structural levels are tonal markers. Tonal markers are pitches found on a lower level of a tonal melody that emerge through a process of reduction to form higher-level patterns. These are common tonal patterns that appear on all levels of reduction. In Example 3, the first notes of each measure plus the last pitch of each phrase are all tonal markers on a higher level, the dotted half-note level. The pitches that form the sequence are tonal markers on a level just above the surface. The most common melodic patterns found in tonal melodies are scales and scale segments, neighbor note patterns (single and double, complete and incomplete), triads, sequences, pedal points, and pitch segments (psegs). A pseg is a group of, usually, three to five pitches with a strong tonal orientation that also contains one or more leaps. In C major, for example, C-D-E-G and C-G-D are common tonal patterns, but since neither has a formal name, such as a scale or triad, I call each a pitch segment and abbreviate the name to pseg. In contrast, a scale segment contains only adjacent pitches, again most commonly in a group of three to five pitches. These patterns appear on the surface as well as other levels close to it, but tonal markers are the pitches that form those patterns at levels above the surface.

In these articles I apply two types of reduction to a variety of tonal melodies to reveal their tonal markers. One type is based on rhythmic/metric considerations, the other on melodic contour information. The rest of this article deals with the process of rhythmic reduction and applications of the information gleaned from that process to the training of the following skills: musical memory, ear training, sight singing, improvisation, and dictation. A sequel to this article, appearing in the next issue, deals with those same skills as applied to patterns derived through contour reduction procedures.

TWO THEORIES THAT SUPPORT THIS STUDY

Two theories concerning rhythm directly affect this study, Maury Yeston's *Stratification of Rhythmic Structure*³ and Fred Lerdahl and Ray Jackendoff's *A Generative Theory of Tonal Music*⁴, each of which I will deal with in turn.

³Maury Yeston, *The Stratification of Musical Rhythm* (New Haven: Yale University Press), 1976.

⁴Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, Mass.: MIT Press), 1983.

In *The Stratification of Musical Rhythm*, Yeston adopts Schenker's terminology for structural levels, applying them to rhythmic *strata*. He deals with relationships between rhythmic structure and pitch function, usually in time spans encompassing two to four measures. In so doing he makes a distinction between *pitch-to-rhythm* and *rhythm-to-pitch* configurations. In pitch-to-rhythm, pitches give significance to rhythms, and in rhythm-to-pitch, rhythms give significance to pitches (Yeston, 4-5). An example of pitch-to-rhythm is shown in Example 4, where the melody could conceivably be interpreted in either 3/4 or 6/8 (Yeston, 68). The pitches of an ascending triad, produced on the three beats of the measure, are more significant at level A than are the static dotted quarter notes at level B. This reinforces the given time signature and shows that the pitches on the quarter-note beats of each measure yield a more significant interpretation than do the repeated dotted-note patterns of the next level.

A rhythm-to-pitch configuration recognizes pitches that are emphasized as a result of recurrent rhythmic groups such as the rhythmic modes of the twelfth century (Yeston, 7-8), ostinatos, dance patterns, and short repeated rhythms as in the three-beat pattern of Example 5. Here the basis is the quarter-half-note higher level pattern that begins on the surface as a pattern of an eighth and two sixteenth notes and is completed by a quarter note-quarter rest pattern in mm. 1 and 2, but changes to repetitions of the eighth-and two sixteenth-note pattern in m. 3. While both pitch-to-rhythm and rhythm-to-pitch configurations result in various strata-which in essence are reductions of their foreground melodies-in this study I use the latter (rhythm-to-pitch) as the basis for establishing structural levels in some tonal melodies and for devising singing exercises to aid in aural training.

Fred Lerdahl and Ray Jackendoff's 1983 book, *A Generative Theory of Tonal Music*, is a formal theory of tonal music that uses the methodology of contemporary linguistics, principles of hierarchy, and a reductive approach to analysis. At the heart of their theory is the realization that musical elements are heard as groups that are themselves hierarchically perceived.

EXAMPLE 4: Bach, Twelve Little Preludes, No. 8, mm. 1-4

D: 

C: 

B: 

A: 



EXAMPLE 5: Beethoven, String Quartet in G, Op. 18, No. 2, III, mm. 1-4





A hierarchical structure, in the sense used in this theory, is an organization composed of discrete elements or regions related in such a way that one element or region subsumes or contains other elements or regions. A subsumed or contained element or region can be said to be *subordinate* to the element or region that subsumes or contains it; the latter can be said to *dominate*, or be *superordinate* to, the former. . . . Thus all elements or regions in a hierarchy except those at the very top and bottom of the structure are subordinate in one direction and dominating in the other. Elements or regions that are about equally subordinate within the entire hierarchy can be thought of as being at a particular hierarchical level (Lerdahl & Jackendoff, 13).

The formalization of Lerdahl and Jackendoff's theory shows how consistently one can recognize hierarchical levels based on their rules of grouping, metrical structure, time-span reduction, and prolongational reduction. All aspects of the theory seek to reveal hierarchical connections in tonal music.

The two areas of hierarchy that impact upon the present study are *metrical structures* and *time-span reductions*. Metrical hierarchies are produced by patterns of strong and weak beats, whereby a beat that is strong at one level is merely a beat (not necessarily strong) at the next level. Therefore, beats one and three belong to a larger level in 4/4 time, while beat one becomes a beat at the next larger level. Each level is labeled by the length of its time-span. The four beats in a measure of 4/4 are labeled the *quarter-note level*, while beats on the first and third quarters are the *half-note level*, and on the first beat, the *whole-note level* (Lerdahl & Jackendoff, 19-20).

RHYTHM REDUCTION AND MELODIC PATTERNS

If a time-span is defined as "an interval of time—a duration—[that] takes place between successive beats," (Lerdahl & Jackendoff, 18) then time-span reductions are intervals of time (time-span segments) at hierarchical levels that are defined by metric or rhythmic patterns. The pitches at each level thus represent time-spans from another level (Lerdahl & Jackendoff, 119). This allows hierarchical hearing in which certain pitch events are heard as structurally important and connected, while others are deemed elaborative and subordinate.

In example 6, a level close to the surface is represented by the first beat of each measure, revealing four pitches, each having a time span of a dotted half note and creating the dotted half-note level. Together these pitches form a double neighbor note pattern surrounding the tonic pitch (G_5 - A_5 - $F\#_5$ - G_5). Each pitch is a tonal marker because each is chosen through a process of reduction to represent a higher level, and it becomes a member of a common tonal pattern at that higher level—here a double neighbor note pattern. These tonal markers are revealed through an understanding of Lerdahl and Jackendoff's metrical hierarchies and time-span reductions. The surface of this melody shows an ascending third elaborating each of the first three higher-level pitches (G_5 - Bb_5 | A_5 - C_6 | $F\#_5$ - A_5).

In example 7, an excerpt by Bach, three levels are revealed: the dotted quarter-note level, the eighth-note level, and the surface level. At the dotted quarter-note level there is a scale segment (F_4 - G_4 - A_4 - Bb_4) that is further elaborated by a sequential upper neighbor note figure at the eighth-note level (F_4 - G_4 - F_4 | G_4 - A_4 - G_4 | A_4 - Bb_4 - A_4). On the surface level the sequence encompasses five of the six pitches of each measure, with an ascending third attached to the first beat and a descending third attached to the second beat. The second half of each third beat consists of leaps to either the dominant or tonic pitches. The patterns at several levels in this melody (scale segments, neighbor notes, sequences) are common patterns found in a multitude of tonal melodies.

I submit that by making our students aware of the patterns that appear at structural levels close to the surface of a melody, we can greatly facilitate their abilities to hear, memorize, sight sing, improvise, and take dictation of tonal melodies. In the next section I will detail activities that can facilitate this task in the areas of musical memory, ear training, sight singing, improvisation, and dictation.

SKILL BUILDING ACTIVITIES

The most common tonal patterns found on the surface and on levels close to the surface of tonal melodies are scales and scale segments, neighbor note patterns (single and double, complete and incomplete), sequences, triads, pedal points, and pseqs. The first task must be to learn many of these patterns from memory from every scale degree, beginning first in a major tonality. While I have

EXAMPLE 6: Mozart, *Serenade in D, K. 250*, III, mm. 1-4



EXAMPLE. 7: Bach, *Brandenburg Concerto No. 1* in F, V, mm. 1-4



had success using a movable-*do* system of solfège, these activities do not depend upon any particular system. However, I strongly suggest they be taught through singing, since singing is the most important activity for developing a strong inner, musical ear.

Pattern teaching in any musical area, be it rhythm, harmony, or melody, is a fairly straightforward pedagogical concept. Common patterns are identified and used as the basis for building a curriculum, with the easiest and most common patterns presented first. These are then used as a foundation for approaching more complex patterns. Perhaps an analogy to the formal learning of language is appropriate. One of the first steps in a formal learning process is to learn the letters of the alphabet. These letters are practiced in common, short, and simple words that are presented first in a simple context. "The dog runs fast," is a simple sentence that can easily be lengthened by adding adjectives, adverbs, or additional phrases to it: "The large brown dog runs very fast, catches a ball while leaping into the air, and brings it back to us."

Likewise, in teaching theory and harmony we require that students first learn the musical alphabet: key signatures, intervals, and basic information about triad formations. Having mastered that, the students might begin the study of harmony with short chord progressions in a tonal context. There are many approaches to the topic, as evident in numerous harmony texts. In one instance harmony is taught in patterns—groups of chords that are commonly found in tonal music, such as I-V-I. Simple chord progressions containing triads and their inversions are the first order of business (for example, I-VII6-I6-II6-V-I), followed by a study of progressions with seventh chords and their inversions, chromatic chords, and modulating progressions. In melody, combinations of three to five pitches frequently make up short recognizable patterns at different levels of structure, as illustrated in the melodies shown above. Not unlike harmonic configurations, these melodic patterns appear in myriad manifestations, allowing for an unlimited number of distinct melodies. It seems obvious that, as basic melodic elements, melodic patterns should form the basis of a curriculum designed to teach tonal melody.

DEVELOPING MUSICAL MEMORY

The first step in implementing such a curriculum is to require students to memorize a variety of common patterns based on simple rhythm patterns, akin to Yeston's rhythm-to-pitch configurations. These patterns are sung from memory on each scale degree, even though, ultimately, they may rarely appear on every scale degree in music literature.

Each repeated rhythm pattern delineates and emphasizes the melodic segment by calling attention to its melodic construction. On the surface level a three-note rhythm pattern, for example, may consist of a melodic trichord with the first pitch of each repeated rhythm acting as a tonal marker. This marker is a member of a higher level pattern—a major scale. To practice this two-level configuration, students sing sequences of common patterns that begin on each scale degree and are set to specific rhythm patterns. Trichord patterns are paired with three-note rhythms, tetrachords with four-note rhythms, and so on.

The following exercises illustrate a variety of combinations of rhythms and patterns, including a scale segment (Ex. 8a), an upper neighbor note figure (Ex. 8b), triads (Ex. 8c), a sequence (Ex. 8d), a descending pseg (Ex. 8e).

The student must sing each exercise fluently from memory in both ascending and descending forms, using either solfège, numbers, or absolute pitch names. If absolute pitch names are used, it is helpful to transpose them to a variety of keys. To keep the singing of these exercises fresh, the teacher should constantly vary the combinations of melodic patterns, rhythm patterns, and mnemonics.

Another aspect of memory training is, of course, to have students memorize complete melodies using rhythmic reduction procedures. Returning once again to the Mozart melody in Example 3, the students first memorize the dotted half-note level (plus final note of each phrase) as a melody ($C\#_5-B_4-A_4-C\#_5-B_4$ and $C\#_5-B_4-A_4-C\#_5-A_4$). They then memorize the sequence associated with the first few measures of each phrase ($C\#_5-E_5 / B_4-D_5 / A_4-C\#_5$), and last they fill in all surface-level features. Some students may need to work on the third measure of each phrase, going back and forth between mm.

EXAMPLE 8a⁵

EXAMPLE 8b



EXAMPLE 8c



⁵Solfège syllables are notated in abbreviated fashion with the initial consonant representing the syllable. Thus, d = do, r = re, m = mi, f = fa, s = so, l = la, t = ti. The upper comma refers to a pitch an octave or more above the designated tonic pitch, while a lower comma refers to a pitch below the designated tonic pitch. For example, d-s-d' in the key of C major is C₄-G₄-C₅, while d-t,-d is C₄-B₃-C₄.

EXAMPLE 8d



EXAMPLE 8e



3-4 and 7-8 to solidify their differences. This technique for memorizing melodies helps the students focus their attention and accomplish this task in an orderly fashion.

EAR TRAINING ACTIVITIES

The purpose of ear training procedures in this context is both to strengthen the students' knowledge of the patterns they are learning, and to help encode the patterns and tonal relationships in their inner ears. Both contrived exercises and examples from the literature help accomplish this task. Example 9 illustrates a contrived example utilizing an echo procedure whereby students sing back each melodic motive. The teacher plays each motive (or sings it on a neutral syllable), while a student responds with the

appropriate solfège syllables, numbers, or absolute pitch names. This activity reinforces both the rhythmic/melodic pattern and the relationships among patterns within a given tonality.

EXAMPLE 9



Ear training exercises using examples from literature are actually a direct predecessor of dictation, but without the responsibility for perceiving and notating everything. When melodies from Examples 7 and 10 are played, the students are expected to sing back only the first beat of each measure. Example 7 opens with tonal markers that form a scale segment based on SDs 1-4, while Example 10 opens with tonal markers that form a scale segment connecting the lower dominant to the tonic before leaping to the upper dominant as the last pitch of the phrase. Once the tonic and opening pitches of each melody are ascertained, identifying these scale segments is relatively easy. Because the students concentrate on a higher level, the accidentals on the surface do not present a problem. Since both melodies contain more interesting features, it would be appropriate to return to them on different occasions, to ear train sequences and notate each phrase. Re-using some of the same material for various activities helps to strengthen the inner ear, since there is then an unconscious familiarity with the music. This helps quicken the students' orientation to the skill being developed.

SIGHT SINGING

In addition to memorizing common tonal patterns with given rhythms, ear training them through echo procedures, and recognizing them at higher levels in melodies from literature as

EXAMPLE 10: Mozart: *Piano Sonata in G, K. 283, III*, mm. 9-13



beginning steps, the technique of *rhythm reduction* is also an important activity for developing sight singing skills. Example 11 illustrates.

Once students are aurally and visually oriented to the key of the melody, they begin by singing the first note of each measure, while keeping a steady beat and possibly even conducting. Maintaining the tempo, students should then sing at a level closer to the surface (in this case the whole-and half-note levels in Ex. 11). The whole-note level presents a simple repetition of G_4 and B_4 . The half-note level reveals stepwise motion filling in the G-B leap: G_4 - A_4 - B_4 - A_4 - G_4 -

EXAMPLE 11: Leveridge, "When dull care," mm. 1-4



A_4 - B_4 - A_4 . The surface level in m. 2 contains first an upper neighbor note prolongation of B_4 (B_4 - C_5 - B_4) and the beginning of a dominant pedal (D_4) that continues through m. 3. The final measure contains only stepwise motion, ending on a member of the dominant chord, suggesting a half cadence. Students are only given the single-line melody; they do not actually see the additional levels notated in the example, making it necessary for them to seek the first pitch of the each measure on their own.

Example 12 is a melody by Beethoven that contains sequential motion among the levels. The higher level (dotted half-note) reveals a sequence consisting of ascending second-descending third motion (Eb_5 - F_5 - Db_5 - Eb_5 - C_5). After the aural and visual orientation to the key, the first pitch, Eb_5 , is sung as the first pitch of that level, even though it represents a dotted quarter-note upbeat closer to the surface. The dotted quarter-note level contains only stepwise motion (Eb_5 - F_5 - Eb_5 - Db_5 - Eb_5 - Db_5 - C_5), while the surface level adds a descending third to each of those pitches. The sequential activity on the surface reverses the ascending second-descending third of the sequence from the dotted half-note level to descending third-ascending second motion.

Example 13 is a more difficult example because it modulates, but the same reductive procedure can be used. The modulation takes place in m. 4. At the whole-note level D_5 becomes the dominant of the new key, G major, making the first three measures an outline of

EXAMPLE 12: Beethoven, *An die ferne Geliebte*, Op. 98, No. 4
 "Diese Wolken in den Höhen"



a tonic triad in C and the final five measures an outline of a tonic triad in G. At the half-note level the pivot is easily achieved by the repeated Ds in m 4: the first is sung as SD 2 in C, the second as SD 5 in G.

Many common tonal patterns are found on the surface level. In just the first three measures students will easily see the opening scale segment (E_4 - F_4 - G_4), triadic leap (G_4 - C_5 - G_4 - E_4), neighbor note figure plus scale segment (E_4 - D_4 - E_4 - F_4 - G_4), and the complete scale connecting G_4 to G_5 . The A_5 at the end of m. 3 seems to be an overshooting of the octave, and indeed is an incomplete neighbor note that highlights the large leap down to D_5 further emphasizing the importance of that structural/pivot note. That D_5 is then

EXAMPLE 13: Bach, *Orchestral Suite No. 1 in C*, Bourrée I, mm. 1-8

prolonged by a complete double neighbor note pattern (D_5 - C_5 - D_5 - E_5 - D_5). The following two measures contain an interesting use of a scale segment. The half-note level pitches in mm. 5 and 6 (G_5 - D_5 - G_5 - C_5) are structural pitches that are each preceded by two eighth notes, forming a quasi-scale segment or incomplete neighbor note pattern. These pitches (E_5 - $F\#_5$ connected to G_5 , B_4 - C_5 connected to D_5 , and A_4 - B_4 connected to C_5) act like a two-note upbeat to those higher level pitches, making it all the more important to understand the half-note level structure of these measures. The arrival at C_5 in m. 6 shows an interesting feature of tonal melody. While C_5 is the structural pitch, D_5 is an important tonal pitch on the surface. It may be difficult to hear its structural identity as an incomplete neighbor note to C_5 , since it is so strongly associated with the dominant triad. Such dichotomies often occur at places where melodic direction is changing. Here the surface-level upward thrust is immediately reversed, as it was at the end of m. 3, to form a cadence with a descending scale fragment (B_4 - A_4 - G_4).

Using rhythmic reduction procedures to develop sight-singing skills facilitates accuracy in singing and, just as importantly, helps the student learn to sing complete phrases rather than possibly getting lost in the details of the surface and losing sight of the musical line. Being as familiar as possible with common patterns, as mentioned above in the sections on memory and ear training, is an important preparatory step for achieving this goal.

IMPROVISATION

Improvisation is a skill that allows more creativity than the previously discussed skills of memory, ear training, and sight singing. Improvisation requires students to create on-the-spot, and helps them learn more about tonal melody than does any other skill building activity. Using rhythmic reduction procedures, students begin with a higher-level structure, such as a whole-note level in 4/4 time. All students are encouraged to use the common patterns that they are learning, but some may choose to experiment with other combinations, again singing either solfège, numbers, or absolute pitches. In the early stages the teacher sets certain parameters, for example, the time signature, key and mode, and the final whole note as tonic. All students participate—it is most helpful if an atmosphere of playfulness is established—and all answers are

accepted, even if the nurturing teacher has to assist the very shy student. Example 14a shows three improvised four-measure phrases in F major. As the level of proficiency grows, students can improvise several phrases, period structures, or concentrate on making the surface level more ornate.

DICTATION

Dictation is often the most difficult activity for students, for indeed the complexity of skills needed to be successful is great. The students who are good at taking dictation have well-developed inner ears with a strong sense of tonality, a good musical memory, a knowledge (conscious or unconscious) of common patterns, and a

EXAMPLE 14a



EXAMPLE 14b: adds the half-note level to the structural pitches from the whole-note levels shown in Ex. 14a.



(cont)

EXAMPLE 14c: adds a surface level to the structural pitches from Ex. 14b.



knowledge of basic notational procedures. Even after a student has learned some basic information about tonal melody, memorized common melodic patterns, and used rhythmic reduction procedures for sight singing and improvisation activities as discussed above, dictation needs to be carefully taught, beginning with activities that do not require complete notation of a melody. All dictation activities must, as a matter of preparation, be preceded by a clear establishment of both meter and tonality.

One pre-dictation activity takes place during sight singing activities. While one student sight sings a high level reduction of a melody, the other students notate those pitches as they are sung. Using the melody in Example 11 above as such an exercise, the class notates whole notes G_4 - B_4 - G_4 - B_4 while a student sings solfège or numbers at that level (*do-mi-do-mi* or 1-3-1-3). Then they notate half notes G_4 - A_4 - B_4 - A_4 - G_4 - A_4 - B_4 - A_4 . Not only does this force everyone to concentrate while one student is singing, it also gives every student practice in translating interpreted data (solfège syllables, numbers, absolute pitches) into staff notation from an aural stimulus.

An early dictation activity is the notation of just the first pitch of each measure of melodies such as those presented in Example 15. After carefully preparing the meter and tonality, the teacher plays

each example. The students are required to write only the downbeat pitches, although the more advanced students may notate more detail after correctly completing the higher level.

Next, students can notate melodies with very clear and obvious common patterns on all levels. The melody in Example 16 contains a tonic triad at the dotted half-note level and almost a complete scale at the dotted quarter-note level. Once students notate these two levels, the sequence and surface level are fairly straightforward.

One way to lengthen dictation exercises is to use parallel period structures. With its repeated opening, this form is a logical next step. When they notate the higher level, students can quickly grasp the relationship of the two phrases and, since the opening of each phrase is the same, they hear it twice during each playing of the melody. Hearing the differences in the conclusion of each phrase should also be fairly simple. The opening period from a Mozart song provides a clear example (Example 17). The dotted half-note level presents a very clear picture of the relationship between the two phrases. At the dotted quarter-note level, the tie in m. 2 of each phrase may need special attention, otherwise it is closely related to the higher level.

EXAMPLE 15

a. Mozart, *Bastien und Bastienne*, K. 50, No. 11

"Meiner Liebsten schöne Wangen," mm. 1-6

b. Mendelssohn, "Abschied vom Wald," Op. 59, No. 3, mm. 1-4

c. Hopkinson, "Beneath a Weeping Willow's Shade," mm. 1-4

The image displays three musical staves, each representing a different melody for dictation exercises. Staff 'a' is in G major (one sharp) and 3/4 time, showing a melody with eighth and quarter notes. Staff 'b' is in B-flat major (two flats) and common time (C), showing a melody with quarter and eighth notes. Staff 'c' is in D major (two sharps) and 6/8 time, showing a melody with eighth and quarter notes. Each staff begins with a treble clef and a key signature.

EXAMPLE 16: Haydn, *Symphony No. 28 in A, IV:1-4*



The surface level patterns (triadic leaps, repeated notes, and neighbor notes) should be easily recognized and notated.

The process of rhythm reduction, as presented in this article, is a clear and straightforward one, and its value in skill building can be great. However, rhythm reduction alone does not suffice to reveal tonal markers in the numerous melodies that do *not* create common patterns at levels above the surface, such as the one shown in Example 18.

EXAMPLE 17: Mozart, "Sehnsucht nach dem Fröhlinge," K. 596, mm. 1-8



Pitches at the dotted half-note level are Eb_5 - F_4 - Eb_5 - Bb_4 . These pitches do not create a common tonal pattern, meaning simply that they are not the correct tonal markers. However, if we select the first and last pitches plus those at each of the melodic turning points (marked by asterisks), we have Bb_4 - Eb_5 - Eb_4 - Eb_5 - G_4 - Bb_4 - Eb_4 . Now the appropriate tonal markers at a higher level reveal a common tonal pattern, a tonic triad. The surface level patterns connecting these tonal markers are also common patterns. A complete major scale connects Eb_5 - Eb_4 while an arpeggiation plus scale segment

EXAMPLE 18: Brahms, *Intermezzo in Eb*, Op. 117, No. 1, mm. 1-4



connect Eb_4 - Eb_5 . Again a scale segment returns the melody as far as G_4 , which then merges with an arpeggiation (G_4 - Bb_4 - Eb_4). The final Eb_4 is then prolonged by its upper neighbor note F_4 . Selecting contour pitches to represent hierarchical levels is a second procedure that can be used to reveal tonal markers, create structural levels above the surface, and show common melodic patterns at all levels. Information gleaned from both rhythmic and contour reduction techniques can be used to develop musicianship skills in an undergraduate aural skills curriculum. The sequel to this paper, appearing in the next issue, discusses contour reduction and its application to the study of tonal melody.

