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The Gail Boyd de Stwolinski Center
for Music Theory Pedagogy

Steven G. Laitz, Director

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From the Editors

Welcome to Volume 30 of the *Journal of Music Theory Pedagogy*. With this issue William Marvin (Eastman School of Music) joins Elizabeth Sayrs as Co-Editor of the *Journal*. We would like to thank Rebecca Jemian (University of Louisville) for her service as reviews editor, and we welcome Philip Chang (University of Colorado at Boulder) as the new reviews editor beginning with Volume 31.

We also thank Prof. Alice Lanning for her 30 years of dedication to the de Stwolinski Center and to *JMTP*. Alice was one of the three faculty members at the University of Oklahoma who founded the de Stwolinski Center and the *Journal*, working tirelessly with her two colleagues James Faulconer and Michael Rogers in an effort to bring music theory pedagogy into a scholarly light. They succeeded brilliantly: since its inception, nearly 300 articles have appeared in the *Journal of Music Theory Pedagogy*. Alice has been a superb Managing Editor, beginning in the pre-computer age by compiling submissions, soliciting reviewers by phone and snail mail, photocopying manuscripts, and mailing hard copies to each reviewer, and then sending the reports on to the editor.

This summer, the *Journal of Music Theory Pedagogy* and the *Journal of Music Theory Pedagogy Online* were honored to support the inaugural Pedagogy Into Practice Conference, sponsored by The Gail Boyd de Stwolinski Center for Music Theory Pedagogy (Steve Laitz, Director). Hundreds of music theory instructors spent an intensive three days at Lee University listening to riveting keynote addresses by Ken Bain, author of *What The Best College Teachers Do*, and Anna Gawboy, Professor of Music Theory at The Ohio State University, as well as traditional paper sessions, innovative workshops, and expansive poster sessions. The program committee, chaired by Elizabeth West Marvin, and co-coordinators Jennifer Snodgrass and Austin Patty created a truly inclusive and energizing experience. We will have a full conference report in volume 31 of *JMTP*, as well as publication of the paper by the winner of the first “Emerging Scholar Award for Music Theory Pedagogy,” presented by the Gail Boyd de Stwolinski Center for Music Theory Pedagogy. We anticipate seeing many of the excellent presentations from the conference in *JMTP*, *JMTP Online*, and other journals in our discipline.

Contributions to this volume of *JMTP* cover the broad range of issues that a contemporary instructor of music theory is likely to encounter, from 16th-century counterpoint to current research in metacognition. We learn how different kinds of innovative writing and reflection practices can help promote deep musical understanding, and how the teaching of introductory Schenkerian theory and introductory aural skills both benefit from providing clear steps for the student to think through (and hear through). Readers will find strategies for introducing post-tonal topics and narrativity in music through one of Debussy's preludes, and our conference report allows readers to reconsider all aspects of core theory instruction with the help of some of the leading pedagogues in North America.

There is significant evidence that writing regularly supports deep learning regardless of discipline. In "Teaching What We Do and How We Do It: Using a Miniconference Assignment to Dig Deep into Musical Analysis," **Robin Attas** discusses a series of scaffolded writing assignments used in a core theory course, including sample rubrics. These writing assignments culminate in an innovative miniconference, in which students get a glimpse of the professional activities of music theorists by presenting their analytical finding to their peers. Attas's model can be adapted to a variety of theory courses—not to develop more professional theorists, but to provide opportunities for students to think deeply and share their discoveries about music.

Anna Ferenc asks us to take a step back and consider the importance of metacognition to the learning process. Beginning with an overview of the research on metacognition, she explores the relationship between reflection and metacognition in music theory, providing a series of reflective writing assignments and suggestions for assessment. The second part of "Promoting Metacognitive Reflection in Music Theory Instruction" provides a fascinating thematic analysis of actual student reflective assignments, demonstrating how these carefully crafted assignments promote metacognition and deep, self-regulated learning in music theory.

Daniel Stevens addresses a problem familiar to many instructors of aural skills: how do you begin to help a student who can't yet hear the difference between tonic and dominant? By building on the guide tone method developed by Jay Rahn and James R. McKay, Stevens sets out a pathway for beginning students to begin

to hear holistically. In “Symphonic Hearing: Mastering Harmonic Dictation Using the Do/Ti Test,” he provides numerous approaches, exercises, and activities to help students hear through this method, with an emphasis on flexibly responding to students’ needs.

In “Schenkerian Analysis for the Beginner,” **Benjamin K. Wadsworth** describes the challenges of introducing upper-level undergraduates to the process of constructing well-formed and musically insightful voice-leading graphs. Wadsworth provides a clear series of steps for students to follow as they conceptualize their reading and then represent it appropriately.

Individual analyses play a central role in class instruction, serving a variety of purposes ranging from introducing general concepts to highlighting particularities of the piece under examination. **Angela Ripley** introduces students to whole tone scales, extended tonality, and narrative analysis through Claude Debussy’s “Ce qu’a vu le vent d’ouest.”

Courses in counterpoint, whether species or direct, Renaissance or Baroque, continue to play an important role in the compositional training of twenty-first century students. **Sarah Marlowe** discusses the challenges of teaching successful courses in 16th- and 18th-century counterpoint while also providing a review of two recent textbooks on these topics by Evan Jones and the late Douglas M. Green.

In June 2016, Gary Karpinski hosted the fourth Triennial Workshops in Music Theory Pedagogy at the University of Massachusetts Amherst. Our volume concludes with a comprehensive report on these workshops by **Morgan Markel** and **Nicholas J. Shea**, in which they describe the format, content, and materials shared by the five workshop leaders.

Beginning with the current volume, *Journal of Music Theory Pedagogy* will no longer offer printed copies of the journal, completing our transformation from a print journal to an open access online publication. Current and back issues of the journal are available as complete issues or as individual articles in open access at <https://music.appstate.edu/about/jmtp>. Starting with our next volume, we will be changing our citation protocol from complete footnotes to author/date formatting. The editors are currently accepting submissions for Volume 31 and future issues.

Teaching What We Do and How We Do It: Using a Miniconference Assignment to Dig Deep into Musical Analysis

BY ROBIN ATTAS

From their earliest encounters with music analysis, I want students in my undergraduate music theory courses to understand, experience, and enact that which is truly fascinating about the discipline of music theory. Students still practice the skills and learn the concepts typical of the undergraduate music theory core, but they also ponder why they like a particular piece of music or a particular genre and develop the ability to communicate their ideas and opinions using technical vocabulary, thorough arguments, and appropriate evidence drawn from the musical text. Students thus learn the value of music theory's modes of thinking in their lives as musicians and in their lives beyond music. I am well aware that my students' career aspirations rarely include the profession of music theory, but instead are focused on popular music industry positions, grade school teaching, and performance and composition in pop, jazz, and art music traditions. Many students at my liberal arts institution take music classes simply out of curiosity, with no intention of pursuing a career in the field. I want my students to experience the full breadth of music theory's professional practices—not to encourage them to pursue an alternative career path, but as a way to develop transferrable skills in writing and critical thinking alongside music theory's discipline-specific content and skills.

Prose writing in the discipline of music theory offers a way to achieve these aims. Advocates of the "writing in the discipline" movement suggest that writing captures a particular discipline's "way of knowing" and that teaching disciplinary writing can teach disciplinary thinking as well.¹ It follows that teaching students how to write like music theorists should help them learn how to think like music theorists, too. Numerous texts provide resources for teaching

I am grateful for the feedback and guidance of Paula Rosinski, Omri Shimron, Lynn Beck, Paul Anderson, and Rosie Ruzzi at various stages of this project.

¹ Michael Carter, "Ways of Knowing, Doing, and Writing in the Disciplines," *College Composition and Communication* 58, no. 3 (2007): 385–418.

writing in general.² In music theory, several scholars advocate for writing as an important part of the curriculum, recommending activities such as informal papers, reflective learning journals, and end-of-class writing-to-learn exercises.³ These scholars reinforce that writing can complement and deepen traditional pedagogical techniques in the music theory classroom.

My own commitment to prose writing in the undergraduate music theory core led to a curricular redesign of my institution's four-semester model in order to integrate and scaffold prose writing throughout the core. My primary goals for the curricular redesign were the following: (1) to design writing assignments that would give students an introduction to disciplinary research in music theory, (2) to prepare students for upper-level undergraduate courses that require original research and essays, (3) to follow best practices of writing pedagogy in order to make the assignments interesting, engaging, and meaningful for students and faculty alike, and (4) to ensure that the inclusion of writing did not increase my workload nor reduce my students' abilities in more traditional music theory activities (part writing, analysis, composition, performance), which I see as equally necessary to their future lives as musicians.

² A notable example is John Bean, *Engaging Ideas*, 2nd ed. (San Francisco: Jossey-Bass, 2011).

³ See Jan Miyake, "Weekly (or more) Writing in the Music Theory Classroom," *Engaging Students: Essays in Music Theory Pedagogy* 2 (2014), <http://flipcamp.org/engagingstudents2/essays/miyake2.html>; Lyle Davidson, Larry Scripp, and Alan Fletcher, "Enhancing Sight-Singing Skills through Reflective Writing: A New Approach to the Undergraduate Theory Curriculum," *Journal of Music Theory Pedagogy* 9 (1995): 1–30; and Bruce C. Kelley, "Part Writing, Prose Writing: An Investigation of Writing-to-Learn in the Music Theory Classroom," *Journal of Music Theory Pedagogy* 13 (1999): 65–87. While Kelley found write-to-learn activities (the use of writing to help students learn concepts) less effective than part writing in his study, his prose writing tasks emphasized concrete facts (e.g., how to spell an augmented sixth chord) rather than open-ended or ambiguous analytical questions. A number of additional strategies for integrating prose writing into music theory teaching are summarized in Sara Bakker and Timothy Chenette, "Writing Across the Music Theory Curriculum," *Engaging Students: Essays in Music Theory Pedagogy* 2 (2014), <http://flipcamp.org/engagingstudents2/essays/bakkerchenette.html>; and in Deron L. McGee, "The Power of Prose: Writing in the Undergraduate Music Theory Curriculum," *Journal of Music Theory Pedagogy* 7 (1993): 85–104.

Several aspects of my institution made a writing-focused curricular redesign a relatively straightforward process. I teach at a liberal arts institution where class sizes are small. A campus-wide Writing Excellence Initiative and a strong Center for the Advancement of Teaching and Learning provide excellent support for faculty interested in writing pedagogy. My department is not a professional school or conservatory, which allows for more curricular flexibility. Within my department, I coordinate the music theory area, and developing course content falls within my responsibilities. Faculty in my department have been supportive of my work, both because of the campus emphasis on writing and because upper-level courses that use the core theory sequence as a foundation also require students to write research papers. While I have these advantages, it is worth noting that many scholars have described the ease with which prose writing can be integrated into music theory courses taught in a variety of institutions and programs.⁴

My curricular design focuses on the integration of writing assignments with learning goals for music theory and ensures that writing tasks build on previous work within and across semesters. In all writing activities, I use documented best practices in writing pedagogy, including required multiple student revisions, frequent and early instructor feedback, peer review, and student choice of topic. Students write informally throughout all four semesters of the core. For example, I ask students to write regularly in class, including summaries of concepts and questions to follow up on with tutors or me. For analysis assignments throughout all four semesters, I ask students to explain musically ambiguous passages or express opinions in informal short paragraphs. Students also write formally throughout the core. In the first two semesters, students complete formal "Recital Responses," which require that they attend concerts and then write in response to specific prompts that focus on the analysis of particular musical features and their impact on the listening experience. In the third semester, students write one-page "Writing for Analysis" assignments, in which they develop an analytical argument about a piece of music or collection of short excerpts. In this article, I will discuss in detail the innovative culminating analysis project that I designed for the

⁴ McGee, "The Power of Prose," offers the most comprehensive argument, but this is demonstrated to varying degrees by all of the authors in footnote 3.

fourth and final semester of the core music theory curriculum, both to demonstrate how writing assignments can be deeply and meaningfully integrated within a semester, and to provide a specific example of how prose writing can facilitate deep student learning in music theory and analysis.

Since the fourth semester core course is the last in the core music theory sequence at my institution, I focus writing activities around a capstone assignment comprising a semester-long multipart analysis project that culminates with a public presentation at a “miniconference,” as outlined in Table 1.

Assignment	Grade Weight	Due Date	Description
Guided Analysis	5%	last class before midterm break	Students complete a guided analysis of one of four pre-selected pieces. Number of students for each piece is capped. At least one class period devoted to discussion of the analyses in order to stimulate research questions.
Abstract	5%	one month after guided analysis	Maximum 250-word abstract in scholarly style. Rough outlines and first draft sent to professor and peers for review. Final version reviewed by peers to suggest directions for final presentation.
Presentation	10%	three weeks after abstract	Ten-minute presentation with five-minute question period. Drafts of presentation discussed in class. Student's grade includes feedback from both professor and peers.
Written Paper	5%	at final exam	Presentation converted to written paper, with more formal language, appropriate citations, and labeling of examples. Papers used as models for subsequent students.

Table 1. Components of the miniconference project

I use a high-stakes multipart writing project because it connects to several goals for the undergraduate core theory sequence as a whole and specifically for the final semester. As introduced in the smaller assignments during the previous semesters, in this culminating project students experience first hand what it means to develop an original piece of research in the field of music theory.⁵ Music theory's professional practices provide specific pedagogical benefits: this assignment serves as the culmination of my aim to develop students' critical thinking abilities through

⁵ I also draw inspiration here from Lee S. Shulman's advocacy for the use of “signature pedagogies” that reflect professional practices in a particular field. See Lee S. Shulman, “Signature Pedagogies in the Professions,” *Daedalus* 134, no. 3 (2005): 52–59.

their use of evidence and argument, and helps students develop the skills required to write research papers in upper-level music courses. The miniconference project immerses students in a long-term analytical engagement with a single piece of music, or as Brian Alegant writes, it encourages students to “scuba dive” rather than “snorkel.”⁶ In addition to deep musical engagement, a long-term analysis project allows for a synthesis of course content both within and across the semesters. The miniconference itself is also an example of an authentic assignment with public accountability, which typically leads to increased student engagement and valuing of the assignment itself.⁷ While students might not ever present a research paper again, they will be able to transfer the skills learned through this process to other sorts of authentic writing, whether in music (grant applications, program notes, public lectures, etc.) or outside of it.

To begin the project, I create a list of four or five pieces that are a good fit with students’ abilities and the course content, which focuses on chromatic harmony, meter, and text–music connections. Since my classes feature a mix of pop-industry- and art-music-oriented students, I focus on one Lied composer and one pop singer-songwriter each year. I also emphasize gender parity by selecting one male and one female composer. In past years, pairings have included Robert Schumann and Joni Mitchell, and Fanny Mendelssohn Hensel and Bob Dylan. While students choose their own piece from the list, a maximum of one-quarter of the class is

⁶ Brian Alegant, “On ‘Scuba Diving,’ or the Advantages of a Less-is-More Approach,” *Engaging Students: Essays in Music Pedagogy* 2 (2014), <http://flipcamp.org/engagingstudents2/essays/alegant.html>.

⁷ Authentic assignments are not limited to writing assignments; they can simply be any “real-world” practice that we hope our students will be able to do after they finish our courses. For more on authentic assignments in general, see Grant Wiggins and Jay McTighe, *Understanding by Design*, 2nd ed. (Alexandria, VA: Association for Supervision and Curriculum Development, 2006). Some examples of authentic assignments in music theory teaching can be found in Cynthia Gonzalez, “A Christmas Eve Music Theory Emergency: A Call for Authentic Learning,” *South Central Music Bulletin* 4, no. 1 (2005): 20–22; Anna Gawboy, “On Standards and Assessment,” *Engaging Students: Essays in Music Pedagogy* 1 (2013), <http://flipcamp.org/engagingstudents/gawboy.html>; and Jeffrey A. Martin, “Toward Authentic Electronic Music in the Curriculum: Connecting Teaching to Current Compositional Practices,” *International Journal of Music Education* 30, no. 2 (May 2012): 120–32.

allowed to choose any particular piece. This ensures that the final conference is sufficiently varied, and reduces the possibility of plagiarism. Scores, transcriptions, and recordings are posted for the class on the course website.⁸

Guided Analysis Assignment

As the first stage of your research, you will complete the following tasks.

1. Harmony and Voice Leading

Lied: Identify the key or mode and complete a Roman numeral analysis and contextual analysis of your selected piece. Consider things like applied chords, chromatic harmonies (Aug. 6, mixture, Neapolitan 6ths), and modulation.

Pop song: Identify the key and complete a Roman numeral analysis. Then, consider chord function as similar to, or different from, the Classical 'basic phrase' you've studied. For example, is a IV chord still a predominant function? Is V the only dominant harmony?

Both: Examine how the melody interacts with the harmony. What type of motion is created (contrary, similar, parallel, oblique)? What scale degrees are used most often? What scale degrees are used at cadences?

Write a paragraph describing *one* aspect of the harmony and voice leading that you find interesting, challenging, or unique. Describe the feature using your analysis, and then describe your reaction to it.

2. Rhythm, Meter, Phrase Rhythm

a) Identify those musical features that create accents to support the notated time signature. Identify those musical features that create accents to support other meters not indicated by the time signature. Write a paragraph about one instance in particular (perhaps a bar or two) where you think any conflict is particularly apparent. Explain how the conflict is created, and the effect you think it has.

b) Complete a phrase analysis of the piece, identifying all phrases and cadences, and classifying them according to type (sentence, period, open, closed) if you can. Write a paragraph describing *one* aspect of the phrase rhythm. Describe the feature referring to your analysis, and then discuss your reaction to it.

