### PROFESSIONAL DEVELOPMENT

# AP® Music Theory Teaching Sight Singing

Special Focus



## The College Board: Connecting Students to College Success

The College Board is a not-for-profit membership association whose mission is to connect students to college success and opportunity. Founded in 1900, the association is composed of more than 5,400 schools, colleges, universities, and other educational organizations. Each year, the College Board serves seven million students and their parents, 23,000 high schools, and 3,500 colleges through major programs and services in college admissions, guidance, assessment, financial aid, enrollment, and teaching and learning. Among its best-known programs are the SAT®, the PSAT/NMSOT®, and the Advanced Placement Program® (AP®). The College Board is committed to the principles of excellence and equity, and that commitment is embodied in all of its programs, services, activities, and concerns.

For further information, visit www.collegeboard.com.

The College Board acknowledges all the third-party content that has been included in these materials and respects the intellectual property rights of others. If we have incorrectly attributed a source or overlooked a publisher, please contact us.

# Contents

1.	Introduction
2.	<b>Baby Steps Up Parnassus: A Multistage Approach to Sight Singing</b> 5 Julie Edwards
3.	What Do You Mean, I Have to Sing?
	Changing Sight Singing Into Recognition Singing
5.	Taking the Leap: Four Ways to Think About Teaching the Hard Notes 29 Ken Stephenson
6.	Sight Singing Integration: Save Time and Build Technique
7.	How Structured Improvisation Can Improve Sight Singing  Performance (and More)
8.	About the Editor
<b>n</b>	About the Authors 50

# Introduction

### **Ken Stephenson**

University of Oklahoma Norman, Oklahoma

Musicians approach music in two basic ways. First, of course, they deal directly with the sounds of the music: They listen to sounds, make sounds, and respond to sounds. In addition, musicians often deal with music through the medium of symbols. Letter names for pitches, such as *B-flat* or *A-natural*; names of structures and patterns, such as *perfect fourth*, *melodic minor scale*, or *compound meter*; solfège syllables, such as *do* or *re*; hand signs for scale degrees; roman numerals for chords; and drawn shapes, such as the staff and any of the lines, ovals, dots, and curlicues that go on it—all these symbols are familiar to music teachers, and many use most or all of them in class every day.

Aural skills involve the ability to translate between these two basic modes of dealing with music. Because there are two ways of approaching music, there are two basic aural skills: The first goes from sound to symbol, and the second from symbol to sound. Employing the first basic aural skill—sound to symbol—musicians listen to a sound and imagine or communicate the right name or sign for that sound. In the classroom setting, a teacher might play a certain combination of three pitches and wait for the class to say, "major triad." Here the students, presented directly with a musical sound, have responded with a symbol, in this case a spoken name. When the prompts are longer and the students write the correct notation for the sounds, we call the activity dictation.

Using the second aural skill—symbol to sound—musicians hear or read a name or sign and imagine the corresponding sound. A musician who has developed this skill should be able to read the phrase *major triad*, for instance, and have the sound of a major triad in mind. How can we possibly develop this essential skill in our students? Without being able to read their minds, how are we able to know whether our students are thinking of the right sounds when presented with musical names or

notations? The answer is that we must complicate the task by asking our students to produce the sounds they are imagining. To be sure that the sounds they produce are the ones they imagine, we cannot allow the students to use an instrument because this would allow them to sidestep the aural skill almost entirely and respond by merely thinking of other corresponding symbols—which keys to press or which holes to cover. Therefore, we must develop and assess this second aural skill through the activity of singing, and since the normal human voice can only produce one pitch at a time, our endeavor with this skill centers on melodies. Naturally, we call the activity of singing melodies on sight, i.e., without the aid of audible prompts, sight singing.

This collection of essays is intended to help you, the high school music theory instructor, teach the second aural skill through sight singing. Because the task is complex, you cannot simply open your sight singing book to page 1 on the first day of class and expect much success; foundations of meter, rhythm, and scale must be understood, and the skills of vocal production and clef reading must be introduced. The chapters by Diane McFarlane and Julie Edwards suggest ways to "divide and conquer" by analyzing this complex task in its component parts. The chapters by Terry Eder and me, on the other hand, focus on analyzing the melodies themselves as a means to improved performance. Stefanie Katz Shear addresses the shortage of time in the AP® Music Theory class by suggesting ways to incorporate singing throughout the course, simultaneously improving singing skills and reinforcing other topics. And Nancy Rogers provides valuable singing exercises involving improvisation.

As you will see, the authors do not agree on everything. Some prefer to sing scales before learning to write them, while others believe students should understand the structure of scales before singing them. Some teach intervals by associations with songs, while others avoid the songs and emphasize tonal contexts. Some say sol and some say so. But the authors agree that a syllable system for pitches is necessary for maximum success (the authors, in fact, all use the same system). Also, the authors all agree that sight singing should not be isolated from other aspects of music theory. But most of all, all six authors agree that this important skill is central to any successful AP Music Theory class. Students must sing often; we dare not teach scales, harmony, and voice leading on paper, and then sing only when we have time left over.

Because sight singing is a complex task, it engages many parts of the mind. At the very least, singing can reinforce what your students learn through written exercises. But because it is at once visual, auditory, verbal, logical, and kinesthetic, many students will find in singing the inroad to learning all the other material in the class.

What we offer here is practical advice based on experience. Every chapter of *Special Focus*: *Teaching Sight Singing* offers step-by-step plans from veteran instructors for dealing with particular issues. For further information—both more foundational and more advanced—we recommend consulting issues of the *Journal of Music Theory Pedagogy (JMTP)* and Gary Karpinski's *Aural Skills Acquisition*. In *JMTP*, you will find, among other things, researched articles examining which pitch syllable system works best and presentations of new rhythmic syllable systems, issues only touched on or assumed in the present collection. Karpinski's book analyzes the tasks of both the teacher and the student of sight singing with great detail, addresses many topics not covered here (such as intonation and assessment), and explicitly ties his conclusions to research—research often documented in the pages of *JMTP*. To these invaluable resources, all the authors of this collection are indebted.

And now, let's focus on sight singing.

# Baby Steps Up Parnassus: A Multistage Approach to Sight Singing

### **Julie Edwards**

Indiana State University Terre Haute, Indiana

Most music educators agree that sight singing is an invaluable skill to the development of musical literacy, but the complexity of the task often makes it intimidating for both teacher and student. The ultimate goal in sight singing is not the singing of a melody itself, but rather the development of inner hearing: the audiation of the melody that takes place before (and during) the actual singing. The act of vocalization allows the teacher to have a window through which to view the student's mental processing. Sight singing is an effective teaching activity because it engages students on several levels: visual, aural, kinesthetic, and cognitive. But the very multifaceted nature of sight singing that makes it so useful is also what makes it such a complex and overwhelming task.

When teachers ask students to sight sing, they are actually asking the students to do a variety of things simultaneously and fluently. First, students must see and understand the visual cues—the rhythm and pitch notation on the staff. Then, they must interpret the images as recognizable tonal and rhythmic patterns (also including harmony and form) that have been encountered in previous experiences with tonal music. Next, and most important, the students must imagine—must audiate—sounds associated with those patterns. Finally they must produce vocal sounds that match the audiated sounds. But the task is not complete yet. The students must listen to the sounds produced, compare them to the audiated sounds, and adjust them if necessary, while looking ahead to see what comes next. This means that students are engaged simultaneously with the past, present, and future, by remembering what was just heard, producing the present sounds, and anticipating the next. Is it any

wonder that students struggle with sight singing, or that teachers find it formidable to introduce sight singing to their classes?

Sight singing is a much less frightening prospect if it is approached as the blend of several components that can be attended to separately and then combined in a systematic way. These components include management of the voice, rhythm, pitch, syllables, and musical fluency or flow. Such a gradual approach allows the student to focus on one thing at a time, achieve a level of success, and then move on to focus on another component while the first task continues as a background event.

# Managing the Voice

Gaining the cooperation of the voice is quite a challenge for some students. The teacher can help by showing students how to warm up the voice through brief vocal exercises that can also reinforce patterns of syllables, pitch, rhythm, and harmony. Encourage students to "make friends with" their voices. Have them get to know their comfort zones—the parts of their range that require less vocal effort—and how to approach pitches outside those comfort zones. Each student should discover the range of his or her voice in order to know the upper and lower limits that he or she is capable of producing. As melodies for sight singing become more complex, they will have increased ranges and will require more vocal agility to navigate leaps. Experience with singing is the best teacher for each individual voice. The more that students sing, the easier singing becomes.

# Rhythm

Rhythm-reading exercises are extremely helpful for strengthening a sense of pulse and meter, and for building in a memory library of common rhythmic patterns that will likely be encountered in melodies. Many available books contain rhythmic examples to be used for just such a purpose, and reading through several on a daily basis is quite productive. Tapping the beat while verbally counting the rhythm heightens the internal sense of pulse, while conducting a beat pattern emphasizes the relationship of how rhythm fits into the patterns of strong and weak beats that we know as meter. If it is initially too physically demanding for students to conduct and count simultaneously, half the class can be asked to "whisper-count" the beats of the meter while the remainder of the group counts the rhythm aloud. Then the two groups switch tasks. Although in this activity a student does not get to verbalize both the

pulse and the rhythm, both are heard simultaneously, and information about how they interact is stored in the student's memory.

Several counting systems exist that serve to reinforce rhythmic relationships. The merits of one over the other may be argued, but common sense dictates that if one is presented and used consistently, whichever system that might be, students will benefit from its use.

### **Pitch**

The development of a sense of pitch can also be isolated from the larger task at hand. Assuming it is a perfect world and all students can match pitch and discern up from down, they can begin to draw an imagined map of tonality onto which tonal melodies can be overlaid. Tonal melodies are made up of pitches from the major or minor scales that relate to one another in ways that are frequently predictable. Students must first be able to navigate their way around major and minor scales, stepping and then eventually leaping from point to point on that scale map, orienting themselves with pitches they know, such as scale degree 1 or 5.