Modality-based Aural Skills Pedagogy: Ear-training Strategies for Post-tonal and Non-Western Musics

Yayoi Uno Everett

One of the difficulties in teaching ear training at the college level stems from the disparity in students' skills: a percussion major may excel in rhythmic drills and yet be pitch-challenged, while a voice major may recall a tune with ease but may have difficulty notating rhythm. Some experience information "overload:" paralyzed by the amount of information that passes by, they are unable to focus on any one feature. Others make one error in their assessment of interval and end up transposing the whole tune. Most students are aware of their weaknesses but have few clues for overcoming them. These problems become exacerbated with post-tonal music that lacks a referential "do."¹

The pedagogical method proposed here presents a systematic approach for developing cognitive skills in ear-training tailored to the individual's use of *modalities*, Walter Barbe and Raymond Swassing's term for the visual, auditory, and kinesthetic channels through which listeners receive and retain musical information.² According to Barbe and Swassing, individuals develop a definite sense of the modalities

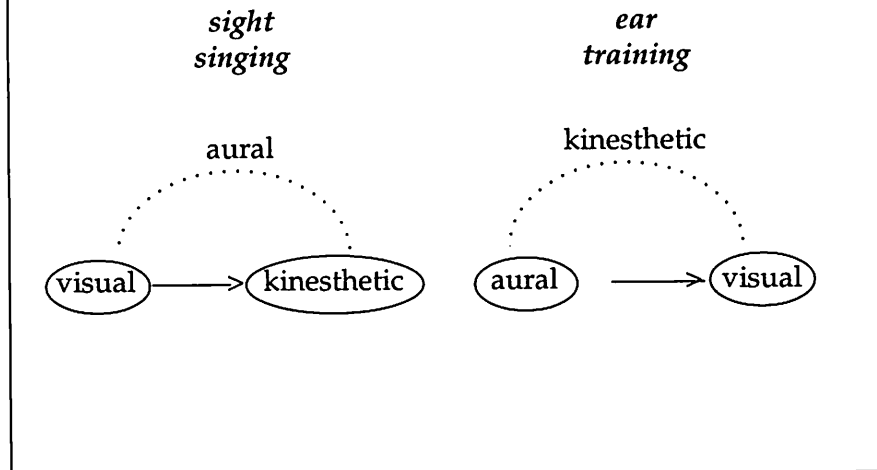
¹This assessment of individual variability in melodic perception of atonal music is discussed by Jeffrey L. Gillespie, "Difficulty Factors in Melodic Perception," *Journal of Music Theory Pedagogy* 7 (1993): 41-53.

²Walter B. Barbe and Raymond H. Swassing, *Teaching Through Modality Strengths: Concepts and Practices* (Zaner-Bloser, 1979). See also Kate Covington, "An Alternate Approach to Aural Training," *Journal of Music Theory Pedagogy* 6 (1992): 5-18; H. Apfelstadt, "Learning Modality: A Potential Clue in the Search for Vocal Accuracy," *Update: Applications of Research in Music Education* 4/3 (1986); Michael Milone, *An Introduction to Modality-based Instruction* (1981); Diane Persellin, "Responses to Rhythm Patterns When Presented to Children through Auditory, Visual, and Kinesthetic Modalities," *Journal of Research in Music Education* 40/4 (1992); Persellin and Pierce, "Association of Preference for Modality to Learning of Rhythmic Patterns in Music," *Perceptual and Motor Skills* 67 (1988).

they rely on for optimal learning in their childhood years: most of us tend to have developed a dominant modality (i.e., visual, aural, kinesthetic) by the time we reach adulthood.³ Based on individual differences in background training, knowledge of grammar, and cognitive skills, it is assumed that Joe, a vocalist who started singing three years ago, requires different modality training for developing aural skills than Jane, a pianist who has been reading music for twelve years. The method presented here involves a three-fold process of identifying and establishing modality channeling through: 1) a diagnostic exam, 2) evaluation and prescription, and 3) graduated ear-training exercises. The musical applications draw from post-tonal, jazz, and ethnic musics that do not necessarily depend on the knowledge of tonal syntax and notational system endemic to the Western classical musical tradition.

Fundamental to the development of aural skills is the process of channeling information from one modality to another: sight-singing requires channeling musical information from visual (input) to kinesthetic (output) modalities, while ear training involves channeling musical information from aural (input) to visual (output) modalities. As illustrated in Figure 1, we do not necessarily channel information directly from input to output modalities. The dotted line illustrates how a third modality can mediate the process of “mapping” musical information from one modality to another. In sight singing, for instance, we transfer visual information into vocalized sounds, but what mediates this process is the aural modality. This intermediary step enables us to discriminate and evaluate the sounds we produce. In ear training, on the contrary, it is possible to channel information directly from aural to visual modalities. Nevertheless, we often sing or

³Barbe & Swassing describe dominant modality as “that channel through which information is processed most efficiently. . . . Through maturation, children’s modalities become integrated as they discover cognitive strategies to transfer information from one modality to another. Besides a dominant modality, many people evidence a secondary modality upon which they can rely when the situation demands it. Secondary modalities are important in the educational process because it is not always possible to capitalize upon a child’s dominant modality. . . . A secondary modality does, however, complement a dominant modality; that is, instead of interfering with the functioning of the dominant modality, a secondary modality enhances it” (p.6).

FIGURE 1: Modality Channeling in Sight singing and Ear training

(internally or externally) to check our retention: we rely on a kinesthetic “replay” of the aural input via humming or clapping to check the accuracy with which we have stored the information in our memory.

Ideally, aural skills training should encompass integration of all three modalities in order to develop a “seeing” ear and a “hearing” eye.⁴ In this article, I present a methodology for incorporating all three modalities in aural skills pedagogy in post-tonal and non-Western musics. The first part of the article focuses on formulating an ear training diagnostic exam designed to identify each student’s modality strength. Individualized strategies can then be formulated to strengthen the student’s cognitive skills and musical memory as needed. The second part of the article introduces parameter-specific drills and graded worksheets for ear training exercises based on a variety of repertoires. When practicing ear-training in class, the

⁴This maxim is reiterated in several textbooks on aural skills. For instance, see the preface to Bruce Benward and Maureen A. Carr, *Sight Singing Complete*, 5th ed. (William C. Brown, 1991), p. xiii.

instructor is encouraged to build fluency in modality channeling by integrating kinesthetic drills with visualization drills, e.g., clapping a rhythm then visualizing the notational pattern, or singing a melodic fragment then visualizing the pitch pattern, as will be demonstrated.

Notation, the primary means by which we conceptualize our hearing and understanding of musical structure, is the final step. In my teaching, I encourage a certain amount of flexibility in the use of notation. Since training skills to “map” sounds into musical objects can be broken down into different levels of specificity, I frequently rely on intermediary symbols and graphic notations to “ease” students into the task of notating music. For instance, I may focus on the contour (shape) of the melodic line prior to discerning pitch or intervallic relationships. I also emphasize non-adjacent note-to-note relationships over adjacent ones.⁵ Especially in atonal musical contexts, students can benefit from various strategies that allow them to listen for long-range connections and repetitions of structural notes. Also musical notations are used appropriate to the musical practice of each culture: for instance, TUBS notation⁶ will be used, in lieu of standard Western notation, for the rhythmic dictation of the *Asante* drumming excerpt.

⁵“Nonlinear” is a term introduced by Jonathan D. Kramer to refer to non-processive, discontinuous, non-adjacent musical relationships. We may listen to music linearly in time, but we can process the information in various nonlinear ways. See Jonathan D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (New York: Schirmer, 1988).

⁶For the identification of rhythm and other parameters in non-Western musics, a graphic system (e.g., TUBS notation) may be used in conjunction with conventional Western notation. TUBS (time / unit / box / system) notation employs a series of equidistant boxes to indicate rhythmic placement of notes in time. This system is used as a standard notational device for transcription and transmission of African drumming techniques. See *Worlds of Music*, ed. Jeff Todd Titan (2nd edition, New York: Schirmer, 1992, pp. 88-97).

DIAGNOSTIC EXAM FOR EAR TRAINING

The instructor administers a multiple-choice test at the beginning of the school year to identify the student's modality strength and command of musical grammar. Figure 2a presents a sample question for the diagnostic ear-training exam used at the sophomore level and up. The exam comprises ten to twelve melodic and harmonic excerpts from post-tonal literature with a set of multiple-choice questions. Like most standard college entrance exams, this written test provides an assessment of modality channeling from aural to visual, demonstrating how quickly the student can "map" aural information to musical notation. The student's aptitude is tested in the following categories: rhythmic, metric, contour, and pitch and intervallic recognition.

The questions are graded: they proceed from general to specific and are designed to test different aspects of melodic structure. Notice how questions 1) through 3) focus on general characteristics while 4) through 6) address more specific pitch and intervallic relationships. Based on the results of seven to ten questions similar to those in Figure 2, the instructor can make a fair assessment of the student's abilities. If the student consistently misses 1) through 3), he or she is recommended to enroll in a lower-level aural skills class or sign up for tutoring. Contour identification tests the basic recognition of registral height and direction and, in my opinion, marks the level of minimal competence for entering music majors. On the other end of the spectrum are those who make practically no errors in the diagnostic exam--these students may be placed into an advanced section.

For the majority of students who place somewhere in between, the instructor sets up individual appointments to formulate a prescription for practicing ear-training inside and outside of class tailored to each student's needs. In these individualized sessions, an additional test is administered that isolates where the "stumbling block" occurs in modality channeling with respect to: retention (ability to store musical information in memory), cognition (using

mental constructs to analyze sound relationships), and/or notation (mapping aural cues to visual ones).⁷

Figure 2b shows a two-part sample test that measures the student's ability to retain and recall a melody (aural to kinesthetic channeling) and then convert it to notation (aural/kinesthetic to visual channeling). In the first part the given excerpt is played twice before I ask the student to sing back whatever he or she can recall. The accuracy of the student's delivery can be itemized by calculating the percentage of correctly executed rhythms and pitches.⁸ The second part involves a pass or fail multiple-choice based identification of the correct notation of the same melody. It is designed to target what students are able to identify with respect to pitch, rhythmic, and intervallic characteristics of the melody. Space is allocated at the bottom of the page for comments on the student's execution.

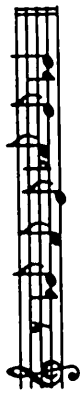
Based on this two-fold diagnostic process, I have included an evaluation and prescription for two undergraduate students at the University of Colorado at Boulder (see Figure 3). Renee (pseudonym) is a double major in flute and engineering. She excels in written theory and has excellent cognitive skills. Her scores (to the left) show basic command of rhythm, meter, and contour identification. Nonetheless, she displays a consistent tendency to

⁷While the listening experience is holistic, the mind can only process one stream of information at a time. See James Tenney, *Meta+Hodos and META Meta+Hodos: A Phenomenology of 20th-century Musical Materials and an Approach to the Study of Form*, 2nd ed. (Oakland, CA: Frog Peak Music, 1988). Meta+Hodos represents one of Tenney's earlier attempts to account for the perceptual organization of musical events based on the principles of Gestalt psychology. He proceeds to show how musical events can be partitioned in different ways with respect to each *parameter* or *dimension* according to the principles of proximity and similarity. For a more comprehensive discussion on musical perception and mental representations of musical relationships, see David Butler, *The Musician's Guide to Perception and Cognition* (New York: Schirmer, 1992) and Jeanne Bamberger, *The Mind Behind the Musical Ear: How Children Develop Musical Intelligence* (Cambridge: Harvard Press, 1991).

⁸One "false" start is allowed in the student's execution. This test is similar to the one that is currently used to measure musical skills in the GRE revised music test.

FIGURE 2A: Sample Diagnostic Exam in Ear Training (sophomore level)

tune:



adapted from Charles Ives: "Like a Sick Eagle"

1) rhythm.
(s = short;
l = long)

a) s s s s l b) s s l l l c) l s s l s l d) s s s l s s

2) likely meter:

a) 2/4 meter b) 6/8 meter c) 3/4 meter d) none of the above

3) melodic contour:






a) major 2nd b) minor 2nd c) minor 3rd d) none of the above

4) the interval that recurs most often is:

a) major 2nd b) minor 2nd c) minor 3rd d) none of the above

5) the interval between the 1st and 4th note is:

a) major 2nd b) minor 2nd c) minor 3rd d) none of the above

6) beginning pitch recurs at:

a) 4th note b) 5th note c) 6th note d) none of the above

FIGURE 2B: Assessment of Melodic Retention & Notation Identification

1) **melodic retention** (aural → kinesthetic): sing back the following melody in tempo after two hearings. Accuracy is measured in percentage by the number of correct pitches and rhythms delivered divided by the total number of pitches and rhythms involved.

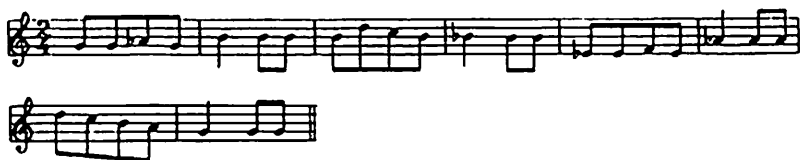
[recorded melodic excerpt: Bartók, *Mikrokosmos*, vol. 15 (mm.5-12)]

Accuracy in pitch retention: _____ %

Accuract in rhythmic retension: _____ %

2) **notation identification** (aural/kinesthetic → visual): listen to the melody one more time and identify which one of the four patterns shows the correct notation of the melody.

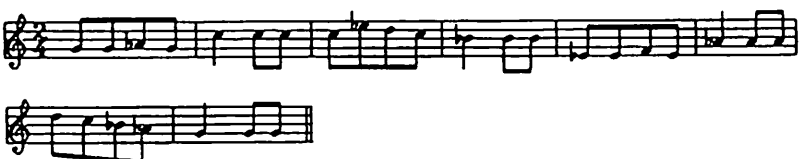
a)



b)



c)



d)



Comments:

FIGURE 3: Sample Evaluation and Prescription

<i>subject I: Renee</i>			<i>subject II: Guy</i>		
<i>status: junior</i>			<i>status: sophomore</i>		
<i>major: flute</i>			<i>major: voice</i>		
diagnostic exam (itemized score)			diagnostic exam (itemized score)		
1) 100%	2) 100%	3) 100%	1) 90%	2) 80%	3) 95%
4) 86%	5) 60%	6) 55%	4) 60%	5) 58%	6) 42%
assessment of melodic retention & notation ID			assessment of melodic retention & notation ID		
<i>melodic retention: 55%</i>			<i>melodic retention: 94%</i>		
<i>notation ID: a) Fail</i>			<i>notation ID: d) Fail</i>		
<i>comment: she chose one with the correct rhythm but incorrect intervals</i>			<i>comment: he chose one with incorrect rhythm and intervals</i>		
<i>self-evaluation: "I can't remember more than three or four notes at a time and frequently end up transposing melodies by step."</i>			<i>self-evaluation: "I can sing back any melody with relative ease, but have difficulty translating it to notation. Rhythm is especially difficult."</i>		
prescription:			prescription:		
strengthen aural —> kinesthetic channelings and establish long-range, nonlinear hearing. (proceed to exercises comparable to Fig. 5)			strengthen kinesthetic —> visual channeling through notation mapping drills (remedial drills necessary prior to introducing regular exercises)		
1) begin each ear-training exercise by vocalizing the melody repeatedly to improve retention.			1) rhythm mapping drills (see Fig. 4a);		
2) write out rhythm above the staff line;			2) pitch segment mapping drills (see Fig. 4b);		
3) graph contours of pitches within each phrase;			3) combination of 1) & 2) up to six note segments;		
4) stake out the highest and lowest notes within each phrase;			4) metric identification drills;		
5) circle any repeated pitches that occur;			5) follow prescription for Renee from 2) to 7) in proceeding to exercises comparable to Fig. 5.		
6) identify adjacent and non-adjacent pitch and intervallic relationships among structurally salient notes;					
7) convert to standard notation.					

transpose the melody up or down midway by focusing too much on note-to-note (adjacent) pitch relationships. This is reflected in the significant “dip” in the percentile of correct answers in parts 5) and 6) of the written exam that deal with long-range pitch and intervallic relationships. As shown by her score (54%) for melodic retention, her main stumbling block is pitch retention. Her failure in notation identification stems from her inability to retain pitches and process linear intervals quickly enough. As a flautist, she is used to reading music, but *not* accustomed to actively singing or memorizing the tune. Individualized recommendations for her therefore include beginning her practice each time with vocalization drills to improve pitch retention.⁹

Guy, on the other hand, is a gifted tenor who can sing back any given melody like a parakeet, but he has an enormously difficult time translating aural output into mental constructs and notation. The written exam shows how he can identify relative lengths of notes (question 1) or shapes (question 3), but not in terms of the specific intervals or relationships. Notice how his high score for melodic retention (95%) does *not* translate automatically into correct identification of the melody in its notated form. He chose d) under Figure 2b which demonstrates that he can neither translate the rhythm nor the pitch into standard notation. Due to his training as a singer, based exclusively on channeling from aural to kinesthetic modalities, the channeling from aural to visual area has not been established. The strategy that I’ve therefore developed for him involves establishing and reinforcing the aural to visual channels through *notation mapping* drills that are designed to “ease” him into

⁹The instructor should also incorporate active vocalizing as a measure of musical retention. Vocalizing allows the students to participate physically in the reproduction of sound as well as to reflect on the tune mentally. External vocalizing, nonetheless, should be alternated with silent vocalizing (relying on the “inner” ears). Also see Michael L. Friedmann, *Ear Training for Twentieth-Century Music* (New Haven: Yale University Press, 1990). In his opening chapter, “Calisthenics,” Friedmann presents a systematic procedure for vocalizing post-tonal melodies: 1) sing by imitation, 2) sing spatially adjacent pitches, 3) memorize. He also discusses techniques for giving dictation with or without singing.

the task of notation through gradated levels, as will be demonstrated.

The purpose of the diagnostic exam and evaluation is to encourage students to discover their own paths toward improvement by: 1) recognizing their dominant modalities, and 2) developing systematic strategies for overcoming “blocked” areas in modality channeling. The next step in the process is to introduce various “mapping” strategies to establish proper channeling from aural to visual modalities in ear-training drills and exercises.

FORMULATION OF EAR-TRAINING DRILLS AND EXERCISES

The following drills and exercises demonstrate some of the strategies I have developed for ear training, specifically designed to enhance mapping musical information to and from visual (notation) to aural modalities. The exercises are designed for the sophomore level and up. I will allude briefly to a few parameter-specific notation mapping drills I regularly perform as warm-up exercises preceding dictation.

Rhythm Mapping Drill (see Figure 4-1)

A list of possible rhythmic subdivisions of a beat (labeled a, b, c, etc.) is presented to the students. The instructor plays a permutation of four to six rhythmic groupings and asks all of the students to sing or clap the rhythm, then asks a student to identify the series (by label). The student is then asked to improvise another series and ask another student in the class to identify it. The same template can be used to teach rhythmic subdivisions within any simple or compound meters. This exercise is designed to develop aural to visual “mappings” of rhythmic subdivisions within a beat, so that when they hear a pattern of dotted-eighth, sixteenth, eighth notes, students can begin to visualize the pattern mentally as a whole. For singers like Guy, who “freezes” because he is unable to process rhythm using notation, this exercise provides a valuable tool for conceptualizing rhythm always as a pattern within a beat.

At the next stage, I move on to a technique called “imaging,” where I play the same rhythmic patterns and test to see if students can visualize these patterns in their heads *without* the template (the template, which served as a “training wheel,” eventually needs to be internalized). Then I build on this strategy by presenting rhythmic patterns in progressively longer contexts, involving metric identification (with this specific example I may alternate between 6/8, 9/8, and 12/8 meters). I also teach syncopation using this method, first by leaving out the ties, and then putting in the ties, to reinforce aural and notational mapping of rhythm.

Pitch Board Drill (see Figure 4-2)

I frequently begin the class by holding up in front of the class a five-foot board that lists the chromatic pitches denoted by letter names. To encourage students to develop relative pitch, I usually begin by asking the class to recall and sing concert A. Then I “hop” around on the board from one letter to another, making students sing the next note that I point to. This warm-up exercise is used to drill interval patterns that will be reinforced later in the context of ear training or sight singing. One variation is to have a student sing a melodic segment on a given note and have the rest of the class identify the sequence on the pitch board. The instructor can always build on the level of challenges involved. For example, students might be asked to sing a series of intervals up or down from a given note, then asked to identify the pitch sequence on the board.

Pitch Mapping Drills (see Figure 4-3)

A list of six to ten three-note pitch segments is presented to the students. The instructor begins by singing or playing one segment, asks the student to sing it back (call and response style), and then asks them to identify where the segment is found on the template.¹⁰

¹⁰These segments usually are extrapolated from sight singing material and feature a particular modal collection of pitch-class set.

FIGURE 4: Notation Mapping Drills

4-1: sample rhythm mapping drill (for compound meters)

a) b) c) d) e) f)

g) h) i)

4-2: pitch board drill.

F# G# A# C# D# F# G# A# C# D#
 F G A B C D E F G A B C D E F
 Gb Ab Bb Db Eb Gb Ab Bb Db Eb etc.

4-3: pitch mapping drill (3-note segments).

sample 1

a) b) c) d) e) f)

sample 2

a) b) c) d) e) f)

4-4: combination drills (3-note segments).

a) b) c) d) e)

The students are encouraged to find the correct segment first by identifying the general contour of the segment, then by identifying the intervals heard.

The instructor then sings or plays the same segment, segues into another segment, and asks the student to sing again. One variation of this technique which never fails to “tweak” the students’ attention involves what I call “morphing:” I begin with a segment, and transform the segment one note at a time into another segment on the template; the students are asked to sing the segment after each transformation. Then I ask a student to identify the segment it changed to and also to recall the exact sequence in which the notes have been changed in the process. This particular exercise is intended to build pitch and intervallic retention. At the next level, I remove the template and ask students to identify similar three-note pitch segments aurally by letter names (given the starting pitch), expanding the pitch segments up to six notes. Figure 4-4 presents a variation of this exercise where the pitch segments are combined with variable rhythms.

Dictation in Context Exercises (see Figures 5-7)

After the initial drills and warm-up exercises, I proceed to ear-training dictation in a musical context. The melodic excerpts are drawn from post-tonal musical repertory and include examples of modal, atonal, twelve-tone, and basic jazz idioms. Following Wittlich and Humphries, I advocate the importance of contextual ear training: whenever possible, melodies are given in context of accompanying parts (with varying timbres and musical textures).¹¹ For practice sessions, I initially start out with stratified worksheets as shown in Figures 5-7: the level of specificity increases as one proceeds to the bottom of the page. Steps 1 and 2 isolate the rhythmic and metric structure: I ask the students to arrange the notes spatially within each measure, then convert them into standard notation. Step 3 isolates the pitch contour (relative height) to make students observe the shape of the melodic line. I often attach leading

¹¹Gary E. Wittlich & Lee Humphries, *Ear-Training: An Approach through Musical Literature* (San Diego: Harcourt Brace Jovanovich: 1974).

questions that encourage students focus on non-adjacent pitch and intervallic relationships, depending on the contextual importance and aural salience of notes within the phrase.¹²

To accommodate students with varying levels of speed and fluency, the worksheet presents a flexible range of material to provide challenges for all (for instance, the gifted student may skip Steps 1 and 3, and go directly to Steps 2 and 4). Figures 5-7 presents three melodic and rhythmic excerpts I have used successfully in class. Both the worksheet and a solution key are given. Melodies are played from recordings, then subsequently reinforced at the piano or at another instrument. I test the students' aural retention by having them sing back the melody, and clap or "chant" the rhythm on a given syllable (e.g., "tak") after every other hearing.

Sample Worksheet No. 1 (Figure 5)

Arnold Schoenberg, *Piano Concerto*, op. 42, I: mm.1-8

I begin by playing a recording of the opening of this piano concerto two times. In the second hearing, I ask the students to clap what they construe as the basic pulse in the piece. Then I proceed to play just the piano part (at a rate slower than the performance tempo) and have them write out note entries spatially within each measure by

¹²In post-tonal music, devoid of harmonic hierarchy, context determines the aural salience and structural weight of notes. It may be useful to encourage students to discern the particular criteria that determine aural salience in a given melody; the teacher can pose questions such as "what notes stick out and why?" The theory of stream segregation (when a melody is heard dividing into separate voices and when it is heard together) is also a useful concept to explore. See William M. Hartmann & Douglas Johnson, "Stream Segregation and Peripheral Channeling," *Music Perception* 9/2 (1991):155-184. Their study demonstrates that stream segregation—the extent to which polyphonic melodies can be segregated—depends on two factors: restriction of frequency range and spatial localization (left or right). If the melody has strong metric accent, one can institute a "downbeat" game where the students have to discern intervallic relations between successive notes that fall on the downbeat. The instructor can play the melody "as is," while the students sing only the notes on the downbeat.

FIGURE 5a: Ear-training sample worksheet #1

step 1: Write out note entries spatially using "x"; indicate the number of pulse per measure. Below each note entry, indicate the relative length of the note with s = short, l = long.

$\frac{1}{2}$

step 2: Given the upbeat = eighth note, transcribe the rest of the rhythms and assign the appropriate meter signature in the space shown below.