3. Form

Identify the musical form of your selected piece. Consider both large-scale form and smaller (phrase-level) formal structures. What repeats? What changes? How often? Draw a form diagram to represent the large-scale and smaller-scale structure of the piece.

Write a paragraph describing one aspect of the form that you find interesting. Describe the form using clear terminology and referring to your analysis. Then, explain your reaction.

Example 1. Guided Analysis assignment (*continued next page*)

⁸ Since accurate pop music scores are rare, I typically spend a lot of preparation time transcribing the pop pieces. I find this valuable: it keeps my aural skills sharp and opens me to new repertoire and analytical ideas.

TEACHING WHAT WE DO AND HOW WE DO IT: USING A MINICONFERENCE ASSIGNMENT TO DIG DEEP INTO MUSICAL ANALYSIS

For the first part of this culminating project, students select a piece from the list and then have two months (the first half of the course) to complete a “Guided Analysis” assignment that requires them to provide a full analysis of their piece’s harmony, form, meter,

4. Text

Consider the text as a stand-alone poem. Indicate the rhyme structure of the text. Describe those moments that seem to have a clear meaning. Describe those moments that seem to have more ambiguous or multiple meanings.

Next, write a paragraph summarizing the meaning of the text. Make sure to address the possibility for multiple meanings.

5. Other musical features of interest

Write a paragraph (supported with annotations on the score as necessary) discussing one other musical feature of the piece that you find interesting. A list of some possibilities:

timbre	instrumentation
performance style	comparison of different performances
cadence placement	use of repetition
motivic structure	production choices

6. What’s next?

What questions does all this work raise in your mind? Are there areas you’re still confused about or that you want to return to? Particularly interesting or innovative passages you’d like to explore further?

Write down three research questions: things you’d like to investigate further. For instance: “Why does the pop singer-songwriter end -ing words with just -in’?” or “Why is a clear musical motive stated in mm. 1–2, but then not returned to until the end of the piece?” Be as specific as you can.

What you should bring to class and submit:

- A copy of the score that identifies all harmonies, key(s), and modulations
- Markings on the score that identify areas of interest in terms of rhythm/meter/harmony, labeled with appropriate terminology
- A form diagram (does not need to be in the format the textbook uses: feel free to be creative about how you represent the form, but make sure to explain how your diagram works)
- Paragraphs (typed, double-spaced, comprehensible) on all requested topics
- Three questions or areas for further inquiry that you are now pondering as potential research paper topics

Example 1. Guided Analysis assignment (*continued*)

and text structure and meaning. A sample template is shown in Example 1. In addition to ensuring that the basic analysis of the piece is completed, this assignment guides the students toward choosing a research question and defining an original thesis. Students have practiced these skills in smaller assignments

in previous semesters, but since this is a more comprehensive analysis than those undertaken previously, I ask students to write a paragraph describing one aspect of each musical feature that they find interesting, challenging, or unique in each of the categories that are required as part of the analysis. They also must describe their reaction to that feature (positive, negative, humbled, excited, etc.), which will help them develop their argument later on when they have compiled more evidence. At the end of the assignment, students are prompted to consider their future research more deeply by asking them to list three research questions for further investigation. On this assignment, students practice translating analysis into prose in a low-stakes environment and also begin to narrow their focus on a research question. Students might (and in many cases, will) come up with identical analyses, but their own interests and opinions shape their analyses in unique ways—just as they shape professional theorists' analytical endeavors.

While students work on the guided analysis assignment outside of class, I introduce the musical concepts required to complete the analysis (topics in chromatic harmony and voice leading, meter, and form) in class. I continue to assign short, low-stakes writing activities similar to those assigned in earlier semesters. Students work towards mastery of the new content, and continue to practice analytical writing and the synthesis of ideas in prose.

The guided analysis assignment is due the last class before the midterm break. Students bring their analyses to class, and the entire class period is dedicated to peer-to-peer and peer-to-professor discussion of their work.⁹ Those who have analyzed the same piece share their work with each other and discover points of commonality and divergence in their analytical details and interpretation. Students discuss possible thesis statements with each other and with me, and enthusiastically help their peers to fine-tune their ideas. In this way, I am not only modeling a collaborative learning environment, but I am also presenting an opportunity for students to engage in an informed music-analytical discussion with peers.

Over the midterm break, I review the submitted guided analysis assignments, looking for errors or points of confusion as well as for ideas about which the student appears to be particularly enthusiastic. This grading takes about the same amount of time as a

⁹ At my institution, class periods for music theory are one hundred minutes; instructors with shorter class periods might need more class periods for this portion.

typical analysis assignment would, but it is much more interesting, since I read students' opinions, ideas, and interests alongside their analyses. After the break, I schedule short individual conferences with students (five to ten minutes each, held during my office hours) to discuss their submitted work and potential directions for the rest of the project. For many students, this is the first time they have been able to discuss their research interests in music with a faculty member, and I find these conferences to be some of my favorite teaching moments of the semester. One week after their individual meetings, students are required to submit a thesis statement and a presentation outline. While these do not receive a formal grade, they provide another opportunity for me to check in with students as they develop their ideas. If time permits, I devote class time to short peer review and feedback activities related to their thesis statements.

At this point in the semester, the content in class shifts from the study of theoretical concepts in isolation to hands-on practical analysis. Short writing prompts continue in class, and student assignments continue to include both analysis of complete pieces and low-stakes writing. More class time is spent discussing models of good disciplinary thinking, presenting, and writing. Finding materials appropriate for second-year undergraduate students is a challenge, but not impossible. I present a ten-minute formal analysis focused on text–music connections in a pop song, and I often invite colleagues at other institutions to give similar presentations via video chat software.¹⁰ I sometimes require students to read and summarize short samples of analytical writing, although finding appropriate examples is more challenging.¹¹ However, since the written paper is weighted less than the presentation in the final grade, oral communication models are of greater pedagogical importance. With each model, whether written or oral, I lead the class to consider both content and structure as well as non-text elements (e.g., digital slides, tone of voice, and diagrams and examples) that help or hinder the audience's understanding of the argument.

¹⁰ Occasionally, appropriate video lectures can also be found online, such as Harald Krebs, "The Influence of Clara Schumann's Lieder on Declamation in Robert Schumann's Late Songs," *SMT-V* 2, no. 1 (February 2016), <https://vimeo.com/150344298>.

¹¹ I have successfully used excerpts from Deborah Stein, ed., *Engaging Music* (New York: Oxford University Press, 2004) and Steven G. Laitz, *The Complete Musician*, 4th ed. (New York: Oxford University Press, 2016).

The students' next graded task in the miniconference project is to write a 250-word abstract modeled after professional conference abstracts. Example 2 provides a sample grading rubric for this assignment.

Abstract Assignment Grading Rubric

Minimum Threshold:

If the abstract does not meet this minimum standard, a failing grade will be assigned.

- No more than 250 words and no less than 240 (include a word count)
- Formatting: 1.5 spacing, title, no more than one or two paragraphs
- Citations: if used, cited appropriately
- Comprehensible (if I can't understand it, I can't grade it)

Average Threshold:

If the answers to all of these questions are "yes," a grade of C or better is possible. If the answers to one or more questions is "no," a lower grade will be assigned.

- Does the abstract have a thesis statement?
- Does the abstract cite at least one specific musical example from the song as evidence in support of the thesis statement?
- Does the abstract state the implications of the research (i.e., why is this useful)?
- Are the ideas in the abstract organized logically?
- Is the writing mostly polished (very few spelling / grammar / word choice issues) and in present tense?

Going Above and Beyond:

If all of the above criteria are met, abstracts can qualify for a B or A grade by meeting some of the following criteria.

- Does the abstract have a clear and original thesis statement?
- Does the abstract contextualize the research within a larger body of work by including multiple citations?
- Does the abstract have two or more specific examples from the song that support the thesis statement?
- Does the abstract have an argument that flows logically from start to finish?
- Does the abstract use clear, concise, powerful, and complex language?

Not submitting a draft or participating in the peer review process will result in a lowering of your grade by 1/3 of a letter (e.g. A to A-, D- to F).

Example 2. Abstract assignment grading rubric

Finding appropriate model abstracts for students is more straightforward than finding model written papers or oral presentations. I provide students with five abstracts that are drawn from recent Society for Music Theory conference programs and selected for their readability, diversity of musical genre, and variety of organizational strategies. In small groups in class, students discuss the formal structure of each abstract and then share their findings with the whole class. Students leave class with a sense of the basic features of abstracts in the discipline of music theory and a few possible organizational models.

Following best practices for writing instruction, I require students to submit a draft of their abstract for feedback from me at least a week before the final version is due. Once the final version is submitted, I use student peer review sessions to stimulate further thinking about the research presentation. In years when there are multiple sections of the class, I ask students to complete blind reviews of the other section's abstracts by providing both a ranking and a justification using the categories laid out in the abstract grading rubric. If blind review is not feasible, I ask students to read each other's abstracts with the aim of providing constructive comments that will focus the analyst's work toward the final presentation and paper. Regardless of the scenario, I find that my main teaching problem in this class period is containing students' seemingly boundless ability to constructively criticize their peers' analytical work rather than having to painstakingly draw out student participation.

During classes held between the submission of the abstract and the final presentations, some time is dedicated to developing the students' presentations with their peers and the professor. I also continue to give model analytical presentations to deepen student understanding of analytical concepts and the structure of formal arguments, but at this point I decrease other homework assignments to give students time to complete their presentations.

A week before the end of the semester, two class periods are devoted to the miniconference itself, in which students give ten-minute research presentations followed by five-minute question periods. Students are encouraged to invite friends to fill out the audience, and I always advertise the event to faculty inside and outside the department. Students rise to the challenge of a public presentation: a nervous tension fills the room, formal attire appears after months of pajama pants, and tough questions are posed and ably answered. Audience feedback is included as a portion

of the final presentation grade, and there is the potential for such feedback to impact my own assessment of the presentation by a small percentage of the total grade. A full rubric (using a different style from the previous rubric) is shown in Example 3.

On the day of the final exam, students submit their presentation text as a paper, with any visuals or handouts from the presentation converted to in-text examples. The learning outcomes of the miniconference project have mostly been met at this point; the final written paper is an added bonus. As indicated in the written paper grading rubric in Example 4, the main goal for the final paper is not for students to learn to convert the oral presentation into a formal “professional” music theory paper, but to learn to integrate musical examples into a written document and label them appropriately. A secondary goal is for students to learn to use one of the typical citation styles prevalent in music theory, although this is not required. These tasks are valuable for students, as they will be required to do them again in upper-level music classes that require formal research papers.

The miniconference authentic assignment model is not for every music theory class, but it can be easily adapted to suit a variety of circumstances. The topic for the miniconference project could be altered: the analysis of string quartets from a particular time period or geographic location, the analysis of multiple works by a particular composer, or the analysis of world music are all possibilities. I use the miniconference project as the capstone of the four-semester core theory sequence because these are the courses I teach, and because most students at my institution end their formal music theory study at this point; however, a miniconference project would be equally appropriate for upper-level undergraduate courses, where smaller class sizes are more typical. Even in a large class, a miniconference could still be feasible if tutorials or other break-out sections are part of the course structure. Graduate teaching assistants could present model analyses, and the miniconference itself could occur in the final week of tutorials rather than during full class meetings. Students might work in groups to prepare posters or lightning talks, encouraging team-based analytical approaches that currently are less common in the field of music theory but are the research norm in many other disciplines.

TEACHING WHAT WE DO AND HOW WE DO IT: USING A MINICONFERENCE ASSIGNMENT TO DIG DEEP INTO MUSICAL ANALYSIS

Category	Excellent (A)	Good (B)	Average (C)	Poor (D)	Fail (F)
Argument /25 points	The presentation presents a coherent, strong, and original point of view that is complex and interesting.	The presentation presents a coherent, strong, original point of view.	The presentation presents a strong but non-original point of view that is occasionally difficult to follow.	The presentation presents a point of view that is often difficult to follow.	The presentation presents an unclear argument.
Analysis /25 points	The presentation makes specific reference to musical features of the designated piece on many occasions.	The presentation makes specific reference to musical features of the designated piece on at least <i>three</i> occasions.	The presentation makes specific reference to musical features of the designated piece on at least <i>two</i> occasions.	The presentation makes specific reference to musical features of the designated piece on at least <i>one</i> occasion.	The presentation does not make specific reference to musical features of the designated piece.
Evidence /25 points	The presentation clearly supports its argument with compelling evidence from outside sources, specific examples, and lots of detail.	The presentation supports its argument with adequate evidence, examples, and details.	The presentation almost always supports its argument with evidence, examples, and details.	The presentation only rarely supports its argument with evidence, examples, and details.	The presentation does not support its argument with specific evidence, examples, and details.
Organization /15 points	The presentation features a clear and compelling overall purpose statement, a concise and engaging introduction and conclusion, and a logical flow of ideas throughout.	The presentation features a clear and compelling overall purpose statement, an introduction and conclusion, and a logical flow of ideas throughout.	The presentation features an overall purpose statement, an introduction and conclusion, topic sentences for most paragraphs, and a relatively logical flow of ideas throughout.	The presentation has a clear overall purpose statement, lacks <i>either</i> an introduction or conclusion, is missing topic sentences for several paragraphs, and has a mostly logical flow of ideas throughout.	The presentation is missing a clear overall purpose statement, lacks <i>either</i> an introduction or conclusion, is missing topic sentences for several paragraphs, and lacks a logical flow of ideas throughout.
Performance /10 points	The presenter uses an engaging voice with varied tone, projects to the back of the room, makes eye contact with the full audience, and uses several appropriate visual and / or aural aids.	The presenter uses an engaging and audible voice, looks at the audience from time to time, and refers to one or two appropriate visual and / or aural aids.	The presenter is audible and makes occasional eye contact with the audience; visual and / or aural aids are sometimes unclear or not used effectively.	The presenter's vocal tone is mostly unvaried and is sometimes inaudible; the presenter rarely makes eye contact with the audience and visual and / or aural aids are often unclear or not used effectively.	The presenter's vocal tone is unvaried and inaudible; the presenter rarely looks at the audience and visual and / or aural aids are unclear or not used.
Peer evaluation adjustment: (+ / - 5 points maximum)					
FINAL GRADE:					

Example 3. Presentation assignment grading rubric

Final Paper Grading Rubric

There are two main goals for this paper:

1. Learn how to include in-text musical examples following scholarly models in music theory and musicology
2. Create a document that you can use in the future and that can serve as a model for future sections of this class

Requirements

Text: Convert your presentation to an essay of about five pages in 1.5 spacing. Make sure your text is comprehensible and aim for a somewhat educated and intellectual audience (e.g., future students of this class).

Citations: If you cite the work of another scholar in your paper, you should use Chicago-style citations and a works cited. You do not need to include in-text citations for the score or recordings of your piece nor include those as part of your works cited.

Examples: You must include at least one in-text example that uses a part of the score/transcription for your piece. The easiest way to do this is as follows:

1. Obtain a PDF of your score (either from <http://www.imslp.org>, or from the course website).
2. Crop the PDF to include only the part you want.
3. Insert the PDF into your text document.
4. Center your image, and separate it from the text with a double space before the image.
5. Immediately below the image, write: "Example [number]. Example Title."
6. Leave another space before continuing with the text.

Here is a sample example, inserted after a paragraph ends.



Example 1. Franz Schubert, "Liebesbotschaft" from *Schwanengesang*, m.1

Grading

If you meet all the requirements above, you will get a B. If you go above and beyond in some way (more detail than in presentation, addressing questions and comments from presentation, beautiful scholarly prose, lots of interesting examples, well-argued document, etc.) then you will get an A. If for some reason you don't meet the above requirements, you'll get a lower grade.

Example 4. Written paper assignment grading rubric

Fears that adding writing to music theory courses will take time away from content and increase the instructor's workload are common. While I have never compared the exact amount of time spent grading in courses with and without writing components, I find that the grading I do in theory courses with a writing component is more engaging and interesting for me, and that I manage my time just as effectively as if writing were not included. Moreover, it appears that my writing-centered courses are more effective in achieving higher-level learning goals. When students work on miniconference activities in class, they are more engaged and more interested in the practice of thinking critically about music. In writing exercises generally and in the miniconference project in particular, students demonstrate their deepest and most meaningful commitment to music analysis, and they most fully employ the transferrable skills of critical thinking and argumentative writing that can serve them in any future career path. It is still important to help music theory students develop into musicians who are musically literate, who are fluent in the basics, and who are competent with traditional topics. At the same time, it is important to teach students how to think, talk, and write about their musical analyses. Employing an effective course design over multiple semesters in which prose writing is directly tied to the skills we want students to learn and to the professional practices of music theorists allows the potential drawbacks of this approach to fade as the benefits move to the forefront. By adapting creative and proven strategies appropriate to our discipline, we can have more engaged music theory students and a more relevant curriculum that teaches not only what we do as music theorists, but also how we do it.