Because scales are composed of half steps and whole steps, the first task is to sing these building blocks on a neutral syllable (such as "la") both ascending and descending. When this has been mastered, these half steps and whole steps can be combined in patterns that form scales, with syllables from a system attached to them from the beginning.

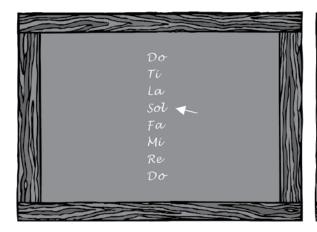
## **Syllables**

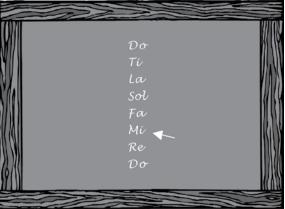
Further progress in pitch comes best with a system of singing syllables. As with rhythm counting systems, several systems exist that allow the association of syllable sounds to pitch locations within a key. This association is critical to the usefulness of a system, and the more reinforcement in the form of analysis, melodic dictation, and such activities that deal with pitch, the better. All systems have their strengths and weaknesses. One of the more popular solfège systems in this country at the college level seems to be moveable *do* with *do*-based minor. This projects well the internal relationships of tonal music and eventually allows for chromatic pitches to be added in relation to diatonic pitches on the mental map of tonality that the student is developing.

Activities that focus solely on pitch location within a tonal framework form the next step. The singing of scales with and without instrumental accompaniment is a

daily activity that will do much to imprint that tonal map on the brain and in the ears. Another activity involves showing the syllables vertically (on a chalkboard or projected onto a screen) and pointing to various syllables so as to form tonal patterns, while students find their way to one pitch at a time without being shown the whole pattern at once.

#### FIGURE 1





Starting with a few syllables and gradually adding others until the entire scale—plus an extension up or down to the dominant—is being used, as well as gradually increasing the speed of pitch changes, allows the teacher to adjust the parameters to the ability of the class. Students learn how to sing up or down the scale mentally until they reach the pitch that they sing aloud.

After students have sufficient experience with rhythm and pitch to gain a level of proficiency with each alone, the next step is to add musical notation to the mix. While the aim is to eventually have students read all clefs and in all keys, working in only one clef for several examples allows a smoother progression of difficulty. Many available sight singing books have extensive collections of melodies arranged in

progressive difficulty and may be used effectively in a classroom situation and for individual practice at this rudimentary level.

### **Putting Rhythm and Pitch Together**

Putting rhythm and pitch together in a methodical way involves some elementary but critical analysis. The following method involves six steps: (1) analysis of meter, (2) analysis of key, (3) analysis of range, (4) preparation for inner hearing, (5) inner hearing, and (6) performance. Using these six steps to approach a new melody in class encourages students to apply them when practicing on their own.

When encountering a new melody, students first determine the meter, then conduct while counting the rhythm of the melody aloud, repeating until fluent. Second, they determine the key, lightly penciling it on the score. Third, they determine the range of the melody and decide if it is necessary to transpose the melody to a key that is more vocally comfortable. (Remember that they should each know the range of their voices by now.) In this step, students should lightly pencil in any syllables that are not immediately recognized. It could be helpful initially to use the following abbreviations: D for *do*, R for *re*, M for *mi* or m for *me*, S for *sol*, L for *la* or l for *le*, and T for *ti* or t for *te*.

The fourth step for students is to set up inner hearing by playing on the piano and singing the tonic pitch, the tonic triad (ascending and descending), or the fivenote scale pattern or entire scale (both ascending and descending). Students should recite the syllables of the melody in rhythm while hearing the pitches in their head, repeating until fluent.

Now comes the most important step: inner hearing. Ask students to sing the melody in their head using solfège syllables, without keeping a steady pulse, pausing to find any difficult pitches by relating them to simple ones that are readily found. They then sing the melody again in their head, with pitch syllables, while keeping a steady pulse this time. Finally, they sing the melody—aloud this time—with a steady pulse and with syllables.

While inner hearing is an individual accomplishment, there are classroom activities that reinforce and foster its development. Have students sing a pitch pattern or a scale, with each person only singing one pitch in succession. This requires them to audiate the sound quickly in relation to what their classmates have just sung. Occasionally have students sing only some of the pitches of a melody in rhythm, audiating the others. Perhaps they only sing the first and last beats of each measure. They must vocalize the right pitch at the right time.

This systematic approach to each melody gives students the time to focus on the individual components of the complex task. Eventually, given adequate practice, the first two steps will become automatic recognition of key and meter, and students will be able to process information in larger chunks and relate what they see to what they expect. Steps in the process can be combined or dealt with in quick succession. Music is not nearly as random as students first believe, and continual exposure to common pitch and rhythmic patterns eventually allows sight singing to be more an exercise of pattern recognition of figures previously encountered than a combination of totally new pitches and rhythms.

# **Fluency**

Daily practice in small amounts is essential to building fluency. Coming at sight singing from two angles makes ongoing skill development possible. Students should: (1) analyze and sing two or three melodies that are at their present ability level, working through the steps individually; and (2) also sing through several melodies that are well below the students' level, without working through the steps. Just give a starting pitch and have them charge ahead. This gives students the opportunity to practice fluency without focusing attention on the complexities of pitch and rhythm that detract from the in-the-moment nature of sight singing.

While sight singing is a complex combination of many skills, each can be practiced individually. These skills can then be combined and approached in a systematic way. The tonal patterns encountered in exercises and melodies will help clarify the map of tonality that each student is creating so that new melodies are overlaid onto it and recognized as containing the same designs and structures as previously encountered melodies. Fluency comes with singing many melodies that reinforce previously learned patterns, while growth comes with encountering new patterns in more intricate melodies. The goal is inner hearing: audiation that turns notation into imagined sounds that are real to the student. The final step is vocalizing that inner sound to allow others to hear it. Practicing each of these component skills individually can change that final step from an object of terror and frustration into a thing of beauty and fun.

# What Do You Mean, I Have to Sing?

### **Diane McFarlane**

Seneca High School Seneca, South Carolina

Every year on the first day of class, when I read through my AP Music Theory syllabus with my students, someone asks, "What do you mean, I have to sing?" The question often comes from an instrumentalist. We sometimes consider these students to be the most teachable in a theory class; if they have a solid musical background, they already know key signatures, scales, complex rhythms, and more. But many of them have never been required to put down their instruments and sing their parts. Thus, good choral students come to the class with a bit of an advantage when it comes to sight singing: They have been singing and are comfortable with the sounds of their own voices and the physical sensations of producing pitches.

My students sing, and they sing often. They sing excerpts from their textbook, they sing intervals for ear training, they sing back their dictation melodies, and yes, they sing sight singing melodies. Incorporate singing into various exercises in your daily teaching. Before your students know what has happened or how it has happened, they will be more comfortable with using their singing voices, and this confidence will aid them in all their future music studies—including ensuring them of better success on the sight singing portion of their AP Music Theory Exam.

### **Scales**

One of the first concepts covered in AP Music Theory is scales: major, natural minor, harmonic minor, and melodic minor. Students should not only write scales, but also hear and sing scales in a variety of ways. For instance, you might give a pitch on the board and ask them to notate a given scale from that pitch. After the class writes out the scale, it is very important that they sing the scale, not only because the sight singing portion of the AP Music Theory Exam implements major and minor tonalities,

but also because they must get used to hearing their own voices. You could also have a student choose a scale and sing it, and then ask the rest of the students to identify its tonality. Another variation would be to have one student sing a major scale, one sing it in the natural-minor form, one sing it in the harmonic-minor form, and one sing the scale in the melodic-minor form.

Many AP Music Theory courses cover the medieval modes right after the major and minor scales. In many cases, writing the modal scales is easier for students who can hear them, and aural recognition of modes is much easier if students can sing each scale. Singing the placement of the half steps and physically feeling the closeness of the two notes as compared to a whole step will help them tremendously in identifying and writing modes. Your students should be able to feel vocally a raised sixth of Dorian (compared with natural minor), lowered second of Phrygian (compared with natural minor), raised fourth of Lydian (compared with major), or lowered seventh of Mixolydian (compared with major). Once a student can not only hear the altered notes but sing them, the transposition of modes becomes much easier. After students know the scales well, have them sing some modal folk tunes such as "Greensleeves" (Dorian mode) or "Tom Billy's Jig" (Mixolydian mode). Even the "Gilligan's Island Theme Song" works well, although without a sixth scale degree in the melody, the mode stands ambiguously between the Dorian and Aeolian modes. After you sing each melody, ask them, "Is the scale more like major or minor? What notes are altered?" When you build the unit on a foundation of singing the scales, you and your students will find building this skill surprisingly easy.

### **Melodies**

Any time your textbook presents a simple melody as an example of a concept is a good time to have the class sing. I set up parameters as in the AP Music Theory Exam, where the students have a certain amount of time to practice the melody out loud. I might then ask the students to stand in a line and be responsible for one measure only. Sharing the responsibility makes the task sound easy, although keeping a consistent tempo can be a challenge. However, the main goal is to ease students into singing, and reducing their portions to only one measure accomplishes that goal.

# Writing a Good Melody Line

When you are teaching students to write a good melody line, one of the most important goals is to make the melody singable. Now that your students have had

experience using their voices, this task should be easier for them than if they had no vocal experience at all. Students will compose better melodies knowing that they will eventually have to sing them; they will pay better attention to form, range, appropriate leaps, correct resolution of the leading tone, and correct use of the variable scale degrees in minor keys.

Once students become proficient in writing a good melody line, have them sing their examples as dictation projects for their classmates. (Of course, you will need to guide students to compose melodies with length and content suitable for the class's current dictation abilities.) Once again, this activity will continue to build their confidence in hearing and using their voices while their peers are concentrating on correct pitches and rhythms. (It's effective to add variety to the dictation by allowing students some time to play their melodic compositions on an instrument, as the dictation exercises on the AP Exam use a variety of instruments.)