FIGURE 5a: (continued)

step 3: Draw the contour of the next three notes, followed by the next four notes, etc. Where is the highest and the lowest notes found? Identify the interval between the highest and lowest notes. Identify intervals and pitch relationships. Proceed with mm. 5-7 in the same way.



step 4: Proceed to write out the melody in standard notation. Supply the appropriate meter signature. For advanced students, fill out the missing bass notes (circled area) in the accompanying voice.

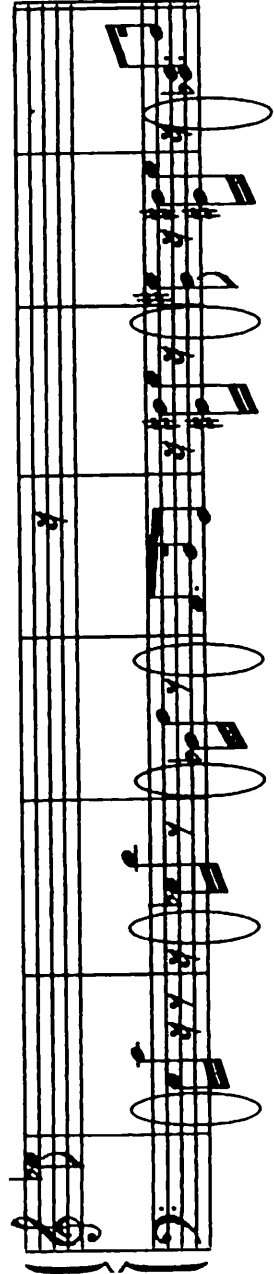


FIGURE 5b: Ear-training sample worksheet #1 (KEY)

step 1: Write out note entries spatially using "x": indicate the number of pulse per measure. Below each note entry, indicate the relative length of the note with s = short, l = long.

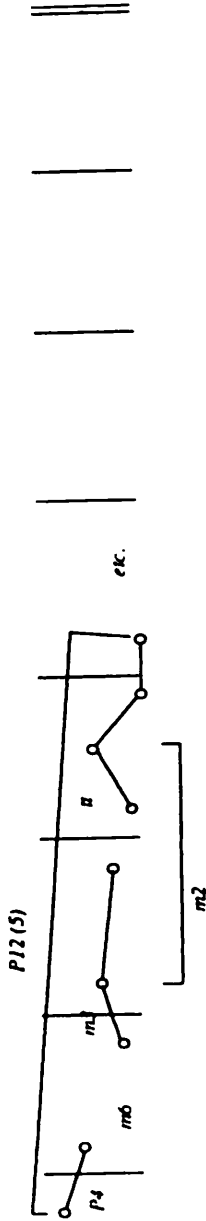
[illegible]

step 2: Given the upbeat = eighth note, transcribe the rest of the rhythms and assign the appropriate meter signature in the space shown below.

The first system of musical notation for 'The Bird Song' consists of two staves. The upper staff is a treble clef with a key signature of one sharp (F#) and a 2/4 time signature. It contains a melody of eighth and sixteenth notes. The lower staff is a bass clef with a key signature of one sharp (F#) and a 2/4 time signature. It contains a bass line of eighth and sixteenth notes. The system ends with a double bar line.

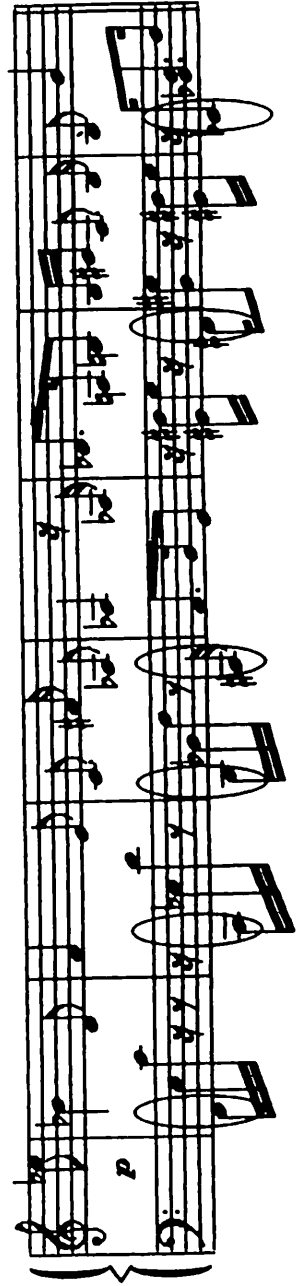
FIGURE 5b: (continued)

step 3: Draw the contour of the next three notes, followed by the next four notes, etc. Where is the highest and the lowest notes found? Identify the interval between the highest and lowest notes. Identify intervals and pitch relationships. Proceed with mm.5-7 in the same way.



step 4: Proceed to write out the melody in standard notation. Supply the appropriate meter signature. For advanced students, fill out the missing bass notes (circled area) in the accompanying voice.

Andante



placing an "x" wherever they hear a note entry in the melody. They are asked to clap the rhythm and visualize the note entries on paper. Based on the spatial location of "x's" and pulses per measure, they are then asked to determine the pulse organization of the piece (in 2, 3, or 4). In Step 2, they proceed to transcribe the rhythms in the appropriate meter, given eighth note as the duration of the beginning upbeat. For those who are rhythmically-challenged, it is possible for them to look at a template of rhythmic subdivisions (see Figure 4-1) to reinforce the aural/kinesthetic to visual mapping of notational symbols within the 3/8 meter.

In the next stage (with rhythmic framework established), I set out to play the left-hand accompaniment while making the students sing the melody in *karaoke* style. Since atonal melodies are difficult to retain, most students struggle to remember even the first four or five notes. Instead of focusing on pitch or intervallic relationships right away, I have them draw the contour of the first phrase as shown under Step 3. For this melody, I have them draw the contour of the next three notes, followed by the next four notes. If there are repeated notes, I ask them to keep the contour line level. To strengthen the recognition of non-adjacent pitch relations, I may ask students to locate the highest and lowest notes of the phrase within mm.1-4. Most of them recognize that the last note of the phrase sounds the lowest. At this point, I make them sing and hold on to the last note, then ask them to "recall" the first note and figure out the intervallic distance between the first and last notes of this phrase. I find that this strategy of figuring out the outer intervals of a phrase (perfect 12th, in this case) helps to eliminate tendencies to transpose the melody. After the contours are specified graphically, then the students are encouraged to identify other aurally salient adjacent and non-adjacent intervals. Since the perception of aural salience may vary from one individual to another, the instructor may begin by directing the students' attention to specific intervals, e.g. to the tritone between the fifth and sixth notes, and the semi-tone between the highest notes of the second and third contour segments.

Only after the contour and intervallic relationships are mapped out are the students allowed to write out the melody in standard notation, where the structural information laid out under Step 3 is used to guide the transcription process. For those who are at an

advanced level, I usually include additional tasks, such as filling in the missing bass notes in the accompanying voice (as shown by the circled areas within Step 4).

Sample Worksheet No. 2 (Figure 6)

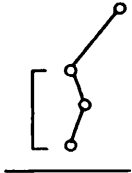
Charlie Parker, *Au Privave*

I play a recording of this “catchy” jazz melody at a “fast” swing tempo a few times with the students tapping on beats 2 and 4. Then they are asked to sing whatever they can recall of the first four measures of the melody, as they continue to tap beats 2 and 4. Even if they cannot reproduce the exact pitches of the tune, they are encouraged to recite the rhythm until accuracy is achieved. The instructor can also adopt a “call and response” approach by singing the head of the tune (first four notes) and making the students respond by singing the next four notes, and so forth. To avoid overemphasis on beats 2 and 4, the students can also tap beats 1 and 3 in one hand with lighter strokes while tapping beats 2 and 4 with the other hand with heavier strokes.

In the next stage, I shift their attention to Step 1 of the worksheet where they have to translate the kinesthetic action of tapping beats into visual markers, here the arrows that move from left to right on the page. For those who are rhythmically-challenged, I start out by asking them to place an “x” on the sheet wherever they hear a note coinciding on beats 2 and 4 (the upward moving arrows) as they sing the rhythm. Then I ask them to do the same for beats 1 and 3. They should have placed “x” on beats 1, 2, and 4 in the first measure, on beats 1 and 4 in the second measure, and on all beats in the third measure. Any subdivision (eighth note “swing” rhythm) within the beat can be notated at this stage as “-” as shown in the key. Then I isolate the last measure and call attention to how the note entries fall between beats and, in effect, “anticipate” beats 2 and 4. These offbeat entries are marked as “x” followed by an inverted arch, as shown. The students are then asked to figure out how the third note offbeat entry anticipates a beat in like manner within m.2. Finally, under Step 2, they are asked to transcribe the rhythms (using swing eighth = straight eighth) in 4/4 meter.

FIGURE 6a: (continued)

step 3: Write out the contour of every **FOUR** notes (except for three notes in the last measure). Bracket any repeated pitches as shown below. Figure out the intervallic relationship between the head notes of each four-note contour segments.









step 4: transcribe the melody in F major in the staff line given below. For advanced students, write out the harmonic changes below the staff line and compose a walking bass to accompany the melody.



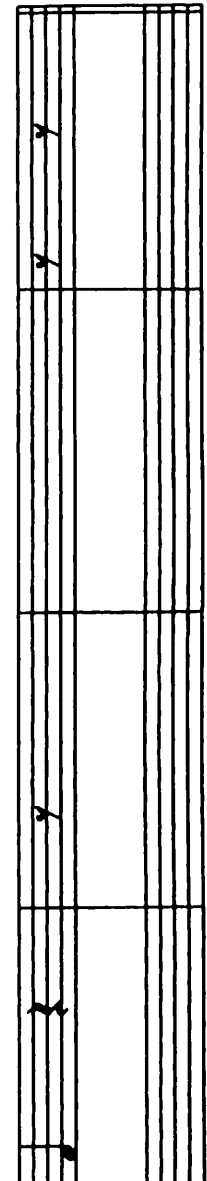


FIGURE 6b: Ear-training sample worksheet #2 (KEY)

step 1: Write out rhythmic entries spatially using "x": begin by placing "x" wherever you hear entries falling on beats 1 & 3, and then on 2 & 4. Indicate entries that "anticipate" beats 2 or 4 with "x" (8th note upbeat). Do likewise for entries that "anticipate" beats 1 or 3.

2 & 4's:

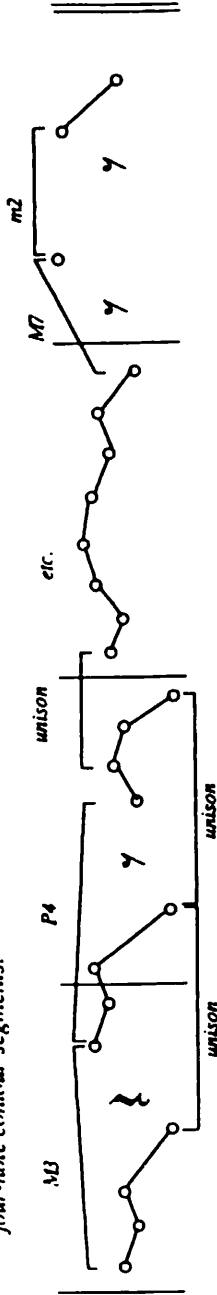
Diagram showing rhythmic entries (x) and arrows indicating timing for 2 & 4's.

step 2: write out the rhythm in 4/4 using standard notation. Place > mark on notes that are accented.

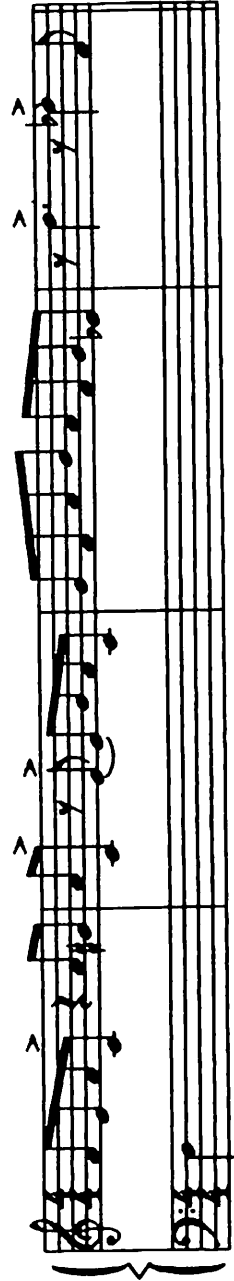
Diagram showing the rhythm written in standard notation (4/4) with accents (>) and arrows indicating timing.

FIGURE 6b: (continued)

step 3: Write out the contour of every **FOUR** notes (except for three notes in the last measure). Bracket un-
repeated pitches as shown below. Figure out the intervallic relationship between the head notes of each
four-note contour segments.



step 4: transcribe the melody in F major in the staff line given below. For advanced students, write out
the harmonic changes below the staff line and compose a walking bass to accompany the melody.



As in the Schoenberg example, the pitch patterns are first graphically illustrated in terms of relative contour (low and high) under Step 3. By now, working strictly from memory, the students are asked to draw the shape of the contour of each melodic segment separated by a rest. This strategy should help them notice the contour repetition between the first four notes and the next four notes. In drawing the contours, they should pay attention to the relative height of the head note of each contour segment of four notes: the head note of the second melodic segment is higher than that of the first, but what about the relationship of the head note of the third contour fragment to the first? By making them sing the successive intervals formed between the *head* notes of each four-note contour segment, they should notice that the head note of the third segment is a semitone lower than that of the first, and so forth. After reinforcing non-adjacent intervallic relationships in this way, the students are encouraged to figure out other salient intervals between or among contour notes. Finally, in Step 4, they are asked to transcribe the tune in standard notation. The advanced students or jazz majors may write out the harmonic changes and a walking bass to go with the tune.

Sample Worksheet No. 3 (Figure 7)

*Kete - Adinkra (Asante royal music of Ghana).*¹³

In this excerpt from the *kete* piece associated with the ceremonial musical tradition of Akan people, the TUBS notation is introduced to notate the polyrhythmic relationships among the three ostinati instruments (the master drum part is omitted here to simplify the musical interaction). The three instruments that complete the ostinato pattern, preferably performed live in the classroom, are: *Dawuro* (bell), *Donno* (hourglass drum), and *Aburukuwa* (stick drum). If the authentic instruments are not available, triangle, anvil,

¹³This excerpt is taken from Willie Anku, *Ashanti Royal Music For Percussion Ensemble: Kete Drumming* (San Marcos, CA: California State University, 1996).

or a rattle may substitute for the *Dawuro*, and bongo or any kind of stick drum for the other two instruments. To emphasize the holistic and kinesthetic nature of this music, the students are encouraged to listen to the three parts until they can latch onto one of the parts and then actively participate by imitating one of the parts in synchrony with the ongoing performance. It is important that the performance lasts as long as it takes for the students to absorb the rhythm of each part internally within their bodies.

At this point, I introduce the TUBS (time/unit/box/system) notation, frequently used to transcribe African drumming patterns for pedagogical use. To illustrate the cyclical periodicity of this music, the notation consists of a series of rectangular boxes enclosed within a timeline (here the bold line demarcates the unit of twelve), and each entry is denoted by a black dot. Since the *Dawuro* pattern provides the foundation, I begin by tapping the twelve beats and reciting the pattern two or three times. The students then imitate the tapping and recitation of the pattern and proceed to “map” the note entries by filling in black dots wherever they hear them. This procedure can be slowed down significantly to facilitate the transcription process. The tapping of the twelve beats, nonetheless, should remain accentually neutral (i.e., no stress every three or four notes) to avoid the establishment of metric grouping. The *Donno* part is then played in conjunction with the *Dawuro* part; the students are asked to imitate the new part and determine where it falls in relation to the *Dawuro*. I also ask the students to distinguish the registral change by writing “h”(high) and “l” (low) beneath the rectangular boxes. Last, the *Aburukuwa* part is added to the other two parts in performance, and the students proceed to transcribe the third part in a like manner.

When the transcription of all three parts is completed and checked, the students are encouraged to perform the excerpt from the TUBS notation to gain an understanding of the structure of the whole. This exercise focuses on the development of the kinesthetic modality in accordance with the music practices in African culture that depend almost exclusively on aural/kinesthetic transmission. Transcription of the rhythms based on Western notation may be introduced at the end for comparative purposes; the transcription

FIGURE 7b: Ear-training sample worksheet #3 (KEY)

----- KEY -----

Dawuro:



Donno:



h = high, l = low

Aburukuwa



(eighth = pulse)

Dawuro:



Donno:



Aburukuwa:



(provided in Figure 7A) follows the polyrhythmic approach to African drumming formalized by Simha Arom.¹⁴

FUTURE AVENUES: CAI AND CURRICULAR DEVELOPMENT

In this preliminary outline of ear-training strategies for post-tonal and non-Western musics, I try to address the individual differences in modality channeling through the three-fold process of diagnosis, evaluation, and prescription. The diagnostic process may prove to be time-consuming to an instructor with a large class, yet it presents the most critical stage in identifying the students' modality strength as well as the "blocked" areas of modality channeling. As in practicing an instrument, the students need to become aware of their strengths and be given specific strategies for overcoming areas of weaknesses in order to make any progress. The strategies introduced here are not limited to application in post-tonal and ethnic musical literature. The gradated notational system, e.g., spatial notation and contour shapes, may also be adopted at the freshman level in the context of tonal music.

One of the most important goals in my classroom teaching is the integration of modality-based activities to transform the students from being "passive" to "active" listeners and participants. Sight singing and ear training should *not* be compartmentalized as separate entities, but joined as complementary activities: teachers and students should incorporate external and internal vocalization exercises in ear training, and emphasize aural "imaging" in sight singing (where the students learn to hear the melody internally prior to vocalizing).

¹⁴ Simha Arom, *African Polyphony & Polyrhythm: Musical Structure and Methodology* (Cambridge University Press, 1991). Arom describes African rhythms as consisting of isochronous pulses and periodicity (recurring timeline) which may be illustrated using Western rhythmic notation without metric confinement. He shows how individual rhythmic parts may be stratified, each with its own periodicity and rhythmic organization. The choice of notation affects how we conceptualize this music. TUBS notation treats the *Dawuro* part as the principal voice against which the other parts are coordinated, while Arom's polyrhythmic notation presents the three parts as having independent timelines and rhythmic autonomy.

My eventual goal is to develop a CAI (computer-assisted musical instruction) program that offers the user interactive capabilities at the computer; students should be able to select and customize a menu of strategies, “mapping” drills, and method of evaluation tailored to each individual’s development of modality channeling. After the diagnostic exam, the students could design their own prescription for working on ear-training (analogous to what was shown in Figure 3 for Renee and Guy) and implement systematic steps for traversing an ear-training exercise at the computer and/or creating their own drills. In trying to establish a systematic approach to ear training, there is always the danger of making the exercises too prescriptive: the instructor sets too many rules and “hoops” while the students cease to make decisions for themselves. I find it crucial, at this preliminary stage, to get a wide range of responses from students and colleagues to expand the levels of flexibility, accessibility, and the range of the graded worksheets introduced here. Exercises may also be cross-referenced by their emphasis on modality channeling: certain exercises emphasize kinesthetic to visual mapping (*Asante* drumming), while others emphasize aural to kinesthetic modality channeling (*Au Privave*) as a prerequisite to visual channeling.

Following Wittlich and Humphries’ context-sensitive approach, it would be possible to include musical excerpts from recordings and then to isolate the functions of individual musical parameters (e.g., pitch, rhythm, timbre) in creating drills and exercises in a CD-ROM environment. The musical repertory should draw from a wide range of twentieth century musical genres—jazz, popular, rock, modal, atonal, and ethnic musics—corresponding to the undergraduate music theory curriculum of each institution. Exposing students to a variety of musical genres and notational systems develops resilience and flexibility in their response to new, untried situations. Other non-conventional notational systems might also be introduced, e.g., the numerical system used to transcribe Javanese and Balinese gamelan. Presented in this manner, aural skills training serves not only to open the students’ ears, but also offers a gateway to open their musical and creative minds to a broad range of musical practices.

REFERENCES

- Anku, Willie. *Ashanti Royal Music For Percussion Ensemble: Kete Drumming*. San Marcos, CA: California State University, 1996.
- Apfelstadt, H. "Learning Modality: A Potential Clue in the Search for Vocal Accuracy." *Update: Applications of Research in Music Education* 4/3 (1986): 4-6.
- Arom, Simha. *African Polyphony & Polyrhythm: Musical Structure and Methodology*. Cambridge University Press, 1991.
- Barbe, Walter B. and Raymond H. Swassing. *Teaching Through Modality Strengths: Concepts and Practices*. Columbus: Zaner-Bloser, 1979.
- Benward, Bruce and Maureen A. Carr. *Sight Singing Complete*. 5th ed. Dubuque, IA: William C. Brown, 1991.
- Covington, Kate. "An Alternate Approach to Aural Training." *Journal of Music Theory Pedagogy* 6 (1992): 5-18.
- Friedmann, Michael L. *Ear Training for Twentieth-Century Music*. New Haven: Yale University Press, 1990.
- Hartmann, William M. and Douglas Johnson. "Stream Segregation and Peripheral Channeling." *Music Perception* 9/2 (1991):155-184.
- Kramer, Jonathan. *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*. New York: Schirmer, 1988.
- Milone, Michael, N. *An Introduction to Modality-based Instruction*. Columbus: Zaner-Bloser, 1981.
- Persellin, Diane C. "Responses to Rhythm Patterns When Presented to Children through Auditory, Visual, and Kinesthetic Modalities." *Journal of Research in Music Education* 40/4 (1992): 306-315.
- Persellin, D. and C. Pierce. "Association of Preference for Modality to Learning of Rhythmic Patterns in Music." *Perceptual and Motor Skills* 67 (1988): 825-26.
- Tenney, James. *Meta+Hodos and META Meta+Hodos: A Phenomenology of 20th-century Musical Materials and an Approach to the Study of Form*. 2nd ed. Oakland, CA: Frog Peak Music, 1988.
- Titan, Jeff Todd, ed. *Worlds of Music*. 2nd ed. New York: Schirmer, 1992.
- Wittlich Gary E. and Lee Humphries. *Ear-Training: An Approach Through Musical Literature*. San Diego: Harcourt Brace Jovanovich, 1974.

Alphabet Dictation: An Alternative Strategy for Ear Training

David Løberg Code

In many aural skills courses, students are not taught an adequate range of strategies for learning how to take dictation. In some cases (as reflected by dictation texts), students are simply provided with a methodically arranged progression of melodies and rhythms for dictation, with no instructions or advice on how to proceed. It is assumed, perhaps, that if the sequence begins at an elementary level of difficulty and progresses incrementally, then all that is needed is sufficient drill work. Among texts that do provide instructions, most advise to memorize first and then write. While this may be the ideal strategy or final goal, it is not feasible for all students. Some do not yet possess the ability to memorize internally an entire melody, and therefore are in need of an alternative approach. I would like to propose one possible alternative, which I have termed 'Alphabet Dictation' (for reasons which will be readily apparent). Alphabet dictation is a strategy for listening that involves the accumulation of discrete bits of information that can be notated during the performance of a rhythm or melody. After the performance, this information is synthesized—using one's knowledge of theory, and of the particular type of exercises being performed—to reconstruct the excerpt as a whole. In my teaching, I have found this technique valuable as both a diagnostic aid and a developmental tool.

Most aural skills texts that offer the student a strategy for dictation advocate memorization as the first step. The following are examples taken from three aural skills texts:

1. As you listen to each melody the first time, try to memorize it—in its entirety....
2. Do not write anything on the paper yet! You will learn almost nothing by trying to write too early....
5. Only after you have the entire melody memorized should you attempt to write anything on paper!

(Benward, Carr and Kolosick, 14)

Listen to the phrase and memorize it by singing it back (silently) one or two times; only then should you actually begin notating (Henry and Mobberley, 69).

Listen to the melody all the way through....Do not attempt to write during the first hearing....Be sure you have memorized the melody *before* writing a single note.

(Ottman and Dworak, 90).

Those accustomed to learning by ear (e.g., Suzuki-trained musicians) often do well with this approach; many do not. Granted, this type of internalization is an important musicianship skill that all students should strive to acquire. However, the above instructions seem to treat this skill as a prerequisite for dictation, without any suggestions for those not yet capable of memorization. Some people cannot remember anything if they wait until after a melody is played to begin writing. Furthermore, as George Miller demonstrated, our short-term memory seems to be limited to 5-9 bits of information.¹ Thus, it is not feasible to expect students to memorize instantly melodies that exceed this limit.² In Gary Potter's study of the

¹George Miller, "The Magical Number Seven Plus or Minus Two: Some Limits On Our Capacity For Processing Information," *Psychological Review* 63 (1956), 81-97.

dictation strategies of twenty-five musicians he notes that “those subjects who ‘listened first to make a mental tape to play back at will’ did less well than those who began writing during the first hearing” (Potter, 68).