BIBLIOGRAPHY

- Alegant, Brian. "On 'Scuba Diving,' or the Advantages of a Less-is-More Approach." *Engaging Students: Essays in Music Pedagogy* 2 (2014). <http://flipcamp.org/engagingstudents2/essays/alegant.html>
- Bakker, Sara and Timothy Chenette. "Writing Across the Music Theory Curriculum." *Engaging Students: Essays in Music Theory Pedagogy* 2 (2014). <http://flipcamp.org/engagingstudents2/essays/bakkerchenette.html>
- Bean, John. *Engaging Ideas*. 2nd ed. San Francisco: Jossey-Bass, 2011.
- Carter, Michael. "Ways of Knowing, Doing, and Writing in the Disciplines." *College Composition and Communication* 58, no. 3 (2007): 385–418.
- Davidson, Lyle, Larry Scripp, and Alan Fletcher. "Enhancing Sight-Singing Skills through Reflective Writing: A New Approach to the Undergraduate Theory Curriculum." *Journal of Music Theory Pedagogy* 9 (1995): 1–30.
- Gawboy, Anna. 2013. "On Standards and Assessment." *Engaging Students: Essays in Music Pedagogy* 1 (2013). <http://flipcamp.org/engagingstudents/gawboy.html>.
- Gonzalez, Cynthia. "A Christmas Eve Music Theory Emergency: A Call for Authentic Learning." *South Central Music Bulletin* 4, no. 1 (2005): 20–22.
- Kelley, Bruce C. "Part Writing, Prose Writing: An Investigation of Writing-to-Learn in the Music Theory Classroom." *Journal of Music Theory Pedagogy* 13 (1999): 65–87.
- Krebs, Harald. "The Influence of Clara Schumann's Lieder on Declamation in Robert Schumann's Late Songs." *SMT-V* 2, no. 1 (February 2016). <https://vimeo.com/150344298>.
- Laitz, Steven G. *The Complete Musician*. 4th ed. New York: Oxford University Press, 2016.
- Martin, Jeffrey A. "Toward Authentic Electronic Music in the Curriculum: Connecting Teaching to Current Compositional Practices." *International Journal of Music Education* 30, no. 2 (2012): 120–132.

McGee, Deron L. "The Power of Prose: Writing in the Undergraduate Music Theory Curriculum." *Journal of Music Theory Pedagogy* 7 (1993): 85–104.

Miyake, Jan. "Weekly (or more) Writing in the Music Theory Classroom." *Engaging Students: Essays in Music Theory Pedagogy* 2 (2014). <http://flipcamp.org/engagingstudents2/essays/miyake2.html>.

Shulman, Lee S. "Signature Pedagogies in the Professions." *Daedalus* 134, no. 3 (2005): 52–59.

Stein, Deborah. ed., *Engaging Music*. New York: Oxford University Press, 2004.

Wiggins, Grant and Jay McTighe. *Understanding by Design*. 2nd ed. Alexandria, VA: Association for Supervision and Curriculum Development, 2006.

Promoting Metacognitive Reflection in Music Theory Instruction

BY ANNA FERENC

Over the past few decades, a significant body of literature has emerged in psychology and education research that documents the importance of metacognition to the process of learning and advocates for its development through reflection in order to promote deeper, more thoughtful, and self-regulated learning.¹ Reflection is particularly valued in contexts such as teacher education, nursing, social work, and business, where it is used to foster learning through experience and to connect experience to theoretical course work. However, the importance of metacognition applies to learning across all disciplines, and it has been adopted even in domains such as mathematics and science that are less experientially-based and have tended to view reflective practice as subordinate to subject knowledge and skill.²

In the domain of music, discussions of reflection and/or metacognition appear particularly in the literature on teacher training, music teaching at primary and secondary levels, and performance.³ Colleen Conway and Thomas Hodgman

¹ See, for example, Robert J. Marzano et al., *Dimensions of Thinking: A Framework for Curriculum and Instruction* (Alexandria, VA: Association for Supervision and Curriculum Development, 1988); Douglas J. Hacker, John Dunlosky, and Arthur C. Graesser, eds., *Metacognition in Educational Theory and Practice* (Mahwah, NJ: Lawrence Erlbaum Associates, 1998); John Dunlosky and Janet Metcalfe, *Metacognition* (Los Angeles: Sage, 2009); Douglas J. Hacker, John Dunlosky, and Arthur C. Graesser, eds., *Handbook of Metacognition in Education* (New York: Routledge, 2009); and Matthew Kaplan et al., eds., *Using Reflection and Metacognition to Improve Student Learning* (Sterling, VA: Stylus, 2013).

² See, for example, Christina Kaune, "Reflection and Metacognition in Mathematics Education—Tools for the Improvement of Teaching Quality," *ZDM* 38, no. 4 (2006): 350–360; and Kimberly D. Tanner, "Promoting Student Metacognition," *CBE—Life Sciences Education* 11 (2012): 113–20.

³ See, for example, Eunice Boardman, "The Relation of Music Study to Thinking," in *Dimensions of Musical Thinking*, ed. Eunice Boardman (Reston, VA: Music Educators National Conference, 1989), 1–7; Lenore Pogonowski, "Metacognition: A Dimension of Musical Thinking,"

acknowledge that very little has been written within music on teaching and learning in higher education. In their relatively recent text, *Teaching Music in Higher Education*, the authors do not mention metacognition, but they do comment on reflection as a tool for learner-centred instruction and recognize reflection as an important skill for instructor development. Indeed, the authors frame their text with opening and closing comments advising college professors to reflect initially on their own learning experiences before they begin teaching and then to continue doing so throughout their careers.⁴

Addressing college-level music theory instruction, Lyle Davidson, Larry Scripp, and Alan Fletcher discuss the implementation of reflective writing in an introductory sight-singing course, and Marilyn Egan explores the effects of applying metacognitive strategies to individual learning-style preferences in a freshman musicianship curriculum.⁵ These initial studies have not been followed by more exploration of reflection or metacognition in music theory pedagogy. This may be because the discipline of music theory (like mathematics) has traditionally favored an approach to teaching that drills subject knowledge and skill and is supported by teaching materials that include an abundance of

in *Dimensions of Musical Thinking*, 9–32; Richard Parncutt and Gary McPherson, eds., *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning* (New York: Oxford University Press, 2002); Wendell Hanna, “The New Bloom’s Taxonomy: Implications for Music Education,” *Arts Education Policy Review* 108, no. 4 (2007): 7–16; Peter R. Webster, “Construction of Music Learning,” in *MENC Handbook of Research on Music Learning*, eds. Richard Colwell and Peter R. Webster, vol. 1, *Strategies*, (New York: Oxford University Press, 2011), 35–83; Meghan Bathgate, Judith Sims-Knight, and Christian Schunn, “Thoughts on Thinking: Engaging Novice Music Students in Metacognition,” *Applied Cognitive Psychology* 26 (2012): 403–9; Carol W. Benton, “Promoting Metacognition in Music Classes,” *Music Educators Journal* 100, no. 2 (2013): 52–9; and Benton, *Thinking about Thinking: Metacognition for Music Learning* (Lanham, MD: Rowman & Littlefield Education, 2014).

⁴ Colleen M. Conway and Thomas M. Hodgman, *Teaching Music in Higher Education* (New York: Oxford University Press, 2009), 2 and 230–1.

⁵ Lyle Davidson, Larry Scripp, and Alan Fletcher, “Enhancing Sight-Singing Skills Through Reflective Writing: A New Approach to the Undergraduate Theory Curriculum,” *Journal of Music Theory Pedagogy* 9 (1995): 1–30; Marilyn M. Egan, “Effects of Metacognition on Music Achievement of University Students” (PhD diss., Kent State University, 1995).

practice exercises in workbooks and online. In addition, there are concerns that prose-writing assignments take time to grade, and that it is difficult to incorporate something that appears extraneous into an already crowded theory curriculum.⁶ Although directed at music classes in general, Carol Benton's observation that "because of time limitations, most instruction focuses on content rather than on learning strategies for acquiring content knowledge," may be applied particularly to the music theory classroom.⁷

Challenging this mindset is Michael Rogers's observation over thirty years ago in his go-to text on music theory pedagogy: "Music theory, in my opinion, is not a *subject* like pharmacy with labels to learn and prescriptions to fill, but it is an activity—more like composition or performance. The activity is *theorizing*: i.e., thinking about what we hear and hearing what we think about—and I would include even thinking about what we think."⁸ By including "thinking about what we think," Rogers invokes metacognition and highlights its importance to theorizing music, though he does not use the term specifically and does not suggest how to facilitate "thinking about what we think" when instructing music theory. This article takes up this cause, beginning with a theoretical framework within which to understand metacognition and reflection. It then describes a strategy for incorporating metacognitive reflection into an undergraduate music theory core course that builds upon and embeds easily into course content, and then investigates the pedagogical value of this strategy by analyzing the content of student reflections on learning.

METACOGNITION AND REFLECTION

In what is perhaps the most comprehensive overview of research on metacognition to date, Pina Tarricone describes metacognition as a complex construct that has intrigued cognitive psychologists

⁶ Deron L. McGee, "The Power of Prose: Writing in the Undergraduate Music Theory Curriculum," *Journal of Music Theory Pedagogy* 7 (1993): 102; Davidson, Scripp, and Fletcher, "Enhancing Sight-Singing Skills Through Reflective Writing," 20; and Courtenay L. Harter, "Bridging Common Practice and the Twentieth-Century: Cadences in Prokofiev's Piano Sonatas," *Journal of Music Theory Pedagogy* 23 (2009): 57.

⁷ Benton, *Thinking about Thinking*, 138.

⁸ Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Carbondale: Southern Illinois University Press, 1984), 7.

and educational researchers for decades. The multifaceted body of work that underpins the strong and well-developed conceptual foundation of metacognition also makes it difficult to construct a universal definition of the concept and sometimes to distinguish clearly between what is *meta* and what is *cognition*.⁹ To differentiate the two, Tarricone generalizes that cognition is a “constant flow of information” often derived from a person’s immediate external reality, whereas metacognition comprises second-order cognitions always derived from within, including the “knowledge and awareness of [cognitive] processes and the monitoring and control of such knowledge and processes.”¹⁰

Psychologist John Flavell is recognized as the originator of the term *metacognition*. In a brief but influential article published in 1976, he defined the term and illustrated it with examples:

“Metacognition” refers to one’s knowledge concerning one’s own cognitive processes and products or anything related to them.... For example, I am engaged in metacognition...if I notice that I am having more trouble learning *A* than *B*; if it strikes me that I should double-check *C* before accepting it as fact; if it occurs to me that I had better scrutinize each and every alternative in any multiple-choice type task situation before deciding which is the best one; if I become aware that I am not sure what the experimenter really wants me to do; if I sense that I had better make note of *D* because I may forget it; if I think to ask someone about *E* to see if I have it right. ...Metacognition refers...to the active monitoring and consequent regulation and orchestration of these processes in the relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective.¹¹

⁹ Pina Tarricone, *The Taxonomy of Metacognition* (Hove and New York: Psychology Press, 2011), 3–5.

¹⁰ *Ibid.*, 1.

¹¹ John H. Flavell, “Metacognitive Aspects of Problem Solving,” in *The Nature of Intelligence*, ed. Lauren B. Resnick (Hillsdale, NJ: Lawrence Erlbaum Associates, 1976), 232.

According to Flavell's description, metacognition is a two-part construct: it involves knowledge of cognition as well as monitoring and regulating such knowledge. This understanding is the basis for subsequent explorations of metacognition in the field of education that have added self-awareness and self-evaluation to its monitoring component, and it is a point of departure for theories on self-regulated learning.¹² This definition remains intact in Benton's recent adaptation and generalization of metacognition for educational purposes: "To be aware of one's thought processes and exert control over those processes in pursuit of learning is to use metacognition."¹³ In the psychological literature, Flavell's original definition has been paraphrased more succinctly as, for example, "thinking about one's own thinking" or "cognitions about cognitions"; "thoughts about thoughts, knowledge about knowledge, or reflections about actions"; "knowledge and control of one's own cognitive system"; or "awareness and control over your own thinking behaviour."¹⁴

¹² See, for example, Barry J. Zimmerman, "Self-Regulated Learning and Academic Achievement: An Overview," *Educational Psychologist* 25, no. 1 (1990), 3–17; Dale H. Schunk and Barry J. Zimmerman, eds., *Self-Regulation of Learning and Performance: Issues and Educational Applications* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1994); Monique Boekaerts, "Self-Regulated Learning: A New Concept Embraced by Researchers, Policy Makers, Educators, Teachers, and Students," *Learning and Instruction* 7, no. 2 (1997): 161–86; Barry J. Zimmerman and Dale H. Schunk, eds., *Self-Regulated Learning and Academic Achievement: Theoretical Perspectives*, 2nd ed. (Mahwah, NJ: Lawrence Erlbaum Associates, 2001); and Gary E. McPherson and Barry J. Zimmerman, "Self-Regulation of Musical Learning: A Social Cognitive Perspective on Developing Performance Skills," in *MENC Handbook of Research on Music Learning*, eds. Richard Colwell and Peter R. Webster, vol. 2, *Applications* (New York: Oxford University Press, 2011), 130–75.

¹³ Benton, *Thinking about Thinking*, 27.

¹⁴ Petros Georgiades, "From the General to the Situated: Three Decades of Metacognition," *International Journal of Science Education* 26, no. 3 (2004): 365; Franz E. Weinert, "Introduction and Overview: Metacognition and Motivation as Determinants of Effective Learning and Understanding," in *Metacognition, Motivation, and Understanding*, eds. Franz E. Weinert and Rainer H. Kluwe (Hillsdale, NJ: Lawrence Erlbaum, 1987), 8; Ann Brown, "Metacognition, Executive Control, Self-Regulation, and Other More Mysterious Mechanisms," in *Metacognition, Motivation,*

Acknowledging Flavell's terminological foundation, Tarricone nevertheless traces the historical roots of metacognition back to philosophers whose theories of reflection have contributed to the conceptualization of metacognition, including Socrates, Plato, Aristotle, Augustine, Descartes, Spinoza, and Locke. As a twentieth-century precursor to Flavell, Tarricone recognizes the philosopher, psychologist, and educational reformer John Dewey, whose writing on reflective thinking encompasses cognitive processes such as awareness, monitoring, and regulation as integral aspects of problem solving.¹⁵ The work of Dewey is a point of convergence for the contemporary histories of metacognition and reflection.

The theorizing of reflection as a component of the process of learning finds its source also in Dewey's foundational publication, *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process*.¹⁶ Dewey regarded reflection as an indispensable part of the kind of thinking involved in purposeful inquiry. Challenging the commonplace view of education at the time (and often now) as a content-centred enterprise in which knowledge is imparted from teachers who have it to students who are passively willing to accept it, he advocated a learner-centred approach far in advance of calls for educational reform in the 1980s, noting, "Since learning is something that the pupil has to do himself and for himself, the initiative lies with the learner. The teacher is a guide and director; he steers the boat, but the energy that propels it must come from those who are learning."¹⁷ From this perspective, he advocated for reflective thinking to be an educational aim and understood it as "the kind of thinking that consists in turning a subject over in the mind and giving it serious and consecutive consideration."¹⁸ Garnering particular attention was his claim that

and Understanding, 66; and Robin Fogarty, *How to Teach for Metacognitive Reflection* (Palatine, IL: IRI/Skylight Publishing, 1994), viii.

¹⁵ Tarricone, *The Taxonomy of Metacognition*, 15–16.

¹⁶ John Dewey, *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process* (Boston: D.C. Heath and Company, 1933). This publication is an extensively rewritten version of an earlier text by Dewey titled *How We Think* (Boston: D. C. Heath and Company, 1910).

¹⁷ Dewey, *How We Think: A Restatement*, 36. On educational reform in the 1980s, see Robert J. Marzano et al., *Dimensions of Thinking: A Framework for Curriculum and Instruction*.

¹⁸ Dewey, *How We Think: A Restatement*, 3.

“learning is learning to think,” and his recognition that thinking, and by extension learning, is a psychological process distinct from products to which it may lead.¹⁹ He notes the fundamental role of reflection in this process (*italics are Dewey’s*):

Of course intellectual learning includes the amassing and retention of information. But information is an undigested burden unless it is understood. It is *knowledge* only as its material is *comprehended*. And understanding, comprehension, means that the various parts of the information acquired are grasped in their relations to one another — a result that is attained only when acquisition is accompanied by constant reflection upon the meaning of what is studied.²⁰

Dewey’s claim that reflection is responsible for turning information into knowledge has been explored in subsequent investigations into reflective practice and its role in learning. Key studies that transcend disciplinary boundaries include work by David Kolb, who developed the Kolb cycle of experiential learning; Donald Schön, who examined the role of reflection in a range of professional settings, leading to the concepts of reflection-in-action and reflection-on-action; Jack Mezirow, who has investigated how critical reflection leads to transformative learning; and Jennifer Moon, who has taken a broad view of reflection in order to explore its relationship to learning.²¹

Recent definitions of reflection include “a conscious exploration of one’s own experiences,” where experiences may be structured or unstructured, inside or outside a classroom, and “a mental process with purpose and/or outcome in which manipulation

¹⁹ Ibid., 78.

²⁰ Ibid., 78–79.