# **Realization of a Figured Bass**

Once students have learned to write a good melody line, teaching them to write a complementary bass line is essential. And once they have written some two-part counterpoint, your students can start singing parts independently. You can provide a melody line for them or ask them to compose their own. Put the melody on the board, and have students work together to compose and notate a figured bass. After they have completed this task, have half the class sing the melody while the other half sings the bass line; then have them switch parts and sing again. To take this exercise one step further, have your students fill in the alto and tenor voices and then have them choose a voice part to sing. If they write any incorrect doublings or problematic voice leading, just leave the problems and let them sing them. Point out the problems and let the students learn what their voices sound like. In this way, while they are concentrating on counterpoint and part-writing, you have provided them with an experience in independent singing and increased their comfort level with their own voices

## **Homophony and Polyphony**

Whenever you encounter or write a four-part harmonic passage, instead of playing the phrase on the piano, consider having your class sing it. Begin by having students sing each voice in unison as a class. The chorale melody "Nun danket alle Gott" ("Now Thank We All Our God") by Johann Crüger may be familiar to some students.

However, reading a horizontal line other than the melody will be challenging to some. Having your students sing in unison will alleviate some of their anxiety. After they sing each line in unison, assign students a specific part, spreading choral students evenly among the four parts. Move your students around the room, grouping them with their sections. Students will hear mainly their own parts, with the other three voice parts in the background.

### **Chords and Inversions**

The activity just described provides a great introduction to hearing the interaction of a melody with the chord structure provided by the other parts. This important skill forms a central part of musical literacy and plays a big role in success on the harmonic-dictation questions of the AP Music Theory Exam. Students can listen to one part at a time to notate the pitches of the soprano and bass, but when it comes time to analyze the chords and their inversions, students need to be able to hear chords vertically. To build on the foundation of the previous exercise, make sure that when students are learning to hear and identify chords they also sing them in an arpeggio. Teach them to sing the inversions, as this will help them hear the lowest voice of the chord. Here's a pattern you can use to teach second-inversion chords:

#### FIGURE 1



A second-inversion triad is also the basis of this bugler's tune:

### FIGURE 2



Here's a suggestion for learning to sing a first-inversion chord:



### **Nonharmonic Tones**

Incorporating singing into the unit on nonharmonic tones can add a lot of fun and allow students to be creative. Students can actually sing passing and neighboring tones before learning to write them, and starting with the aural approach can give them a deeper understanding of these embellishments as well. Here's an exercise to try: First, provide your students with a basic melody line and accompaniment. (You might provide only the melody and have them write the figured-bass accompaniment.) Now have them sing the melody as written while you play the accompaniment. After they have the written melody in their heads, ask them to add a simple neighbor or passing tone. Have one or more students sing their examples for the class; afterwards, they can notate their new versions on staff paper.

When teaching students contrapuntal rules, such as avoiding parallels, have them work in pairs, create a short two-voice exercise with parallel fifths, and then sing the pattern for the class. The activity focuses on the interaction of melodies and draws attention away from their singing voices. Students are still using their voices, however, and are continuing to become more comfortable with singing. This exercise can also be done with nonharmonic tones such as suspensions (which are always fun to sing), retardations, anticipations, appoggiaturas, and escape tones. Appoggiaturas that leap too far will be difficult to sing, which will reinforce the concept of leaping and stepping.

# "So how important is the sight singing portion of the AP Music Theory Exam?"

Very. Can your students do well on the exam without being good sight singers? Yes. But what if your ability to make them feel more comfortable with using their voices is the difference between their achieving a final grade of 2 or 3? What if the extra comfort adds the few points necessary to earn a grade of 5, exempting the student from an entire year of freshman-level theory?

Let's be realistic. Our students come to us at varied levels of strengths. Some have better ears than others; some are skilled at composition; and some are good readers. The sight singing portion of the AP Music Theory Exam is 10 percent of the entire exam score. The Readers who correct your students' tests are not looking for accomplished singers. They are looking for correct pitches and rhythms.

# Some tips for boosting your students' sight singing scores:

- Teach your students to sing well enough to confidently sing the opening motif of the melody.
- Teach students to sing the first and last measures, if nothing else. They can dissect the short melody enough to accomplish that much of the task.
- Prepare students to use a system, whether it is solmization, scale-degree numbers, or rhythmic syllables.
- Tell students to write the counting, intervals, or solmization on the test page.
- Tell students the first and last notes will probably be the tonic. Make sure they hold the last note for its full value.
- Let your students know that one example will be major, and one will be minor. One will be simple; one will be compound. One example will be in bass clef; one will be in treble. These balances stay consistent from year to year on the AP Music Theory Exam.
- Train your students not to redo a melody if they are satisfied with the first attempt, as a second attempt makes it impossible to earn the "flow" point.
- Order AP Music Theory Released Exams or download examples from apcentral.collegeboard.com, and run mock sight singing exams. As their teacher, do not be afraid to demonstrate using your voice, even if you are uncomfortable with singing. If you model singing at any level, you'll continue to encourage your students to sing. Be sensitive toward the nonsinger's attempt to sing. The sight singing portion of the AP Music Theory Exam can be challenging for even the most accomplished singer. With a lot of practice and strong encouragement, however, your students can be successful sight singers.

# Changing Sight Singing Into Recognition Singing

### **Terry Eder**

Plano Senior High School Plano, Texas

Sight singing may not be as difficult as we sometimes make it. Liken it to reading the English language. It has been shown that beginnings and endings and patterns of letters play a major part in our ability to read and understand words:

Cna yuo raed tihs? Sghit snginig is not as difficult as we seemtmeis mkae it! The letters are not all in the correct order, and yet the mind can still make sense of the meaning by recognizing the beginnings and endings and patterns of words. The human mind does not read every letter by itself, but rather groups things together in patterns that are common to the language. This concept can be applied to the skill of sight singing in the language of music, as well. The recognition of beginnings and endings of melodies and patterns throughout the melody is the first, best step toward simplifying the act of sight singing. Everything is not completely new, but rather the mind recognizes patterns that have been seen, heard, and even sung many times before. Chunking a melody in this way breaks the sight singing process down into fewer unknowns and makes it possible for the student to understand and read a melody based on previous experience with various rhythmic and melodic patterns and intervals. Sight singing becomes recognition singing!

## **Analysis of Melodies**

A careful analysis of the melodies that have been written for the AP Music Theory Exams over the past 12 years reveals common patterns characteristic of melodies written in the Common Practice style. (See Table 1.)

By studying and learning some of these basic patterns, which appear not only in AP Music Theory Exam melodies but also in the melodies of many popular sight

**P5:** R↓S P8:D↑D **M6:** D↑L **P4:** R↑S; Me↑Le **P5:** D↑S; R↓S; **P4:** D↑F; R↑S; **d5:** F↓T **P4**: D↓S; S↑D **m6**: S↓T **P5:** S↑R; R↓S **m6:** S↓T P4: D↓S; S↑D Intervals **P4:** R↑S **P5**: S↓D **m6:** S↓T P5: S↓D **P4:** D↓S (F) ↓M ↓R ↓D (F) ↓M ↓R ↓D S↓Fi ↑S ↓D Ending Melodic  $\stackrel{\bigcirc}{\rightarrow}$ Patterns \T \D  $\stackrel{\square}{\rightarrow}$ \\_ T \T \D \T \D \T \D  $\uparrow$ T  $\uparrow$ D  $\stackrel{\square}{\to}$ R \S ≥ D ↑S↓F ↓Me Beginning Melodic Patterns D ↑Me ↑S D ↑R ↑Me D ↑R ↑Me D ↑R ↑Me D TM TS D TR TM  $\stackrel{\square}{\rightarrow}$ \\_ T D ↓T ↑D D TR TM D TR Raised 4th, 7th Raised 6th, 7th Raised Tonic: Do-Di Raised 4th, 6th, 7th Raised 7th Raised 7th Raised 7th Altered Tones Compound Meter 9/8 9/8 9/8 8/9 9/8 8/9 TABLE 1. ANALYSIS OF SIGHT SINGING MELODIES Simple Meter 2/4 3/4 4/4  $\circ$  $\circ$  $\circ$ C harmonic minor D harmonic minor E harmonic minor C harmonic minor Minor Key E melodic minor C melodic minor Major Key Eb major Eb major Bb major D major D major F major Exercise 2000 9661 1997 1998 1999 2001

	MoioN	Wiscos K	Simple	Compound	Altered	Beginning Melodic	Ending Melodic	0 0 0 0 0 0
2002	F major	for one	0			S T T T	R ↓T ↑D	P4: D↓S; S↑D M6: S↑M
		B melodic minor		8/9	Raised 4th, 6th, 7th	D TMe TS	S↓Fi↑S ↓D	<b>P4:</b> R↑S <b>P5:</b> S↓D
2003		E harmonic minor	C		Raised 7th	D √S↑D	R ↓T↑D	<b>P4</b> : D↓S; R↑S; S↑D
	Bb major			8/9	Raised 4th	D TR TM	S↑R ↓D	<b>P5</b> : S↑R
2004		F melodic minor	C		Raised 6th, 7th	D TMe TS	R ↓S ↑D	<b>P4:</b> D↓S <b>P5:</b> R↓S
	D major			8/9	Raised 4th	D TR TM	S \T \D	<b>P4</b> : S↓R <b>m6:</b> S↓T
2002	Bb major		2			DTRTMTFTS	S \T \D	
		E harmonic minor		8/9	Raised 3rd, 4th, 7th	D 1R 1Me	S \T \D	<b>P5:</b> R↓S m6: S↓T
2006		D harmonic minor	C		Raised 7th	D \T \D	R ↓T↑D	<b>P4</b> : S↑D
	Bb major			8/9	Raised 4th	D TM TS	(F) ↓M ↓R ↓D	<b>P4</b> : S↑D <b>m6</b> : D↓M
2007	D major		C			D↑M ↓R	(F) ↓M ↓R ↓D	<b>P4:</b> D↓S
		C melodic minor		8/9	Raised 4th, 6th, 7th	Q↓ L↑ Q	(F) \$\tag{M} \tag{R} \tag{D}	<b>P4:</b> D↓S

Note: Exam sight singing melodies for the years 1999–2007 can be seen on the College Board AP Central® Web site; melodies for the years 1996–1998 are no longer available on the Web site, but have been included in this analysis.

singing texts, the unknowns of sight singing can be reduced to recognizable elements so that the skill of sight singing becomes more one of putting known patterns together in an often somewhat inevitable fashion. Once again, the singing of melodies is no longer sight singing, but recognition singing.