Another pedagogical concern I have with the above approach is the emphasis placed on memorizing the excerpt in its entirety before notating anything. Of course, it is counterproductive to attempt to properly notate the melody while one is listening: standard notation is simply too slow for real time. This method produces the all-too-common result whereby one gets behind after one or two measures and gains nothing from the remainder of the performance. Complete memorization is perhaps an ideal goal but, as has been pointed out, it is not always attainable. The implicit message sent to our students is that if they do not know *everything* (and know it with certainty), then they do not know *anything*. Students who have narrowed down a note to one of two possibilities may write down nothing with the hope that the right choice will come to them, only to be still uncertain following the subsequent listening. On the other hand, by writing down their best guess, they transform the next hearing into something like an error detection exercise and are more likely to have success. Most students hear and remember a great deal of relevant information about a musical excerpt, but they are led to believe that only the final product—the pitch and duration of each note—matters. Partial knowledge is devalued, as are various forms of relative information such as contour and general motivic patterns.

The end-product of dictation is a visual representation of the music: you write down what you hear. While this is a useful musical skill by itself, it is not the sole purpose of dictation in a theory curriculum. Michael Rogers states that the purpose of dictation is “to produce a certain kind of listener who can hear sound as meaningful patterns” (Rogers, 101). As performers and teachers this is necessary for making music with others in ensembles, evaluating (and correcting) your own or other’s performances, comparing different musical interpretations, as well as enjoying a

²The precise amount of musical information at which the short-term memory limit is exceeded varies considerably depending on the expertise of the listener. See Karpinski (1990, 197-201) and Marple (74-93).

more complete listening experience. With the goal of aural comprehension in mind, it is shortsighted, for both student and instructor, to focus only on the end product of dictation. Students develop their ability to comprehend music aurally through the act of dictation: they learn to hear more, and hear better, by writing it down. Often, the final notated excerpt reveals where the mistakes are, but not what caused them. For the instructor, dictation should not be simply a convenient artifact for the purposes of grading, it should be a means by which students communicate their inner understanding of the music to us, a tool for assessing strengths and weaknesses that allows us to provide feedback for improvement. Imagine verbally instructing someone to write down the word 'melody,' whereupon they write down 'malady'. While it is clear that the latter is incorrect, it is not clear how the mistake was made. Did the transcriber hear the right word and spell it wrong, or the wrong word and spell it right?

ALPHABET CHANTING: PREPARATORY SKILLS

In alphabet dictation, the alphabet is used to structure the listening process and facilitate transcription. Before applying this method to actual dictation, I begin with some group preparatory exercises involving 'alphabet chanting.' First, I will clap short rhythms consisting of 5-15 notes during which time my students are instructed to follow along using letters of the alphabet to represent each note. Afterwards they are supposed to tell me on what letter we ended. For example, if the rhythm contains nine notes, they should have reached the letter 'I,' the ninth letter of the alphabet, as shown in Figure 1. The difference between using the alphabet versus simply counting numbers is that the former is monosyllabic (except for 'W'), thus allowing a one-to-one correspondence between notes and letters in real time.³ When counting, polysyllabic numbers are often mapped onto successive notes, thus resulting in the wrong final tally.⁴ Once students can consistently identify the last letter, the next step is for them to repeat the rhythm, chanting out loud with the alphabet.

³If needed, a monosyllabic version of 'W' is 'dub.'

FIGURE 1: Mapping the alphabet to a nine-note rhythm.

The alphabet is a ready-made text that provides each note with a unique identity. For some students, having a 'text' that fits with the rhythm makes it easier to recall the excerpt. In this way the alphabet serves as a mnemonic device that can help develop memorization skills. I should point out that I also have students use rhythmic syllables (similar to those used with the Kodaly method) when sight reading and improvising rhythms. However, these syllables require a higher level of cognition than alphabet chanting and are therefore more difficult to use for imitation and dictation, especially at the beginning level. One must comprehend the relationship of a rhythm to the meter and beat, determine the proper sequence of syllables, and perform the resulting sequence accurately. On the other hand, alphabet chanting requires virtually no prior analysis, the sequence of syllables is always the same, and it is second nature to perform. Subsequent alphabet chanting exercises incorporate melodic material and conducting in addition to performing rhythms, as well as increasing the length and complexity of the excerpts to develop increased memory capacity. Once the process of linking letters of the alphabet with notes of a melody is familiar enough we can begin working on dictation.

⁴Students often encounter a similar problem when asked to perform septuplets. They subdivide by verbally counting to the number seven, resulting in an eight syllable rhythm. I suggest substituting 'sen' for the word 'seven' (which seems more satisfactory than 'sev').

ALPHABET DICTATION

On a piece of paper, students write out the letters of the alphabet (with plenty of space) ahead of time as a framework:

A B C D E F G H I J K L M N O P (etc.)

This provides a visual reference for the melody so that they can follow along (with their eye and/or finger), even on the first hearing. The letters also provide a physical location where information can be recorded for each note. A difficulty that sometimes occurs in traditional dictation is that students feel compelled to work chronologically from left to right. In his study, Potter cites the following participant's comment as being representative of many: "I don't like to write things down unless I know where they go" (Potter 1990, 60). A student may comprehend something midway through a melody but neglect to write it down because she or he has not completed all the notes up to that point, and does not know where to notate the information. Because it remains unnotated, the information is often forgotten. For this reason, Karpinski advocates the notation of rhythm first "to provide a framework in which to place the pitches." He goes on to ask: "Without any metric or rhythmic information, how much good does it do to know that 'fa' occurred somewhere in the middle of the passage?" (Karpinski, 202). With alphabet dictation, every note is already present on the page waiting to be filled in with details regardless of where in the melody it occurs. In the early stages of dictation, students often use a kind of shorthand that treats the traditional staff as a graph on which the individual sound events are plotted spatially with frequency represented on the vertical axis and time represented on the horizontal axis. In this conceptualization the staff, already laden with musical information, precedes a melody; the notes themselves (usually represented as dots) derive their meaning from their location on the graph. In alphabet dictation, it is as if each note of the melody exists *a priori* and a staff is fitted around it.

Since alphabet dictation was designed in particular for students who experience difficulty in absorbing and memorizing musical excerpts in their entirety, we begin by breaking down the process into discrete, single-task stages. When students approach each dictation hearing with specific questions to resolve they are more

likely to come up with the answers. In contrast, when they approach each hearing without any directed goals, listening for anything and everything, the results are usually less productive. Therefore, during each hearing of the excerpt, I ask them to focus on only one musical feature at a time, separating melodic and rhythmic elements from one another. Naturally, this necessitates considerably more hearings than normally provided for dictation exercises, but I have found this almost atomistic separation to be extremely beneficial, and a relatively short-lived phrase. I do not advocate this type of narrow listening as a final goal, but rather as a temporary developmental process, after which melodic and rhythmic information are combined. The following are the initial sequences I prescribe for melodic and rhythmic materials:

Melodic

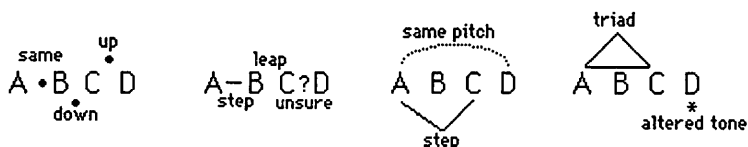
1. Length: On what letter does it end?
2. Contour: Is each note above, below, or the same as the one before it?
3. Conject vs. Disjunct: Is each note a step (minor or major 2nd) or a leap (minor 3rd or larger) from the one before it?
4. Patterns: Do you hear any scalar segments, arpeggiation of triads, prominent scale degrees, nonconsecutive repeated notes, altered tones?
5. Specifics: Identifying specific pitches or intervals.

Rhythmic

1. Length: On what letter does it end?
2. Measures: On or between which letters does each downbeat occur?
3. Beats: On or between which letters does each interior beat occur?
4. Equal vs. Unequal Divisions: Do the notes divide each beat into equal or unequal parts?
5. Patterns: What is the general pattern (rhythmic contour) for each unequal division (e.g., longshort, or short-short-long, etc.)
6. Specifics: Identify specific durations and rhythms.

Rather than working left-to-right, completing each measure before moving on to the next, this layered approach begins with very general information about the whole melody and fills in successively finer details. Using the alphabet framework, the details are notated in a fairly simple shorthand that is translated into traditional notation at a later stage of the dictation process. While I encourage students to alter the symbols to suit their needs, I teach a uniform shorthand for the purpose of in-class dictation exercises (see Figure 2). Contour is notated by a dot above or below the space in-between consecutive letters (or within the space itself for unisons). Stepwise motion is notated by a dash (hyphen) between letters; leaps by a blank space. In places where the student cannot decide whether the interval is a space of a leap, I ask them to write a question mark. This not only prevents mistaking an unfilled space for the deliberate blank 'notated' to indicate a leap, but also highlights the specific intervals for which one should listen during the next hearing. Arpeggiation of triads is indicated by triangles; scalar passages by inclusive square brackets above the letters; non-consecutive repeated notes by connecting slurs; and non-consecutive stepwise motion by angled lines (above or below the letters depending on the direction of the interval). Chromatic tones are indicated by asterisks and additional melodic details such as intervals, scale-degrees, solfège syllables, or pitch names are added in as appropriate. The length of the excerpt is indicated by a double-bar following the letter corresponding to the last note. Barlines and beat divisions (half barlines) are placed between the appropriate letters. An equal sign or a not-equal sign indicates whether a beat is divided into equal or unequal parts. In the case of the latter, the general rhythmic contour is specified by

FIGURE 2.: Some shorthand symbols used in alphabet dictation.



relative durations: L = long, M = medium, S = short. An important aspect of this shorthand notation is that it can be used in real time while listening to the musical excerpt (which is not possible when writing noteheads, stems, and flags). Hence, students who have difficulty remembering what they heard after the excerpt is over, can notate information while they hear it without getting behind the music. Karpinski (1990, 199) cautions against having students write while listening, saying that this will inhibit the expansion of their memory capacity. While I do not encourage 'writing-while-listening' as a final solution, I have found it beneficial when used as part of their ear training development along with tasks that develop memory. Moreover, regardless of our advice or warnings, there will always be some students who resort to 'writing-while-listening,' and it is better that they use a shorthand that is conducive to such an activity.

Separating the listening process into distinct layers such as described above also helps identify areas of weakness to which the student must attend. For example, if someone cannot easily identify the contour or direction of intervals, it is not surprising that they get the notes wrong, and it is of little value for them to continue to subsequent levels. The same applies when difficulties are encountered at any of the other levels. Students should stop and spend their practice time mastering the more basic skills before progressing further. This kind of diagnosis can be difficult to make, for both teacher and student, if based solely on the final dictation. From a graded dictation example, a student will learn which notes are wrong, but perhaps not why they are wrong nor what can be done for improvement. Using traditional dictation, even when successive listenings are notated on separate staves, it can be difficult to spot the root causes of errors, and it involves considerably more time on behalf of the instructor. Alphabet dictation can be used in the classroom to allow students to discover their own strengths and weaknesses. The instructor leads the class through sample dictations, specifying with each hearing the target musical feature for which students should listen. Before proceeding to the next level, the correct answer for the current level is provided, and students are asked to check their own work and take note if they need further practice on this skill. For the purpose of this exercise, however, they write the

correct answer on their page and continue to the next level in the same manner. Initially, alphabet dictation is more time-consuming (but perhaps more accurate) than a traditional approach, especially if one must concentrate on only one piece of information at a time. After a little practice, however, students are able to group together several features at once (melodic and rhythmic), and thus alphabet dictation can eventually employ the same number of hearings used in regular dictation.

By focusing on patterns, rather than the specific pitch and/or duration of individual notes, alphabet dictation encourages students to use their knowledge of the music and of music theory to fill in perceptual gaps and reconstruct a complete musical excerpt. In other words, even if they don't "get all the notes," students can often deduce what is missing by logically piecing together various bits of information. The first step is to combine all the information already notated in the alphabet dictation. Figure 3 shows a dictation melody in standard notation accompanied by a possible alphabet dictation.⁵ For most of the melody, the alphabet dictation contains sufficient information to determine the exact pitches and rhythms. For example, since the last note 'V' is *do*, and the preceding note 'U' is a diatonic step above that, then 'U' must be *re*. Similarly, 'T' is a diatonic step above 'S,' which in turn is a diatonic step above 'U' making the entire last measure *mi-fa-re-do*. While it may seem that anyone who has perceived the aforementioned information (i.e., up/down, conjunct/disjunct, ends on *do*) would have simply heard the selection intuitively as *mi-fa-re-do*, this is not always the case. These discrete pieces of information may have been gathered during separate performances of the excerpt and not perceived as an integrated melodic unit. Using similar deductive methods it is possible to reconstruct all the notes from Figure 3, except 'C' and 'Q.' Regarding the latter, given that it is part of an arpeggiation of a triad that starts on *do* and ends on *mi*, there are only two options: *la* or *so*. If there were an additional hearing available, the student is more likely to

⁵The alphabet dictation shown in Figure 3 is not intended to represent the final stage of a dictation process. There are still some details missing from this alphabet dictation that would make it impossible to reconstruct the complete melody.

FIGURE 3: A melody accompanied by a possible alphabet

The figure consists of two parts. The top part is a musical staff with a melody in 2/4 time. The bottom part is an alphabet diagram showing the letters A through Z arranged in a sequence that corresponds to the melody's pitch contour. The diagram includes solfège syllables (so, do, fa, re) and interval markers (L, S, H) to indicate the relationships between the letters.

The alphabet diagram is as follows:

so | A • B • C • D • E • F • G • H • I • J • K • L | [M • N • O • P • Q • R |] do | S • T • U • V || W X Y Z

Below the letters, there are interval markers and solfège syllables:

= = = L[#] S L[#] S H = L[#] S H

be successful if consciously listening for which one of these two pitches occurs, rather than listening without such expectations. Even if there were no more hearings available, the odds of guessing correctly the intervening pitch are vastly improved with only two possibilities.

A further means of deducing or intelligently guessing missing information is to draw on knowledge of the style in which the excerpt was composed. While most students learn the melodic and harmonic conventions that underlie tonal melodies in theory courses, they do not often apply this information while taking dictation. For instance, by determining the implied harmonic progressions and cadences of a given melody, students can make an informed decision regarding the plausibility of a particular pitch or set of pitches. In measure one (Figure 3), one might infer the note 'C' to be *re* because it would outline a V^7 chord in beat one resolving to an implied I chord in beat

two.⁶ This type of theoretically-informed decision making should, of course, be encouraged in any dictation scenario, with or without the use of alphabet dictation. However, since alphabet dictation is more conducive to the notation of partial information, the results are usually more fruitful. With traditional dictation strategies, students more typically notate all-or-nothing: the first two measures may be completed notated, while the third measure is left completely blank. It is obviously rather difficult to reconstruct a measure with no clues.

Besides following general stylistic conventions, the musical materials employed in ear training texts and courses are usually introduced in graduated levels with well-defined boundaries. This provides a succession of finite musical styles within which students can develop their expertise before progressing to a larger, more complex set of possibilities. Students can take advantage of these graded levels to guide their listening and decision-making strategies. Let us suppose that the level of rhythmic complexity in Figure 3 was limited to the second division of the beat (i.e., sixteenth notes) without the use of syncopation or borrowed divisions. In that case, the information provided regarding equal and unequal divisions of the beat (along with the general rhythmic contour) would be sufficient to determine the duration of each note. Moreover, this approach encourages listening for recognizable patterns, rather than trying to measure the length of each duration as it is heard. Melodically, we may be working only with leaps from the tonic, subdominant, and dominant-seventh chords, and thus the note 'Q' could not be *la* since it would then outline a submediant chord.

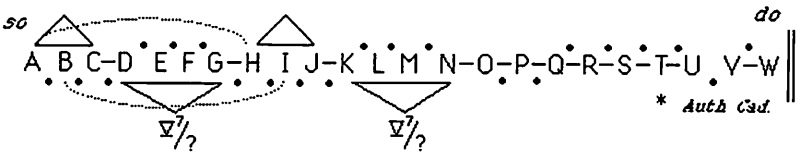
In my experience, it is often difficult for students to become accustomed to thinking in this theoretically deductive manner while in the midst of taking dictation. I therefore find it helpful to practice this kind of analytical deduction apart from regular dictation. In one type of exercise I precede the playing of an example by providing a fixed set of five or six melodic and rhythmic patterns from which a melody will be derived. This is similar to using the stylistic

⁶In addition, one might infer the missing pitch is *re* because in tonal melodies consecutive leaps within the same beat unit usually outline a single chord.

boundaries described above, but less overwhelming and less abstract. By actually being able to see all of the possible patterns written down, it is easier to compare and apply them. In another type of exercise, I provide a (mostly) complete alphabet dictation of a melody and/or rhythm from which the students must reconstruct the original melody and translate it into standard notation. This is not a listening exercise, but rather is intended to offer practice in the kind of reasoning that should take place in between or after listenings. When they have finished notating the completed melody, I play the excerpt for them to check their work. Figure 4 shows an alphabet dictation from one of these exercises that focuses on pitch alone and incorporates arpeggiations of secondary dominant seventh chords.

Alphabet dictation (and chanting) was developed to provide an alternative approach for teaching dictation. Most students will probably not rely exclusively on alphabet dictation, but will add these new skills and ways of thinking to their existing repertoire of techniques. There is no single method that will best suit the preferred learning and processing styles of all students. While we may believe that rote memorization and internal performance are ideal and essential musicianship skills, we cannot assume that all our students will be predisposed to this mode of cognition. Instead of processing a melody as a complete unit or a series of contiguous (but complete) segments, alphabet dictation promotes listening for general information and patterns across the entire melody, to which successively finer details are added. In the beginning, this layered approach allows students and teachers to diagnose specific areas of weakness that are not always discernable from the finished product of dictation. Moreover, this individual diagnosis can take place within a group classroom setting. By providing a mechanism for notating partial information (e.g., melodic and rhythmic contours and patterns), alphabet dictation also validates this as meaningful information, which in turn provides a positive reinforcement to students who might otherwise become frustrated by producing only blank measures. Finally, alphabet dictation helps promote the application of theoretical knowledge to guide and interpret the listening process.

FIGURE 4: Alphabet dictation used for reconstruction exercise.
(Answer appears in footnote 7).



⁷The following is the solution to Figure 4:

A B C D E F G H I J K L M N O P Q R S T U V W
So mi do ti ri fi la so mi ti la di mi so fa mi re mi fa fi so ti do

REFERENCES

- Benward, Bruce, Maureen A. Carr, and J. Timothy Kolosick.
Introduction to Sight Singing and Ear Training. 2nd Ed. Dubuque,
IA: Brown and Benchmark, 1992.
- Henry, Earl and James Mobberly. *Musicianship*. Vol.1. Englewood
Cliffs, NJ: Prentice-Hall, 1986.
- Karpinski, Gary S. "A Model for Music Perception and its Implica-
tions in Melodic Dictation." *Journal of Music Theory Pedagogy* 4/2
(1990): 191-229.
- Karpinski, Gary S. "Ear Training and Integrated Aural Skills:
Three Recent Texts." *Journal of Music Theory Pedagogy* 3/1 (1989):
127-149.
- Marple, Hugo D. "Short Term Memory and Musical Stimuli." In
Psychology and Acoustics of Music: A Collection of Papers, ed.
Edward P. Asmus, 74-93. Lawrence, KS: Division of Continuing
Education, University of Kansas, n.d.
- Miller, George. "The Magical Number Seven Plus or Minus Two:
Some Limits On Our Capacity For Processing Information."
Psychological Review 63 (1956): 81-97.
- Ottman, Robert W. and Paul E. Dworak. *Basic Ear Training Skills*.
Englewood Cliffs, NJ: Prentice-Hall, 1991.
- Potter, Gary. "Identifying Successful Dictation Strategies." *Journal
of Music Theory Pedagogy* 4/1 (1990): 63-72.
- Rogers, Michael R. *Teaching Approaches in Music Theory*.
Carbondale, IL: Southern Illinois University Press, 1984.

Sight Singing Schubert: A Study in Solfège

Bruce Taggart

Most of us in the music theory community agree that undergraduate music majors should learn to sight sing. We see the ability to sing a score at sight as an important skill that enhances our students' musicianship. It is a skill that is of direct and obvious importance in all their musical activities, from performing, to score study, to teaching. But acknowledgment about the importance of sight singing is usually where the agreement ends. There is no consensus on how to fit sight singing instruction into the undergraduate curriculum, which texts offer the most useful activities, whether intervals or scale function should be stressed, whether syllables should be used and, most contentious of all, which syllable system offers the most advantages. In this article, I will present interpretations of two Schubert songs using solmization syllables to illustrate the relative strengths and weaknesses of the two most common systems in the United States (moveable-*do* with either *la*- or *do*-based minor), and to demonstrate the analytical insights offered by both systems. In *do*-based minor, *do* is always the tonic, regardless of mode. In *la*-based minor, the tonic syllable moves with mode; thus, in minor the tonic is *la*, in Dorian it is *re*, and so on. I will also refer to this as *moveable tonic*.¹

¹I will not address the important issue of sight singing atonal scores here, in which moveable *do* is irrelevant. In the undergraduate theory curriculum, it makes sense to focus on mastering tonal sight singing before turning to post-tonal styles; it seems reasonable to assume that the two might require different sight-singing approaches.

The debate about the correct method of teaching singing by sight has raged for hundreds of years.² Recent writers have expressed it this way: "[Movable *do* systems are] harmful in the long run to those who become musicians. . . . My early fluency with 'the' scale [i.e. movable *do*]-so convenient for my chorus director--now seems analogous to knowing the five lines [of the staff] as 'Every Good Boy Does Fine.'"³ Another supporter of fixed *do* writes that the movable *do* approach is a "musical dinosaur;" students who learn this system are "brainwashed," and never "cultivate an awareness of the uniqueness of each tonality-its character and color."⁴ A supporter of moveable *do* writes, "To ask Americans to use [fixed *do*] (in spite of startling claims that absolute pitch can be taught with it) would be asking us to use a foreign language when we already have a perfectly good set of symbols for pitches."⁵ Another describes fixed *do* as "simplistic, ambiguous, and inaccurate," while moveable *do* with *la* as the tonic in minor "insinuates a dependence on the major to define the minor, as if to suggest that minor cannot exist independently of its relative."⁶ *Do*-tonic minor shows that "in the Americanization of solmization pedagogy, theory is king. What matters to these theorists is how well a given solmization system conforms to a predetermined theory. Theory wins and music students lose."⁷

In the United States, collegiate music theory programs use a wide range of sight singing approaches. In a recent survey of four-

²See, for example, the vitriolic exchange of letters between Fux and Mattheson in the early 18th century, translated by Joel Lester in "The Fux-Mattheson Correspondence: An Annotated Translation," *Current Musicology* 24 (1977): 38-50.

³W. Multer, "Solmization and Musical Perspective," *Theory and Practice* 3 (1978): 48.

⁴L. Martin, "Solmization: Getting the Facts Straight," *Theory and Practice* 3 (1978): 23.

⁵John D. White, *Guidelines for College Teaching of Music Theory* (Metuchen, New Jersey: Scarecrow Press, 1981): 31.

⁶T.A. Smith, "A Comparison Of Pedagogical Resources In Solmization Systems," *Journal of Music Theory Pedagogy* 5 (1991): 1-23.

⁷M. Houlahan and P. Tacka, "The Americanization of Solmization: A Response to the Article by Timothy Smith," *Journal of Music Theory Pedagogy* 6 (1992): 149.

year degree-granting music departments in the United States, Cynthia Crump Taggart and I found that the most common sight-singing approach used department-wide is solmization using moveable *do*, with *la* as the tonic in minor being slightly more common than *do*.⁸ Next in frequency was the use of numbers, followed by fixed *do* with no chromatic inflections. Infrequent was the use of fixed-*do* with chromatic inflections, neutral syllables, or note names. The most common reasons given for the use of moveable *do* with *la*-tonic in minor were that it facilitates functional hearing, it retains the half-step relationship between *mi-fa* and *ti-do*, and it makes clear the relationship between modes. The most common reasons given for the use of moveable *do* with *do* as the tonic in minor were that it helps in understanding scale degree function, it reinforces the study of tonal harmony, and it is consistent, with the tonic always being *do*. Fixed *do* was said to develop perfect pitch, to be universally used, to work in all genres of music, and to be simple. Many of the responses were vigorous, even heated, concerning the relative merits and weaknesses of the various systems.

Generally missing in the debate is the consideration of real music using the various approaches. We may argue that one system does not work well, but we seldom give the example that proves it. Critics of moveable *do* argue that it does not handle modulation well; critics of *la*-based minor argue that it conceals harmonic function by setting up two parallel systems of nomenclature for the same harmonies in major and minor; critics of *do*-based minor argue that it requires an extra analysis step, in which scale degree is determined, to get from the notation to the performance. But throughout the debate, real music is not presented for us to consider except as short, anecdotal problem passages.

Perhaps the most important reason for this comes from the near impossibility of abandoning our personal solmization orientation in favor of another, even for a short time, in order to consider its merits. For the fixed-*do* adherent to allow *do* to float from note to note, for the moveable-*do* adherent to hear *si-re-fa* as a tonic triad in either B or

⁸Cynthia Crump Taggart and Bruce Taggart, "Sightsinging Systems: A Survey of American Colleges and Universities," *Southeastern Journal of Music Education* 6 (1994): 194-209.