²¹ David Kolb, *Experiential Learning: Experience as the Source of Learning and Development*, 2nd ed. (Upper Saddle River, NJ: Pearson Education, 2015); Donald Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983), and *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (San Francisco: Jossey-Bass, 1987); Jack Mezirow, *Transformative Dimensions of Adult Learning* (San Francisco, CA: Jossey-Bass, 1991); and Jennifer Moon, *Reflection in Learning & Professional Development: Theory & Practice* (London: Kogan Page, 1999).

of meaning is applied to relatively complicated or unstructured ideas in learning or to problems for which there is no obvious solution."²² As suggested by these definitions, the application of reflection to teaching and learning continues to be intertwined with metacognition. For some researchers, metacognition and reflection are overlapping constructs when they are acts of evaluative thinking (assessing what you know as well as how and why you know it). In a nontechnical sense, the two terms are synonymous and are used interchangeably by educators who understand reflection as a type of metacognitive activity. Indeed, reflection is required to facilitate metacognitive processes, as recognized by Tarricone when she asserts that "reflection is the quintessence of metacognition."²³ However, not all reflection necessarily promotes metacognition—to so do, it must be purposely focused on verbalizing how one learns or generalizes knowledge, skills, and strategies for future applications.²⁴

Of particular interest to educators is the self-regulatory component of metacognition, which in educational contexts translates into the monitoring of one's learning or the "executive control of behaviour" involved in planning, regulation, and evaluation.²⁵ Research indicates that the most effective learners are self-regulating: they monitor their learning to determine accurately what they know and do not know, they know how to eliminate confusion or seek additional information when needed, and they understand themselves as learners and are aware of strategies that are optimal for achieving comprehension.²⁶ Thus, promoting

²² Naomi Silver, "Reflective Pedagogies and the Metacognitive Turn in College Teaching," in *Using Reflection and Metacognition to Improve Student Learning*, 1; Anne Jordan, Orison Carlile, and Annetta Stack, *Approaches to Learning: A Guide for Teachers* (Berkshire and New York: McGraw Hill Open University Press, 2008), 200; and Moon, *Reflection in Learning & Professional Development*, 161.

²³ Tarricone, *The Taxonomy of Metacognition*, 11.

²⁴ See Tarricone, *The Taxonomy of Metacognition*, 41; and Fogarty, *How to Teach for Metacognitive Reflection*, x.

²⁵ Marzano et al., *Dimensions of Thinking*, 14–15.

²⁶ See Douglas J. Hacker, "Definitions and Empirical Foundations," in *Metacognition in Educational Theory and Practice*, eds. Douglas J. Hacker, John Dunlosky, and Arthur C. Graesser (Mahwah, NJ: Lawrence Erlbaum Associates, 1998), 12–13; and Victoria J. Risko, Kathleen Roskos, and Carol

metacognition develops learning-to-learn skills.²⁷ Further, research indicates that possessing metacognitive ability is the key to learning content effectively; studies have shown that students who are slow to learn or who are challenged by comprehending content lack metacognitive skills, not memory capacity.²⁸ Moreover, self-regulatory monitoring of learning facilitates the transfer and application of knowledge to new contexts, which is a desirable outcome in all fields and necessary for theoretical work.²⁹

Researchers have also connected self-regulation with intrinsic motivation to learn, a topic of enduring concern to instructors of music theory and an important factor in academic success. Students who are intrinsically motivated to learn engage in self-regulating learning strategies and experience increased levels of *self-efficacy* (the personal belief in one's ability to succeed at a task). Psychologist Albert Bandura and others have noted that self-efficacy is a highly effective predictor of motivation to learn and plays an essential role in motivation to achieve.³⁰ Therefore, since self-regulation is a component in common with both metacognition and motivation, fostering metacognitive engagement can stimulate

Vukelich, "Reflection and the Self-Analytic Turn of Mind: Toward a More Robust Instruction in Teacher Education," in *Metacognition in Literacy Learning: Theory, Assessment, Instruction, and Professional Development*, eds. Susan E. Israel, Cathy Collins Block, Kathryn L. Bauserman, and Kathryn Kinnucan-Welsch (Mahwah, NJ: Lawrence Erlbaum Associates, 2005), 317.

²⁷ Benton, *Thinking about Thinking*, 3–4.

²⁸ See, for example, Ann Brown, "Knowing When, Where, and How to Remember: A Problem of Metacognition," in *Advances in Instructional Psychology*, ed. Robert Glaser, vol. 1 (Hillsdale, NJ: Lawrence Erlbaum Associates, 1978), 77–165; Annemarie Sullivan Palinscar and Ann L. Brown, "Reciprocal Teaching of Comprehension-Fostering and Comprehension-Monitoring Activities," *Cognition and Instruction* 1, no. 2 (1984): 117–75.

²⁹ Bernadette Berardi-Coletta et al., "Metacognition and Problem Solving: A Process-Oriented Approach," *Journal of Experimental Psychology: Learning, Memory, and Cognition* 21, no. 1 (1995): 210.

³⁰ See, for example, Albert Bandura, "Self-efficacy: Toward a Unifying Theory of Behavioral Change," *Psychological Review* 84, no. 2 (1977): 191–215; Dale H. Schunk, "Self-Efficacy and Academic Motivation," *Educational Psychologist* 26, nos. 3–4 (1991): 207–231; Barry J. Zimmerman, "Self-Efficacy: An Essential Motive to Learn," *Contemporary Educational Psychology* 25 (2000): 82–91.

motivation. Indeed, Charles Harrison has argued that “to indulge in one is to indulge in the other.”³¹

In music education research, metacognition has been recognized as crucial for progressive development of musicianship and as the key to musical independence. Benton explains that “as music students increasingly use metacognition, they take greater responsibility for their own learning, develop their own strategies for working through musical problems, and learn how to learn more efficiently.”³² She notes that self-regulation increases with expertise, observing that “being self-aware of strengths and weaknesses, recognizing problems, and knowing how to apply strategies to solve problems and correct errors are abilities that are noticeably greater among expert musicians than novices.”³³ This echoes the work of Susan Hallam, who, in a study that compared habits of expert and novice musicians, found that metacognition was a distinguishing feature of professionalism: professional musicians routinely accessed metacognitive skills to a greater degree than novices, which enabled professionals to learn how to learn repertoire efficiently.³⁴ Lest one think that metacognitive ability presupposes a certain level of expertise, research indicates that novice musicians may be engaged in metacognitive processing profitably, especially if it is practiced regularly within a learning environment.³⁵ Although these observations pertain to instrumental performers, there is no reason to suggest that they would not apply similarly to professional and novice music theorists.

Metacognition may be fostered by different strategies aimed specifically at planning, monitoring, or evaluating learning, and may be practiced through activities such as partnered think-aloud sessions and self-assessment exercises.³⁶ However, the literature on

³¹ Charles J. Harrison, “Metacognition and Motivation,” *Reading Improvement* 28, no. 1 (1991): 35.

³² Benton, “Promoting Metacognition in Music Classes,” 59.

³³ Benton, *Thinking about Thinking*, 35.

³⁴ Susan Hallam, “The Development of Metacognition in Musicians: Implications for Education,” *British Journal of Music Education* 18, no. 1 (2001): 27–39.

³⁵ Bathgate, Sims-Knight, and Schunn, “Thoughts on Thinking: Engaging Novice Music Students in Metacognition,” 408.

³⁶ Benton, “Promoting Metacognition in Music Classes,” 53.

reflection suggests that reflective writing is a particularly effective strategy through which to hone metacognitive skills, especially in higher education.³⁷ Peggy Ertmer and Timothy Newby argue that reflection on the process of learning is essential to developing “expert learners,” defined as “those successful individuals who approach academic tasks with confidence, diligence, and resourcefulness.”³⁸ Moreover, Benton argues that reflecting deeply on one’s work requires metacognition and can become active learning when students “make connections among past learning experiences, current learning experiences, and possibilities for future learning.”³⁹

In effect, reflective writing engages students in the process of making and documenting meaning that is relevant to them from course content and aligns with the current constructivist approach to instruction, which views learning as something that is not passively accepted but rather actively constructed by learners when they assimilate new facts and experiences into the context of previous learning.⁴⁰ Such activity involves analysis, synthesis, and evaluation of data, which are higher-order cognitive skills according to Bloom’s taxonomy of educational objectives.⁴¹ Harnessing these cognitive skills discourages surface learning—a style of learning often encountered in music theory instruction in which students take in information temporarily but do not retain it. Instead, reflection invites all students to engage in a deep approach to learning whether they are surface learners memorizing just enough to pass a test, strategic learners earning good grades but not invested in their learning, or deep learners in pursuit of meaningful learning experiences.⁴² Moon suggests that reflection also facilitates

³⁷ Jordan, Carlile, and Stack, *Approaches to Learning: A Guide for Teachers*, 208.

³⁸ Peggy A. Ertmer and Timothy J. Newby, “The Expert Learner: Strategic, Self-Regulated, and Reflective,” *Instructional Science* 24 (1996): 1.

³⁹ Benton, *Thinking about Thinking*, 55.

⁴⁰ See Leslie P. Steffe and Jerry Edward Gale, eds., *Constructivism in Education* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1995).

⁴¹ Benjamin S. Bloom, ed. *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain* (New York: D. McKay, 1956), 18.

⁴² Ken Bain, *What the Best College Students Do* (Cambridge, MA: Harvard University Press, 2012), 35–36.

the *upgrading* of learning, in which ideas encountered previously at the surface may be reprocessed more deeply through reflection and integrated with new learning.⁴³ Thus, purposeful reflective writing has the potential to be a very useful tool for music theory instruction, because learners are required to continuously integrate new disciplinary information into previous knowledge that may not have been adequately retained if it did not initially undergo deep processing. Additionally, when learning has been unsuccessful, reflection may help to determine the cause of the problem and explore possible remedies to use in the future.⁴⁴

In the 2001 revised version of Bloom's taxonomy, metacognition now appears as one of four types of knowledge in the knowledge dimension.⁴⁵ As such, it takes its place as an important component of learning in the twenty-first century and is supported by empirical research indicating that incorporating the development of metacognitive skills as part of a course leads to better learning outcomes. In all domains, instructors are called upon not only to deliver content consisting of disciplinary knowledge and skills, but also to equip students with metacognitive strategies to use the knowledge meaningfully in order to attain their goals.⁴⁶ Issuing a rallying cry from the domain of music, Leonore Pogonowski writes, "We have to infuse metacognitive strategies into our teaching methods if, as a significant outcome of music education, we wish to develop independent musical thinkers."⁴⁷ Given the abundance of research in support of developing metacognition within educational contexts particularly through reflection, it behooves music theory

⁴³ Jenny Moon, "Reflection in Higher Education Learning" (PDP Working Paper 4, Learning and Teaching Support Network Generic Centre, January 2001): 6, https://www.researchgate.net/publication/255648945_PDP_Working_Paper_4_Reflection_in_Higher_Education_Learning.

⁴⁴ Phil Race, "Evidencing Reflection: Putting the 'W' into Reflection: Why Reflect?," The Higher Education Academy ESCalate Education Subject Centre: Resources, last modified November 15, 2006, <http://escalate.ac.uk/resources/reflection/02.html>.

⁴⁵ Lorin W. Anderson et al., eds., *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, abridged ed. (New York: Longman, 2001), 29.

⁴⁶ Marzano et al., *Dimensions of Thinking*, 5.

⁴⁷ Pogonowski, "Metacognition: A Dimension of Musical Thinking," 19.

educators to consider incorporating similar metacognitive strategies that empower students to learn disciplinary content meaningfully.

METACOGNITIVE REFLECTION ASSIGNMENTS

A variety of vehicles, such as reflective journals, learning log books, and reflective notes, have been used to foster reflective learning. While they may serve discipline-specific purposes, the informality that typically characterizes them does not always require metacognition. Literature on reflective writing indicates that the kind of deep thinking associated with metacognition is difficult to attain. For many students, reflecting on learning and providing evidence of such reflection is a challenging task.⁴⁸ Some will not understand what is required of them and may feel uncomfortable working with information that is not from a text or provided by a lecturer. Consequently, Moon warns: "Just asking students to write a learning journal, for example, may bring benefits, but they will be haphazard. A purpose and an idea of the kind of outcome of reflection is required—particularly if the reflective activity is to be assessed."⁴⁹

When beginning to reflect, it is common for students to focus on describing the subject matter of their learning. For example, a student may write: "I learned that the seventh of ii⁷ is a dissonance. I also learned that it must resolve down by step." Reflective writing becomes more meaningful when the instructor provides writing prompts or questions that direct a learner's thinking toward metacognitive awareness. Questions that require only a single-word answer (*yes* or *no*) do not make effective reflection prompts. Rather, questions that ask *how* and *why* in addition to *what* can help to deepen reflection beyond merely a description of course content. Providing some structure to a reflective writing assignment should be done to clarify its purpose, its manner of presentation, and its expected outcome. This is particularly important to do if assessment is involved.

Examples 1 and 2 provide two sample reflective writing assignments that were incorporated into a course on chromatic harmony at the sophomore level, the results of which will be

⁴⁸ See for example, D. Holm and S. Stephenson, "Reflection—A Student's Perspective," in *Reflective Practice in Nursing*, eds. Anthony M. Palmer, Sarah Burns, and Chris Bulman (Oxford: Blackwell Science, 1994), 53–62.

⁴⁹ Moon, "Reflection in Higher Education Learning," 8.

discussed later. Example 1 addresses the learning experience of a particular topic in the course, modal mixture, while Example 2 concerns the full course experience. Both assignments instruct students to compose reflective statements in essay form. While this may seem at odds with writing that is exploratory in nature and that typically lacks academic formality, the essay requirement ensures that students present their thoughts coherently enough for assessment. Both assignments include questions that are not mandatory to answer, but rather provide guidance about the kind of information that would be appropriate to include. The questions are metacognitive prompts that may be used either at the end of any unit of study in a music theory course (as in Example 1) or at the end of a course (as in Example 2). It is important to note that the questions direct students to write not about the subject matter *per se*, but rather about their learning experience of the subject matter, their integration of new information into previous knowledge, and the self-regulation of their learning. The questions ask *what*, *why*, and *how* in order to encourage metacognitive responses. Such prompts may address learning experiences generally, as most of these questions do, or may be directed more specifically at a particular activity, assignment, or exercise, such as the enriching activity referred to in Example 1, which was an optional assignment inviting students to identify instances of modal mixture in their individual performance repertoires.

Instructions:

Reflect on what you have learned while studying the topic of modal mixture. Compose your thoughts about your learning experience in a document that is no more than 2 pages long. Write in the style of an essay (in paragraphs, not in point form), with double-spaced text in 12-point font. You may use the following questions to guide your reflection, but you need not limit your observations to them:

- What exercises on this topic were most beneficial for my learning? Why?
- Did this topic reinforce or develop my knowledge in some way? If so, how?
- Did it answer questions I was wondering about or pose new questions?
What are they?
- Did this topic show me gaps in my previous learning that I should address?
What are they?
- What did I learn from the enriching activity?

Example 1. Reflection on the learning experience of modal mixture

Instructions:

Reflect on what you have learned in this course. Take some time to think about your knowledge and abilities in the subject of music theory when you began the course and your knowledge and abilities now. Compose your thoughts about your learning experience in a document that is no more than 2 pages long. Write in the style of an essay (in paragraphs, not in point form), with double-spaced text in 12-point font. You may use the following questions to guide your reflection, but you need not limit your observations to them:

- Did I develop my understanding of music in this course? How?
- What topics or activities in the course were most beneficial for my learning? Why?
- As a result of my work in the course, have I improved my skills in analysis, harmonization and/or ability to communicate about music? Is this important to me? Why or why not?
- In what way was this course relevant to me? Why do I think so?
- Did the course answer questions I was wondering about or did it initiate new questions that I can now pursue? What are they?
- Did I find the topics in this course more challenging or easier to grasp than material in previous theory courses? Why?
- Did the course show me gaps in my previous learning that I still need to address? What are they?

Example 2. Reflection on learning experienced in the entire course

Assessment of reflective writing is a controversial issue. Some proponents of reflection support its assessment, while others argue that reflection cannot or should not be assessed at all in light of the individual and personal nature of the activity. The latter position is particularly valid in apprenticeships or professional training situations where learner motivation to succeed is routinely high and the outcome of reflection is evident in the work performed (which is itself assessed). However, it is well known that in undergraduate classrooms, learning tends to be driven by assessment.⁵⁰ Value is conferred upon assignments that are assessed, and conversely, work that is not assessed appears less valuable. Therefore, if students are to understand that reflective work is valuable and should be taken seriously, it must be rewarded with assessment. Moreover, subjecting reflective writing to assessment may serve as an extrinsic motivator to foster potential intrinsic motivation, which may be developed through metacognitive reflective practice.

This in turn raises the question, how should reflective writing be assessed? Moon acknowledges that there is no single correct

⁵⁰ Moon, *Reflection in Learning & Professional Development*, 130.

way to accomplish this, but advises that criteria for assessment should be based on the purpose of the reflection and that such information should be communicated to students before reflection is assigned.⁵¹ This may be done effectively through a rubric for assessment. Example 3 provides a rubric that could adequately assess the reflective writing assignments shown in Examples 1 and 2. It describes the criteria that must be met to achieve from zero to a maximum of four points on a completed assignment and clarifies that the purpose of the reflection is to express clearly the integration of new learning into previous theoretical knowledge and/or professional development. Adoption of such a rubric for assessment has the additional benefits of streamlining the grading process and ensuring that a certain degree of consistency is maintained if more than one person evaluates assignments. Evaluation is thereby completed quickly and may be pedagogically energizing when students provide perceptive insights through their reflections.