With regard to the recent AP Music Theory Exam melodies, Table 1 shows information regarding the following elements:

- Keys: major and minor
- Beginning and ending pitches
- Beginning melodic patterns and ending melodic patterns
- Recognizable and common rhythmic patterns
- Scalar passages (stepwise motion) in context of the key
- Intervallic patterns: the most common intervals and broken-chord patterns
- Altered pitches
- Melodic cadential implications

As shown in the table, beginning melodic patterns often outline the tonic triad, fill in the third from tonic to mediant, use stepwise motion, or revolve around tonic and dominant. Several formulae for ending melodic patterns also emerge from the analysis, and while these beginning and ending patterns are certainly not exhaustive, they provide insight into common melodic movement and character. Practicing these patterns through singing, visual identification in different keys, and even writing will help to put recognition on "automatic" so that when encountered in sight reading, the patterns will have been experienced in some way many times before. For example, the following table shows ending melodic patterns that were identified in the melodies, patterns that can be practiced both visually and orally.

**MISCELLANEOUS** FA-MI (ME)-RE-DO SOL-TI-DO TABLE 2. COMMON ENDING MELODIC PATTERNS SOL-FI-SOL-DO RE-TI-DO

21

# Using Solfège Warm-Up Drills to Aid in Teaching Common Melodic Patterns

Practice these common patterns by singing them in class, making sure to employ a syllable system to focus reading: either solfège or scale-degree numbers (or both). Don't leave it to chance. Relationships between the notes of a melody must be based on the practiced knowledge of the relationships between the solfège syllables or scale-degree numbers representing those notes. While these systems are only the means to an end, studies have shown that establishing relationships using a system such as solfège aids dramatically in the process. And while everyone may not need a system to read at certain levels of difficulty, eventually the reading will become complex enough that even the best readers will benefit by using a system.

It is safe to say that many of the intervals in melodies of the Common Practice style are steps, i.e., major and minor seconds. The analysis of the AP Music Theory Exam melodies shows that 32 percent of the intervals were minor 2nds, while 43 percent were major seconds. Therefore, learning to sing scalar passages beginning on any scale degree of a major or minor scale should be one of the first and most important steps toward acquiring the skill of sight singing.

The frequency of intervals larger than major and minor 2nds in the AP Music Theory Exam melodies was much less:

Minor third: 8 percentMajor third: 5 percent

• Perfect fourth: 5 percent

• Perfect fifth: 3 percent

• Minor sixth: 1 percent

• Major sixth: .5 percent

Of course, this doesn't mean that the intervals in all Common Practice melodies will fit these percentages, but you can expect that on future AP Music Theory Exams stepwise motion will prevail and larger intervals will appear less often. This analysis of percentages also does not account for the context in which these intervals are cast, but it can lend insight to strategies for learning to recognize and sing varying kinds of intervals at sight.

The following scale-degree exercises are presented as daily drills that can be used to practice the common melodic patterns identified earlier:

### Ascending major thirds and descending minor thirds in simple meter

### FIGURE 1



# Ascending major thirds and descending minor thirds in compound meter

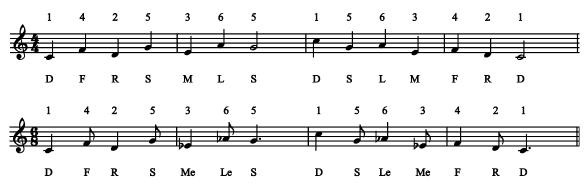
### FIGURE 2



### **Perfect fourths**

These exercises show how practice can shift easily from simple to compound meter and from major to minor keys. (Remember that the system of singing with scale-degree numbers does not allow for mode change and that students must know the pattern of whole steps and half steps in the different modes.)

### FIGURE 3



### Perfect fifths

The following exercise focuses on practicing perfect fifths. By filling in the third, it also helps to practice triads in a major key (the diminished triad *ti-re-fa* is included as well and, of course, has the only fifth that is not perfect).

### FIGURE 4







### Minor sixths

Most common minor sixth: sol (5) down to ti (7) (especially at melodic cadences where ti resolves to do)



### Other minor sixths

Do down to mi (in major)

### FIGURE 6



Sol up to me (in minor)

### FIGURE 7



Do up to le (in minor)

### FIGURE 8



### Major sixths—most common:

Do up to la

### FIGURE 9



Sol up to mi



### Minor seventh—most common:

Sol up to fa

### FIGURE 11



The ability to sing these intervals with ease is not acquired by osmosis, and mass transference of drills to actual music in most cases is not immediate. With consistent drilling and practice, however, the mind can begin to make these associations automatic, and the ability to sing intervals starts to transfer more easily to the context of real melodies.

# **Realization of Common Rhythmic Patterns**

In addition to melodic patterns, students must also learn to recognize common rhythmic patterns and realize these patterns both individually and in various combinations. Compound meter must not be neglected in favor of placing emphasis on the reading of melodies in simple meter. The most common patterns in simple meter involve mostly quarter notes and eighth notes, and the combinations of these durations usually seem to be easier to read than some of the patterns in compound meter. And yet the compound-meter patterns, if practiced through visual identification, aural identification, and certainly through realization in singing, can be as accessible in reading as simple-meter patterns seem to be already. The most common one-beat patterns experienced in compound meter are these:



Other one-beat compound patterns that appear include the following:

### FIGURE 13



Practicing these one-beat patterns together in various combinations helps students get accustomed to seeing, hearing, and realizing these patterns in a rhythmic context that is predictable and recognizable in melodies.

In conclusion, the steps to the achievement of success in sight singing are strongly related to the ability to recognize and perform some common rhythmic and melodic patterns, thereby making it possible to encounter known elements in the process. Of course, one of the most important parts of learning the art of sight singing is to be certain that singing happens every day, thereby making these patterns automatic. With every new melody encountered, the predictable and recognizable becomes more obvious and the skill of sight singing truly becomes one of putting things together in an organized and inevitable way. Each student must discover a unique and individual method for success in sight singing. Applying the strategies presented here will provide options to help them decide the approaches that will work best for them.

# Taking the Leap: Four Ways to Think About Teaching the Hard Notes

### Ken Stephenson

University of Oklahoma Norman, Oklahoma

Everyone involved in teaching music theory understands the importance of training students to be able to convert notation into sound mentally, without the aid of an instrument, and we all understand that the training and assessment methods for this skill involve sight singing. The details of the sight singing method used will depend on the material we have the students sing. The AP Music Theory Exam, the AP Music Theory course, and most first-year music theory college courses choose to concentrate on tonal melodies. To tackle this repertoire, almost everyone uses either a fixed syllable system, a movable system (whether in numbers, where "1" always stands for "tonic," or in solmization syllables), or an interval-by-interval method. The first trains students to think of each pitch in relation to the nomenclature and notational system of Western music; the second, in relation to the tonic or scale of the piece; and the third, in relation to the surrounding pitches.

No one of these methods, however, adequately expresses the full nature of tonal melodic structures. Tonal melodies present complex networks of relationships, and both the successful student and the successful program should work on understanding all these relationships and using all of them when singing. Especially in a situation involving a leap, sight singing students should think about and make use of at least four types of relationship. Every note in a tonal melody has (1) a unique place in the scale (in other words, a unique relationship to the tonic); (2) a step relationship with other notes in the melody (sometimes notes right before and after, and sometimes more distant notes); (3) a relationship with the harmonic structure of the piece (the *implied* structure in the case of unaccompanied melodies such as most

sight singing melodies); and (4) an intervallic relationship with the notes immediately before and after it in the melody.

What does all this mean in practical terms? Consider this example:

### FIGURE 1



Melodies like this (although usually longer) can be found in any standard sight singing book, a sight singing test in the second semester of a college sequence, or on the AP Music Theory Exam. Look especially at the first note of the second measure. This note is reached by a leap and will cause problems for many students.

Let's face it: most students start out with a terrible strategy for handling situations like the one described above; they just jump up some distance that feels about right and hope for the best. A better strategy—the strategy for success—is thinking about the multiple relationships to which the note contributes. Let's examine how each of the four relationships comes into play with this note.

### Position in the Scale

First, students should think of the position of this note (or any difficult note) in the scale; by the second semester, we hope that each diatonic scale degree has begun to have a distinct sound to students. The relationship of scale degree and sound, after all, is the entire point of a movable syllable system; the goal is that as our students recognize the key (D, in this case) and scale degree (six, or la in this case), they find it second nature to sing the proper pitch. Many students first acquire a distinct idea of la as the note above so. As the song says, "La: a note to follow so," and of course that's the way it happens in the scale. In most actual music, however, la is actually the note before so, in other words, the note that leads to so. Teachers can help students learn to recognize la through dictation and sight singing exercises involving the resolution of la to so: do-mi-so-la-so, do-ti-do-la-so, do-re-mi-la-so, etc. After some time with exercises like these, students will get an idea of la that doesn't depend on it leading to so; eventually la just sounds like la.