B-flat (major or minor), for the *do*-based minor adherent to hear *la-do-mi* as the tonic triad, or for the *la*-based minor adherent to add “extra” accidentals in order to get the *le* and *me* of *do*-based minor, all seem somehow contrary to the musical laws of nature. The primary strength of solmization, namely that it creates strong verbal and aural associations between notes and syllables, also prevents easy change from one system to another. Those of us who have taught all three systems know this challenge only too well.

But perhaps we can step back from our own systems for a moment and try to consider sight singing from other perspectives. I will present solfège analyses of the two compositions in minor using moveable *do* with both *la* and *do* as tonic. I call these solfège *analyses* because sight singing using a moveable system can require the singer to make decisions about the tonic during modulations, and because the syllables themselves reveal melodic and harmonic structures to the singer. I will not present the compositions using fixed *do* because such decisions during modulations are not necessary with that system, and because the syllables reveal no analytical structures that the original letter names of notes would not reveal. The sight singer would gain as much analytical insight from singing the letter names themselves.

I demonstrate a bias against fixed *do* solmization here. Although I have taught using this system, I was never satisfied that my students were gaining skills as a result of the solmization; instead, it seemed that the syllables were added after the note sounds had been determined. This may well be an example of an inability on my part to shed my own moveable *do* inclinations in order to consider fixed *do* with an open mind. I am sympathetic to those who argue that fixed *do* develops a sense of *keyness*—that is, how different scales and keys built on the various syllables sound—and a general sense of pitch location, but I am skeptical about claims that a system in which *do* can be C, C#, C♭, or even C*, can develop perfect pitch in those who start using it only as adults.

I will try to present the compositions from the perspective of the sight singer encountering the notated melodies for the first time with no accompaniment. As we will see, sight singing the melodies alone using moveable *do* without the written or sounding accompaniment often forces a difficult decision about tonic when

the harmonic context would have been set by the piano. How do we decide what note to call *do* if we don't know what the momentary key center is? This problem is especially pronounced in minor, in which the melody can drift in and out of the relative major with no added accidentals. Often the melody itself is quite ambiguous. In the course of these analyses, we can at least address the main criticism of moveable *do* systems that they do not deal well with modulation. In the analyses, I will present both a conservative approach to tonicization and modulation, in which the syllable to note assignments do not change unless a true large-scale modulation has taken place with a change of key signature, and a more aggressive approach, in which even brief (but obvious) shifts of tonic cause a shift of syllable. As we will see, both have strengths and weaknesses.

I will use the following syllables: *do, di, ra, re, ri, me, mi, fa, fi, se, so*⁹, *si, le, la, li, te, and ti*. Some teachers may have a different set of syllables for inflections. I know of some who say *to* instead of *te*, and *lo* instead of *le*. Unfortunately for us, the syllables are not internally consistent. It would be better if all flats ended in "e" and all sharps in "i," but *mi* and *re* prevent this. Standardization is obviously not one of the strengths of American sight singing.

The two songs by Schubert, *Der Schatzgräber* (Ex. 5) and *Schäfers Klagelied* (Ex. 6), offer considerable challenge to the sight singer who lacks the support of an accompaniment to provide harmonic context. Both songs are in minor, and both contain modulations and tonicizations that are both brief and subtle. Because melody and accompaniment are meant to lace together in defining harmonies and keys, sight singing these melodies alone can be a disorienting experience.

We should make several assumptions before we begin. First, let us assume that we are encountering the scores and the compositions for the first time. Second, we have had no cues to harmonic structure (such as preparatory tonic chord or key-establishing scale). Third,

⁹Although contrary to solfège tradition, substituting *so* for *sol* has several advantages. First, it makes the entire set two-letter syllables; *so* now agrees with its inflections *se* and *si*. More important, *so* is much easier to sing than *sol* and promotes good singing mechanics; the swallowed "l" of *sol* is a sure tone killer for non-singers.

our primary goal is to sing the notes correctly. Any analytical insight that we glean must come *in addition* to a successful performance of the melody. Fourth, we will have no trouble performing the rhythms of the piece.¹⁰

I have notated the syllables for both *la*- and *do*-based minor moveable *do* beneath the melody line. Line 1 represents *la*-based minor; line 2 is *do*-based minor. These first two lines are conservative interpretations in which the syllables remain fixed to the diatonic set as determined by the key signature (line 1) or by the original key and mode (line 2); syllables do not change with local changes of tonic or mode. When the key signature changes (as in m. 24 of *Der Schatzgräber*), the syllables are adjusted accordingly. Syllable lines 3 and 4 represent a more aggressive analytical approach, in which the tonic syllable shifts whenever the sense of key center audibly shifts, either through modulation or prolonged tonicization. Line 3 is *la*-based minor, and line 4 is *do*-based minor; both reflect a shift of tonic in modulation or tonicization. The question of when to shift the tonic syllable lies at the heart of much of the debate about sight-singing systems, and it relates to a thorny analytical question; namely, when do we call an audible shift of key center a modulation, and when do we call it a tonicization that is heard as a temporary departure from the true key area? In the first, we adopt the new key center as the true tonic; in the second, we retain an auditory sense of the old tonic even as we hear a new temporary tonic.

This question of how a melody establishes tonic and, as a result, how singers choose a starting syllable, warrants a digression. Some melodies are more ambiguous than the two to be discussed here. Consider, for example, the simple folk melody of Example 1. Using moveable *do* with *la*-based minor (*moveable tonic*), the sight singer could simply start singing; the opening syllables (as determined by the key signature) would be *ti, do, re*. The tonic turns out to be D, with the syllable *so*, making the mode Mixolydian.¹¹ Using *do*-based

¹⁰I realize that this is a big assumption for many young sight-singing students. A discussion of rhythm sight reading and syllables must wait.

¹¹"*La*-based minor" is therefore also *so*-based Mixolydian, *fa*-based Lydian, and so on.

tonic, we must determine the tonic before we can start singing. This either requires us to visually recognize tonal cues that point to D, or we must be able to scan the melody and *hear* where the tonic is. This, obviously, is a somewhat circular proposition: in order to determine the tonic so that we can know what syllables to use to sight sing the melody, we must first sight sing part of the melody. No doubt a well-trained musician should be able to perform such a task. Nonetheless, it does raise a paradoxical question: what do we want the solmization system to provide to us in order to facilitate sight singing, and what must we provide to the solmization system to make sight singing possible?

EXAMPLE 1. *Don't You Hear the Lambs?*



Consider another folk tune that presents an interesting challenge to the *do*-tonic sight singer (Ex. 2). A visual or aural scan of the first two measures seems to suggest a tonic of D, resulting in the use of the syllables *me*, *re*, and *do* on the first three notes (making the mode Dorian). The song might have continued as in the modified version of Example 3, confirming D as the tonic. However, the leap from D to G in the third measure of the real melody clearly points to G as the tonic, making the mode Mixolydian. The opening syllables must therefore be *te*, *la*, and *so*. Sight singers using moveable tonic would sing *fa*, *mi*, and *re*, discovering that the mode was Mixolydian when the tonic was sung with *so*; again, a

preliminary analysis was not necessary to begin singing. *Do*-tonic singers must therefore perform a double analysis: first, they must discover the true tonic, then they must interpret the notes of the melody in relation to the tonic in order to determine which notes receive inflected syllables; this is because the notation itself does not show inflections within a mode. In the Mixolydian examples above, the inflected syllable is *te*; in minor the inflected syllables are *me*, *le*, and *te*. A casual glance at the music does not reveal these inflections. Sight singers must have an understanding of the scale degree relationships in the various modes. Although this is not an unreasonable expectation for college music students, it requires an extra step in singing melodies at sight.

As a final digression, consider the beginning of *Sebben Crudele*, by Caldara (Ex. 4). Both the key signature and the first statements of the melody strongly suggest G major, complete with a strong authentic cadence in G in m. 22. The sight singer using *do*-tonic could easily start on *mi* and sing through the first phrase using G as *do*. Indeed, these are the syllables that the moveable tonic (*la*-based minor) singer would use. However, for *do*-tonic these syllables

EXAMPLE 2. *Frog Went A-Courtin'*



EXAMPLE 3. *Frog Went A-Courtin'*, modified



would be incorrect because the key is really E minor (made clear by the accompaniment, were it available), making E *do* and G *me*. Subsequent phrases would inform the singer of the mistake. The singer must either correctly guess the mode in the beginning or perform a fairly long-range analysis of the melody to discover the strong E minor phrases that follow. (A case could be made for an immediate, brief modulation to G major at the entrance of the vocal line; deciding on the correct solfège syllables in this case is still difficult, especially considering the accompaniment's insistent return to E minor after every vocal statement.) This song illustrates how easily a minor key can slip into and out of its relative major; *la-tonic* has a decided advantage in this case because it can follow the melodic line from minor to relative major without requiring an analytical decision about syllable shifting.

Returning to our Schubert songs, we find that *Der Schatzgräber* (Ex. 5) is the less complicated of the two. Line 1 shows the syllables for *la* tonic, and line 2 shows the syllables for *do* tonic. Because the

EXAMPLE 4. *Sebben Crudele*

The musical score for 'Sebben Crudele' is presented in five staves. The key signature is one sharp (F#), indicating E minor. The time signature is 3/4. The score includes measure numbers 1, 13, 20, 29, and 36. The melody is written for a single voice part. The first staff (measures 1-12) includes a four-measure rest at the beginning. The second staff (measures 13-19) continues the melody. The third staff (measures 20-28) includes another four-measure rest. The fourth staff (measures 29-35) continues the melody. The fifth staff (measures 36-42) concludes the excerpt. The melody features various rhythmic patterns, including quarter notes, eighth notes, and sixteenth notes, with some measures containing triplets or four-measure rests.

EXAMPLE 5. Schubert, *Der Schatzgräber*, mm. 1-421. Moveable tonic (e.g. *La* minor, *Re* Dorian), no modulations2. *Do* tonic, no modulations

3. Moveable tonic, modulating

4. *Do* tonic, modulating

1. mi do ti la fa re do ti ti ti mi re re do ti do ti mi di di re re
 2. so me re do le fa me re re re so so fa fa me re me re so mi mi fa fa
 (3.)
 (4.) 3. si si la la
 4. ti ti do do

mi mi fa re fa fa fa so fa mi re do te la so fa la fa re re mi fa
 so so le fa le le le te le so fa me ra do te le do le fa fa so le
 ti ti do la do do do re do ti la so fa mi re do mi do la la ti do
 re re me do do do do re do ti la so fa mi re do so me do do re me

so fa mi re re do do ti ti ti mi mi do ti la fa re do ti so fa mi re
 te le so fa fa me me re re re so so me re do le fa me re te le so fa
 re do ti
 fa me re

do ti la la fa re mi re do ti mi si la
 me re do do le fa so fa me re so ti do 1, 2. so mi redo la fa mi re

re re so so fa fa mi re mi re so mi mi fa fa so la so fa so la fa do fi so si
 3. so di re ri
 4. te mi fa fi

la la la la fa re re mi fa so fa mi fa fa la do ti ri fi mi mi
 mi mi mi do la la ti do re do ti [do do mi so] fi/mi si ti la la
 so so so so me do do re me fa me re [me me so te] la/so ti re do do

so mi re do la fa mi re so la so fa mi re do do la fa re fa la do mi re do

melody clearly begins in D minor, the sight singer should have no difficulty choosing tonic at the beginning. Likewise, the change of key signature and clear parallel structure of the melody make the move to D major in m. 24 obvious.

The passage in mm. 5-11 poses a small puzzle. The F-sharp in m. 5 suggests a move to G minor, which the melody in mm. 5-6 seems to support. The melody abruptly jumps into, and strongly cadences in, B-flat major with little warning in mm. 7-9, and then slips back into what is apparently G minor in mm. 10-11, returning to D minor in m. 12. What should modulating sight singers do here? The moves to G minor are weak but clear, and the cadence in B-flat is strong. Should the tonic syllable (*la* or *do*) be moved to G in m. 5? To B-flat in m. 7? Such shifts are shown in lines 3 (*la*-tonic) and 4 (*do*-tonic). Because these key areas are short and weak, singers are most likely to retain a sense of tonic on D throughout this passage. Even the strong B-flat cadence will be heard as a cadence on the submediant, rather than as its own key area. The syllables should probably not be shifted.

Assuming that the sight singers choose to retain D as tonic, and that both syllable systems are equally easy to sing in this passage, which system provides more theoretical insight? Singers using *la* as tonic will find themselves singing in the brief key area of *re*, cadencing on *fa*, which they may recognize as the subdominant and submediant, respectively. Singers using *do*-tonic (line 2) will find themselves in *fa* and *le*. A disadvantage of the moveable tonic (*la*-based minor) system is that it does not foster a strong sense of association between syllables and scale degrees. *Re* and *fa* could be any scale degrees, depending on mode. For *do* tonic singers, on the other hand, *fa* is always the subdominant, and *la* and its variant *le* are always the submediant. Singers using this system would easily and subconsciously recognize the passages in *fa* and the cadences on *le* and *la* as being in the subdominant and submediant, respectively. Such real-time, performance-based theoretical understanding is always advantageous. In either case, retaining the tonic on D is superior to chasing the fleeting tonicizations of G and B-flat.

The key change to D major in m. 24 forces a shift of tonic syllable for moveable tonic singers. *Do*-tonic offers an advantage at this point because the parallel melodic structures from minor to major

are reflected in the parallel syllables. What was *so, me, re, do* in m. 1 becomes *so, mi, re, do* in m. 24. The melody continues to parallel the minor melody through m. 29.

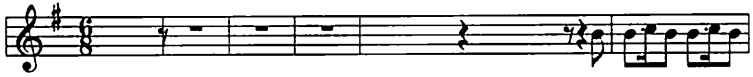
Measures 30-35 bring an interesting challenge for modulating singers. Although the analyst with the advantage of piano score at hand can easily recognize the half cadence in E minor in m. 31, can we expect singers to detect it? Sight singers should recognize E minor in m. 32, and may retrospectively realize that they should have adjusted the syllables to reflect the dominant of E minor in m. 31, but this is an awkward solution. The brief and surprising cadence on F# minor in m. 35 will certainly puzzle modulating singers. Should the syllable on C# be in E or F#? Retrospectively, singers may recognize the G major triad in m. 34 as a Neapolitan chord, leading to a C# triad—the dominant of F# minor—on beat 1 of m. 35, cadencing on F# on beat 3. In this case, the syllables for *do*-tonic (line 4) in mm. 34-35 should be *ra-ra-fa-le-so-ti-re-do-do*. Those for *la*-tonic (line 3) would be the more unusual *te-te-re-fa-mi-si-ti-la-la*. Surely we cannot expect sight singers to recognize these structures as they are singing. Probably the only reasonable syllables are those that leave the tonic on D throughout the D major section (line 1).¹² We need to recognize that the decision to modulate or not is hardly trivial; in fact, Schubert's complex, fleeting harmonic progressions demand a careful analysis. The vocal part alone often does not give the full picture.

Schäfers Klagelied (Ex. 6) is the more challenging of the two Schubert melodies because of several modulations that occur with little preparation. Sight singers using movable *do* must decide ahead of time how aggressive they will be in moving *do*. Failure to move *do* can yield extreme problems in solmization. Moving *do* too often can likewise lead to problems. Lines 1 and 2 show *la*- and *do*-based minor, respectively, with no shifts of tonic; lines 3 and 4 show these same systems with aggressive shifting of the tonic syllable.

The beginning of the vocal melody is clearly in E minor: it begins on the dominant, moves quickly to tonic, and contains early leading-

¹²Although singers will not recognize the Neapolitan from the syllables *fa*, *la*, and *do* themselves, singing is facilitated by not having to choose the "correct" syllables.

EXAMPLE 6. Schubert, *Schäfers Klagelied*, mm. 1-64



1. Moveable tonic, no modulations
2. Do tonic, no modulations
3. Moveable tonic, modulating
4. Do tonic, modulating

mi mi fa mi mi fa mi
so so le so so le so



la mi la si la ti la si la la la te la la fa fa so la mi so fa mi la la so fa mi re ti
do so do ti do re do ti do do do ra do do le le te do so te le so do do te le so fa me



la so so mi re do mi do la so mi re re mi fa so fa
do te so fa me fa me do te so fa fa so le te le

4. so so mi re do mi do la so ti re re mi fa so fa



mi so so mi re do re do la so so so mi ti la fi mi
so te te so fa me fa me do te te te so re do la so
mi so so mi re do re do la so b-minor do la mi re ti la
me me do so fa re do



C-major/minor: so la do fa la do fa te do te la fa la do fa la do fa
te do me le do me le ra me ra do le do me le do me le
re mi so do mi so do fa so fa mi do mi so do mi so do
re mi so do mi so do fa so fa mi do mi so do mi so do



te so mi fa fa te fa fa fa te ra ra do do do do do do mi
ra te so le le ra fa fa fa ra ? ? me me me me me me so
fa re ti do la re la la la re fa mi mi mi mi mi mi si
fa re ti do do fa do do do fa le le so so so so so so ti



E-flat Major
fa le fa le te do do fa le ? me ra te so
le ? le ? re me me le ? se ? ra te
la la do la do re mi mi la do do so fa re ti
do do me do me fa so so do me me/do so fa re ti

(CONT)

EXAMPLE 6. CONTINUED

36

le ? do le ? do le te re do ti le so te ti so fi fi fi so fi so le so fi

41

so te mi? so so so mi re do re do la so mi re mi fa so fa le so fa me fa me do te so fa so le te le so so mi re do re do la so mi re mi fa so fa so so ti re do re do la so ti re ti fa so fa

46

mi so mi mi so so mi re do mi do la so so ti la so fi la ri mi te so fa me fa me do te so fa so le te le so so ti re do re do la so so mi re do ti re si la do

51

mi mi fa mi mi fa mi la mi la si la ti la si la la la te la so so le so so le so do so do ti do re do ti do do do ra do mi mi fa mi mi fa mi la mi la si la ti la si la la la te la so so le so so le so do so do ti do re do ti do do do re do

56

la fa so la mi la fa mi la la so fa mi so fa mi mi la te la la fa la te la do le te do so te le so do do te le so te so so do ra do do le do ra do la fa so la mi so fa mi la la so fo mi so fa mi mi la te la la fa la te la do le te do so te le so do do te le so te so so do ra do do le do ra do

61

la fa re fa mi re do ti re do la do le fa le so fa me re fa me do la do re do mi re do ti re do la do le fa le so fa me re fa me do

tone D-sharps. Singers using either *la*-based or *do*-based minor would have no difficulty with the first two phrases (mm. 6-14). In mm. 14-20, E minor slips into its relative major, forcing *do*-tonic singers to shift *do* to G (shown in line 4). Leaving *do* on E, with the tonic of the passage being *me* (line 2), is at best cumbersome. *La*-tonic singers need not shift syllables here. *La*-based minor again offers the advantage of a smooth shift to the relative major with no analytical preparation.

Singers using both systems with modulation are forced to make some difficult decisions in mm. 21-23, where the melody suddenly- and briefly- cadences in B-minor. These measures offer a good example of the important role played by the accompaniment in defining key areas. In m. 21 the tonic G major triad in the piano part becomes a G major-seventh chord on the first beat (assuming the dotted quarter as the beat), and then a German augmented sixth chord in B minor on the second beat of the measure. With these strong harmonic cues, the accompanied melody smoothly moves into the B minor cadence and is heard as a brief harmonic digression rather than a true modulation; without the accompaniment, however, the shift is abrupt.

The singer must decide whether to retain the old tonic or shift to this new, albeit sudden and brief, tonic. Given the brevity of the key area, the best course would probably be to retain the old tonic and add inflections to the syllables. In *la*-based minor (line 1), the resulting syllables yield a cadence on *mi*, which would suggest the dominant of the original key (line 1; remember that the *la*-tonic singer is comfortable with *mi* as the chord root of the dominant, odd though it may seem to *do*-tonic singers). The *do*-tonic singer who modulated in m. 14 will also cadence on *mi*, but this *mi* represents the mediant of the most recent key of G major (line 4). (The singer using *do*-tonic without modulation would cadence on *so*, as shown in line 2; this interpretation makes little sense because the key is functioning here as the mediant of G major, rather than as the dominant of E minor.)

Unbeknownst to the singer, the piano accompaniment returns to G in m. 24, now as a G7 chord that leads to C major in m. 25. Singers who are modulating aggressively will again be forced to modulate retrospectively (or analyze ahead). Line 3 shows the syllables in C major, which will be the same for both moveable *do* systems because of the major mode. Lines 1 and 2 show the unmodulating syllables in moveable tonic and *do*-based minor, respectively.

Aggressively modulating *la*-based minor (line 3) proves problematic in mm. 29-32, when the melody slips into C minor, the parallel minor of the previous key area. Suddenly, from one C to the next, the syllable must shift from *do* to *la*. *La*-tonic singers are now faced with the problem of retrospective modulation; without previous analysis, they cannot know the new key until after they are

into it. Modulating *do*-tonic (line 4) fits the move to the parallel minor well. Keeping *do* on E (line 2) starts to approach impossibility with the *fa*-flat (A-flat). Keeping *do* on G (line 1) allows straightforward syllable assignments throughout this modulatory section.

From the cadence in C minor in m. 32, the melody moves to C minor's relative major, E-flat, by m. 35. Singers who tried to leave *do* on E will now find it impossible to continue (line 2). The lack of syllables for *do*- and *fa*-flats rules out this approach. Singers using modulating *do*-tonic (line 4) are again likely to miss the moment of modulation in m. 35 because the material that precedes it seems to suggest a continuation in C minor. Singers using modulating *la*-tonic (line 3) can continue through the modulation without changing syllables, noting that the tonic has shifted to *do*, which indicates a move to the relative major. Singers using *la*-tonic who let E remain *la* (line 1) will now find themselves in "*le* major." These syllables clearly show that the key has moved far (in harmonic terms) from the original E minor (*la*) to E-flat major (*le*).

The melody continues briefly in E-flat in m. 37, but lands on a problematic C-sharp in m. 39. Is this note a harbinger of a modulation in the works? A logical guess would be that this note might serve as the leading tone to D (as indeed it does). The sight singer will not know this in advance. *Do*-tonic singers who have been in E-flat up to this point (line 4) would sing *li* on the C-sharps of mm. 40 and 41 until they figure out that this is an augmented sixth to dominant cadential formula in G, making the correct syllable *fi*. In the meantime, the singer must choose between *li* (if E-flat is tonic), *fi* (if G is tonic), or *ti* (if D is tonic). Modulating *la*-tonic singers (line 3) would have a similar problem. The C-sharp could either be *li*, *fi*, or *ri*. *Li* would be the syllable if the *do* remained E-flat from the previous key; *fi* would be the syllable if the new key were G major; *ri* would be the syllable if the new key were G minor (making *do* B-flat).

This is a problem for modulating *la*-tonic. Even though the passage in mm. 39-41 strongly suggests a continuation in G, it does not specify whether it will be major or minor. In the meantime, *la*-based minor singers have no way of knowing without analyzing ahead. Although both *do*- and *la*-tonic singers will have difficulty

choosing the correct syllables at this point, *la*-tonic singers will have the greatest difficulty.

It should be noted that *la*-based minor singers who have not modulated the syllable assignments (line 1) will find themselves singing the correct syllables without having to decide on the new key. Obviously, this is, in part, a happy accident; if the melody had continued in G minor, the syllables in line 1, mm. 39-41, would not have agreed with the new key. As it is, however, sight singers using the key signature to determine syllables will again be offered analytical insight (at least in retrospect) by this cadence on *so* (because *so* is the dominant of the relative major of the original key of E minor).

As the melody works its way back to E minor, it does so in a kind of a thematic and harmonic retrograde of previous material. The G major passage of mm. 42-50, which is the same as that in mm. 14-23 (with variation on the final cadence), leads to a repeat of the opening theme in E minor in mm. 51-59. We see, then, a symmetry of key areas, with E minor at the beginning of the song leading naturally to G major as the stepping stone for explorations of increasingly distant key areas, culminating in the arrival at E-flat major in m. 34. G major is then used to ease the key back to the original E minor for the song's conclusion; the relative major moves effortlessly to the minor, allowing a harmonically stress-free modulation.

It is desirable to have the syllables mirror this stress-free transition. Whereas some modulations require brute force (such as the shift from C major to C minor to E-flat major in mm. 24-36), other modulations can "sneak" in. Allowing the tonic to move from syllable to syllable as the syllables remain anchored within the diatonic set makes singing such subtle modulations easy. Sight singers who move the tonic syllable to agree with every modulation will inevitably be faced with a sticky analytical decision at points of brute-force modulation. But modulations to and from relative major and minor can be accomplished with ease if the syllables are allowed to stay fixed. It seems appropriate to make such distinctions between types of modulation. We see in line 1 of mm. 42-63 that singers who have kept the syllables anchored to the notes of the key signature (as well as those using modulating *la*-tonic, line 3) have an easy time with the ending of this song. The tonic easily slides from

do on G in mm. 42-50 to *la* on E in m. 51. Singers using *do*-based minor must again make a shift, this time from G-*do* to E-*do*.