Points	Criteria
0	Reflection is not submitted.
1	Reflection shows very little engagement with thinking about learning experiences, or does not comply with writing requirements, or is hindered by many writing problems.
2	Reflection displays a passable attempt at thinking deeply about learning experiences and at integrating new information into previous theoretical knowledge and/or professional development. The work appears to be half done.
3	Reflection displays a good effort to think deeply about learning experiences and to integrate new information into previous theoretical knowledge and/or professional development.
4	Reflection displays an excellent effort to think deeply about learning experiences and to integrate new information into previous theoretical knowledge and/or professional development. It is well written and contains very perceptive comments.

Example 3. Rubric for assessment

What kind of results could the reflective assignments in Examples 1 and 2 elicit from a sophomore class of music majors? The remainder of this essay describes the context and method of a study that addresses this question, discusses the results of a

⁵¹ Moon, "Reflection in Higher Education Learning," 14–15; and Jenny Moon, "The Higher Education Academy Guide for Busy Academics No. 4: Learning Through Reflection" (November 2005), 3, <https://nursing-midwifery.tcd.ie/assets/director-staff-edu-dev/pdf/Guide-for-Busy-Academics-No1-4-HEA.pdf>.

content analysis of the completed reflection assignments, and then evaluates the pedagogical value of this metacognitive strategy.

A STUDY OF STUDENT REFLECTIONS

Context and Method

A total of five metacognitive reflective writing assignments were implemented into a single-term music theory core course on chromatic harmony at the sophomore level, which was open only to music majors. The course was lecture-based and built upon concepts introduced in two prerequisite music theory courses at the first-year level. The first four reflective assignments were completed at the end of selected constituent units of study within the course (modulation, binary form, modal mixture, and Neapolitan and augmented sixth chords), and each was focused on the learning experience of those units. The last assignment was completed at the end of the course and was a reflection on learning experienced in the course overall.

The assignments were assessed according to a rubric similar to the one in Example 3; the rubric was included with the assignment in order to clarify the purpose of the reflective activity and to make its evaluation criteria as transparent as possible. Each assignment was assessed and returned to students with feedback before the next one in the sequence was begun in order to assist students in developing their reflective practice. Performance on reflective assignments constituted ten percent of the final course grade, and one assignment that earned the lowest score was dropped so that only four of the five reflections counted toward the final grade. This provision took into account the possibility that students might not reach their optimal reflective potential at all times, and it also offered students the option not to submit one assignment of their choosing without penalty.

When the course was completed, students were invited to allow their written reflections to undergo a content analysis in order to investigate the pedagogical value of this metacognitive strategy for music theory instruction.⁵² For each assignment, statements were selected from student reflections and grouped into categories identified by recurring themes. Some categories developed in response to the writing prompts that were provided

⁵² This study was approved by the Research Ethics Board of Wilfrid Laurier University.

in the reflection instructions, while others arose from the process of engaging in reflection. To maintain a reasonable scope, this article limits its discussion to results derived from one topic reflection assignment—the learning experience of modal mixture reproduced in Example 1—and from the final course reflection assignment reproduced in Example 2. The modal mixture assignment was the third of the four topic reflection assignments, and as such it is the earliest one in the sequence that ensures that students had received feedback on at least one previously-completed reflection assignment. The writing on this assignment may therefore be considered a fair representation of the collective reflective abilities possessed by students at this stage.

Participants

From a total pool of seventy-four college-aged students in the course, of which thirty-nine (53%) were female and thirty-five (47%) were male, twenty-six agreed to participate in the study, yielding a sample size of 35%. The sample was equally divided between male and female participants: thirteen male and thirteen female. Final grades for participants in the study ranged from 55% to 96% and averaged 78%. Final grades for all students in the course ranged from 41% to 96% and averaged 73%. The sample is therefore reasonably representative of class enrolment.⁵³

⁵³ The sample size for this study is affected by ethics board policy. To gain approval, student consent could only be obtained after the course was completed and final grades were submitted to ensure voluntary participation free from any perceivable undue influence. Under these terms, the sample size may be regarded as substantial rather than small. Results of the study may reflect self-selection bias. However, mitigating this concern is the fact that the data is not conditioned by knowledge of a subsequent study to which it may be subject, and that the sample corresponds very closely with gender balance and student achievement in the course overall. While the sample does not include any participants with failing grades in the course, the 41% grade in the final grade range for the course is an outlier—it is the score of the only student who did not pass the course. The absence of this student from the sample does not affect results of this study because the student did not submit the reflection assignments under review. Removal of this outlying grade from final grade calculations results in a range of 53% to 96% for all students in the course, which corresponds almost exactly with the final grade range for sample participants.

Results and Discussion

A content analysis of student reflections identified six different thematic categories:

1. Statements reviewing the subject matter
2. Statements expressing development of theoretical knowledge and skill
3. Statements identifying beneficial exercises and learning strategies
4. Statements addressing learning challenges
5. Statements expressing motivation
6. Statements recognizing relevance and the transfer of learning

Statements excerpted from the reflections on the learning experience of modal mixture (the “topic assignment”) encompass all six categories. Those excerpted from the reflections on learning experienced in the course (the “course assignment”) encompass categories 2 through 6; category 1 is not represented. The appendix provides tables that organize all of the excerpts from participant reflection statements into each of these categories, numbered correspondingly. With the exception of category 1, which consists of one table containing data only from the topic assignment, all other thematic categories feature two tables representing the data from each of the reflective assignments.

Table 1 consists of statements reviewing the subject matter of modal mixture, which are found in 23% (6 out of 26) of participant reflections on the topic assignment. At the end of the course, students no longer review subject matter in their reflective statements, and consequently, no data exists to populate this category from the course assignment. As discussed earlier, reviewing subject matter is to be expected from learners new to the practice of reflection. Though these comments may not be perceptively significant, they can alert instructors to misconceptions, misinterpretations, or problems in the making, which may then be addressed and corrected in timely fashion. For example, statements 5 and 6 in Table 1 provide teachable moments. The student’s belief in the final sentence of statement 5 that “applied chords must resolve, while secondary mixture does not,” warrants clarification of the concept of resolution, and the suggestion in statement 6 that modulation

involving mixture is limited to $\flat VI$ or $\flat III$ is an opportunity for correction. Thus, while reflection assignments are typically helpful low-stakes learning activities for students, they may benefit the instructor by providing timely feedback for corrective teaching prior to more high-stakes assessment.

Statements constituting thematic categories 2, 3, and 4 are responses to the writing prompts provided in the reflection assignment instructions and represent different aspects of the regulation of learning. In particular, they illustrate how reflective writing may develop a learner's awareness of their own agency and responsibility for learning. The responses in Table 2a document that, in the topic assignment, 54% of participants (14 of 26) recognize ways in which their theoretical knowledge and skills are being developed or revised. They monitor their learning by expressing their comprehension, recognizing the integration of their new knowledge with previous theoretical knowledge, and perceiving improvement in their analysis and harmonization skills. For example, one student (see Table 2a, statement 4) expresses the revision of their previous knowledge by describing the integration of new theoretical information into their listening experience and recognizing the effect that their new knowledge has on their experience:

I used to think that modal mixture was just modulations, and so I did not know there was another term for the concept. ...The idea that there was "modal mixture," "melodic mixture," and "harmonic mixture" was frankly very eye opening (or ear-opening). I learned how to better apply modal mixture and it makes listening to music more interesting; instead of going like, "Oh, something weird happens there, it is kind of cool, some kind of weird modulation, but I have NO idea what it is", I can go like, "Oh, listen, there's a $\flat VI$ following that tonic chord! There's some modal mixture going on!"

Additional evidence of revision is found in statements 8 and 13. It is noteworthy that the latter credits reflection with developing an awareness of disciplinary knowledge when the student writes, "From this reflection activity on modal mixture in particular, I've learned that most of what we are learning in theory I already have some knowledge of, from having a good ear and understanding of music."

Presenting excerpts from the course assignment, Table 2b in the

appendix shows that a similar number of participants (50%, or 13 out of 26) comment on developing theoretical knowledge and skill over the duration of the course. They perceive improvements in analysis, harmonization, and dictation, and they report that they have upgraded their previous learning. Among these statements are recurring expressions of self-efficacy that refer to confidence in their acquired theoretical skills (see statements 1, 2, 4, 5, 9, 10, and 12). In statement 5, confidence is connected to evidence of upgrading previous learning when the student writes:

The beginning of this course was quite difficult for me because I first had to go back and learn concepts from last year before I could continue learning new ones. Once I was secure and my learning gaps had been acknowledged I found that I was doing better in testing situations and that I needed less assistance from my tutor. Lectures and homework are easier to grasp and I find in general I am doing better and feeling more confident in comparison to my first year theory courses. I came into University feeling behind in theory and now I feel like I have finally caught up and am becoming a more competent student.

Particularly noteworthy is that the reflective acknowledgement of progress and improvement may lead to the recognition of the relevance of learning the subject matter, as demonstrated in several excerpts. One student (statement 9) writes, "I find these skills to be very important and valuable as they help to show me that I am a strong musician." Another (statement 10) notes that the identification of harmonies in the repertoire "makes music something altogether more familiar to me. Music becomes less of a distant and incomprehensible entity with each new lecture and chapter topic." Another student (statement 13) focuses on the future benefit of their learning, writing, "Being able to [analyze music] is important to me because it can help in the long run with understanding new concepts in other theory courses and when learning new pieces."

An equal number of excerpts from both the topic and the course assignment contribute to the third thematic category, consisting of statements that identify beneficial exercises and learning strategies. In each case, 50% of participants (13 out of 26, though not all the same students for each assignment) identify beneficial exercises and describe engagement with strategies that support their individual

learning needs. Presenting excerpts from reflections on the topic assignment, Table 3a in the appendix shows that participants explain the merits of repertoire analysis, melody harmonization, and figured bass realization from different perspectives. Students also begin to realize the benefits of aural engagement with printed music examples (statements 4 and 10) and begin to recognize a need to upgrade their previous learning to a deeper level (statement 9). A detailed expression of learning about learning, or meta-learning, appears in statement 11. Here, the participant differentiates assigned activities in terms of their perceived formative versus summative value, and explains compellingly why certain types of exercises facilitate one purpose or the other:

I found all of our homework activities to be equally helpful in my learning in different ways and across different stages. Analysis was helpful for me as a “first step” as it allowed me to clarify any questions or confusion I was having about the rules and concepts surrounding modal mixture. Having to look for and hear examples of modal mixture myself within a relevant musical context (as opposed to just looking at [the textbook’s] pre-analyzed examples) really helped me to gain a greater understanding of the contexts in which modal mixture can occur. As a “second step”, I found voice-leading, figured bass, and melody harmonization exercises helpful in *testing* my knowledge and understanding of concepts and harmonic/melodic paradigms surrounding modal mixture. In analysis it is possible (although not ideal) to ignore paradigms and just look at each chord individually, and so sometimes I find that I am not necessarily paying as close attention to paradigms as I would be when I have to write them myself. By actually having to write progressions, I was really able to take a more self-reflective stance and make sure that I had a really thorough understanding of paradigms.

A similar statement appears in Table 3b (statement 10), but curiously the types of exercises contributing to formative and summative purposes are reversed. This may be because score analysis becomes much more comprehensive and complex toward the end of the course.

Strategies for learning receive more consideration at the end of the course as documented in Table 3b in the appendix. Statements 3, 5, 9, and 11 express a stronger preference among participants for engaging with course concepts aurally, either through dictation practice or by incorporating listening into analysis. Performing theory exercises and/or relating course content to performance repertoire emerge as other helpful learning strategies in statements 2, 4, and 8. Participants also recognize the payoff of approaching coursework with diligence and discipline, thereby documenting self-efficacy and recognizing the benefits of taking responsibility for their learning (statements 1 and 10). Last, but not least, is evidence acknowledging that reflection assignments facilitate the retention of information and foster a deeper understanding of subject matter (statements 2, 7, and 13). In this regard, statement 13 is particularly noteworthy as it credits reflection with learning how to integrate new information into previous knowledge and describes the rewarding experience of accomplishment to which it leads:

My knowledge could grow and grow because finally I learned how to make connections. Throughout the term the reflections aided in reinforcing these connections. By articulating what I learned in words, rounding up the flurry of new information was a daunting task no longer. Finally being able to understand theory and to follow the new concepts is a wonderful, comforting feeling that enhances my life as a musician, and makes me feel worthy of identifying as one. ...I have made a lot of progress this term and I feel more confident in what I have come to learn than ever before. By also learning how to look back and reflect while taking in new information, I could process everything much better. I am no longer afraid of theory as a result.

In thematic category 4, which consists of statements that address learning challenges, 50% (13 out of 26) of topic assignment reflections, but only 35% (9 out of 26) of course assignment reflections include statements that address learning challenges and strategies to overcome them. Excerpts from the topic assignment in Table 4a in the appendix explain what learners believe they know or do not sufficiently understand and usually identify the need to engage more purposefully with coursework in various ways to overcome

challenges. In these comments, students also express the emotions experienced when encountering difficulties (see statements 2, 3, 9, and 10). Statement 2 illustrates how connecting new information with previous learning may change an initial negative reaction into a positive experience:

Initially, modal mixture felt like a real challenge. It seems to me that it was the first step to expanding the foundational knowledge gained this semester regarding chromatic harmonies. At first I was confused and frustrated. I had successfully comprehended applied chords and diatonic modulations and suddenly chromaticism had to come along and shake things up. I was nervous about the difficulty that comes with having too many options for deciding what an accidental can indicate. I was content with an understanding that an accidental indicates a non-chord tone, an applied chord or a diatonic modulation. I was scared to throw modal mixture and chromatic modulations into the mix. However, with a little practice and some reassurance that I was completing my homework correctly I realized that the foundational knowledge from concepts previously learned this semester could be applied to navigate through modal mixture with ease.

As is evident from Table 4b in the appendix, significantly fewer participants mention learning challenges in the course assignment reflections, and when they do, the challenges are downplayed in favor of recognizing progress and expressing the ability to overcome difficulties (see statements 2, 4, 5, 6, and 9). A few participants still acknowledge that the source of their difficulties lies in upgrading previous learning, which has not yet been accomplished (see statements 1, 3, and 8). The existence of these comments at this late stage in the course confirms that learner awareness of what needs to be done does not necessarily lead to doing it. Evidently, additional incentive is needed for some students to revisit content from a previous course in order to upgrade learning.

As noted earlier, research links self-regulation with motivation. This is reflected clearly in Table 5 in the appendix: the regulatory activity required to produce the statements that populate thematic categories 2 through 4 elicits unsolicited descriptions of motivation

that are documented in thematic category 5. Nineteen percent (5 out of 26) of topic assignment reflections in Table 5a and a nearly double 35% (9 out of 26) of course assignment reflections in Table 5b describe motivation. Accompanying this encouraging development are comments in both tables that express emotions of satisfaction, enjoyment, excitement, and even inspiration as participants acknowledge their desire at first to expand their theoretical knowledge and “keep on top of homework,” and later to continue to improve their skills and apply their new learning to a subsequent theory course or the next step in their development as musicians. A particularly striking and welcome revelation is recounted in statement 4 of Table 5a where a student associates theory studies with joy when writing, “Modal mixture was yet another way of expanding my musical world ... and it has really allowed me to find more joy in my theory studies.”

Even more remarkable and consistent with research on metacognitive reflection is the number and quality of statements in thematic category 6 that recognize the relevance of learning course content and document its transfer to contexts beyond the course. As shown in Tables 6a and 6b in the appendix, 46% of participants (12 out of 26) report doing so in the topic assignment reflections, and 65% of participants (17 out of 26) include such commentary in the course assignment reflections. In both Tables, an overwhelming number of statements connect the knowledge acquired in the theory course with the learning of performance repertoire (see Table 6a, statements 1, 3, 5, 7, 8, 9, 11, and 12, as well as Table 6b, statements 2, 4, 5, 7, 9, 10, 11, 12, 13, and 17). Participants also acknowledge the application of their knowledge to composition (Table 6a, statements 2 and 6, and Table 6b, statements 8 and 11), and the relevance of their learning to professional development and career aspirations (Table 6a, statements 2, 3, and 11, and Table 6b, statements 1, 3, 4, 11, 12, 14, and 15). Statement 11 in Table 6b encapsulates all three of these subthemes:

I found that the content in this theory class could be easily applied to my repertoire. For example, I am working on a Mozart sonata and although I have not studied sonata form in detail yet, I can understand the tonal map of the piece by understanding how it modulates. Modulation is also important in song writing and since I hope to go into music therapy, I can apply my knowledge to modulate

a song according to the needs of the client. I enjoyed studying modal mixture. Modal mixture is another application I know I will use in the future because it allows for word painting, another effective technique in song writing.

A highlight of Table 6a is statement 10, where a student credits reflection with facilitating the transfer of knowledge and, in this case, perceptively connects information acquired in a non-music course (sociology) with the development of musicianship while studying music theory. The statement shows that, through metacognitive reflection, students may begin to engage in theorizing even at an introductory disciplinary level:

While reflecting on the chapters on modal mixture, a concept came to mind that was introduced in a sociology course I am currently enrolled in. The concept stated that our language shapes our consciousness. Another way of putting it is that what we are able to perceive is shaped by the richness of our vocabulary. This concept felt very relevant as the chapters on modal mixture introduced a new layer to the musical language and vocabulary that is gradually being developed. I now find that when I look at and hear music it is easier [to] perceive more and more details of what is there.