### How can I practice this? (Exercises for students)

1. Sing do while playing the melody on an instrument.

- 2. Sing the melody while sustaining do on an instrument.
- 3. Find all the difficult pitches. For each one, sing *do*, and sing up (or down) a scale until you reach the note.
- 4. Look at all the hard notes again. For each one, try to sing it, then sing down the scale (or up, if it's a low note) until you say "do." Did you really land on do? If not try again until you get it.
- 5. Sing through the melody again without the aid of an instrument. After every leap, slow down and think about whether the note matches the syllable. Think about the note it should be and the other notes that you might have hit by mistake. When you get to the B, for instance, ask yourself, "Is this really *la*? Is it *so*? (In other words, was my leap too small?) Is it *ti*? (In other words, was my leap too large?)"

## **Step Progressions**

The second relationship to keep in mind is a step relationship with distant notes in the melody. Why are some notes in a melody harder than others? Every note in the scale is just as easy to find as all the others when we sing a simple scale. When we sing, "Do, re, mi, fa, so, la, ti, do," la isn't suddenly harder than the rest of the pitches. Its difficulty in our example comes from its disjunct context: The melody leaps to it. In a scale, the note is easy; at the end of a leap, it's hard. Since the leap makes the note difficult, we can help students by showing them a way to think about the note that ignores the leap.

Many classic adventure movies and cop shows involve rooftop chases: We see the desperate fugitive leap effortlessly from the roof of one building to the next, and then the hero hesitates. Maybe the jump is only a few feet across, but the drop in between the two buildings is three stories high! As long as the hero thinks about that huge vertical distance, he will not be able to make the jump. On the other hand, if he looks straight across and ignores the vertical distance, he sees what looks almost like a step, and he is able to make it across. The same is true in this melody. If students find that the large leap makes the B harder, they should stop looking down at the D and concentrate on some shorter distance. The B is only a step higher than the A in measure one: Thinking about the A makes the B much easier to sing.

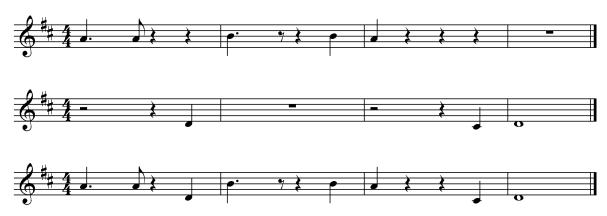
In fact, regardless of the intimidation factor, the step relationship between the A and the B forms an integral part of the structure of the melody, and students should be aware of it when they sing. If recognizing long-range connections like this one aids in

understanding as well as performance, we must not ignore them. (Later, the melody leaps down to ti. What earlier note could students relate ti to?)

### How can I practice this?

- 1. Sing all the high notes of the melody. In the sample melody, that's A-B-A.
- 2. Sing all the low notes: D-C#-D in this case.
- 3. Sing these in rhythm, first the high notes, then the low notes, then both:

### FIGURE 2



### **Harmonic Structure**

The third category of relationship—harmonic structure—is much harder to grasp for many students, especially the singers and wind players, since they can't play chords on their instruments. But of course our students must learn the sounds of the basic chords and learn to think about the harmonic structure of melodies. Again, more than just helping students find the pitches, it also sensitizes them to an essential part of the structure of music so that all tonal pieces start to make more sense and are more enjoyable.

Now, think about the B in our sample melody again. The second note of a leap could be one of two things: (1) a part of the implied harmony, or (2) an appoggiatura. In other words, either it's part of a chord or it isn't. The leap to B is followed by A; one of these must be a structural tone (part of the implied harmony), and the other an embellishment. Which one looks like the structural tone? Clearly B. The pitch A is there only once, falls on the weak part of the beat, and lasts only half a beat. B, on the other hand, happens twice, comes directly on beats 1 and 4, and lasts for over half the measure.

It's the prominence of notes such as the B here that makes implied harmony possible. The listener who really understands the music will mentally hear a tonic harmony in the first measure; the notes will hang together as a unit and sound like a I chord. The prominence of B, however, *causes* a change in the implied harmony. Any note that prominent must be a chord tone; but it doesn't fit the I chord of the first measure, so the harmony must have changed. The A after it acts as a passing tone between B and G; then the melody leaps away from G, so G must be a chord tone, also. The most common chord in D major containing both a B and a G is the IV chord, and that is what the properly trained student hears here.

While often subtle and moderately difficult, analysis of this kind enables the third way—the harmonic way—of thinking about the difficult pitch: in this case, think of the B as part of the IV chord. If you play a IV chord while the students sing this melody, they will very likely find the correct pitch. If you train them to analyze the implied harmony and audiate the primary triads as they sing, they will eventually be able to find the pitch without having anyone play the chord.

## How can I practice this?

- 1. Practice spelling chords, and practice knowing how to spell all the chords in all the keys. For this melody, say, "D-major scale: D, E, F#, G, A, B, C#, D. The I chord: D, F#, A. The ii chord: E, G, B. The iii chord: F#, A, C# etc."
- 2. Repeat step 1, this time playing each chord on an instrument (a guitar, keyboard, harp, or percussion instrument) as you spell it and listening to the sound of each chord.
- 3. Sing the primary triads. Be able to do each in several inversions. Look at the range of the melody and be able to sing these chords in inversions that fit that range:

#### FIGURE 3



4. Analyze the melody for chord tones and embellishments. While playing the implied chords on a keyboard, leave out the embellishments and just sing the chord tones:

#### FIGURE 4



## **Local Intervals**

Some sight singing books and some sight singing teachers suggest an intervallic approach: If you learn what a perfect fourth sounds like, you can sing it anytime you come across it in a piece of music. This method works perfectly for learning to sing atonal music, but it presents several problems for students learning to sight-sing tonal melodies. For one thing, intervals outnumber pitches: Students only need to learn how seven different pitches sound in order to sing diatonic melodies in major keys, but they would have to learn 14 different intervals. Here, the tonal-context method cuts the work in half. But the intervallic way causes even more problems in tonal music because intervals of the same size sound different in different contexts. We can't simply teach students how a perfect fourth sounds, because they don't all sound alike: A perfect fourth between so and do doesn't sound like a perfect fourth between ti and mi.

Theorists in the Middle Ages had several good ideas that have been largely forgotten. One of these, the idea of "interval species," could be especially useful for sight singers. In the Middle Ages, an interval was not thought of simply as a pair of notes; the two notes were thought of as the endpoints of a scale segment. Intervals of the same size were distinguished by the arrangement of whole steps and half steps that came between them in the scale. Intervals with different arrangements were said to be different species of that interval. For instance, the perfect fourth between C and F (assuming all natural notes) is a WWH fourth, while the fourth from D to G is a WHW fourth. The two intervals are the same size, but the different arrangement of whole steps and half steps makes them different species of fourths. This useful theory explains why an interval sounds different when it's found in different places in the scale.

Our students can begin to apply this idea when they sing skips if we train them to think of all the scale steps in between. Consider this melody:

#### FIGURE 5



Perfect fourths happen three times in this melody, and each fourth represents a different species. In the second measure, students should not simply think about jumping up a fourth: They should think about the two notes in between and the pattern of whole steps and half steps they create. (Minor thirds happen twice in the melody. What pattern of whole steps and half steps fills the interval each time?)

You might have noticed that this method isn't very different in practice from the other three methods. If you think of the notes in between on a skip, you're finding the difficult note's position in the scale, and you're relating it by step to notes that are easier to find. Think back to the B in the first melody. Knowing that note's relationship to the tonic is the same as knowing its relationship to the note before: The note before it is the tonic. Thinking of the scale that connects the notes is thinking about a D-major scale. And thinking about the scale involves relating the note to the A one step below it. So the methods often connect with one another. Keep working on all four methods. They're all important, but you will find that different methods will turn the key for different students, each key opening a door to understanding the other three.

## How can I practice this?

1. The obvious way to begin practicing thinking about interval species is to sing the scales out loud that fill the leaps. For that last melody, sing a version like this:

## FIGURE 6



- 2. After you can sing that form of the melody, try making the sixteenth notes quieter.
- 3. Then try singing it again with the sixteenth notes totally silent.
- 4. Finally, read the original melody again and just imagine the sixteenth notes filling the gaps.

## Conclusion

Thinking about all the interlocking relationships of pitches in a tonal melody increases both the understanding of tonal relationships and accuracy in sight singing. Pursuing

## SPECIAL FOCUS: Teaching Sight Singing

the fourfold approach outlined here requires some extra work and time from the instructor at first, but after you demonstrate how to write a stepwise version of a melody, for instance, you can have each student write one and present it to the class. Soon your class will dispense with explicit references to these extra exercises, and by the end of the year, they'll be taking the leap without any extra effort.

# Sight Singing Integration: Save Time and Build Technique

#### **Stefanie Katz Shear**

A.W. Dreyfoos School of the Arts West Palm Beach, Florida

## "How do I integrate sight singing in my class when there is so much material to cover?"

Wouldn't it be ideal to work with students on sight singing at least two hours per week? We would love to have students spend this much time learning and mastering solmization and Kodály techniques, but it is unrealistic; most of us have no more than five hours per week in which to teach an entire AP Music Theory curriculum. Therefore, integrating sight singing into the other tasks of the curriculum is essential for balancing time and guiding your students to success on the AP Music Theory Exam. After all, the AP Music Theory curriculum is cumulative, like a layer cake. Ingredients such as flour, eggs, and chocolate must be mixed together in the right amounts and in the proper order (icing before baking is not recommended!) to produce a delicious cake. This article will offer methods for teaching your students to sight sing while they are integrating four other important concepts of AP Music Theory: (1) scales and scale degrees, (2) intervals, (3) harmonic progressions, and (4) melodic dictation.

## **Scales and Scale Degrees**

Everything having to do with pitch relates to scale. Consequently, students have to understand the major and minor scales and the functions of the seven scale degrees. Begin by addressing tonic and dominant: Explain the triads built on these scale degrees, play some V-I(i) cadences in at least three keys, and compare the chords to visiting place (V) and home (I).