We have now “sung” through the entire song using several solmization approaches. Line 1 contained the syllables that agreed with the key signature; among other things, this was *la*-tonic in E minor. The syllables in line 1 remained anchored to the notes of the diatonic set as specified by the key signature. Modulations were shown through inflections of the syllables only, rather than by moving the tonic syllable for each key area. Line 2 was the doomed attempt to keep *do* attached to the overall tonic of E. Lines 3 and 4 showed *la*-based and *do*-based minor interpretations, respectively, in which the tonic shifted with each modulation (which I called an aggressive approach). Which (if any) seemed most satisfactory? Which offered the greatest ease of singing? Which offered the most significant analytical insights? Did any offer both ease of singing and analytical insights?

It is only fair to confess my own biases before attempting an evaluation of the four approaches. Although I have taught using both *la*- and *do*-based minor, and I prefer *do*-tonic in the classroom when illustrating harmonic structures and melodic scale function, I tend to use *la*-tonic--or, more precisely, moveable tonic, in which the tonic can be any syllable--when I sing from sight using syllables because it allows me to hear interval relationships and scale functions most easily and because it requires no preliminary analysis. I share the concerns of fellow theorists that *la*-tonic conceals many structural features of minor; the inconsistencies between the syllables in major and minor are surely problematic for vocally illustrating and discussing harmonic and melodic structures in the classroom. For example, in teaching the augmented sixth chord leading to the dominant, it is very useful to have the syllables of the augmented sixth be *le* and *fi* leading to *so* in both major and minor. (In *la*-tonic the syllables would be *fa* and *ri* leading to the dominant *mi*.) Students will find it easier to identify augmented sixth chords if they can use the characteristic progression of syllables as a clue in both major and minor. Not having a common set of syllables to reinforce scale degree and harmonic associations common to both major and minor weakens the analytical utility of a

moveable tonic approach for such progressions. Nonetheless, I tend to use *la*-based minor (moveable tonic) when I sight sing.

We can assume that both systems facilitate singing non-modulating passages equally well for those accustomed to using them. I find the experience of singing such passages with the two systems to be equally easy, but quite different. With *la*-tonic I am aware of relationships within the diatonic set; I have a strong sense of where *mi-fa* and *ti-do* are, even though they are between scale degrees 5-6 and 2-3 respectively. Because there is no need to perform a scale-degree analysis to identify syllable assignments, I am much less aware of scale degrees and harmonic patterns. I focus my attention on the position of notes within the operative diatonic set (that is, the notes specified by the key signature). I do not think of all modes in terms of the major key; on the contrary, I think of all modes, including major, in terms of the available notes as determined by the key signature. Using *do* as tonic, on the other hand, I have a strong sense of scale degree and underlying harmonies because I must think in those terms to identify syllable assignments. I am less aware of the diatonic set and more aware of specific keys and harmonic functions. Both sight-singing experiences are valuable and informative for me.

In the two Schubert songs, the problems created by the frequent sudden modulations make both systems that require reassigning the tonic in a modulation difficult. Fluent performance of the melodies will be hindered by the need to change tonic “on the fly.” The simplest approach for the sight singer is to use *la*-tonic (or fixed *do*!) at the beginning and allow the syllables to remain fixed on the diatonic notes as determined by the key signature, applying chromatic inflections where needed. We saw that in Example 6 this yielded cadences on *mi*, *fa*, and *le*, but it did not complicate singing the melody; it may offer useful analytical insights because it shows that all modulations in this song are fleeting and do not warrant a full shift of the tonic.

Such a permanent assignment of the syllables to the diatonic set as indicated by the key signature, with no shift of the tonic syllable in modulations, may represent a compromise between fixed *do* and fully moveable *do*. It shares with fixed *do* the simplicity of not having

to analyze and make retrospective decisions about tonic mid-song; both are performance--rather than analysis--oriented. It shares with fully moveable *do* the emphasis on scale degree relationships (albeit with different syllables on the notes of the scale in the various modes), harmonic patterning, and diatonic intervals. The tonic of a diatonic major scale is always *do*; the tonic of a diatonic minor scale is always *la*. Half-steps always fall between *mi-fa* and *ti-do*. Chromatic inflections of notation are reflected in the inflected syllables. Furthermore, leaving the tonic syllable in place throughout a composition should reflect the experience of the listener as the harmonies move away from the original tonic to more distant keys. Modern theories of harmonic structure suggest that such departures are heard in the context of the original tonic; tension is generated by the implied eventual return to the tonic. It seems appropriate to have the syllables reflect this departure and return.

Examples 7-9 illustrate how such syllables might be applied to the development section of a sonata form movement, in this case a piano sonata by Haydn. The development section opens in the dominant (Ex. 7). Using moveable tonic that remains fixed to the key signature, the syllables make this "*so* major." Although this seems odd to those accustomed to *do*-tonic, a singer comfortable with moveable tonic would recognize *so-ti-re* as both the local tonic and the overall dominant. Obviously, using *do*-tonic here (with A as *do*) would work well. In a discussion of these measures (36-40), it would be easier to illuminate analytical structures with *do* on A; singing might also be easier within the key area. By m. 59, however, the key has moved to B minor, shown in Example 8 as *la* minor (that is, the submediant minor), an important key in Haydn development sections. This key leads back to the tonic (D major) by m. 71, in anticipation of the true recapitulation in m. 74.

Singing the themes of the development section would be difficult using fully moveable *do*; the nature of a development insures that many key areas will be touched on only briefly, often not recognized except in retrospect. If we could isolate each key area, singing the melodic material with the tonic of *do* would, no doubt, be easier because the scale degree/syllable associations would remain consistent, but it requires extensive analysis to determine where exactly one tonic leaves off and the next begins. This problem is

EXAMPLE 7. Haydn, *Piano Sonata in D Major, I*, mm. 36-40
(development)



EXAMPLE 8. Haydn, *Piano Sonata in D Major, I*, mm. 59-61
(development)



EXAMPLE 9. Haydn, *Piano Sonata in D Major, I*, mm. 67-71
(development)



often even more pronounced in transitional passages between tonic and dominant key areas.¹³ Leaving the syllables assigned to the notes of the key signature allows easy syllable assignment throughout the movement. For ease of singing (rather than analyzing), leaving the syllables anchored to the diatonic set as determined by the key signature (moveable tonic) might prove a better solution than trying to modulate aggressively.

Finally, Example 10 presents a more recent example of a digression to a remote key, here in the bridge section of "Skylark," by Hoagie Carmichael. The sudden move to G major, with its strong cadence in m. 26, in the middle of an E-flat major song is a challenge for singers. How do we want them to hear this key? I suggest that despite the strong G major feeling of *mi-(me)-re-do* in m. 26, we should hear this still in E-flat as *si-(so)-fi-mi*; that is, as a cadence in the major key of the mediant scale degree, or "*mi* major." Although we clearly hear the brief modulation as a departure to a remote key, we should not lose our sense of the home key; the effectiveness of the passage depends on keeping it in its original harmonic context. If we were teaching this song aurally (in any key), these syllables would simplify the process; transposing it on an instrument would also be simplified using the unmodulating syllables as a guide. In both cases, fixed *do* and modulating *do*-tonic do not offer such generalizability from key to key.

Modulation seems to be the issue that supporters of the various systems tend to focus on, especially when pointing out the weaknesses of other systems. Seldom do we take the issue beyond the abstract discussion of what the syllables should be at various static points in the melody to considering how the singer will handle the modulation as it occurs. Those who argue in favor of fully moveable *do* may be correct when they say that a new key area should have a new tonic syllable, but they do not give a good procedure for arriving at this new tonic. Where and when does the singer make the shift? How strong must the modulation be to warrant a shift? Do we expect our students to sing through such

¹³Furthermore, in sonata form movements that are in minor, the transition is often between the original key and its relative major, which is especially easy for those accustomed to *la*-tonic in minor.

EXAMPLE 10. Hoagy Carmichael, "Skylark," mm. 18-27 (bridge).

do mi so do do do re do ti te do mi te

la la la te la so fa mi re fa la le so fa re

la do re si do si ti di si mi di ti si so fi mi so la

Skylark

Words by Johnny Mercer

Music by Hoagy Carmichael

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modulations without stopping and resetting the tonic syllable? Unless we have good answers to these questions, fully moveable *do* will always be susceptible to criticism from other approaches.

Ultimately, we need to ask what our goals are for our students. Do we wish them to sing notated melodies fluently at sight, even if it means minimal analytical understanding of structures being sung? (What percentage of college students can learn to sing scores fluently at sight in four semesters?) Or are we less concerned with sung performance of scores and more concerned with expanding our students' theoretical understanding through the use of a syllable system that reinforces and illustrates analytical structures? I fear that we must make such a decision, given the limited amount of time and resources available to most of us in the typical undergraduate theory sequence. The decision between the two systems is neither obvious nor simple.

In any case, we should be careful that our arguments in favor of one system over another be based on the actual act of sight singing, and not on abstract theoretical principles or static analytical structures. Assuming that we want our students to be able to sing (and hear!) real scores (and not just short melodies in sight-singing texts) at sight, our system of choice should facilitate fluency; an effective sight-singing system will help the student sing a wide range of scores in a wide range of tonal styles. All arguments about theoretical consistency and validity, all our perceptions of how we sight sing, are irrelevant if our students do not acquire such fluency.

Reviews

Earl Henry, *Sight Singing*.

Upper Saddle River: Prentice Hall, 1997. 363 pp.

Reviewed by Timothy A. Smith

A successful sight singing course requires a thoughtful teacher, diligent students, and a good text. That Earl Henry (Webster University) is a thoughtful teacher is evident from his new text, *Sight Singing*. The book begins with scales, and progresses through the usual arpeggiations of tonic and dominant triads, to chromatic, modal, and atonal melodies. Each unit contains a predictable sequence of what the author calls "concepts, warmups, exercises, studies, excerpts from the literature [and] ensembles."

Sight Singing's more than 400 warmups are evenly divided between pitched and rhythmic examples; the author recommends the latter be improvised on scales so as not to be entirely without pitch. Many of the rhythmic examples are in two voices; the pitched warmups are frequently in parallel major and minor. Whereas intonation problems are usually remedied by proper vocal technique, the warmups provide ample opportunity for instructors to inculcate good singing habits, although *Sight Singing* itself does not address the issue.

Warmups are followed by three or four analytical and compositional exercises. As with the warmups, both rhythmic and pitched examples are represented. The compositional exercises in *Sight Singing* appropriately incorporate improvisations to which students are instructed to attach tempo and performance indications in various languages. Newly-composed melodies, called "studies," follow the "exercises." Typically ten per unit, studies are more substantial than the warmups and correlate nicely with the essential concepts of each unit.

Each unit's six to eight "excerpts from literature," plus three or four ensemble pieces, represent the only literature pieces *vis a vis* proto-compositions or etudes. Some 100 of these excerpts, plus fifty

ensemble pieces, comprise less than one third of the book. Ensembles range from two- to four-part polyphony, including a half dozen longer choral works, chorales, and a half-dozen canons. Examples are not limited to the public domain; the later chapters include Ives, Bartok, Hindemith, Berg, Webern, Schoenberg, Stravinsky, Holst, Dallapiccola, and Babbitt. The units on non-traditional resources, atonal and serial melodies are especially well done.

Each chapter begins with a thorough review of concepts, and it is here we discover what sets *Sight Singing* apart from other primers. First, it paces smoothly with most harmony texts. Second, and more importantly, concept reviews are related to the reading and hearing of music. It is in these reviews that Henry's pedagogical "angle" becomes evident, for *Sight Singing* is, in many ways, two books in one. Its comprehensive approach to the integration of skill development with cognition of formal and theoretical rubrics has much to commend it and is the book's greatest strength.

More than two-thirds of *Sight Singing's* examples are warmups, exercises and studies, composed specifically to reinforce allied concepts of each unit. These studies are a significant achievement with venerable pedagogical roots in the development of technique, but not without cost—humorously articulated in Alice Parker's explanation why she preferred arranging to composing: "The likelihood you or I will write a memorable tune is practically nil."¹ Parker's maxim aptly describes *Sight Singing's* warmups and studies on scales and triads no matter how inspired the composer may have been!

Sight Singing contains no more miscues than one might expect of a first edition: as when students are instructed to "change the key signature to that of the relative major" (p. 118); a dominant of the dominant is described as a process in which "the supertonic is heard as a temporary new tonic" (p. 168); in the context of enharmonic modulations, "an enharmonic relationship depends upon the listener's ability to hear a single chord as functional in two different keys" (p. 226); or (in tonal contexts) "because the fully

¹This quotation is recalled by the reviewer from a workshop Alice Parker conducted at Biola College twenty-five years ago. Alice Parker is a prolific arranger and composer of choral music. She began her career arranging for Robert Shaw.

diminished seventh chord is made up entirely of minor thirds, inversions are impossible to discern aurally" (p. 250). Rather than dwell upon typographical errors. I propose to question four assumptions which permeate sight singing texts in general. These, then, are not a critique of *Sight Singing* so much as commentary on shibboleths of the theory curriculum which manage to pronounce themselves in nearly every text.

The first assumption is that the aural cognate for what students have learned about chords and progressions requires the singing of melodies outlining triads. Here I am reminded of Julie Andrews's famous line, "when you read you begin with A, B, C; when you sing you begin with *do, re mi*." Most sight singing texts assume that "when you study harmony you begin with I and V, so to connect this information to the ear you should sing arpeggiations of I and V." The point is that melodies are not chords and chords not melodies. The reader is invited to take exception (because there are plenty) but, in general, most melodies are not about the business of outlining triads.

While arpeggiations teach students to sing intervals, the better way to help them grasp melodic manifestations of harmonic function is to sensitize them to tendency tones. Functions are, after all, about momentum and resolution, phenomena which arpeggiations do not capture as elegantly as "*fa-mi, ti-do, le-sol*" etc. If this is true, then most melodies, especially stepwise non-arpeggiating ones, qualify for a chapter on harmonic momentum. *Sight Singing's* frequent reminders that tones tend to move in certain directions are therefore more effective than its arpeggiating etudes.

Because melodies are linear events, students learn more from discussions directing attention to linear, rather than vertical, sonorities. There are advantages, I should think, to teaching students to perceive and name the melodic characteristics of harmonic progressions without recourse to traditional harmonic accouterments such as inversion symbols, Roman numerals, comparisons of chord qualities in major and—spare us please—three forms of minor. The best way to do this is the Jersild method.² A text exploiting Jersild would likely bill its chapter on dominant/tonic harmonies as melodies fea-

²Jorgen Jersild, *Ear Training* (New York: Schirmer Books, 1966).

turing “re-do, fa-mi, la-sol” and “ti-do.” This would follow with units on “ri-mi, fi-sol, si-la, te-la” (secondary function), or “le-sol” plus “fi-sol,” and “ra-ti” (chromatic pre-dominants).

While *Sight Singing* often mentions the tendency of tones to move in certain directions, a pedagogy exploiting this principle would have employed a three-step process in which students were first taught to produce, then recognize, tendency pairs apart from notation, then connect those sounds with symbols of key and clef. Students might have been required, for example, to demonstrate competence at singing Jersild pairs from flash cards, then to write syllables from sounding pairs, then to identify and sing pairs notated in keys and clefs. This could not be done, however, because *Sight Singing* deigns not to use solmization syllables to name pitches (more about that later). While *Sight Singing’s* many reviews of vertical structures contain important information, they do not represent a systematic method for “growing” that information into aural skills, which leads to the second assumption.

Many ear training texts presuppose that cognition of structure is the quickest way to quicken the ear to recognize sounds those structures produce. Not to deny that this happens, and certainly not to question the appropriateness of teaching structure, I doubt the efficacy of methodologies wherein the inculcation of aural skills relies upon pedantries of harmonic structure. I’ve known too many students, alas, who could recite the particulars of a half cadence but who, when asked to sing the tonic pitch after having heard one, sing the dominant. Instead of one-more-timing half-cadence structure, I’ve found that if I immediately re-articulate the tonic chord students will perceive that they have confused “sol” for “do.”

This implies that “knowing” how a half cadence progresses, is spelled, voiced, etc., is not enough—there is something missing. In fact, what is missing is “perceiving,” connecting cognition of a structure with recognition of its sound. Explaining once more that the cookies are in the jar on the top shelf won’t get the cookie; students need something else—a stepladder or pogo stick—to “get” the cookie. It is this “something else” that I find missing in most sight singing texts.

I suspect this “something else” has something to do with telling students something like this: “Right there. . . Did you hear that

sound? . . . You've heard it many times before. . . . It's a familiar thing but you haven't known what to call it. . . . Listen to the next example and raise your hand when you hear it again. . . . Silent-sing example four and identify the measure in which it occurs. . . . Which one of the following melodies also contains that sound? . . . What syllables seem always to appear with it? . . . How do those syllables move? . . . Guess what? That sound is called a thus-'n-such. . . . Remember that sound!" While it may be helpful to know the vertical ingredients of "that sound," it is possible to give it a name before knowing its ingredients.

Naming familiar sounds is primarily what a course in sight singing should be. Twenty-three years of students have convinced me that they learn to read music the same way they learned to speak and read their mother tongue—before having encountered the rules of grammar, punctuation, or even spelling. It is a process that requires listening more than explanation, naming sounds more than theorizing about the mechanics that make them. And there is no better way to name sounds than solmization . . . which leads me to the third assumption of most sight-singing texts.

But first a story. A few years ago I read *A Brief History of Time* by physicist Stephen Hawking. While I liked the book very much, I remember most its preface which seemed mostly to defend the author's decision to use but one equation. The reason for this is that Hawking's publisher had informed him that, with the addition of each equation, sales would plummet by some predictable increment. In spite of this warning, the professor felt he could not function without Einstein's famous $e=mc^2$. Two points are relevant: first, the economics of publishing often drive authors to omit valuable information because the public won't "buy it;" second, authors who believe passionately that such omissions do not serve the interests of readers will employ pertinent methods, even if it costs.

I think it not an unfair portrayal to say that most ear-training texts tiptoe around solmization for the same reason Hawking jettisoned equations: in order to survive in the competitive publishing world it pays to be passionless when it comes to this method. One can imagine the hopefulness, then, with which those of us who use syllables read "*Sight Singing* is a workbook . . . grounded upon the philosophy that . . . solfège can be taught and learned through . . .

explanatory prose" (preface, ix) and then again in chapter one, "SOLFÈGE will be studied in the next chapter" (p. 8), only to find the next chapter wimping out with "use a syllable recommended by your instructor" (p. 17). Remembering the promise of its preface, we might be excused for finding it inexplicable that *Sight Singing* neither explains solfège, nor does it use one solitary solmization syllable, anywhere in any of its prose, to name any pitched sound. How much more elegant that prose might have been if it had used "le" and "ti" rather than "minor mode 6" and "raised 7." This omission is particularly puzzling in that *Sight Singing* prescribes a liberal dose of rhythmic solfège (presumably because that convention is not controversial).

The fourth assumption of most sight singing texts is that the nostrums you and I were taught must be perpetuated in our students. In the last few years John Buccheri (Northwestern University) has convinced many of us to abandon "compound" and "simple" nomenclature in the context of meters. John has also been teaching his students it is not all that important whether an augmented sixth chord speaks French, German, or Italian . . . and he is right. In addition to being the indefatigable apostle of the Jersild method, Michael Rogers (University of Oklahoma) has demonstrated the futility of several die-hard tenets of the theory curriculum, including the identification of intervals out of context. To these I would add the teaching of "three forms of minor."

Consistent application of the rationale for three forms of minor might just as well create three forms of major. Chromatic pre-dominants employing "le" in major should be equal justification, I should think, to add "do-re-mi-fa-sol-le-ti-do" to the inventory of master-at-all-cost scales. And, while we're at it, let's smooth out that augmented second with a "te" (but only when the scale is descending). I got the picture some years ago that, while melodic minor indeed helps pianists untangle fingers in terms of the literature, it is doubtful that this theoretical unicorn is worth the confusion it creates. How much more time has been wasted untangling minds about "which-form-of-minor-are-we-in-now" than all the fumbling fingers in the piano department. If I were to use *Sight Singing*, I would skip its explanation of minor scales, inform students that all dominant

functions in minor are: (a) borrowed from the parallel major, (b) signaled by the appearance of “*ti*” which is (c) often approached from a borrowed “*la*,” and leave well enough alone.

On balance I would rate *Sight Singing* as a cut above the average because it has a pedagogical angle—integration of harmonic knowledge with ear training skills. The book is well-balanced, comprehensive in scope, and attractively composed. But, like most texts of its kind, *Sight Singing* equivocates when it comes to naming scale degree functions and thereby deprives itself of an effective tool for connecting sounds with symbols.

Reviews

J. Kent Williams,
Theories and Analyses of Twentieth-Century Music.
Harcourt Brace College Publishers, 1997.

Reviewed by Richard Bass

The special pedagogical problem with twentieth-century music analysis is that we must make decisions not only about how to teach the material, but also about what material to teach. With so many composers, and in the absence of a common practice, the stakes are high for the choices we make, both in the repertoire selected, and in the analytic tools with which we approach the music.

The publication of numerous theoretical and analytic studies during the past few decades has greatly increased our capacity for a deeper understanding of much of this diverse repertoire. Many issues concerning structural and conceptual aspects of twentieth-century music have yet to be sorted out, but how far we have come is strikingly evident when we compare textbooks of the last ten to twenty years with those that were popular just a short time before. Authors like Leon Dallin, Vincent Persichetti and Ludmila Ulehla, their intimate knowledge of contemporary compositional styles and techniques notwithstanding, lacked a well-integrated analytic approach, settling instead for a loosely connected and often flaccid set of descriptions and observations.¹ Only in the study of twelve-tone music, particularly as advanced in the text by George Perle, was there a degree of analytic rigor comparable to that which we have more recently come to expect as a matter of routine.² It is partly for

¹Leon Dallin, *Techniques of Twentieth Century Composition* (Dubuque: W.C. Brown, 1957); Vincent Persichetti, *Twentieth-Century Harmony: Creative Aspects and Practice* (New York: W.W. Norton, 1961); and Ludmila Ulehla, *Contemporary Harmony: Romanticism through the Twelve-Tone Row* (New York: The Free Press, 1966).

²George Perle, *Serial Composition and Atonality* (Berkeley: University of California Press, 1963, and five subsequent editions through 1991).

the very reason that serial pieces could be studied with such predictably successful results that this repertoire became so dominant in courses dealing with the analysis of twentieth-century music. Of greater difficulty were the pre-serial, atonal works by Schoenberg and his followers, and greater still the music of composers like Debussy, Stravinsky, Bartók and others who did not belong to the circle of strict serialists.³

Despite its inherent limitations, set theory (also “atonal” or “post-tonal” theory) as developed by Allen Forte and refined by numerous other practitioners, is principally responsible for opening the door to a more systematic study of a large corpus of twentieth-century works.⁴ With set theory we can uniquely identify any pitch-class collection, study its properties, and categorize it in relation to other collections in a variety of ways that are at least potentially meaningful. One of the things that distinguishes modern textbooks from those noted above is their inclusion of set-theoretical techniques, and the most recent texts can be characterized largely by the extent to which they rely on these methods.⁵

Among the pedagogical choices to be made by the authors of such texts, then, are those that center around the degree of breadth desired—whether to restrict the study to a method (like set theory) that works well for a limited repertoire, or whether to take a more comprehensive approach, even at the risk of diluting the sense of focus. In this light, comparisons among recent texts, although never entirely fair, are unavoidable, and in order to place Kent Williams’s *Theories and Analyses of Twentieth-Century Music* into perspective, particularly for instructors who have taught a course on this topic

³For a more detailed discussion of the relationship between the Schoenbergian Viennese circle and other composers of the early twentieth century, see this reviewer’s “Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors,” *Journal of Music Theory* 38/2 (1994), pp. 155-6.

⁴Allen Forte, *The Structure of Atonal Music* (New Haven: Yale University Press, 1973) is the *urtext* monograph on atonal theory; the list of others who have contributed to the field is too long to include here.