CONCLUSIONS

This study corroborates research findings in other fields, as outlined at the outset of this article, that metacognitive processing encourages development of self-efficacy, fosters motivation to learn, and facilitates deep learning experiences. Moreover, it demonstrates that such processing may be achieved productively in music theory study at an introductory undergraduate level by implementing a reflective practice that invites students to think deeply about their learning experience of the subject matter. All of the reflective statements about the experience of learning documented in this study provide evidence of students constructing the meaning of course content and experiencing that meaning in ways that are individually important. Metacognitive reflection emerges as an effective vehicle through which students may draw on their own

learning authority to deepen learning experiences. In doing so, they recognize the relevance of music theoretical learning to their individual professional development, which is an ideal outcome of undergraduate music theory instruction that is difficult to achieve without purposeful reflective practice.

One must keep in mind, however, that the findings of this study are contextualized by a sample of twenty-six participants in one sophomore course at a particular post-secondary institution. Further research is needed that would involve a greater number of participants at the same and different levels of study across multiple institutions to replicate, revise, or reconsider results. Nevertheless, given that these findings are supported by a substantial body of research on metacognition in educational settings, the study invites reflection on the objectives of music theory instruction.

Teaching objectives in music theory pedagogy are normally viewed in terms of disciplinary content, and logically, initiatives to update, revise, or reform instruction typically address content. However, focusing solely on the revision of content does not address the learning process. And learning is not simply about accumulating content, as Dewey cautioned over eighty years ago. More recently, adult education expert Jack Mezirow has defined learning compellingly as “the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action.”⁵⁴ Learning is, therefore, more accurately about the process by which new information encountered by learners is integrated with existing knowledge to create new meaning and understanding. To be effective, pedagogical initiatives in our field should address this process, which may be accessed through metacognitive reflection.

This is not to suggest that issues concerning content and its delivery are not important. Indeed, reflection first requires information, knowledge, or experiential data of some kind for interpretation or reinterpretation. One cannot reflect meaningfully without first genuinely acquiring the knowledge or doing the work upon which reflection is based. However, in today’s rapidly changing educational environment and musical world, it is important to consider not only the disciplinary knowledge that should be taught, but also the skills

⁵⁴ Jack Mezirow, “How Critical Reflection Triggers Transformative Learning,” in *Fostering Critical Reflection in Adulthood: A Guide to Transformative and Emancipatory Learning*, ed. Jack Mezirow and Associates (San Francisco, CA: Jossey-Bass, 1990), 1.

that students must acquire to learn content meaningfully and to adapt it to new contexts within and beyond the discipline. Metacognitive reflection is needed to engage learners with their individual processes of learning, to deter them from completing tasks without evaluating what they are doing, and to facilitate the integration of new information with previous knowledge. This last point in particular suggests that the incorporation of metacognitive reflective practice into music theory pedagogy would align constructively with the proposed pillar of integration recommended by the College Music Society Task Force on the Undergraduate Music Major in its recent call for curricular reform. In effect, the rationale of the Task Force for recognizing integration as a pillar of reform may be understood as an adaptation of the purpose of metacognitive practice to undergraduate music instruction, especially when they write that “the content of the undergraduate music curriculum must be integrated at deep levels and in ways that enhance understanding, interpretive performance, and creativity as a holistic foundation of growth and maturation.”⁵⁵

As demonstrated by the study of student reflections presented above, incorporation of metacognitive reflective practice into music theory instruction at the undergraduate level facilitates meaningful learning of course content in ways that the accumulation of additional practice, reinforcement of content, or even change of content may not. Metacognitive thinking brings to conscious light the cognitive and learning processes that are often assumed but not acknowledged within the context of teaching and learning music theory. Validating these processes helps to promote motivation, deepen learning of subject matter, and provide opportunities for its transfer beyond the environment in which it was learned. Results show that engaging students in metacognitive reflection on their learning experiences of disciplinary subject matter leads to an appreciation of the study of music theory, and this should encourage our field to include the development of metacognitive ability alongside other skills that are traditionally considered to be part of the purview of music theory pedagogy.

⁵⁵ Task Force on the Undergraduate Music Major, “Transforming Music Study from its Foundations: A Manifesto for Progressive Change in the Undergraduate Preparation of Music Majors,” *College Music Symposium* 56 (2016): iv, doi: <http://dx.doi.org/10.18177/sym.2016.56.fr.11118>.

APPENDIX

Thematic Categorization of Excerpts from Student Reflections

Table 1 Statements that review subject matter: Excerpts from student reflections on their learning experience of modal mixture
1. Throughout the unit of modal mixture I learned that there are two types of modal mixture, harmonic mixture and melodic mixture. I also learned that the main chords that are altered are VI, which becomes $\flat$VI and the III chord, which becomes $\flat$III. These two chords are also used the most within modal mixture. Another rule I learned is once the modal mixture is started, it must continue until it can resolve to the dominant.
2. Something I learned that I thought was very interesting was the use of plagal motions made to sound cadential. For example, if the progression is IV-iv-I, and a line moves "la", "le", "sol", it has a very pleasant sound to the ear because of the draw and need for resolution from la to sol. The semitone between le and sol make it far more dramatic.
3. The principle of modal mixture is one of the tools for modulation into non-closely related tonalities which differ by more than one sharp or flat in terms of key signature. This also helps to create more unique tonal progressions. The melodic mixture component, where non-root tone is borrowed from minor tonality into major progression or vice versa, provides some special characteristics to the melody, not found in solid major melody progression. The harmonic mixture component [occurs] when the root of a chord is altered, for example from vi to $\flat$VI, or from ii [sic] to $\flat$III and vii$^{\circ}$ to $\flat$VII in major keys. Modal mixture allows to create harmonic progression to non-closely related keys. Because steps such as $\flat$VI, $\flat$III or $\flat$VII can themselves be dominants of some keys' [sic] tonic.
4. Modal mixture involves the borrowing of a note or chord from the parallel mode (major or minor) of a composition's home key, and the insertion of this chord into a progression that is written in the home key. In terms of function, the borrowed harmony is treated in the same way as a regular diatonic chord built on the same root. For instance, a composition in C major may borrow a minor chord built on F from the parallel mode of C major (that is, c minor). In this scenario, the borrowed F minor chord would be treated in the same way as the regular major chord built on F, and would lead to a dominant function chord in the key of C major. Modal mixture has proved to be such a popular compositional technique largely because it has the potential to greatly expand a composer's repertoire of different colourations and harmonic intensities. Using modal mixture, a composer may introduce a completely foreign (and often surprising) mood, while still remaining in the home key. In addition, a composer may use mixture chords as pivot chords in modulating passages, and, in this way, modal mixture can be used to increase the number of keys to which a composition may modulate. Thus, mixture chords give composers the capacity to add both emotional complexity and harmonic interest to their compositions in a simple, elegant and efficient way.

Table 1 Statements that review subject matter: Excerpts from student reflections on their learning experience of modal mixture	
5.	There are two kinds of mixture, harmonic and melodic. Harmonic mixture refers to using a harmony in the major mode whose root is borrowed from the minor mode, like flat six. Melodic mixture refers to borrowing a scale step that is above the root of the chord from the minor key, such as the iv chord in a major key. Secondary mixture is also concerned with the mediant and the submediant chords. Instead of being borrowed from the minor key, they become major via accidentals that do not have to do with the minor key. This is a bit tricky because it can look like an applied chord. Using my knowledge from last year, however, I can determine whether or not this mysterious chord is functioning as an applied chord. Applied chords must resolve, while secondary mixture does not.
6.	I learned that ♭VI was the most commonly used scale step in modal mixture, but that other possibilities existed too, such as minor iv. Then there were important plagal motions, such as IV to iv to I, IV to ii diminished 65 [sic] to I, and ♭VI to I. There was also the benefit of knowing the difference between melodic and harmonic mixture. Then when we learned about secondary mixture, I thought that was going to be it for the topic, but I also discovered that one can use modal mixture to modulate. The trick to doing that lies in modulating either to the key of ♭VI or ♭III. One interesting thing that I remember is that when modulating to the ♭VI in D♭ major, the ♭VI is B♭, which does not exist as a key, and must therefore be notated as A since it is understood as being enharmonically the same in the system of equal temperament.

Table 2a Statements that express development of theoretical knowledge and skill: Excerpts from student reflections on their learning experience of modal mixture
1. This new learning will integrate with my previous knowledge specifically on the topic of modulation, as we are now learning about different types of modulation that incorporate the topic of modal mixture. Reoccurring chords to modulate to are the $\flat$III and $\flat$VI chords.
2. Modal mixture opens up an entire new tonal area in compositions, and for me that is really exciting. ... I am especially interested in the fact that it is used extensively in romantic music, which I really enjoy listening to, and have previously not been able to understand theoretically. In addition, I was very interested in the amount of emotional expression and tension that can be achieved with the use of modal mixture.
3. Learning about modal mixture has been fairly straightforward. It seems like we already knew the information, but now it's being stated to draw awareness to it and make everything clearer.
4. I used to think that modal mixture was just modulations, and so I did not know there was another term for the concept. ... The idea that there was 'modal mixture', 'melodic mixture', and 'harmonic mixture' was frankly very eye-opening (or ear-opening). I learned how to better apply modal mixture and it makes listening to music more interesting; instead of going like, "Oh, something weird happens there, it is kind of cool, some kind of weird modulation, but I have NO idea what it is", I can go like, "Oh, listen, there's a $\flat$VI following that tonic chord! There's some modal mixture going on!"
5. This topic was completely new to me, but I did find that it reinforced some of my old knowledge. In the past I was always confused when iv or IV were to be used. This helped me to understand that the cases are actually important, and when each chord is more likely to be used.
6. While doing the analysis exercises I realized I did not have a fast enough command of my major and minor keys together. Also that I need to review applied chords, as I often forgot about them completely and would get stumped on a question if there was one. I also found practicing dictation very helpful, as I found it difficult while trying to analyze to hear all the chords with accidentals in my head at all. After practicing and becoming more familiar with what harmonic and melodic mixture chords sound like I found it easier to identify them on paper by trying to play them in my head. I think I still need to go back and practice the homework questions more to become really comfortable with the material in a time pressure situation.

Table 2a
Statements that express development of theoretical knowledge and skill:
Excerpts from student reflections on their learning experience of modal mixture

7. As a composer, I have always been interested in mixing modes (i.e. borrowing steps from major into minor), but never pursued learning how to do it 'properly'. In this way, modal mixture was intriguing to me, and I felt my knowledge of harmonization was thoroughly developed. ... This chapter also reminded me to go over some paradigms learned last year and drill them until I can recognize them at first glance.
8. This study of modal mixture also developed my understanding of tonal theory in other ways. Most notably, it helped me to discover how mixture chords can be placed strategically to destabilize the prevailing harmony and the expectations of the listener, and how to incorporate these mixture chords into my own writing. In this way, the study of modal mixture in [this course] developed and enhanced both my understanding of compositional techniques and my ability to analyze existing works. In addition, the study of this topic provided me with an explanation for many situations where, in the past, I had thought that composers were breaking the rules of music theory. ... By studying mixture chords and their uses, I have refined my understanding of how composers incorporate different tonal colours and moods into their music, and how to associate colouration with other musical elements, such as text and melody.
9. I also appreciated [the reminder] that not all chromatically altered chords indicate mixture, some are applied chords, as I sometimes only focus on the current concept we are learning and forget about past topics.
10. Thinking back to when I first started studying music theory, what I could see in the music was very limited. It would have been restricted to perceiving maybe tonality as well as differentiating between a melodic and harmonic line. Now, however, greater distinctions are becoming more and more apparent. There are a few practical components of this strength. One is that I am starting to find that it is more natural to consider music horizontally as opposed to vertically. This means that when it comes to analysis and dictations it is easier to start thinking horizontally. I believe this advance in my learning resulted from having to distinguish applied chords from modally mixed chords.

Table 2a
Statements that express development of theoretical knowledge and skill:
Excerpts from student reflections on their learning experience of modal mixture

11. An aspect I didn't realise was how often [mixture chords] functioned as altered pre-dominant harmonies. Thinking over it now, using mixture at that point really helps to bring out the dominant cadence. When leading up to the predominant, the musical characteristics tend to be centered around I and expanding it long enough to create a sense of phrasing. Then when it comes to the predominant, having a ii or IV is an acceptable option. However, it sounds very boring and unoriginal. At times, because it sounds similar to tonic still, I sometimes don't realize that it was the predominant and suddenly find myself at the end of a phrase. Placing a ii dim or iv instead changes the phrase so much in the most simplistic of ways. The addition of the lowered sixth adds that next dimension which gets the audience's attention setting things up wonderfully for cadence. It's different enough where you feel that hint of tension and wonder where it leads.
12. Getting to know what modal mixture really is made me glad. When I first heard the term for it, I did not know that it was associated with minor chords or scale steps being used within the major key, I thought that modal mixture meant the mixing of actual modes (i.e. Dorian mode, etc.)! Then I read that it was simply the mixing of the two major and minor modes that we use currently, and "aha!" everything made a lot more sense, especially in regards to music that I have looked at in the past.
13. In terms of reinforcing and developing my knowledge, reviewing this topic has definitely reinforced my understanding. If I recall correctly, last year I complicated my thinking whenever analyzing or even just thinking about modal mixture. I thought there was more to it than simply borrowing harmonies from either the parallel major or minor. Why? I don't know. But my brain is fixed now. I also understand much clearer the difference between melodic modal mixture ... and harmonic modal mixture when the root of the chord has to be the note being borrowed. ... From this reflection activity on modal mixture in particular, I've learned that most of what we are learning in theory I already have some knowledge of, from having a good ear and understanding of music.
14. With all my practice in employing modal mixture I solidified my voice leading skills and harmonic analyses are much easier to do and more quickly done. This ease extends to identifying (and harmonizing) applied chords, an area where I've observed significant improvement.

Table 2b Statements that express development of theoretical knowledge and skill: Excerpts from student reflections on their learning experience in the course	
1.	Thinking back to the beginning of the semester I remember being very nervous about what [this course] would bring and how I would fare in the course. Now that the exam is drawing closer, I am happy to say that I am confident in my ability to recognize and understand the majority of the concepts covered over the semester. Not only this, but I also understand with greater clarity how dissonance and particular chords such as the augmented sixth chords, modal mixture chords and the Neapolitan second can be used in a musical context to convey particular emotions. ... Accidentals seemed daunting at first, but I now appreciate and can recognize the hints that accidentals provide the eye when attempting to analyze a piece. ... Since understanding music theory is not second nature to me, I will have to continue to actively practice the concepts covered in this course in order to retain the knowledge I gained.
2.	Something I particularly enjoyed right at the beginning was studying was [sic] modulation, because it was linked to skills directly, and was an important, basic skill to develop. ... As a pianist (or instrumentalist in general), I was quite familiar with modulation already, however I didn't know how to go about modulating or how to hear it sensibly. Modulation was especially important to me in dictation because I don't have perfect pitch and I need to realize that the tonic has modulated to a different key. I am certainly better at identifying this now, because I am able to connect the modulation to sensible transitions.
3.	I believe that I have improved on my dictation abilities. This has also helped me with my dictation abilities in Musical Skills.
4.	I also thought that this course helped to improve my skills at analysis and harmonization. I feel like I can analyze much quicker now with fewer mistakes. I also feel like I can write counterpoint and harmonize figured bass much quicker now as well, without having to think so much about avoiding parallel octaves or fifths. Sometimes I still make silly mistakes and miss things in the music, but I am definitely improving.
5.	As a result of this class and efforts made through tutoring my analysis skills have greatly improved and I find that I am better able to recognize chords, paradigms, and modulations because of it. ... The beginning of this course was quite difficult for me because I first had to go back and learn concepts from last year before I could continue learning new ones. Once I was secure and my learning gaps had been acknowledged I found that I was doing better in testing situations and that I needed less assistance from my tutor. Lectures and homework are easier to grasp and I find in general I am doing better and feeling more confident in comparison to my first year theory courses. I came into University feeling behind in theory and now I feel like I have finally caught up and am becoming a more competent student.

Table 2b Statements that express development of theoretical knowledge and skill: Excerpts from student reflections on their learning experience in the course	
6.	I feel that I have improved my skills in analysis, harmonization, and dictation, largely due to the important connections I was able to make between theory and my own repertoire.
7.	Although I struggled with some dictation topics, overall I have gotten much better at harmonic dictation. Many harmonic paradigms are in my library and my ear can recognize them.
8.	I do feel that I improved my skills in analysis and harmonization because of my work in this course.
9.	I feel that over the course of this term, I have absolutely improved my skills in all three of the areas mentioned [analysis, harmonization, and ability to communicate about music]. When I look at how far I have come since the beginning of last year, the end of last year and the beginning of this year, I am amazed at how much I have learned and how comfortable I have become with it all. In terms of the beginning of this term, I have noticed significant improvements, especially in my confidence levels. ... I find these skills to be very important and valuable as they help to show me that I am a strong musician.
10.	As a result of my work in the course, I think that I have improved in nearly all areas of theory. Last year I could hardly do analysis or if I did any I would be guessing instead of actually knowing how to properly analyse and label chords. This year I do not need to guess anymore! I am also far better at realising figured bass and knowing what all those little numbers at the bottom are telling me to do. ... Before I took this course, I would often try to see if I could analyse, by myself, music that I was signing [sic], but I found it difficult because there were often chords that simply did not fall under any category that I had learned yet. I always wondered what they were, or if they were real chords that could be labelled by a theorist. Now I know of many new chord possibilities, of more sequences, and of chromatic contrary motion. As a result I rarely find chords that I cannot name, or at least, in most of the repertoire that I sing. It makes music something altogether more familiar to me. Music becomes less of a distant and incomprehensible entity with each new lecture and chapter topic.
11.	Throughout this course, my understanding of music has definitely been further developed. I can hear and recognize modulations much easier, as well as the difference between modulations and tonicizations, both sometimes before looking at the score.