## FIGURE 1

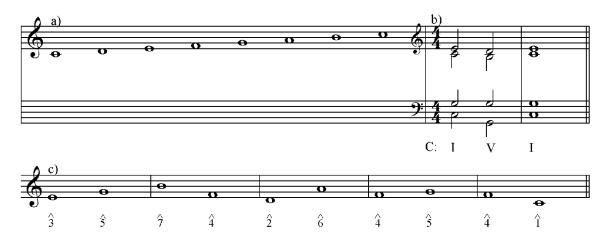


I explain it this way: "I may go on a short vacation to New York City and have a terrific time. But, after visiting such an exciting city, it's so *comfortable* to come home and sleep in my own bed." *Comfortable* is the key word here, because the students need to understand the attraction in coming home to tonic. While in New York (the dominant in this scenario) I really feel like it is time to get back and get some rest! When we hear the V chord, we feel this way because the leading tone pulls us home to tonic.

After becoming familiar with *tonic* and *dominant*, it is imperative that all scale degrees be introduced. After a brief initiation of all scale degrees, start putting this information into action:

- 1. Establish a key by playing the one-octave scale and I-V-I progression. C major is a familiar and welcome key to use as an example.
- 2. Play the scale again slowly; emphasize V and I at least two times.
- 3. When ready, play ascending or descending intervals in this scale—no more than five combinations, total.
- 4. Have students notate the syllable or scale-degree number appropriate for each pitch.

## FIGURE 2



### Student Feedback:

- Ask how your students are doing.
- Sing or play back those examples that students have questions about.
- Encourage the questioning student(s) to recall the two-note pattern and then to sing tonic.
- If a student has issues with tonic and dominant recall, enlist the entire class to sing tonic.
- Play or sing the two notes again and direct the student (or the entire class) to sing the scale in order to find the initial note.
- Direct the class to hold the first note of the pattern when they arrive at it.

## Follow-up:

- Continue with this drill one day per week for 15–20 minutes per session.
- Gradually ask each student individually to sing tonic and dominant.
- As the weeks—and the students—progress, add more scale degrees and different keys to the exercise. Make sure all scale degrees are represented.
- By the second quarter, try three notes and harmonic minors.
- At the start of the second semester, begin working with four to five notes and a variety of scales: major and all three types of minor.
- The singing during feedback should always begin by singing tonic. Address each student individually on a continual basis.
- During the last quarter of the year, request that each individual student sing
  a scale of his or her choosing and a three-note pattern to follow. Have the
  class notate these scale degrees.

Begin a tradition of singing one-octave major scales and three types of minor scales (ascending and descending) on a weekly basis and together as a class. This accounts for no more than five minutes of class time per week. Use the piano as an aid at first to help with intonation.

## **Intervals**

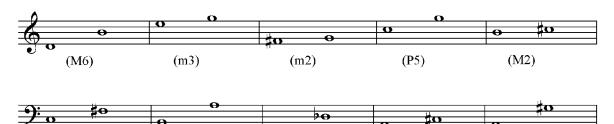
Intervals form an essential component of music theory. Many courses introduce intervals while students are beginning to understand the fundamentals of the scale. Several methods are available for learning aural recognition of intervals: Associating each interval with a familiar melody (an ascending P4 sounds like Wagner's "Bridal Chorus," for instance) and with scale degree patterns (the P4 sounds like sol to do)

are the most common. But why not incorporate singing into this process? Here is a method to use:

 Ask students to notate 10 ascending intervals played in succession on the piano. (Have them notate only interval names, not notes.)

#### FIGURE 3

(TT)



(m6)

(M3)

(M7)

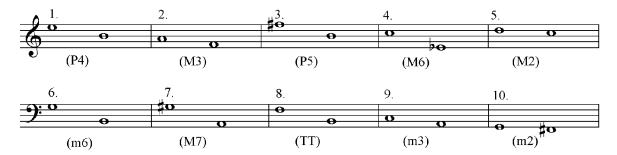
• Recite the correct answers to the class.

(m7)

- Poll your students about their written responses.
- Play any problematic interval(s) again (emphasize the bottom note).
- Have the student sing the bottom note and then sing up by steps until finding the second note in the interval.
- As the student sings, demonstrate with your fingers the number of steps (quantification).
- Count the steps of the ascending notes and together sing the melody associated with the ascending interval. Allow the student(s) to verbally respond with the answer. This does not have to be a slow session. Sing the stepwise movement and tune beginnings quickly.

Once the students become familiar with this process (but no later than the ninth week of class), add another layer to the cake: proceed with 10 descending intervals.

#### FIGURE 4



Now the student must sing the *bottom* note first and then the stepwise movement up to the top note (*ascent before descent*). This is extremely important so they do not unintentionally invert these intervals.

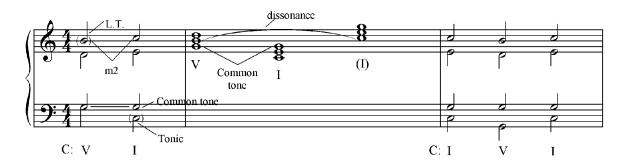
For the first semester, drill intervals consistently. Begin almost every class with 20 intervals, alternating between ascending, descending, and harmonically played intervals. Maintaining the process outlined above will make progress in interval recognition rapid and sure.

## **Harmonic Progressions**

Harmonic progressions in four-part chorale style take form as two aural questions (FR3, FR4) and two written questions (FR5, FR6) in the free-response section of the AP Music Theory Exam. Address harmonic progressions alone before dictation of the soprano and bass line. Begin with tonic and dominant.

- 1. Discuss ways in which the I and V chords are similar and ways in which they are different. Reinforce the information visually by writing the chords on a staff on the board (preferably in C major, at first).
- 2. Explain how both I and V chords share G as a common tone.
- 3. Relay to the students that I chords contain tonic and V chords have the leading tone.
- 4. Remind the class of the half-step relationship between these two chord tones.
- 5. Emphasize that the tonic and leading tone sounding together creates a dissonance.
- 6. Play a four-part example on the piano.

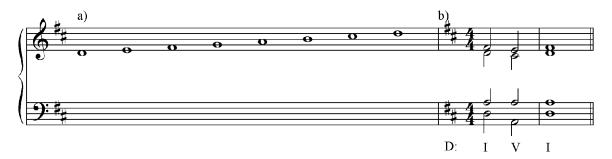
## FIGURE 5



7. Establish a new key by playing the scale and I-V-I using four-part chorale style.

- 8. Play four consecutive chords consisting of different voicings and inversions of the I (tonic) and V (dominant) chords.
- 9. Play five combinations (of four consecutive chords) before moving on.
- 10. Instruct the students to notate whether they hear I or V chords.

#### FIGURE 6



#### FIGURE 7



## Student Feedback:

- Instruct all of your students to sing tonic.
- Direct them to continue singing tonic as you play each chord of the first example very slowly.
- While playing, talk to the students and tell them they are harmonizing beautifully with the I chord.
- When playing the V chords, instruct the students to sing tonic even louder.
- Emphasize the dissonance that takes place.

The students really are involved now (they actually find it funny) and begin to digest this concept of tonic and dominant. They definitely understand that harmonizing tonic with the V chord creates dissonance. Only the vocalizing of tonic will solidify the idea. Establishing and retaining tonic is fundamental to good sight singing technique.

## Follow-up:

- During the course of the year, the progressions should become increasingly more difficult.
- By the end of the first quarter the progressions should include I, ii, IV, V, and vi in major keys and I, ii°, iv, V, and VI in minor keys, using first- and second-inversion chords where appropriate. Cadences should be addressed at this time.
- By the end of first semester, the number of chords should increase to six. Begin to introduce dominant seventh chords.
- The second semester should focus on 8 to 10 chords and include iii/III and vii°, fully diminished and half-diminished seventh chords, and secondary dominants.
- Students should continue to reference other chords around I (tonic) and V (dominant). Remember, this class is cumulative. We are just adding layers to the cake.

## **Melodic Dictation**

Students need to understand that many of the same skills are involved in both melodic dictation and sight singing. A melody is a melody, whether the student is writing a melody that is performed (dictation) or performing a melody that is written (sight singing). Therefore, every opportunity to work on melodic dictation in class is an opportunity to master the fundamentals of sight singing.

During the first four weeks of the semester, I have the students notate simple, two-measure melodies such as those shown here.

## FIGURE 8



At this early stage, they are all stepwise melodies, only in major keys, and only in simple meter. We follow this procedure:

• Play each example two times at a moderate tempo.

- Have the entire class sing back each example. (Once the class becomes familiar with the exercise, have students respond individually.)
- Take notice together (by singing and explaining) that each example begins and ends on tonic. (Most melodies on the AP Music Theory Exam do this, so pointing out the feature directly prepares students for the exam.)
- Make sure that as the students are singing, they hold the last note until the downbeat of the next measure (another important test-taking strategy for the AP Exam.)
- Direct the students to sing even louder when they arrive on the tonic and dominant scale degrees throughout the melody. Consistently advise the students of these landmarks and how they may find other notes in reference to these important scale degrees.

As the year progresses, begin to add skips to your melodies, introduce minor keys and compound meter, and increase the length of the melodies.

## FIGURE 9



As the examples become harder, you will have to play each melody more times. But after the final playing of each example, make sure the entire class sings back the melody with correct pitches and rhythms (the students may use solmization, "la," or numbered scale degrees), and they will soon let you know that the four-measure dictations seem easy!

Throughout this chapter, it is evident that many learning styles are available to the students. For example, (1) students HEAR Tonic, (2) students THINK about Tonic, (3) students WRITE Tonic, and (4) students SING Tonic.