⁵Among general texts, the earliest to offer a serious discussion of sets is Gary Wittlich, “Sets and Ordering Procedures in Twentieth-Century Music,” in *Aspects of Twentieth-Century Music*, ed. Gary Wittlich (Englewood Cliffs: Prentice-Hall, 1975), pp. 388-476.

using a different text, I will refer also to three other books that have appeared within the past decade: *Analytic Approaches to Twentieth-Century Music* by Joel Lester, *Materials and Techniques of Twentieth-Century Music* by Stefan Kostka, and *Introduction to Post-Tonal Theory* by Joseph Straus.⁶ Each of these four books is written in a similar, didactic style, and all are intended to be used, as Williams states in his preface (iii) "as a basic text for upper-level undergraduate and lower-level graduate courses."⁷

In the texts by Lester, Kostka and Straus, the study of pitch organization is paramount, a fact which should come as no surprise considering the pitch orientation of Western music generally. Lester and Kostka make at least some effort to deal with other aspects—specifically, rhythm and meter, timbre, and texture, which are discussed in separate sections—but it is an effort that at times seems rather perfunctory. Straus adheres principally to pitch constructions and relationships, drawing occasionally on events in other parameters to support points made in the course of his analyses. Within the study of pitch organization, both Lester and Straus rely principally on a set-theoretical approach, whereas Kostka deals with melody, harmony and pitch collections in other terms as well, reserving the discussion of set theory for a separate chapter. Both Lester and Kostka present their main topics within a kind of chronological frame consisting of an introductory chapter that contrasts

⁶Joel Lester, *Analytic Approaches to Twentieth-Century Music* (New York: W.W. Norton, 1989); Stefan Kostka, *Materials and Techniques of Twentieth-Century Music* (Englewood Cliffs: Prentice-Hall, 1990); and Joseph Straus, *Introduction to Post-Tonal Theory* (Englewood Cliffs: Prentice-Hall, 1990). I omit from these comparisons texts with a predominantly historical-stylistic orientation, even though they may contain information that is useful for analysis. Among these are Bryan R. Simms, *Music of the Twentieth Century: Style and Structure* (New York: Schirmer Books, 1986); Robert P. Morgan, *Twentieth-Century Music* (New York: W.W. Norton, 1991); and Elliott Antokoletz, *Twentieth-Century Music* (Englewood Cliffs: Prentice-Hall, 1992).

⁷Citations that refer to the book under review here are given simply as page numbers in parentheses; footnotes are provided for all other sources cited. For a more detailed, comparative discussion of the texts by Lester, Kostka and Straus, as well as others, see Arnold Whittall, "Reviews," in *Music Theory Spectrum* 13/1 (1991), pp. 79-88.

common-practice tonal music with twentieth-century styles, and a concluding section describing more recent approaches to composition, like indeterminacy, minimalism, and various “eclectic” techniques. Straus, on the other hand, makes no such allowances for the uninitiated or skeptical student, moving directly into atonal topics at the outset and sticking with them to the end of the book.

Williams’s *Theories and Analyses* likewise prioritizes the study of pitch organization, but it resembles the texts by Lester and Kostka in its separate treatment of non-pitch topics. It also is framed by an introductory discussion that examines some of the differences between traditional tonality and twentieth-century techniques, and a concluding set of chapters dealing with aspects of indeterminacy, minimalism, and eclecticism. These are the first and last of the book’s five “Parts,” each of which is subdivided into a number of chapters. Williams uses what has come to be called “spiral” organization for some of the topics (especially those that are pitch-related), presenting basic information in the early chapters, then returning to and building upon it in later chapters. His commitment to set theory as an analytic tool is greater than Kostka’s, but not as nearly absolute as in the books by Lester and Straus.

Whereas the texts by Williams, Lester and Kostka all purport to take a comprehensive approach to the subject, the amount of space Williams devotes to the various topics and compositional procedures achieves a balance that is closer to Kostka than to Lester. As an example of just how different the emphasis can be, we might consider the portion of each book that is concerned with serial music: for Williams it is about 10% and for Kostka 15%, but Lester spends no less than six chapters on this material, which amounts to a full 40% of the total.

Williams begins with an introductory chapter comprising the whole of Part I, which defines and contrasts three types of pitch organization: tonality, atonality, and neotonality. He analyzes three songs—Berg’s 1907 setting of “Schliesse mir die Augen beide,” Berg’s 1925 twelve-tone setting of the same text, and Copland’s “The World Feels Dusty,” respectively—to illustrate these approaches. Part II (Chapters 2-6) introduces set-theoretical terms and expressions, and seeks to familiarize students with basic operations and relationships. Part III (Chapters 7-9) covers topics outside the pitch domain, with

a chapter each devoted to rhythm and meter, texture, and "Form, Process and Time." Part IV (Chapters 10-15) returns to the study of pitch structures and proceeds to expand upon the concepts presented in Parts I and II through analytic demonstrations. Part V (Chapters 16-18) covers those "leftover" topics noted above, which Williams refers to as "Recent Developments;" here he gives a general discussion of indeterminacy, and offers some more specific ways of approaching selected works by composers who use minimalist techniques (Reich, Riley and Rzewski) and borrowing (Rochberg).

Throughout the text there are exercises and review questions designed to reinforce concepts as they are introduced. There is also a list of works for listening and analysis given at the end of each chapter, although there are no specific instructions or questions to facilitate the study of these pieces. Most of the works cited are chosen from published anthologies that are widely available, and each citation gives the name of the anthology and the page number where the piece can be found.

One of the most remarkable and best aspects of the book is its seriousness and determination in the treatment of non-pitch topics, which nearly always transcends the standard descriptions proffered in other texts. In many instances Williams constructs his own analytic models based on recent research and supported by numerous references to the scholarly literature. The practical results of such efforts are exercises and assignments in which students can be asked to apply specific methods to the study of various musical parameters within individual pieces.

What most characterizes Williams's *Theories and Analyses* as a whole, in fact, and what sets it apart to a large extent from other textbooks, is the exceptionally wide range and sheer quantity of theoretical approaches it incorporates. These include, in addition to the customary numerical designations associated with set theory: Schenkerian voice-leading graphs for certain tonal and neotonal works, hierarchically organized graphs of metric frameworks, phrase-structure diagrams, notational representations of motivic transformations, analysis based on Hindemith's theories of tonality and consonance-dissonance relationships, flow charts to explore musical process, plus a number of references to findings based on studies in music psychology. Each topic is explained in a careful,

step-by-step manner, with the theoretical sources introduced and discussed in the text itself and in footnotes on the same pages, rather than appearing in separate, end-of-chapter bibliographies as is the case with most textbooks.

This emphasis on theoretical diversity stands in sharpest contrast to the Straus book, which is devoted exclusively to the systematic and effective application of a single analytic model. What can be said for Straus is that, however limited his mode of inquiry, the results are both insightful and musically convincing. Williams's analyses are also impressive, but in a very different way: if Straus's approach, with its sharp focus and singularity of purpose, is like that of a laser surgeon, then Williams's might more closely resemble that of an octopus brandishing kitchen gadgets and farming implements. As ungainly as this may seem, from a pedagogical standpoint it can be a good thing: it is less helpful, after all, to present students with finished analyses that are really just the residue of an analytic process than it is to show them what that process entails, with all its false leads and dead ends, and how choices made along the way can dramatically influence the results. Given enough time and students who are willing, such "no-stone-unturned" methods can be highly effective.

One of the realities of today's music curricula, however, is that there is usually no more than a single-term course allocated to twentieth-century analysis. Therefore it is difficult to knead together so many different concepts and procedures into a coherent intellectual experience for students whose knowledge of the repertoire is often limited at best. Despite Williams's obvious talent for organization, some of the disadvantages inherent in the approach are reflected as problems in the textbook itself. These problems stem either from the overaccumulation of material in too short a time or, in other instances, from overgeneralizations in presenting information.

Just how rapidly material can accumulate is evident even in the introductory analyses given in Chapter 1. For Berg's tonal setting of "Schliesse mir" (pp. 2-10) Williams discusses the form and melodic-motivic structure, then presents a complete Schenkerian voice-leading graph of the song. Although he includes a brief explanation of this analytic notation, it is likely that only students who have some experience with this approach (and there are still many who

do not) can fully appreciate what it reveals about the characteristics of tonal composition. The analysis of the atonal setting of “Schliesse mir” (pp. 11-17) focuses principally on pitch-class content, plus melodic motives and contours. Then the discussion of Copland’s “The World Feels Dusty” (pp. 18-26) imports yet another set of tools to deal with elements of neotonicity: non-functional (“jazz”) symbols applied to chords (mostly ninths, elevenths and thirteenth) in various inversions, figured bass symbols for the same harmonies (e.g., 9-7-6-5-4), and identification of modes used in different phrases of the song with tonic notes (B, G and E_b) that divide the octave symmetrically as a cycle of major thirds.

The same sort of problem resurfaces at other points in the text as well—even where the topic is a narrow one. For example, Part II (“Fundamentals of Set Theory”) begins with a chapter on pitch and intervals (Chapter 2: “Integer Notation,” pp. 30-44) which generates a staggering number of terms and expressions that students must keep straight. For continuous pitch code (cpc), Williams presents both “Rahn” numbers (middle C or C₄ = 0, with positive integers above and negatives below),⁸ and MIDI numbers (0 is the hypothetical lowest C of a practical range, so that middle C = 60). In addition to pitch-class numbers (pcs), he gives name classes (ncs, where 0 = any C, C_#, C_x, C_b, or C_{bb}). Students are then shown ways to express pitch through binomial representations of pitch class plus name class (br), pitch class plus octave designation (pc-octs), and through complete binomial representations (cbrs).⁹ The text continues with a discussion of intervallic relationships (ordered and unordered pitch and pitch-class intervals and their attendant abbreviations) that closely parallels Rahn.¹⁰ Williams also introduces the familiar mod-12 “clock” diagram here (p. 40), then concludes the chapter with various polynomial representations for intervals.

⁸John Rahn, *Basic Atonal Theory* (New York: Longman, 1980); the rather formal presentation of material in this manual serves as the basis for discussions of set theory in most subsequent texts.

⁹The source for most of these expressions is Alexander Brinkman, *Pascal Programming for Music Research* (Chicago: University of Chicago Press, 1990).

¹⁰See Rahn, pp. 20-29.

At this early stage in the study of set theory, then, students have encountered an array of designations that is likely to be quite confusing: cpc, pcs, ncs, brs, pc-octs, cbrs, ips, ipcs, incs, iocts, ipc-octs, ibrs and icbrs. Whereas any of these concepts may be useful in particular situations, most instructors would no doubt appreciate more selectivity, or at least a clearer distinction between essential information and that which is more specialized. In fact, Williams never revisits some of these materials, and others reappear in situations where their usefulness is not entirely apparent (e.g., brs and ibrs in the examination of neotonal melodic models, p. 220). It is a direct consequence of this theoretical density that there is not enough room left in the book for the number of analyses needed to demonstrate effectively the relevance of all the concepts it introduces.

Generalizations, while unfortunate at some level, are necessary expediencies in teaching. In this book, however, they create a special dilemma, precisely because Williams tries to provide such rigorous theoretical underpinning for his methods: his desire for rigor inspires a broad-based approach, which in turn invites generalizations; points of exception to the general statements can then translate into inaccuracies that diminish the overall rigor of the method.

Problems of this kind arise in the discussion of symmetrical pitch-class sets in Chapter 11. Williams states first (p. 195) that "Most of the chords and scales used in functional tonality are *asymmetrical*, but one symmetrical type does occur: the diminished-seventh chord." Perhaps what he means here is not "in functional tonality," but rather "among the diatonic harmonies in the major and harmonic minor modes," because functional tonality also includes the diatonic scale itself (set 7-35, or [0,1,3,5,6,8,10], which is symmetrical at T6I), as well as symmetrical chromatic harmonies like the augmented triad (set 4-12, or [0,4,8]) as a dominant function, and the "French sixth" (set 4-25, or [0,2,6,8]) as a pre-dominant function.¹¹ He also writes (p. 198) that "Every symmetrical set has a balancing point called its axis of symmetry," a statement which is almost true,

¹¹I exclude from this list of symmetrical functional harmonies the diminished triad (set 3-10, or [0,3,6]), which is a symmetrical subset of the diminished seventh sonority Williams mentions.

but only by default.¹² Having just discussed both inversional and transpositional indices for symmetrical sets, Williams neglects to note here that such an axis (the kind that can be illustrated on the clock diagrams that accompany his discussion) exists only for inversional symmetry, not for transpositional symmetry. It is true that most transpositionally symmetrical sets are inversionally symmetrical as well, but there is one set (6-30, or [0,1,3,6,7,9]—better known as the “Petroushka chord”) that is transpositionally symmetrical only, and for which there is no such “balancing point.”

Another misleading statement occurs during the pitch-class analysis of an excerpt from Schoenberg’s *Second String Quartet* (p. 250), where Williams identifies a whole-tone collection that accrues in the violin parts, which also includes appoggiatura-like notes that lie outside the collection. He describes this type of construction, as well as others (pp. 271-2) in which whole-tone subsets are inflected by foreign pitches, as “nearly whole-tone” sets, citing Bryan Simms as his source. For Simms, however, this term has a very different meaning: it refers specifically to a whole-tone hexachord that is altered by shifting one pitch class a semitone up or down, which results in the familiar “Prometheus” or “mystic chord” sonority (set 6-34, or [0,1,3,5,7,9]).¹³ By placing whole-tone sets and subsets with embellishing added notes in the same category with a unique set-type that is directly associated with a number of important twentieth-century works, Williams in this case dilutes the significance of Simms’s observations as well as his own.

Technical problems are rare in this book, but they do show up occasionally as typographical errors (e.g., p. 177, Ex. 10-9: the second row of numbers is really “ncs,” not “pcs” as printed), word substitution (e.g., p. 161, penultimate paragraph: the parenthetical “stems down” referring to Ex. 9-13 should read “stems up,” in contrast to the down-stems noted in the next paragraph), and mislabeled cross-reference within the volume (e.g., the reference to an octatonic set on p. 192 directs the reader to Chapter 13, whereas the collection is actually discussed in Chapter 11).

¹²A similar statement appears in the chapter summary (p. 212): “Every symmetrical set has axes of symmetry.”

¹³See Simms, pp. 39-40.

The book includes two appendices, the first of which is a standard table of pitch-class sets like the one given in Rahn. The second is a glossary of chord symbols used in jazz, taken from Dan Haerle.¹⁴ The chord constructions given in the second appendix are not explained in the text, so their inclusion here is helpful. Not all these symbols, however, agree with those used in the analysis of the Copland song in Chapter 1: for major seventh chords, Williams uses a triangle (e.g., $C^{\Delta} = C-E-G-B$), but the appendix gives only the options with the abbreviation and the poetic breve ($C\text{ Maj}^{\flat}$ and $C^{\sim}$); also, Williams uses the circle with a slash for half-diminished seventh chords (e.g., $C^{\circ} = C-E_{\flat}-G_{\flat}-B_{\flat}$), whereas the appendix shows it as an inverted question mark ($C_{?}$).

In its choice of repertoire, *Theories and Analyses* is very conservative, perhaps surprisingly so in light of the broader, more inclusive regard it exhibits for different theoretical perspectives. There is considerable variety in the supplementary listening and analysis lists, but the pieces that are the objects of Williams's more in-depth discussions tend to be those that have become a kind of "standard repertoire" for twentieth-century analysis (bearing no particular relationship, incidentally, to a list of often-performed works). Schoenberg, Berg, and Webern completely dominate the atonal and serial sections; and with the exceptions of Copland's "The World Feels Dusty" in Chapter 1 and a single piece from Bartók's *Mikrokosmos* (Dance No. 2 in Bulgarian Rhythm), Hindemith is the representative composer for the neotonal analyses. Even in Parts III and V, where the topics and available repertoire are more diverse, recent music is eschewed in favor of works by better-established composers. Only one piece by a woman composer is mentioned (Kaija Saariaho's *Vers le blanc* for electronic tape, p. 160), and there is no serious consideration of works that have been influenced by music of non-Western cultures, or of Western popular culture, even though such styles and techniques (including quotation and allusion) have steadily increased in number as a kind of extension of the aspects of borrowing Williams explores in detail in the analysis of Rochberg's *Sfumato* (Chapter 18, pp. 322-334).

¹⁴Dan Haerle, *Jazz Piano Voicing Skills* (New Albany, IN: Jamey Aebersold Jazz, 1994).

Overall, *Theories and Analyses of Twentieth-Century Music* is an excellent pedagogical reference, and I expect that instructors as well as students will consult it often for its succinct expositions of theoretical models and concepts. The section on neotonality, for example, presents as clear and concise an explanation of Hindemith's theories as can be found anywhere. Another of Williams's accomplishments in the teaching of twentieth-century analysis is his incorporation of aspects of the Meyer-Narmour "implication-realization" model into some of his discussions.¹⁵ His application of this method to melodic analysis in particular is done in a way that is practical and simple enough for students to use in their own work.

There is much to recommend this book as a supplementary resource for a course in twentieth-century analysis. It has many strengths as a primary text as well, but in this capacity it places more than the usual amount of responsibility on the instructor—to sort out from among the oceans of technical information those points that require special emphasis, to help students translate methodologies into analyses that are well focused, to incorporate works by a more heterogeneous group of composers (especially if broad coverage of a representative repertoire is one of the course objectives), and to fit all this material into the time allotted to such a course. Still, it is apparent throughout the book that Williams has given careful consideration to the "critical issues" noted in his preface (iii): "the importance of acknowledging one's assumptions, the inevitable trade-off between specificity and generality, the necessity for methodological rigor, and the gulf between musical conception and perception." In deriving methodologies from theories, in constructing innovative models for the analysis of unique repertoire, and in using the scholarly literature in specific ways to support pedagogy, Williams offers us a textbook that goes a step beyond any other that is currently available.

¹⁵See Leonard B. Meyer, *Explaining Music* (Chicago: University of Chicago Press, 1973) and Eugene Narmour, *Beyond Schenkerism: The Need for Alternatives in Music Analysis* (Chicago: University of Chicago Press, 1977).

From The Classroom

A Low-Tech Tool for the Music Classroom

By Joel Phillips

In this expanding world of “high” technology let us not forget there are many fine applications of “low” technology in the music classroom. The humble overhead projector is but one example of an immensely useful low technology that many of us have overlooked since the advent of computer technology. Permit me to share a few ideas of how indispensable I find this low-tech tool in my classroom.

Consider using the overhead projector instead of a chalkboard. Doing so has several distinct advantages. First, using the overhead allows you to talk to your students instead of to the board and, because you are maintaining eye contact with them, you can instantly recognize when they have missed an important point. Second, the images on the overhead are bigger and easier to read. Third, music shown on the overhead looks like music on paper--notes are black and the “paper” appears white--while the images on a chalkboard are reversed--white notes on black or green “paper.” Fourth, musical examples shown previously can be reviewed or compared (just try “un-erasing” a chalkboard!)

Here are some ideas for ways you might use this tool:

- Excerpts from scores can be made into “slides” to aid in score analysis. Save class time by pointing to the measure you wish to discuss instead of having students attempt to find it by counting measures. Use colored pens to highlight salient features of a score. Make multiple copies of an excerpt, distribute them to several students, and compare these analyses in class discussions.

- Give students a slide with staff lines and markers and have them generate sight reading and dictation materials for use in class. Have students evaluate and edit each composition before performing it to reinforce their critical thinking skills and to improve their inner hearing. Use such examples for error detection, harmonization, or variation. Change the old clef, add a new key signature and accidentals to convert a major tune into a minor tune. Divide students into teams and have a race around the room by having each student on each team compose a bar of rhythm and pass the slide along. Read the composite rhythm composition from the overhead. Flip it over and read the rhythm backwards! My students cannot wait for their chance to compose music on slides for use in the class.
- Use a blank slide on top of a slide with staff lines. Write a passage of music on the clear slide. Move the clear slide up and down to demonstrate concepts like transposition and sequence. Flip it over to illustrate inversion, retrograde or retrograde inversion. Use blank slides to diagram graphs of phrase structure while listening to music in real time. Make some slides with lines like those of notebook paper. Break students into groups and have one student record the group's remarks for later use in a full class discussion.

The materials for making and using transparencies are readily available at your local office supply store. Blank transparencies come in boxes of 100 and currently cost around \$35 per box. On the box is a list of the makes and models of machines with which the blanks are compatible. Of the available pens, I prefer the *vis-a-vis* brand fine point water-soluble marker because they are darker and last longer.

It is easy to make transparencies. Simply use blank transparencies like paper in a photocopy machine or an inkjet or laser printer (check the manual first to make sure the machine can accept transparencies). Use a setting that offers the straightest path through the machine to minimize the risk of jams. Try a single blank the first time you use a machine. If you experience no problems, you may

wish to insert a stack into your paper tray (be sure to fan the stack; the blanks tend to stick together). When photocopying in this way you can easily create music examples from existing scores or from blank manuscript paper. In either case you may wish to enlarge a copy of the original item to view more easily its detail on the overhead slide.

Computer users have a few additional advantages. Because the image is slightly raised from the surface of a slide, it will tend to degrade over time. Computers can be used to minimize this degradation by reversing an image before printing. (To do so, go to the page setup options for your printer and choose the setting that reverses an image.) When printed as a reversed image you will actually write on the smooth side of the slide and thus better preserve its image. Examples can also be scanned into the computer and printed onto slides. Annotation and corrections can be added to these scanned images. Enlargements can be made through the computer's page setup commands as well.

A final tip is in order. While you might use a damp paper towel as an eraser for small corrections made in class, this is not the proper tool for big jobs. After a day of teaching you might have twenty or thirty used slides. For these big jobs run water over the slides in the sink and pat them dry. Saving your erasures until after class buys you another couple of minutes of instructional time during class.

So, if your navy jacket looks like you bought it used in Pompeii, or if you sneeze more than you talk in class (even though you bought the "dustless" variety of chalk), or if you are tired of cables, data projectors, and \$150 light bulbs, take that overhead projector back out of the closet and put it to good use.

LETTERS TO THE EDITOR

From David Damschroder

I read with interest Michael R. Rogers's review of my *Listen and Sing* in Volume Ten of this journal. As anyone who has written a textbook knows, the opinions of instructors are strong and varied. An author can learn from and be swayed by criticism, but ultimately must do what he or she thinks best, based on core insights and values. Instructors who do not intersect sufficiently with an author's perspective have other textbook options.

The editors of this journal have offered me this space to alert its readership to some inaccurate statements contained in the review. The following description is not correct:

Directly underneath almost every sight-singing and dictation melody, for example, are brief written hints about how and what to listen for. These do not constitute a complete analysis but rather direct the student's (and teacher's!) attention to telling details of structure and organization (p. 209).

This inaccuracy would not amount to much, except that Rogers then proceeds to find fault, based on his misconception:

Maybe the students should be 'doing' more of the analytical work and focusing less on 'receiving' a finished product of someone else's mind; maybe these are the kinds of hints that students should be asked to construct on their own during repeated hearings (in the case of dictation) or during repeated score perusals (in the case of singing) rather than being handed the hints in advance for free (p. 210).

I agree wholeheartedly with Rogers and, in fact, have constructed *Listen and Sing* accordingly. Students need some guidance, but not the saturation of having hints for "almost every" exercise. Exactly

half of the Solo Melodies are accompanied by hints (always the odd-numbered exercises, never the even-numbered exercises), while six of every ten Melodic and Harmonic Dictation exercises have hints. The latter ratio is not apparent from a perusal of the text alone, since blank staves are provided for only six of every ten dictations (the six with hints). The others appear in the 252-page *Instructor's Manual*.

I am uncertain whether Rogers acquired the *Instructor's Manual* before writing his review of *Listen and Sing*. I would like to think that he did. He praises the quality of my hints: "These many wonderful pedagogical tips alone are worth the price of the book" (p. 209). Since 294 of these hints appear below empty staves in the text, one might expect that he has viewed the music that they elucidate. And he criticizes some of my dictation choices: "The dictations (both melodic and harmonic) sometimes seem too long to exercise one of the main benefits of the task, development of short-term memory" (p. 213). Length is less a factor of the number of measures than of the musical content, which can be viewed only in the *Instructor's Manual*. Eight measures of sixteenth notes would make for a "longer" exercise than eight measures of half notes. But other evidence suggests that he did not familiarize himself with the *Instructor's Manual*. As noted above, he was unaware of the number of dictation exercises supplied in the *Instructor's Manual*. And one of his criticisms is directly countered by my commentary in the *Instructor's Manual's* eighteen-page introduction. Rogers writes:

Starting pitches and neatly placed bar lines are always (somewhat artificially) provided instead of requiring students to infer tonic, infer length and meter, etc.--all tasks that mimic real-life musical situations (p. 213).

I write:

Empty staves are provided in the text for six of the ten melodic dictation exercises for each chapter. . . For the four supplementary melodies provided in the *Instructor's Manual*, you choose what to tell them before the performance. I recommend that at least the clef and either the key or the first pitch be given (*Instructor's Manual*, vii-viii).

Though the *Instructor's Manual* is not sent automatically when an instructor requests an examination copy of *Listen and Sing*, the Schirmer sales representative who serves Oklahoma, where Rogers teaches, informs me that she does not hesitate to supply one when an instructor requests it. At that time, sales representatives could have been contacted either through Schirmer's Web page or its toll-free number.

Roger's also misrepresents the text's coverage, as follows:

Secondary dominants (in melodic study only, not harmony) are treated in some detail, but only a very few melodies (out of hundreds), and no harmonic progressions, include real examples of key shift (p. 214).