Table 2b Statements that express development of theoretical knowledge and skill: Excerpts from student reflections on their learning experience in the course
12. More so than last year, I have even been able to hear the music in my head before listening to it. Some of this I think is due to my perfect pitch, but also a deeper understanding of overall musical structures and form contributed as well. ... I feel more grounded in my knowledge of how music works overall. I know there are many rules and details I have yet to conquer, but I am not as afraid as I once was of classical music.
13. As a result of my work, I have improved my abilities to analyze music with far more depth of chords and figured bass comprehension. Being able to do this is important to me because it can help in the long run with understanding new concepts in other theory courses and when learning new pieces.

Table 3a Statements that identify beneficial exercises and learning strategies: Excerpts from student reflections on their learning experience of modal mixture
1. The most beneficial homework exercises for me that were assigned were the ones using figured bass. This helped me to really get a grasp on the analysis portion of modal mixture and to understand when to appropriately make chords major or minor.
2. The most useful exercises for me were the ones where we had to write modal mixture. I believe that writing something requires a fuller knowledge of modal mixture than simply recognizing it in context. Also, the writing exercises are very relatable to my composition, and I hope to be able to use modal mixture to achieve the kind of mixture of emotions and emotional contrast of the romantic pieces we studied in class eventually.
3. I continue to find in class 'homework-take-up' to be the most beneficial to my learning, as it provides a context in which to encounter one's own mistakes in the presence of someone who can correct them. Seeing my mistakes also allows me to think of new questions important to my gaining an understanding of the concept, at a time when they can be immediately answered (while still fresh in my mind).
4. I found listening, as music is such an aural experience, really helped me with grasping this particular concept. ... I had read the required pages in the textbook, but for the first time, I also listened to the textbook samples (terrible of me, I know, I am very sorry). Let it be said, I will definitely be listening to more of the textbook samples because they are just so cool. Regardless, by listening to these while reading the textbook passages that described each sample, it really helped me understand the concept.

Table 3a
Statements that identify beneficial exercises and learning strategies:
Excerpts from student reflections on their learning experience of modal mixture

5. The exercises that I thought were the most beneficial to my learning were the ones where I had to actually write modal mixture. I find that this is very good practice for tests because I seem to have a problem with being able to do my theory fast enough. I also feel like if you are able to write the modal mixture, you will be able to recognize it in an analysis. ... I also always find the analysis questions useful because they help me to understand the voicing and resolutions of the chords. I find it helpful that I can see the whole score written out in front of me.
6. I found that the exercises that were most beneficial for my learning on modal mixture were the analysis questions and the melody harmonization for chromatic modulations, and the harmonization for common tone chromatic modulations. The reason the analysis questions were so useful is because it solidifies paradigms, and it requires that you understand the differences between modal mixtures [sic] and how it can modulate based on a pivot chord, or common tone. The melody harmonization for chromatic modulations was important because it helped to put the context of what we read and learned about in class into a practical setting. It also required that you understand how to take a major key and its parallel minor to find possible pivot chords. The reason common tone chromatic modulation harmonization was important for me is because it allowed me to see if I really understood the difference between using a pivot chord to modulate and modulating from flats to sharps or sharps to flats.
7. [Workbook] exercises devoted to compositional practice were most helpful for me here because they offered an opportunity to employ modal mixture in a more controlled environment; the textbook examples and listening exercises stimulated my imagination and allowed my ear to more intuitively discern these wonderful harmonies. I really enjoyed plunking out the textbook examples on my own.
8. I found that figured bass exercises were most beneficial to me in the modal mixture unit. Analysis and harmonization questions were helpful as well, but I felt figured bass exercises really helped drill the concepts of the unit into my brain (particularly because of the accidentals included in the figured bass).
9. I found that I derived the most benefit from the exercises that required either figured bass realization or melody harmonization. The difficulties that I encountered while completing such exercises led me to conclude that I should spend some more time reviewing the important harmonic and melodic paradigms. Having also struggled with time management on the previous mid-term test, I feel that a stronger knowledge of these paradigms would help me to complete the harmonization and voice leading components of future tests more efficiently.

Table 3a Statements that identify beneficial exercises and learning strategies: Excerpts from student reflections on their learning experience of modal mixture
10. As usual, the exercises I find most helpful were the analysis questions paired with the recordings. Aural reinforcement of the concept adds a great deal to my understanding.
11. I found all of our homework activities to be equally helpful in my learning in different ways and across different stages. Analysis was helpful for me as a “first step” as it allowed me to clarify any questions or confusion I was having about the rules and concepts surrounding modal mixture. Having to look for and hear examples of modal mixture myself within a relevant musical context (as opposed to just looking at [the textbook’s] pre-analyzed examples) really helped me to gain a greater understanding of the contexts in which modal mixture can occur. As a “second step”, I found voice-leading, figured bass, and melody harmonization exercises helpful in testing my knowledge and understanding of concepts and harmonic/melodic paradigms surrounding modal mixture. In analysis it is possible (although not ideal) to ignore paradigms and just look at each chord individually, and so sometimes I find that I am not necessarily paying as close attention to paradigms as I would be when I have to write them myself. By actually having to write progressions, I was really able to take a more self-reflective stance and make sure that I had a really thorough understanding of paradigms.
12. The exercise most beneficial to my learning of modal mixture was the writing. Writing out progressions and intentionally putting in flats/naturals to make the modal mixture chords is helpful in contextualizing the concept. It allows me to see and “feel with my pencil” exactly what modal mixture looks like and how it works in musical examples.
13. The exercises that were most beneficial to my learning was [sic] some general dictation practice, and roman numeral harmonic analysis, because they both forced me to think through and pinpoint the notes being used in modal mixture.

Table 3b Statements that identify beneficial exercises and learning strategies: Excerpts from student reflections on their learning experience in the course
1. Doing the assigned homework exercises consistently helped me the most to get a better understanding of the little rules that each concept has individually.
2. I found that the material in the course was fairly easy to grasp due to a few reasons. Firstly I have been able to relate the topics to my piano repertoire, so I have a better understanding. Part of the reason for connecting these relationships is the fact that we had to do reflections throughout the year. These honestly helped me a lot in developing an insightful explanation of each topic so that it would last in my mind long-term, and not just learn and fade.
3. One of the most significant learning tools I took from this course was the importance of listening to music before analyzing it. I mean this both literally and in reference to the internal listening we learned about (attempting to hum or hear the tune in our heads using skills techniques).
4. With both modulations and modal mixtures, it really helped to play the exercises from the ... workbook onto a piano to better hear the progressions. ... Something we did in classes that really helped was singing the homework exercises before we talked about them. It really helped to internalize the music.
5. I also found doing the dictation homework extremely helpful, not just for dictation but for analysis and my understanding of each unit.
6. The activities that were most beneficial for my learning in this class were the analysis, figured bass realization and melody harmonization exercises. This is because these exercises kept allowing me to practice paradigms and because they showed me if I understood the concepts explained in class and in our readings.
7. I feel that I was able to have a much greater understanding than last year because I applied the theory learned in class to the music I study in studio. ... I also enjoyed the enriching activities and reflections. If we hadn't had to do either of those assignments I don't think I would have understood why studying theory is important or improved as much. ... I found it very rewarding to be able to find the concepts we were studying in class in my repertoire and then understand how that phrase should be treated and what purpose various moment [sic] in my songs have. I also found that the more thought I put into my work the better my grades were, which is a good incentive to keep trying to understand each concept well enough to find it in real life situations.
8. Singing the harmonies has also helped immensely because I can "feel" the harmonies in my body, which I've come to think is an important skill for composers to learn.

Table 3b
Statements that identify beneficial exercises and learning strategies:
Excerpts from student reflections on their learning experience in the course

9. I believe dictation is the most useful aspect of this course. Training the ear to listen for inner voices is especially useful onstage or in a choir. As a singer, there are no "fingerings" upon which you can rely for a correct note. In a dramatic scene, a singer must produce the correct pitch without referring to the score; this would be easier to accomplish if they understood and heard the relationship between their starting note and the scale steps in the melodies of another singer or the orchestra.
10. As mentioned in some of my previous reflections, I find writing exercises (i.e. figured bass, soprano harmonization) and analysis both hugely beneficial to my learning in different ways. I find that writing exercises are good as a "first-step" in that they help me to confirm what I have learned in the textbook and class and to develop a concrete understanding of paradigms and harmonic functions as I learn them. For example, when learning about augmented sixth chords, writing activities helped me to make sure that I understood which scale degrees belonged in each type of augmented sixth chord and how each chord had to resolve. Analysis activities, on the other hand, feel more like a "test" of my learning, as I have to identify harmonies and progressions within a larger, more complex musical context. If I approach an analysis question and am completely unsure of what is going on in the music, then I know that I need to review concepts and maybe go back and do some more writing exercises in order to clarify my understanding. I really realized the true benefit of both [of] these types of activities in the second half of the term. After our first term test, I was quite unhappy with my mark. I wasn't able to finish the test in time, and I realized that because I hadn't been doing all of the assigned homework, I was really at a disadvantage in terms of being able to identify harmonic paradigms *quickly*. I did every single homework question assigned between our two term tests, and it definitely paid off. My mark on our second term test was almost thirty percent higher than the first test, and I credit that to my having had lots of extra practice!
11. Listening to the scores before analyzing them became a good habit that usually helped make analyzing a lot faster, easier to do.
12. I am no longer double or triple checking my work, or searching through the textbook to see if something I ... did that is related to a previous chapter was right. Now, I can just check it over once, and know that what I have written is probably right, and that I know my stuff. I am very proud of this accomplishment. I believe that most of this has come directly from lots of practice with the course work, and repetition of working with it every day.

Table 3b Statements that identify beneficial exercises and learning strategies: Excerpts from student reflections on their learning experience in the course
13. This term I learned and understood new things that I never would have imagined I could. Since I initially struggled in the most basic concepts of theory in first year, I had to constantly discipline myself this year to better understand those basics of theory and harmony in order to progress and apply all of the new things that we learned. Doing this was important since all the new material could be linked to old concepts. My knowledge could grow and grow because finally I learned how to make connections. Throughout the term the reflections aided in reinforcing these connections. By articulating what I learned in words, rounding up the flurry of new information was a daunting task no longer. Finally being able to understand theory and to follow the new concepts is a wonderful, comforting feeling that enhances my life as a musician, and makes me feel worthy of identifying as one. ... I have made a lot of progress this term and I feel more confident in what I have come to learn than ever before. By also learning how to look back and reflect while taking in new information, I could process everything much better. I am no longer afraid of theory as a result.

Table 4a Statements that address learning challenges: Excerpts from student reflections on their learning experience of modal mixture
1. I find I'm struggling with noticing the difference of when the mixture is harmonic or when it is melodic. I realize the difference between the two depends on the chord tones that are being borrowed from the minor mode but when it comes to noticing which mixture it is, I don't fully understand how to do that. Maybe going back to some of the exercises and purposely trying to figure out which mixture is being used will help me better understand this problem. 2. Initially, modal mixture felt like a real challenge. It seems to me that it was the first step to expanding the foundational knowledge gained this semester regarding chromatic harmonies. At first I was confused and frustrated. I had successfully comprehended applied chords and diatonic modulations and suddenly chromaticism had to come along and shake things up. I was nervous about the difficulty that comes with having too many options for deciding what an accidental can indicate. I was content with an understanding that an accidental indicates a non-chord tone, an applied chord or a diatonic modulation. I was scared to throw modal mixture and chromatic modulations into the mix. However, with a little practice and some reassurance that I was completing my homework correctly I realized that the foundational knowledge from concepts previously learned this semester could be applied to navigate through modal mixture with ease. In fact, with only two main scale steps to worry about so far (me and le) it might even feel simple. ... During the lecture on modal mixture, I also experienced a positive change in my understanding of the academics of music for the first time. I have always had a strong physical and emotional sense of music, but there is often a block between my inherent understanding of music/sound/emotion and my ability to express and understand music verbally and theoretically. The words confuse me. I would rather listen and feel music than judge and understand it. However, during the modal mixture lecture I was able to understand (for the first time) which chords you were referring to solely through your use of the terms do, re, mi/me, fa....etc. In first year I required constant visuals and slow speaking to keep up with the professor in class, but I feel I am becoming more familiar with the musical vocabulary at the university level. This is very exciting for me. ... In order to succeed in fully grasping this concept, I will need to constantly review my notes and keep up with the assigned homework. 3. The dictation exercises were kind of frightening, in all honesty, because it took a while for me to get the longer passages. I could hear the modal mixture occurring, but getting the right notes took a couple of exercises. Eventually, doing more of the exercises helped, and only encouraged me to reread more on modal mixture and digest the concept more.

Table 4a Statements that address learning challenges: Excerpts from student reflections on their learning experience of modal mixture
4. I wasn't grasping the concept of how you apply enharmonic keys to finding a common tone modulation. During analysis I struggled with understanding how to identify the common tone. I took this problem to my theory tutor and was able to resolve the issue and develop a strategy that took me step by step to figure out what kind of a modulation I am working with and how to analyze it.
5. I found modal mixture to be the most challenging topic we have covered this year. I think that because I sing so many lieds [sic] in my studio the sounds of mixture chords in that repertoire in particular did not stick out to me as something new. The most helpful thing to overcome this was to sit down and analyze a couple short lieds [sic] that I have sung. I found it particularly helpful to analyze parts of "Liebe schwärmt auf allen Wegen" and "Die Forelle" both by Schubert. This helped me understand modal mixture better because I could see it at work in my own repertoire and understand the purpose it serves in adding emotional and dramatic impact to the words and lines of the song. For example, Schubert used mixture chords to emphasize the word alone in one of my songs, which really intensifies that word and draws attention to it.
6. I can say that my understanding of horizontal reading of music is lacking. When composing something with modal mixture I tend to write vertically as opposed to looking at the greater picture of music and writing horizontally. To gain a better sense of composing music horizontally, I will have to better understand musical paradigms and be able to recognize them in repertoire. As well, I must practice using these different paradigms in composing to feel comfortable writing horizontally as opposed to vertically with modal mixture. ... I know that I need to practice and memorize musical paradigms as well as strengthen my abilities to recognize modal mixture in play versus tonicization.
7. I find it difficult to hear the quality of some chords serving prolongation function in the context of progressions, so hearing mixture chords proved a challenge for me. Melodic mixture triads are harder to catch in dictation, since only one note (often the 3rd) is lowered or raised by a step; however, in my head they are easier to imagine isolated for the same reason. In contrast, harmonic mixture triads in root position are usually easier to hear in dictation, because the bass voice must jarringly deviate from the scale steps belonging to the original key. Although, harmonic mixture chords are harder to imagine, since there are no similar chords (i.e. with roots on the same scale step) in the original key, and more than one scale step must be lowered (usually the root and the fifth). Hearing these chords in my head can be aided by thinking and singing them in solfège. What I find most effective is focusing on the quality of the chord (i.e. Major), and separating the chord mentally from the tonality of the rest of the phrase.

Table 4a Statements that address learning challenges: Excerpts from student reflections on their learning experience of modal mixture
8. I found one lecture particularly beneficial about the accidentals in figured bass. I learned, it is more helpful to look at the bigger picture and the possible harmonies that note could represent, write the notes/harmonies on the staff and apply all the accidentals necessary for that key first. The last step should be to compare your work to the figured bass and ensure all of the correct accidentals are present. This approach is much more musical and less stressful, compared to seeing all the accidental signs in the figured bass and trying to understand them all out of context.
9. I don't feel as solidly grounded in my learning on modal mixture as I did with modulation or binary form. I feel that the pace with which new information is introduced and expected to be absorbed has accelerated. Or more accurately concepts are being combined more and more intricately demanding that I draw on a deeper well of knowledge ... Modal mixture on its own is a simple enough concept but in combination with modulation I need to put in more time or work to understand fully. ... I did not, I admit have time to do all the assigned exercise [sic] which perhaps is the reason for my slightly shakeier [sic] understanding.
10. The one major struggle I have been facing with these chapters has been with chromatic modulation. Chromatic step-wise bass descent I also do not fully understand, but I feel that is a very simple fix as it just requires some time to write out that motion in a number of different keys to sort it out. With chromatic modulation it still does not feel comfortable or easy to recall, which likely means that I have not understood the concept. What has been helpful so far has been writing out the chords built on each scale degree in the major, parallel minor and the key which is being modulated to chromatically ... in order to determine which can serve as pivot chords. I will spend some time going through [exercises] so that knowing which pivot chords to use with chromatic modulation becomes more solid. The main thing that is required at this point is to spend time working through exercises targeted towards the areas [where] I am struggling to solidify understanding those concepts. With the weight load of other courses increasing it means that the time spent working on theory will need to be more focused.