## Strategizing for the AP® Music Theory Exam

While you should continually refer to the exam throughout the year, you can focus explicitly on preparation for the AP Music Theory Exam during the final weeks. Use at least two AP Music Theory Released Exams to prepare students for the testing format. Instructors may purchase released exams from the collegeboard.com store (http://store.collegeboard.com/enter.do). Read through the instructions as a class, and leave 75 seconds for practice. This way, the students will become accustomed to the format and, on the day of the exam, will be more focused on the material. While the students should sing the practice melodies together as a class, some students may still need individual instruction in preparation for the exam; giving these students your time may have a significant impact on your students' success.

In studying the released exams, help the students understand that the construction of the melodic-dictation questions (FR1, FR2) and the sight singing questions (SS1, SS2) are similar. The AP Music Theory Development Committee keeps the following scheme of components in mind:

	Easy	Difficult	
Meter	Simple	Compound	
Key	Major	Minor	
Clef	Treble	Bass	

## FIGURE 10

c- :



Both SS1 and FR1 consist of **two** easy components and **one** difficult component; both SS2 and FR2 consist of **one** easy component and **two** difficult components.

For the day of the exam, give your students the following hints:

- 1. Use the 75 seconds of practice time to actually sing. Students are given 75 seconds to practice before each sight singing example is recorded, and they need to take advantage of this time. While they might use some of this time to study the melody (see below), they should sing as much as possible during the practice period. They may sing the scale associated with the key, they may sing through the entire example, or they may sing certain measures that are giving them difficulty, as long as you encourage them to sing something.
- Analyze and mark the score. Identify tonic and dominant, utilize solmization,
  make note of accidentals by writing in the score. Students are allowed to
  notate on each sight singing example and are encouraged to do so.
- 3. Perform with flow. According to the rubrics for the sight singing questions on the AP Music Theory Exam, one additional point is awarded as a "flow" point. To be awarded a flow point, the student must record the melody without stopping to correct a note or passage. The student may not start the example over or have any large hesitations. If any of the above occurs, then there is no flow or "momentum of musical motion." Please encourage your students not to stop once they have started to record.
- 4. Arrive at and hold the last note. Returning to tonic is a fundamental component of sight singing. Advise students that the last note is going to be tonic. Try to retain tonic to the end of the melody. Although the scoring guides for AP sight singing tolerate a small amount of variation on the length of the last note of the melody, encourage students to hold the note for its full value (until the downbeat of the next measure). Just by singing the last note correctly in both pitch and rhythm, the student will earn one point.

## Conclusion

You and your students have now come full circle. At this point your students should be well prepared to take the sight singing portion of the exam. Having incorporated sight singing into other topics of AP Music Theory—scales and scale degrees, intervals, harmonic progressions, and melodic dictation—your students should now understand the relationship between sight singing and the rest of music theory. Having integrated these subject areas will only help solidify musical concepts even more, and the students will be able to internalize this information so they may continue to grow

musically. And demonstrating this growth by performing well on the AP Music Theory Exam will certainly add some cherries to the layer cake.

## How Structured Improvisation Can Improve Sight Singing Performance (and More)

## **Nancy Rogers**

Florida State University Tallahassee, Florida

Musicians value sight singing because it requires a wide range of essential musical abilities: fluent reading of both pitch and rhythmic notation, a solid sense of meter and the major/minor tonal system, an awareness of common melodic formulas and harmonic patterns, and much more. Sight singing per se is not the ultimate goal for most of us; rather, sight singing necessarily unites the symbols and sounds of music, fostering the development of the "seeing ear" and the "hearing eye." By focusing on sight singing, we develop a host of related skills; conversely, by practicing other skills, we may improve sight singing.

Improvisation in particular has the potential to reinforce a variety of abilities that contribute to successful sight singing. This essay will address the important role that structured improvisation activities can play in developing sight singing (and other) skills. It will also offer some guidance in using improvisation effectively in the classroom, providing a variety of suggested exercises as illustrations.

## It's Never Too Early

Although we tend to think of improvisation as suitable only for advanced students, improvisational activities are in fact very appropriate and useful for novices. Consider the frustration many students experience when they initially try to sight read using solmization: concentrating simultaneously on reading musical notation, interpreting it accurately, conducting, and using the correct syllables can seem overwhelming. It's no

<sup>1.</sup> I borrow these expressions from Bruce Benward (Music in Theory and Practice). Michael Rogers, correctly emphasizing the intellectual component necessary for this transference, described the same phenomenon as the "understanding ear" and the "hearing mind" (Teaching Approaches in Music Theory). For an interesting discussion of reading-listening integration, as well as the concept of thinking in music rather than thinking about music, see the introduction to Gary Karpinski's Aural Skills Acquisition.

wonder that some students begin to perceive solmization as a liability rather than an asset.

Becoming familiar with a solmization system through improvisation is easier in many respects than learning exclusively through more traditional exercises. Temporarily eliminating musical notation has several distinct advantages for beginners:

- The cognitive burden of the activity is significantly reduced.
- It establishes an environment in which there is no single correct answer.
- Students are free to work at their own pace.

Most important, students who focus solely on the sounds of the notes and their associated label ( $\hat{1}$ - $\hat{2}$ - $\hat{3}$ , do-re-mi, etc.) will more quickly develop the effortless fusion of sound and syllable that facilitates both sight singing and dictation. As some of my students have remarked, "The note just seems to say its name." Furthermore, they will have ample time to discover and absorb the important characteristics of each scale degree (e.g., the stability of the tonic, the leading tone's desire to resolve to the tonic, etc.) before you draw upon this implicit knowledge in the context of four-part writing.

The key to successful improvisation in these very early stages of music instruction is creating a set of restrictions that will keep the resulting melodies simple yet musically satisfying. Example 1 presents guidelines for a relatively easy exercise as well as two good realizations.

#### **EXAMPLE 1**

In a major key and  $\frac{4}{4}$  meter, sing a melody that moves entirely by step and uses only quarter-notes and half-notes. You may begin on do, mi, or sol.

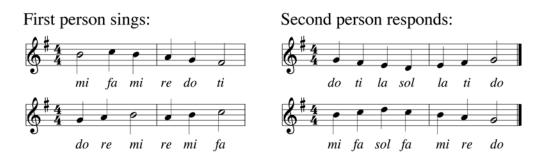
Two possible solutions:



Obviously, similar guidelines could be devised for practicing an unfamiliar rhythmic solmization system (e.g., *du-ta-de-ta* or *1-e-&-a*). Such exercises are also easily modified to make them more interactive. For instance, the instructor might sing a short antecedent phrase and ask the student to respond with an appropriate

consequent phrase.<sup>2</sup> Alternatively, students could work in pairs: the first student improvises a short melody that pauses on a note other than *do*, and the second student reacts with a more conclusive pattern (illustrated in example 2). After a few minutes, collaborating students can trade roles.

#### **EXAMPLE 2**



Notice that exercises such as those illustrated in examples 1 and 2 may be performed by students who do not yet read music. Even students who are initially flustered by applying solmization may benefit from improvising suitable melodies or rhythms using a neutral syllable (e.g., *la-la-la* or *ta-ta-ta*) if they are unaccustomed to performing in public. The entire class (or an individual partner) could then repeat the patterns using solmization; this activity is excellent preparation for true dictation.

## A Variety of Approaches

There are countless methods for structuring improvisation exercises that are directly relevant to sight singing. The trick is to include a specific skill or musical element that has been learned recently. When students are able to produce a particular item (e.g., syncopation, half cadence, tonic triad, or chromatic passing tone) on demand, we can be confident that they not only grasp the abstract concept but also understand how to apply it in context. Four strategies for designing improvisational exercises will be described and illustrated below, but there are numerous other possibilities.

## **Restricted Material**

Highlight a recent concept or feature, but keep the surrounding material relatively simple and familiar so that students can concentrate effectively on the new and more challenging patterns. Examples 1 and 2 severely restricted material for beginning students. Example 3 illustrates a more advanced exercise that would be appropriate

<sup>2.</sup> You may wish to use this opportunity to introduce the general concept of antecedent—consequent phrases, but you can just as easily skirt the issue using nontechnical language (e.g., "I'll sing part of a melody, and you try to finish it," or "I'll pose a musical question, and you sing back a musical answer").

for students who are currently encountering arpeggiations of the dominant seventh chord in their sight singing. Once again, the activity may easily be adapted for pairs of students; listeners could identify the implied cadence types.

## **EXAMPLE 3**

Create a pair of phrases using a minor key,  $^6_8$  meter, and nothing shorter than an eighth-note. Include leaps from the  $V^7$  chord, but otherwise try to move entirely by step.

One possible solution:



If students have completely mastered leaps from the tonic triad, it would be reasonable to allow both tonic and dominant leaps. An enormous variety of pleasant melodies can be constructed from these limited materials.

## **Building Blocks**

Create a list of target patterns that your class has encountered lately. Students freely combine the patterns provided on your list, in much the same way as we might assemble larger structures using building blocks. To add another dimension to this activity, listeners might identify the pattern of blocks used by the improviser. Alternatively, a pair of students could improvise paired phrases, perhaps then identifying the blocks used by the other partner. Examples 4 and 5 provide illustrations using rhythmic and pitch materials, respectively.

## **EXAMPLE 4**

Perform a rhythm in  $\frac{2}{4}$  using only the patterns below (in any order). Try to make the ending feel suitably conclusive.



## **EXAMPLE 5**

Perform a four-measure melody in  $\frac{2}{4}$  using only the patterns below (in any order). Try to use at least three different patterns, and end on the tonic.



Two possible solutions:



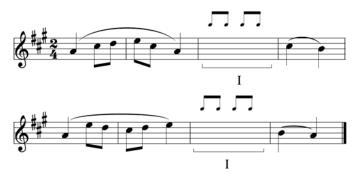
## **Harmonic Background**

Provide a harmonic outline, indicating which chords are to be used as well as where each chord begins and ends. A relatively easy exercise may focus on a single chord, providing a substantial melodic context through traditional notation (as shown in example 6). An advanced exercise might include more harmonic variety and use little traditional notation—indeed, perhaps none at all (see example 7). Notice that the degree of rhythmic guidance provided is also flexible: The instructions may suggest

a specific rhythm for each measure, a more generally applied rhythmic pattern, or a range of note values, or they may leave rhythm entirely up to the student.