Were this true, my text would be an abysmal failure. Though I may cover modulation less thoroughly than Rogers would like, my treatment of secondary dominants in harmonic contexts is extensive. All of these topics are introduced on pages 305 through 307, where the terms *applied dominant*, *secondary dominant*, *applied leading-tone*, *secondary leading-tone*, *tonicization*, *modulation*, and *pivot chord* appear in bold italic type and are accompanied by chordal examples. It appears that Rogers missed this and missed literally hundreds of harmonic progressions that reinforce these concepts on the remaining 350 pages of the text and in the *Instructor's Manual*.

Finally, Rogers makes the following assertion:

The personalities and flavors of the notes are missing along with any recognition of how changing contexts affect their meaning. . . The teeming inner world of tugs and magnetism that defines tonality is unaccounted for in the flattened-out, nonhierarchical perspective of this text (p. 212).

Frankly, I was anticipating the very opposite criticism from some reviewers: that my outlook is too overtly Schenkerian for my young audience. Instead, I'm accused of being "nonhierarchical." Hierarchical thinking pervades *Listen and Sing*, particularly in its hundreds of hints where I demonstrate how the application of music theory can "enhance artistry and. . . forestall mechanical pitch-manipulation" (*Instructor's Manual*, p. v). As soon as a "changing context" is

introduced (namely, when the dominant is presented as an alternative to tonic in Chapter 2), I demonstrate how context affects scale degrees 7 and 8. I assess “instability” and “stability” and explain how a chord can be “prolonged.” I use the words “subordinating” and “hierarchy” in my commentary, and emphasize (in italics) that “a pitch may fulfill several different functions within a key” (p. 18). Other evidence of my hierarchical perspective can be found in the hints to Solo Melodies 2-7 and 2-9 and Melodic Dictation 2-4 (all of which reveal “associations among nonadjacent pitches”), to cite instances from only the second of the text’s twenty-six chapters.

Criticism is useful to instructors making adoption decisions and to authors contemplating future editions only when it is based on a thorough and accurate assessment of a work. Thus I offer these remarks as a corrective to the review as published in Volume Ten.

LETTERS TO THE EDITOR

From Michael Rogers

A response to David Damschroder:

Professor Damschroder is right. My review does contain some inaccuracies, although not all the ones he claims, and I welcome this opportunity to set the record straight and to correct some misunderstandings he has about my criticisms.

1. My comment that “*maybe* [my emphasis] the students should be ‘doing’ more of the analytical work . . .” was not intended to “find fault” (as Damschroder puts it) with his book or approach. I was merely trying to step for a moment outside the confines of this specific review to identify—for teaching in general—at what point analytical hints offered by an instructor can start to impede the learning process rather than help it. Perhaps my error, if any, was that I did not make this larger issue sufficiently clear.

I don’t know at what point the hints would become “too much” either for this book or in some other context, so I don’t know if he had too many and I never said that he did. This can only be decided on a case-by-case basis by a seasoned teacher for individual students according to their needs of the moment. I think, though, it is a perfectly legitimate issue to raise within a review for any kind of teaching. I go on to say (in the review): “the analytical clues themselves are certainly exemplary models of the sort of thing that should be happening as part of the educational exchange in listening and singing environments. It will be up to individual teachers to decide how to maximize their effectiveness for each given setting—how and when to use them.” In other words, I supported the value and quality of these cues in my original review (even as I

tangentially mused about their proper number). In fact, as Damschroder himself acknowledges, I went so far as to admit that, "these many wonderful pedagogical tips alone are worth the price of the book," so I am slightly mystified at his defensive posture.

My phrase "almost every" in describing the amount of hints was indeed excessive—mathematically speaking, that is. I was simply responding to my enthusiasm for seeing such hints at all, considering that most books include nothing like this. My comment, then, was intended to draw attention to this abundance of good things and was intended as high praise, not as a rebuke, but I can now see how it could be misconstrued. I certainly did not undertake the kind of precise statistical count of the percentage of analyzed melodies that Damschroder offers, and I defer to his figures as a corrective. Based on the information in Prof. Damschroder's letter, there appears to be no fundamental disagreement between us on both the value and limitations of verbal nudges.

2. Regarding whether or not I consulted the *Instructor's Manual* for my review, there is an interesting story to tell. In fact, I did *not* have this manual available at the time of the review for the simple reason that I was not even aware of such a manual. So far as I remember—and I am willing to admit to a faulty brain—in the packet I received or brochures that Schirmer Books initially sent, there was no information whatsoever about the existence of an *Instructor's Manual* and one is not automatically provided when a review copy of *Listen and Sing* is ordered, as Damschroder admits. Furthermore, nowhere in the main text (that I could find) is there any reference to this supplementary book. The accompanying cassette tapes are mentioned in the preface; I would expect the *Instructor's Manual* also to have been identified as part of the supporting package. If you were just looking at the text—as most people would be—you wouldn't even know there was an *Instructor's Manual*. Now I'm sure it's true, as Damschroder states, that an area representative could be helpful in obtaining a copy, but common sense suggests that you would first have to know that a book existed before you could ask for it.

I am now embarrassingly aware, then, that at least some of my impressions of the strengths and weaknesses of the book were based on ignorance of the larger picture—on ignorance of this supporting

manual, which as it turns out does contain much useful practice material that invalidates some of my original assessments about the full range of content and focus. For the resulting inadvertent inaccuracies, I apologize to the readers of this journal and especially to Prof. Damschroder for misrepresenting the subject matter of his text.

But there is still more to my adventure with this book. After my review was completed and submitted, I did discover, completely by accident one day while just browsing in the Schirmer catalog of music textbooks, a listing (with its own ISBN number) for a *Teacher's Manual for Listen and Sing*. I immediately contacted the headquarters of Schirmer Books in New York City to request a copy. I was told in clear terms that "the book was no longer available; it had gone out of print." After briefly experiencing my frustration, I decided to put the matter to rest. My review, after all, had already been sent.

When Prof. Damschroder's concerns were passed on to me after the review was published, I made a second inquiry (again from national headquarters) about the availability of the *Teacher's Manual* so I could properly respond to his comments. This time I was told that the manual had just been reprinted and was now back in stock (as of January 1998). I am not sure whether Prof. Damschroder is aware that apparently (if my information was accurate) there was a time period when the manual was not available. At any rate, I have since received a copy, have reviewed it, and can confirm that it does in fact include the kinds of practice material (for secondary dominants and modulation) that I initially had such trouble locating in just the main text alone, although I missed some there too. I am sorry that my convoluted experience with this review has resulted in such an unfair description of the content of this text. [I never said, by the way, as Damschroder claims, that the terms themselves for secondary dominants, modulation, and related issues were not mentioned or that they were not identified or defined or illustrated as important concepts, but only that I couldn't find the appropriate or adequate follow-up practice progressions once they had been introduced.]

3. As Prof. Damschroder surmises, the *amount* of practice exercises for harmonic modulations (even after revising my figures) is still

not sufficient, in my opinion, for a full course of study on this topic, but I am willing to admit that this is a personal judgment. My students, at least, would need a lot more practice for this demanding and important task than what is provided in this book.

Damschroder's progressions for secondary dominants are problematic, however, for another reason. The problem is that, although there seem to be enough harmonic patterns that include secondary-function symbols (and two kinds of systems are generously offered), the types of multiple-choice distinctions called for too often, in my opinion, involve discriminations not between a chord that is a secondary dominant and one that is not, but rather between two slightly different versions of the same secondary dominant. So this time it is the content of the progressions that falls short and not the amount of practice material.

For example, I am not as concerned about the relatively trivial difference between a $V6/5$ of V and a vii^{o7} of V as I am about the more crucial and substantial distinction between any kind of secondary dominant of V compared with, say, the very different musical and psychological effect of a simpler and less tension-provoking IV , or the slightly more rich $ii6/5$, or the distinctively dramatic N^6 chord, or any of the more forward-pushing augmented-sixth chords—all of which could fit into the same predominant slot.

The kinds of distinctions that Damschroder chooses to dwell on—and not all are of this type—are of a finer gradation and, while important too, could easily be practiced in other simpler contexts (e.g., $V6/5 - I$ vs. $vii^{o7} - I$). Why waste the secondary-dominant progressions just to practice chord-quality distinctions? These don't even need progressions at all but could be practiced as individual chords. Secondary-dominant practice should involve sensitization to the different effects—or affects—of intensity, weight, and meaning that secondary-dominant chords can produce as compared with different categories of chords; it should not fuss over minute shades of color variation or inversion difference between or among chords that are all basically conveying the same musical message.

Many of Damschroder's secondary-dominant exercises, then, are not what they seem to be. I have not done the type of precise statistical counting that Damschroder would expect, but I estimate that over 75% of the secondary dominants in the multiple-choice

format call only for judging chord quality rather than detecting the presence or absence of a secondary dominant in the first place.

Similarly, I would consider it more important to be able to distinguish presence or absence of augmented-sixth chords than to be able to distinguish between the various geographical types within the augmented-sixth family. In short, the crucial features of chords to stress in harmonic dictation are those that differentiate *between* families and not *within* families. Uniqueness is more significant than variation—although both have their place.

4. Appropriate length of dictation melodies is another topic about which we apparently differ—although here there is some perception/cognition research to help identify the capacities of human processing.¹

I am not about to start counting “data bits” in Damschroder’s melodies to determine whether or not they fall outside the commonly accepted boundaries of human perception. It would be foolish, anyway, to compare my results with his because different teachers (or listeners) might use very different chunking procedures or pattern-identification methods. My general impression, however, remains that a fairly large number of his practice melodies for dictation would not easily meet the standards or requirements of short-term memory processing. An interesting debate could be designed about whether or not student practice melodies should follow these short-term guidelines in the first place. But that is, of course, another topic altogether.

¹See George Miller, “The Magical Number Seven Plus or Minus Two: Some Limits On Our Capacity For Processing Information,” *Psychological Review* 63 (1956): 81-97, which is the classic study on the limits of short-term memory and chunking. See also Hugo D. Marple, “Short Term Memory and Musical Stimuli,” in *Psychology and Acoustics of Music: A Collection of Papers*, ed. by Edward P. Asmus, Jr. (Division of Continuing Education, University of Kansas, n.d.), 73-93. This study tested the “7, +/- 2” rule of thumb in musical contexts and found that most listeners operate within the expected limits of short-term memory as defined by Miller. Many additional more recent follow-up studies over the years have confirmed the validity of this framework.

5. My most fundamental difference with Damschroder involves his omission of scale-degree function. And after reading his above response to my review, I am even more convinced that he has not yet come to appreciate its importance. [I am not consoled (or surprised) to learn recently from Damschroder's *Instructor's Manual* that his own favored system for sight singing is to use letter names (p. x), which is at the opposite end of the spectrum from scale-degree function.] First of all, he confuses the issue (in his letter) by excessively focusing on the red herring of "hierarchy," a term I used (once) in my review and one that has many different applications in musical analysis. He assumes I am referring to some kind of Schenkerian orientation. I am a big fan of Schenkerian analysis (especially for sight singing and melodic dictation). I have argued for its benefits in my published writings, analysis articles, and conference papers and use it on a daily basis in my own teaching for both aural and written theory, although always in combination with complementary approaches, never exclusively. I appreciated (and fully recognized) the many wonderful applications of Schenkerian principles in Damschroder's book and, in fact, would not have minded if he had gone even further in this direction.

But in this case, I was talking about something different; I was using the term "hierarchy" to make a simple distinction between "active tones" and "rest tones."² The "flattened-out, nonhierarchical perspective" I was referring to in my review was Damschroder's lack of distinction between two different *levels* of melodic function: those pitches that "demand progression and resolution" (Wedge) and those that do not. Not recognizing such distinctions drains the lifeblood out of tonality and reduces melodic structure to a single static plane of existence. It is in this sense—not the Schenkerian one—that I feel his approach is "nonhierarchical."

The key term here is *melodic* function. Damschroder claims, for example, that his book does deal with pitch function in changing

²I am borrowing terms here from another Schirmer Books publication: George Wedge, *Ear Training and Sight-Singing* (1921), one of the earliest and best examples of the pedagogical application of scale-degree function; see especially chapter VI. A quick perusal of this book will reveal what is missing from the Damschroder text.

contexts and he quotes from page 18 that “a pitch may fulfill several different functions within a key.” We are in agreement as far as this goes; all events in music, of course, are context sensitive. The example he is referring to, however (on the previous page), involves a simple C-major melody where the pitch G first appears as part of a tonic triad and then later as part of a dominant triad. He is talking about, in other words, *harmonic* function—the role a pitch plays in the underlying chord structure (the fifth of this chord vs. the root of that).

Now I am certainly not going to argue that melodic and harmonic function are unrelated, but when I use the term scale-degree function I am referring specifically to a “teeming inner world of tugs and magnetism”—it is ironic here that Damschroder quotes back to me my own words—created by powerful horizontal intervallic patterns of goal-directed motion inherently built into the structure of the major/minor scale (*not* chords); I am not referring here to the conventional labels for chords like the primary-triad functions, for example, that he cites. It is *melodic* patterns that activate the intricate network of relationships and attractions that we define as functional tonality.

The historical antecedent for the pedagogical position I am advocating is not Schenker, as is evidently true for Damschroder, but rather Fétis, the first theorist—in my opinion—to fully grasp the inner melodic workings of tonality, although as I have already made clear, Schenker has been an important influence on my thinking as well. My complaint, then, about Damschroder’s book is not that it’s not Schenkerian enough but that it’s *only* Schenkerian. What pedagogical vigor and bounty his text would have had if only the additional, and presently missing, principles of scale-degree function could have been combined with the many fine Schenkerian features already present (and abundantly identified by Damschroder himself in his letter—changing context, stability/instability, prolongation, levels analysis, long-range vs. local associations, structural reductions, harmonic functions, subordination, etc.)! I like his book very much. I just thought it could have been even much better—more eclectic, comprehensive, multifaceted.

Let me illustrate, briefly, how my scale-degree approach and Damschroder’s Schenkerian mind-set differ by picking just one item

from his list for comparison (the same one he also singled out for comment). Damschroder claims, correctly, that his book does illustrate the value of changing context (e.g., the quote he cites from p. 18 and the musical example on p. 17, which I have already briefly mentioned). In this example—and in others—the kind of changing context that is tacitly assumed is one where the meaning of a pitch changes according to its particular surroundings (as when a pitch belonging to one triad now belongs to another) but in Damschroder's universe the larger context is nearly always *within the same tonality* (except, of course, where tonicization or modulation occurs as in simple pivot-note or pivot-chord situations).

The kind of surroundings I am pleading for, however, is a richer one where the changing context itself, through a subtly altered disposition of half and whole steps, for example, might trigger *an entirely new tonal center*. Simply adding or subtracting an accidental from a pattern can do this in an instant. I am arguing, in other words, for more attending to how these minuscule adaptations re-interpret the meanings assigned to every pitch—how tonality itself as a force-field of gravitational pulls is roused, motivated, intensified, extended, embellished, impelled, mutated, undermined, and transformed purely through single-line patterning and re-distribution and re-grouping of melodic intervals.

Damschroder's view of tonality seems, by comparison inert, fixed, stationary. This criticism of the purely Schenkerian landscape *untempered by acknowledgment of internal melodic urgencies and proclivities* has been made by others too. This topic is a big can of worms to open so I'm just mentioning it as an aside. The degree to which teachers will wish to present tonality as a living impulse of varying kinds of surges, respites, oppositions, lures, and kinetic contractions and releases compared with presenting tonality as an invariable structure like a motionless mobile or a map viewed from above will differ according to the training, background, and temperament of the teacher and the needs and level of the students. It is not a question that can be settled once and for all in these few pages, but I remind everyone that it is a dilemma that needs to be hacked away at and returned to frequently. Is tonality more like a flowing river or a stable crystal? Is a musical composition more like an amusement-park fun house or a well-ordered supermarket?

Another way to get at our differences is to consider how a given interval changes meaning according to location within the key or scale. I see little of this kind of thinking in Damschroder's book, as I said in my initial review. Certainly intervals of various sizes are frequently mentioned and practiced on, but the subtly different effects of repositioning within the scale are rarely alluded to. It is in this realm that the values of scale-degree function really shine. For example, the "Twinkle, Twinkle" P5 from tonic up to dominant has one particular sensation, but the other five locations in the diatonic scale where P5s might occur each embody their own unique musical character. It is the recognition of these distinctive sensations that I miss so much in his book. In other words, Damschroder's approach is "flattened out" in the sense that the many individual flavors of each interval size are not properly recognized; each interval is squeezed into a single classification. There are many different kinds of M6s or of m3s in real music, but for Damschroder each size means just one thing. This, then, is how I am trying to explain "changing context," and not simply by taking a single pitch and pasting a new label on it as its membership in changing chords occurs.³

It might be interesting or profitable to have a more extended debate or comparison of views concerning these differing perspectives in the pages of this journal (like the "Houlihan/Tacka vs. Smith" discussions on *la*-based minor several years ago—see Footnote 3) or in some other kind of setting, but a precondition for meaningful interchange would consist of each of us stating at the outset, in our own paraphrase, a "pro-and-con" version of the other's position with such clarity that we could each certify the accuracy of

³See the comment on the P4 at the end of this response; and for a comprehensive description of dozens of other intervallic "changing-context" examples, see my article, "Beyond Intervals: The Teaching of Tonal Hearing," *Indiana Theory Review* 6/3 (Spring 1983): 18-34. Other relevant sources that help to illuminate my position include Steve Larson, "Scale-Degree Function: A Theory of Expressive Meaning and Its Application to Aural-Skills Pedagogy," *JMTP* 7 (1993): 69-84; David Butler, "Describing the Perception of Tonality in Music: A Critique of the Tonal Hierarchy Theory and a Proposal for a Theory of Intervallic Rivalry," *Music Perception* 6 (1989): 219-242; and the Tim Smith series on solfège systems in this journal (1991, 1992, and 1994).

the opposing statement. I don't mean to say that if such a thing were to happen, then Damschroder would immediately embrace my ideas in the next edition of his book, but only that such understanding of the contrasting view would be a necessary starting point for a real discussion to take place.

I'm not sure, in this case, we are at that point yet. I've seen no evidence in Damschroder's book—or now in his letter—that he has comprehended the fuller ramifications of the scale-degree function methodology. And I must confess, too, that I'm not sure I could fulfill this requirement either (i.e., to explain his view to his satisfaction). I am reasonably certain, though, that our views do not represent competing or incompatible pedagogical systems (which *was* true in the minor solfege controversy). So I would be interested in finding the common ground.

It is possible that I am not giving Damschroder enough credit and that he has, in fact, considered, in a deep and thorough-going manner, all of the benefits and goals of scale-degree pedagogy and then rejected this approach as not meeting his needs for some unspecified reason. Or maybe he thought, as I suspect, that he was using scale-degree function all along, and I just wasn't able to find it (like my mistake with modulation). But so far as I can tell, we just don't know (from the book or from the letter) what his thinking is on this issue, except for his evident confusion that a Schenkerian perspective and scale-degree function are the same thing.

Setting aside my inaccuracies regarding *content* (which I have already admitted to and explained), I don't think it is fair for Damschroder to continue to insist that I have also misrepresented his *methodology*. The mountain of evidence (at the end of his letter) that he thinks counters my criticism is really just a smoke screen—it is rebuttal for a criticism I never made.

Coincidentally, I have recently published a detailed explication of the most systematic and richest version of scale-degree pedagogy that I know of, so rather than attempting to explain my value system further, I simply refer Damschroder and all interested readers to my article on the Jersild Approach.⁴ The selected bibliography

⁴Michael R. Rogers, "The Jersild Approach: A Sight Singing Method from Denmark," *College Music Symposium* 36 (1996): 149-161.

and related readings that I recommend, as well as careful study of Jersild's books, and particularly those of Wedge and Edlund, will go a long way toward making clear the differences between Damschroder's book and my view.

What would convince me that Damschroder has truly understood my view is for him to be able to restate the main points of the "Jersild" article in *his* words—that is, to make it his own—to my satisfaction. I would not ask for agreement, only for understanding and accuracy. And, of course, I would hope to be able to do the same in return—that is, state for him why he consciously chose *not* to use the kind of scale-degree function I am describing. But he has not even made that argument yet for himself.

I will only add in closing that the Jersild approach, among other things, identifies ten purely linear patterns (seven diatonic and three chromatic) as landmark key definers and scale-position locators each with a distinctive melodic personality; these are two-note contextual patterns and not merely individual pitches. For those reading the article I also direct special attention to the "Tonal Grid" chart on p. 155, which makes apparent the "teeming inner world of tugs and magnetism" mentioned above. [Damschroder will be pleased to see that it is constructed as a kind of structural reduction, but a throbbing one I hope, not quiescent.] And note, as well, the use of melodic tetrachords (p. 151) as a way of noting (and notating) how tiny intervallic adjustments in simple four-note patterns can re-orient one's ears back and forth between motion and arrival, turning beginnings into endings and vice versa, like rotating stones in a kaleidoscope. And finally, note the illustration of the changing nature of the P4 in a series of remarkable chameleon-like melodic examples (pp. 153-54) originally conceived by Robert Hurwitz. This one demonstration alone will pinpoint the essence of my argument.

My article—and now this response—concludes with the following summary:

[With this system] the goal of sight singing is suddenly and palpably revealed not as 'how to sing the next note,' but as the learning of a large and intricate, yet beautifully simple, framework for hearing.

We only know that we have done our jobs as sight-singing teachers if students can exhibit sensitivity to musical shadings. We can't really

tell if they have learned anything about how tonality itself operates simply by observing if they sing the right notes on some test because those 'right notes' may be performed in the most anti-musical way imaginable (e.g., as a series of flat, undifferentiated pitches unrelated—in their mind's ear—to any defining tonal grid and thus totally lacking any individuated meanings of 'tension and release' or of 'leanings and resolutions').

In fact, we have all witnessed such monochromatic performances that trudge stiffly and computer-like from note to note—either in the sight-singing class or on the concert stage. We often begrudgingly have to give credit for such a theory performance even though the invisible threads of connection between pitches are missing. We must find ways to distinguish between a performance that is correct (maybe even accidentally correct), yet mechanical, compared to one that is correct for the right reasons—and therefore *musical*.

A sight-singing teacher should be more than a burglar alarm for wrong notes.

CONTRIBUTORS

Richard Bass is Professor of Theory and Director of Graduate Studies in Music at the University of Connecticut. His publications cover topics ranging from 18th to 20th century music, with articles appearing in numerous journals, including *Music Analysis*, *Music Theory Spectrum*, *Journal of Music Theory*, and *19th-Century Music*. He is a leading authority on the music of American composer George Crumb, and is currently doing research on the harmonic language of late-Romantic music.

David Loberg Code is Associate Professor of Music Theory at Western Michigan University in Kalamazoo. His research interests focus on tuning systems and interdisciplinary topics such as music and feminist pedagogy, the application of critical theory to music analysis, and world music. He was selected as a 2001 Fulbright Scholar to return to Norway to continue work on the Groven Piano Project, a 36-tone untempered piano based on the work of composer Eivind Groven.

David Damschroder is Associate Professor of Music Theory at the University of Minnesota.

Yayoi Uno Everett is Assistant Professor of Music Theory at the University of Illinois at Urbana-Champaign. She taught previously at the University of Colorado at Boulder. Her specialties include twentieth-century musical analysis, aural skills pedagogy, and Asian music.

Laurdella Foulkes-Levy is Assistant Professor of Music Theory at the University of Mississippi, where she also co-directs the Mississippi Early Music Ensemble. She was formerly a director of the Kodaly Musical Training Institute. Her research is in the areas of theory and aural skills pedagogy, including the use of technology in the classroom, and the interactions between harmonic motion and musical form.

Joel Phillips is Professor of Music Theory and Composition at Westminster Choir College of Rider University. He has served as Chief Reader and Scoring Consultant for the Graduate Record Examination in Music, and is the Chief Faculty Consultant for the Advanced Placement Examination in Music Theory. Phillips serves on the editorial review board of the *Journal of Music Theory Pedagogy*.

Michael R. Rogers is Professor and Chair of Music Theory at the University of Oklahoma. He is currently co-authoring an undergraduate theory text (with Earl Henry); working on a book about musical interpretation; and preparing an expanded and revised edition of his theory pedagogy text, *Teaching Approaches in Music Theory*.

Tim Smith is Associate Professor of Music Theory at Northern Arizona University, where he has headed the theory and composition unit since 1995. Dr. Smith is active in the creation of CAI and worldwide web mediated instructional materials in music theory and analysis. He taught the first web-based course at Northern Arizona University, "Bach, the Baroque and Beyond," and his web site, "The Canons & Fugues of J. S. Bach," is referenced more than 5000 times a month from individuals in 67 countries.

Bruce Taggart is Instructor of Music Theory in the School of Music at Michigan State University, where he is also the Associate Director of the Community Music School. He coordinates undergraduate ear training and sight singing, and teaches graduate theory pedagogy.

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