## **EXAMPLE 6**

Complete the two phrases using only notes from the tonic triad. A suitable rhythm has been indicated.  $^{3}$ 



One possible solution:



## **EXAMPLE 7**

Maintaining the syncopated rhythm established in the opening measures, complete this melody by outlining the chords indicated below the brackets.



One possible solution:



<sup>3.</sup> Examples 6 and 7 are taken from Chapters 3 and 15 of Ottman and Rogers' *Music for Sight Singing*, seventh edition; used by permission of Prentice Hall.

If your class has already addressed passing tones and neighboring tones, exercises like these also provide a good opportunity for students to experiment with ways of connecting notes within the prevailing harmony. To assist a disoriented student, you may wish to provide reinforcing accompaniment: Either play the underlying progression quietly on the piano or have the class hum chord tones.

### **Melodic Framework**

A series of structural pitches (presumably occurring in metrically strong positions) serve as landmarks around which the student improvises a more elaborate melody. Obviously the guiding notes may be chosen in such a way that they create clear harmonic implications (perhaps even outlining a particular chord), or they may form a long-range contour with stepwise motion. As always, you may wish to provide other guidance such as a rhythmic pattern, or you may ask students to incorporate a specific compositional feature (such as a unifying motive). Example 8 illustrates a relatively advanced exercise that would be appropriate for students who have encountered chromaticism in their sight singing.

#### **EXAMPLE 8**

A melodic outline for one phrase is provided below. Using entirely stepwise motion and any combination of  $\mathcal{I}$  and  $\mathcal{I}$  that fits the meter, connect these notes (all of which fall on the beat) so that they form a melody. Include some chromatic neighboring and/or passing tones.<sup>4</sup>



One possible solution:



## **Making Connections with Sight Singing**

The structured improvisation activities suggested here are designed to link sounds with various abstract concepts and symbols that are familiar from music analysis. Students must therefore utilize their analytical skills when practicing traditional sight singing in order for improvisational exercises to be maximally effective. If students have recently completed melodies by improvising patterns from tonic and dominant

<sup>4.</sup> Example 8 is taken from Chapter 13 of Ottman and Rogers' *Music for Sight Singing*, seventh edition; used by permission of Prentice Hall.

chords, ask them to scan sight singing melodies for tonic and dominant arpeggiations. If they have been improvising elaborations for an underlying stepwise melody, encourage them to concentrate on long-range stepwise connections in sight singing melodies.

Whether we are teaching analysis, four-part writing, sight singing, or performance, it is important for all music teachers to remember that integrated skills are a hallmark of superior musicianship. The whole is indisputably greater than the sum of its parts.

## **Assessing Progress**

Given that the AP Music Theory Exam does not test improvisation, there is no harm in using improvisational exercises strictly as a fun and ungraded in-class activity. Easy and focused problems can serve as a warm-up for true sight singing—similar to a more traditional drill, but presumably with a higher degree of mental engagement. Challenging and open-ended exercises, on the other hand, provide an opportunity for creative expression and might be especially enjoyable at the end of class.

Whether or not we choose to grade improvisational endeavors, it is important both for teachers and for students to recognize signs of accomplishment. The two most important goals of the exercises described here are (1) recognizing abstract symbols and concepts such as  $V^7$ , and (2) linking this intellectual understanding with musical sound. Additionally, we hope that students will internalize some stylistic norms of Common Practice music (such as resolution tendencies and typical phrase structure), and that they will be able to apply this implicit knowledge to their own music. Evidence that students are making progress toward these goals includes the following.

- Minimal achievement (reflecting intellectual understanding alone): The student is able to provide solmization corresponding to the featured element.
   For example, if an exercise calls for outlining the IV chord, the student should be able to say fa-la-do or 4-6-1.
- Basic achievement (reflecting both intellectual understanding and the desired symbol-sound connection): The student is able to sing pitches corresponding to the featured element in a given key.
- Moderate achievement: The student is able to produce the desired musical element or feature in context while maintaining a clear key and meter as well as a steady tempo.

 High achievement: The student integrates the required elements into a setting that reflects musical conventions such as four-measure phrases, typical cadential formulas, and unifying motives.

## Some Advantages of Improvisational Exercises

Improvisation benefits students with a wide range of abilities and experience. As mentioned earlier, exercises such as those illustrated in examples 1 and 2 may be performed by students who do not yet read music. Given that aural skills need considerable time to develop, starting early is a tremendous advantage. At the opposite end of the spectrum, improvisational exercises can challenge even our most advanced students by including more harmonic variety, providing fewer hints and less contextual information, and requesting subtle features such as phrases exhibiting sentence structure (the 1+1+2 subphrase design so familiar from Classical music).

Students with different learning strategies are free to approach improvisational tasks differently. Some will be eager to dive in and experiment, relying on their stylistic intuitions. Analytically inclined students, on the other hand, may deduce reliable compositional "recipes." Consider example 1, for instance: in this exercise, a melody using the rhythm without repeated notes will work as an antecedent phrase, while a melody using the rhythm without repeated notes will work as a consequent phrase. (If the melody includes a repeated note, this relationship will be reversed.) Improvisation also provides a chance for students with different learning styles to work together productively. As a pair, they can create suitable formulas and look for recurring patterns, or they can hypothesize guidelines and confirm that the results are musically satisfying. Opportunities for both communal learning (working in pairs, small groups, or the entire class) and individual practice abound.

There are, of course, inherent advantages in offering diverse classroom activities, and improvisation offers some welcome variety. When presented as a kind of game, improvisation can be fun and relaxing. Perfectionists who fear committing a mistake to paper sometimes become more adventurous during improvisational exercises. Any initial anxiety provoked by an exercise's open-ended nature should be offset by recognizing its correspondingly abundant supply of correct solutions.

When improvisation exercises are interactive, students are able to hone a variety of vital musical skills. Group improvisation provides an environment in which performers listen to one another's musical ideas and respond directly in music,

typically developing shared motives and gestures in the process. The activity requires proficiency in analysis, aural skills, and composition, and it is arguably one of the most practical and realistic music theory exercises possible—especially for students interested in composition, jazz, or popular music (where improvisation is routinely expected).

In short, structured improvisation exercises have the potential to bring together much of the material addressed in AP Music Theory classes: analysis, listening, sight singing, harmony, voice-leading, phrase structure, motivic development, and more. The potential payoff is well worth the time invested.

## Bibliography

- Benward, Bruce, and Marilyn Saker. *Music in Theory and Practice*, eighth edition. New York: McGraw-Hill, 2008.
- Karpinski, Gary S. Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians. New York: Oxford University Press, 2000.
- Ottman, Robert W., and Nancy Rogers. *Music for Sight Singing*, seventh edition.

  Upper Saddle River, NJ: Pearson Prentice Hall, 2007.
- Rogers, Michael R. Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies, second edition. Carbondale, IL: Southern Illinois University Press, 2004.

## **About the Editor**

**Ken Stephenson** has been teaching since 1989 at the University of Oklahoma, where he is now the Kenneth and Bernadine Russell Chair of Music Theory. He received his Ph.D. in music theory from the University of Iowa in 1989. His research interests center around tonality in the twentieth century, the results of which include articles on Prokofiev's "Romeo and Juliet" and a Yale Press book called *What to Listen for in Rock*, on the basic tonal, formal, and harmonic style of rock music. From 2005 to 2009 he is serving as Chief Reader for the AP Music Theory Exam.

## **About the Authors**

**Terry Eder**, a choral conductor and teacher with more than 30 years of experience at both the college and secondary levels, is currently the music theory teacher at Plano Senior High School in Plano, Texas, where he teaches beginning and AP Music Theory. He also serves as lead teacher for the O'Donnell Foundation's AP Music Theory incentive program involving 11 high schools in the Dallas–Fort Worth metroplex, as well as two high schools in Abilene, Texas. Eder is a College Board consultant and has presented at several AP Music Theory Summer Institutes and two-day workshops.

**Julie Edwards** has taught music theory, aural skills, sight singing, and keyboard harmony at the college level since 1997. She currently teaches at Indiana State University in Terre Haute, Indiana, where she received an Educational Excellence Award from the College of Arts and Sciences in 2003. She is also an active church musician and private piano instructor.

**Diane McFarlane** holds a bachelor of arts degree in music education and a minor in music performance from the University of Wisconsin-Green Bay. She has been teaching high school music since 1986, and at Seneca High School in Seneca, South Carolina, since 1989, where she conducts the school's five choirs and teaches AP Music Theory. Diane is Nationally Board Certified from the National Board of Professional Teaching Standards.

**Nancy Rogers** has been an assistant professor of music theory at Florida State University since 2002 and served as secretary of the Society for Music Theory from 2004 to 2008. She has been involved with the AP Music Theory program in a variety

of capacities: as a Reader, a course auditor, a presenter at the AP Annual Conference, and a contributor both to the AP Music Theory *Teacher's Guide* and to AP Central<sup>®</sup>. She and Robert W. Ottman coauthored the seventh edition of *Music for Sight Singing* (Pearson Prentice Hall, 2007), and her articles have appeared in *Music Theory Online*, the *Journal of Music Theory Pedagogy*, *Em Pauta*, and *Indiana Theory Review*.

**Stefanie Katz Shear** teaches AP Music Theory and Accompanying/Ensemble III at A.W. Dreyfoos School of the Arts in West Palm Beach, Florida. She is also an adjunct professor of tonal harmony (I, II) and staff accompanist/vocal coach at Palm Beach Atlantic University, also in West Palm Beach.