Table 4a Statements that address learning challenges: Excerpts from student reflections on their learning experience of modal mixture
11. The most difficult concept for me to work with is modulation involving modal mixture. Although I understand modulation and modal mixture, including the concepts behind them, sometimes I find it hard to figure out where exactly a piece modulates to; in other words, it is hard to find the pivot chord. For example, [a workbook exercise] involves a very tricky modulation from A major to $\flat$III (C). It is tricky because right after the pivot chord, the piece incorporates modal mixture ... and so it is difficult to figure out what is happening, and where you are actually modulating to because there are so many accidentals. It gets even more confusing when there is an applied chord thrown in, (a V/iv), shortly afterwards. Then after a [PAC] in C, it modulates back to I(A) ... This example is tricky because there are lots of accidentals involved and it is hard to tell whether those accidentals are due to modal mixture or modulation.
12. While learning about modal mixture, I discovered that it is important (for myself, anyway) to write out the key chart that includes the key signature and all of the chords in that key. ... This helps me make sure all of the accidentals are correct, and that I am analyzing the chords correctly as well. It also helps me work faster.
13. I do have concern with regards to incorporating these new techniques and writings into my dictation practice and ear training. ... I think that I may need to really buckle down in order to notice the different modes of each chord and incorporating [sic] inversions into that understanding.

Table 4b Statements that address learning challenges: Excerpts from student reflections on their learning experience in the course
1. On the other hand, the course showed me holes in my previous learning that I still have not addressed properly and unfortunately have affected me when attempting to put it altogether. Examples of topics that are a struggle for me would be cadential six-four chords and applied chords. I found I had the most trouble with these when it came to dictation tests and harmonic analysis questions in homework exercises and on the term tests. I found the material studied in this course the same level of difficulty to grasp as other theory courses. This is because the new topics that were taught were integrated with previous knowledge and having to comprehend the two together takes time.
2. The introduction of the Neapolitan and Augmented sixth chords are still a struggle for me to incorporate into my work in terms of writing, but I have had no problems listening and hearing them in analysis.

Table 4b Statements that address learning challenges: Excerpts from student reflections on their learning experience in the course
3. This course did show me gaps in my previous knowledge. I need to take some time and rememorize the types of sequences and all of the paradigms. I think if I knew the paradigms I would be able to harmonize figured bass so much quicker and more correctly. I also think I need to sit down and spend a lot of time practicing. Once I do this, I think my understanding will improve a lot.
4. My Achilles heel this term was dictation. I really struggle to reproduce the music in my head. However, I do believe my skills in dictation have improved a lot ... This has been a gap in my knowledge since last year and is something I will continue to work on. ... I also realized that I become a bit disoriented when there are a lot of accidentals in an exercise, I sometimes forget to put important accidentals and need to pay more attention to this detail when I write the final.
5. I display strength in formal analysis but not in harmonic analysis as much. With dictation I must recognize the paradigms that I learn. With composition I must remember key voice leading rules that will help me compose quickly in tough situations. I am capable however, of figuring out what I need to do to strengthen my theory skills.
6. One thing that I need to address now that [the] course is coming to a close is being able to [notate] what I hear. When I see the notes on a page I can hear them in my mind, however when unfamiliar notes are played without any previous visual indication I find myself lost. What I need to do is become less visual when it comes to music, because music is after all an auditory thing.
7. I do still find some gaps in my knowledge of musical theory but it is very specific to form and analyzing form. ... When analyzing music for form things can be up for interpretation at times and there are always exceptions to the rules. This fact frustrates me very much so in that there are no hard and fast rules to determine different form styles but instead there are guidelines.
8. For some reason I never got the hang of picking up applied chords in dictations. I would have liked to have more time spent on aural recognition of new chords [sic] types and modulations in class; although I concede that there isn't much time and a lot of thing [sic] that need to be covered. This may reflect a gap in my previous learning...
9. I am proud with how far I have come with dictation, but still wish I would have been able to improve more. I have worked really hard to achieve what I have achieved, and am happy with the results.

Table 5a Statements that express motivation: Excerpts from student reflections on their learning experience of modal mixture
1. The main question that studying modal mixture brought up for me was when we will progress to music that will modulate without any movement into related key areas or common tones. I thought of this question because I am very interested in the expanded modulation possibilities of modal mixture, and I look forward to looking at more chromatic music in theory.
2. This unit also motivated me to keep on top of my homework as I found the concepts to be more difficult to integrate with my previous knowledge. To combat my difficulties I will redo many of the homework questions and have started dictation tutoring sessions.
3. I do now wonder, however, about certain other chromatic harmonies that I've noticed in my work. I often use very bizarre chords (at least to me), especially with <i>fi</i> or <i>si</i> mixed with <i>te</i>. I'm excited to understand the harmonic implications of these notes and chords (if there are any) and further this harmonic vocabulary that is consistent with my compositional style.
4. I really enjoyed our study of modal mixture for a variety of reasons. As we continue to learn more about chromatic harmony in class, we have an ever-increasing number of forms, harmonies, and paradigms available to identify and to write. Having this wider range of options really makes learning about theory a lot more interesting for me as it enables me to be creative in the progressions that I write, and it allows me to have a greater appreciation for the richness of the music that we study and analyze. Modal mixture was yet another way of expanding my musical world in this way, and it has really allowed me to find more joy in my theory studies.
5. In conclusion, the topic of modal mixture has brought forth knowledge that I had but never realised I had. When there is modal mixture in a piece I can identify it with more refined language, and can emphasize those moments with further expressiveness. I am happy that we are learning about theoretical concepts that emerged in the 19th century, because that century is my favourite century, and being able to understand the music of that time brings me immense satisfaction. Though the concepts are becoming more complex, I enjoy learning about them very much.

Table 5b Statements that express motivation: Excerpts from student reflections on their learning experience in the course	
1.	[This course] has definitely been an enlightening theory course for me that has both furthered my knowledge of theory and witnessed the birth of the theory geek within me. ... When I realized that [this course] was almost over...I was actually quite disappointed. I used to want to do more analysis because I thought it was less work, but I was <i>just</i> able to write really cool harmonies! I learned much more than I thought I would, mostly because I did not think I would be particularly inspired or enthusiastic about any concepts covered. However, I think with the usage and application of music that made me musically geek out, [this course] was a lot more educational and exciting than I had expected.
2.	[This course] was able to pique my curiosity about what other concepts in theory would be helpful to know and apply to repertoire. I found that sometimes when studying more modern repertoire I wondered if there was some sort of "method to the madness" in some instances. ... I plan to take the skills I learned in this course and integrate them into theory next term when the focus is shifted to Form and Analysis. I will also continue to practice dictation to improve my listening skills in preparation for next term.
3.	Besides providing me with a new harmonic palette, [this course] has pushed me even further into a world of chromaticism that I'd never thought to explore. I've begun to study the atonal works of Bartók and Stravinsky and I look forward to eventually exploring this atonal world about which I have many questions.
4.	In summary, despite the work load and hard work, I enjoyed this class and I know I will use many of the skills this class taught me. ... I hope to build on my knowledge I gained in this course and use my knowledge to create great music to help others.
5.	I look forward to having my musicianship improved upon even further in [the next theory course].
6.	My question is, outside of atonal music and within the boundaries of harmony (i.e. not form), how much more would there be to learn? Is what I have learned only a small amount of what musical harmony is all about?
7.	I will continue to strive to improve my dictation skills by making myself thoroughly familiar with the specific sounds of each chord, each paradigm, and other common patterns that my ears should be able to pick up. I must never assume that my dictation level is adequate enough because there is always more practise for me to do, and there is always room for me to improve significantly.

Table 5b Statements that express motivation: Excerpts from student reflections on their learning experience in the course	
8.	Until this term, I never really thought of myself as a composer ... In discovering my desire to compose, this course has introduced some questions for me; when it comes to the 'rules' of classical writing, how can I find my voice as a composer? Will I follow these rules to a 'T', or will I break them over and over? What makes a good composer, someone who has a mind of their own, or one who writes technically?
9.	I personally feel that this course has inspired me to really delve into the topic of Music Theory and to consider it as something to pursue going forward in school. ... I find that as I learn more and more about music theory, I gain more interest in it and how it has developed throughout the centuries.

Table 6a Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience of modal mixture
1. Furthermore, something else that I found to be quite interesting was learning about notating ♭VI in a certain context. It's pretty fascinating, yet makes perfect sense that if notating the modulation to ♭VI in a key that has scale step 6 flattened already, you would notate the new key enharmonically on the score, while still maintaining the impression of ♭VI on the analysis. An example we talked about in class would be if you were in D♭ major and were modulating to ♭VI, you would notate it as B♭, but as an A on the score. This makes it far easier for the musician to read, because B♭ is a "non-existent" key. I played a Liszt consolation last year in D♭ major actually, and this exact problem occurred, however it was notated as a chord structure in B♭ and not A. My studio professor recommended later that I think of it in A, and it helped tremendously. This just goes to show you how useful this idea is.
2. Modal mixture is also an exciting concept because it increased my appreciation for an understanding of music (as opposed to simply experiencing it). I think it is fair to say that without modal mixture, composers would lose a great deal of the material they work with to depict emotion in music and paint pictures with music. The contrast offered through the use of borrowed scale steps from the minor and major modes offers so much power to create emotive music. If I can really grasp which mixtures evoke which emotions, I will have a much more creative palette from which to write my own music. Especially as a singer and lyricist who focuses a great deal on poetry in music, modal mixture is a powerful tool to have.
3. This was my first time hearing about modal mixture, and learning about it had me reacting like, "Oh, wow, this is what happened in that piece by so-and-so!" It opens up infinite possibilities; it gives the student musician a lot more to experiment with and helps with the understanding of what happens in the repertoire they study. ... It answered a lot of questions I had regarding my analysis of my own repertoire. This unit on modal mixture was very enlightening and has me excited to apply it more in my musical learning.
4. The knowledge of modal mixture significantly expands the way music progressions can be written and enriches my musical experience.

Table 6a Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience of modal mixture	
5.	I also found it very beneficial to have a class where we talked about modal mixture in lieder, and we looked specifically at “Lachen und Weinen,” another Schubert lied I am quite familiar with. Talking about “Lachen und Weinen” really helped me understand where and how modal mixture is used in the kind of repertoire I sing all the time. ... In conclusion this unit of theory was challenging for me, but expanded my knowledge about my own repertoire, and reinforced what I already knew about harmony because I got to practice all of my old skills while adding on the new information about modal mixture.
6.	Modal mixture came just as I was finishing a composition and preparing it to be performed at the Student Composer’s concert that coincidentally incorporated lots of modal mixture (though I was unaware of the fact at the time of its writing). In my music, ♭VI and ♯III (as well as other chromatic textures, such as ♯II and ♭VI [sic]) appear frequently in major modes. Until modal mixture, however, I didn’t understand the theoretical basis of these compositional devices. Our coursework helped me explore a whole new range of uses for these coloured harmonies and I gladly integrated them into my work and performance, treating them in a new way. ... For the enriching activity, I decided I would explore some of my old compositions in an attempt to see where and how I employed modal mixture and it really surprised me how frequently it appeared and sometimes how well I used it (though this was not always the case). I learned a great deal from this exercise including how to properly place modal mixture contextually; how to inform harmonically the rest of the piece after modal mixture has occurred; and most interestingly how to notice the function of modal mixture.
7.	I found this study of modal mixture to be very satisfying, because it provided me with a brand new means of explaining many of the musical devices and elements of the music that I routinely play on my instrument. Specifically, this study enabled me to explain the modulations to seemingly unrelated keys that I have observed in many of the Romantic period compositions that I have encountered, and gave me considerable insight into the techniques that composers use to evoke emotions through their music. In particular, I was intrigued by the parts of the unit that examined how composers use mixture chords to establish parallels between the emotions of their music and those of the accompanying text.
8.	In playing my own repertoire, I had been able to recognize that a piece had modulated and it was not a closely related key. Now, I understand that this is possible by means of mixture chords in the home key being used as a pivot chord.

Table 6a Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience of modal mixture	
9.	Knowing about modal mixture has helped me finish my analysis of the Schubert Impromptu I am working on. The piece begins in A $\flat$ major. As I was playing through the piece I was surprised by the many extra flats that came up. Now, however, I can understand that Schubert is drawing from A $\flat$'s parallel minor, which could have a g $\sharp$ and f $\sharp$ in it. I can see how the modal mixture is effective in this Impromptu; It adds strong contrast, suspense, and yearning for resolution back to the home key. It also adds drama and passionate emotion. Schubert also used modal mixture to modulate to a far key. ... Schubert modulates from D $\flat$ major to A major, which is the enharmonic spelling of b $\flat$. This was quite a challenging connection for me to make at first. I had started to play this piece in the summer and at the time, had no idea why Schubert suddenly decided to go to A major after all those flats. I also could not figure out how it melted so smoothly with the rest of the piece. Now, with my new knowledge, I can understand it as a direct enharmonic modulation to flat six. It makes such a dramatic effect! Understanding modal mixture has allowed me to make a tonal map of the Schubert which will be very helpful when I have to memorize the piece next term.
10.	While reflecting on the chapters on modal mixture, a concept came to mind that was introduced in a sociology course I am currently enrolled in. The concept stated that our language shapes our consciousness. Another way of putting it is that what we are able to perceive is shaped by the richness of our vocabulary. This concept felt very relevant as the chapters on modal mixture introduced a new layer to the musical language and vocabulary that is gradually being developed. I now find that when I look at and hear music it is easier [to] perceive more and more details of what is there.
11.	Our study of modal mixture also made me realize how often I take compositional intricacies for granted. As a singer, and one who loves singing German lieder, I come across modal mixture quite frequently in the repertoire I study. Studying this music, I always knew that there was a lot of modal mixture involved, but it wasn't something I could previously put a name to or logically identify. Having this new knowledge of the rules, guidelines, and contexts in which modal mixture operates provides me with a better understanding of its occurrence in the music I sing. As with everything we learn in theory, having this increasing understanding of theoretical concepts allows me to create a more polished and musical rendition of whatever repertoire I am learning. I also have a better appreciation for the composer's use of modal mixture, and the way in which he or she uses it to create certain emotional tensions or conflicts within a work; and having this appreciation makes me want to work even harder at bringing a song to life!

Table 6a Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience of modal mixture
12. Learning about modal mixture was really interesting to me because it is something that I notice and come across frequently in the music I sing. I always knew it was there and that it frequently served expressive function, though I never knew what the technical term for it was. I love singing German lieder and it is wonderful to be covering a topic that appears in that repertoire. ... we looked at the lied “Lachen und Weinen” by Franz Schubert, which had great examples of modal mixture. I sang that song on my jury in first year, and I remember the specific moments where it would sound minor to reflect the mood of a certain phrase. ... Afterwards it becomes major again. The contrast of moods created by modal mixture in this lied really bring across the idea of confusion and conflicting emotions that arise from love. Now whenever I feel put out by love I will think of it as being a flat six kind of day.

Table 6b Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience in the course
1. [This course] has contributed to my current knowledge and new learning immensely. Over the course of the semester I have gained a great deal of information that can contribute to my ongoing learning of music and continue to assist me in my music career ahead. Coming into [this course] I did not expect to learn as much as I did throughout the semester but I am extremely pleased to be walking away with so much more information than expected. It certainly developed my understanding as it is now much clearer to me how all aspects of music theory tie in together to produce the music we read and play today.
2. Theory is great because it is really important to be able to communicate about music. If I was to give a public master class, I would feel a lot more comfortable now than I would have a year or so ago because I wouldn’t have known how to identify certain aspects of the score then. A project that I am working on at the moment in my piano studio (Do It Yourself project) involves me describing certain sections of the piece I’m working on, and it sure helps to know the names of these sections. ... Finally, I think every year that theory helps my ability to sight-read because I become faster at analyzing harmonies and structures (like sequences or motifs). It is very beneficial to my learning as a musician and a great course.
3. My interest in music therapy and the skills required to improvise in this field resulted in [this course] having more relevance in my life.

Table 6b Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience in the course	
4.	A lot of the concepts covered in this course draw on examples from Schumann, Schubert, Chopin, and other Romantic composers, which for me was awesome, because I am working on a huge Schumann piano sonata. Listening to modal mixture, augmented sixth chords, and all that chromaticism has definitely made analysis and overall understanding of structure of that sonata easier. ... As an aspiring performer, the realization and interpretation of music is really important. I find that I am able to make a more accurate harmonic analysis of larger scale works, because the chords I did not know how to analyze before have been introduced in this course...Due to the greater number of topics covered that is directly relevant to my performance repertoire, I am more willing to study the theoretical concepts from this course and apply them in my own musical interpretations... This course definitely contributed to my development as an aspiring professional performer and made me more aware of my own musical interests.
5.	I'm also starting to see the different concepts I've learned from [this course] in my solo music. Seeing different chords and patterns that I've already learned help me to internalize and understand the music more. ... I also have a better understanding of the music I learn for my masterclass. I even analyze my repertoire books.
6.	I would say that through [this course] I was able to cultivate a deeper understanding of music. This course helped to solidify paradigms that I had already learned as well as to build on them through new course material. I found as the course continued, I was able to apply concepts learned in theory to other courses. For example in 2nd year history, analyzing scores and listenings is easier after having first learned these skills in theory.
7.	The connections between theory and performing my music became very clear to me this term. Last year I didn't completely understand why I had to study theory, and as a result my grades and interest in theory suffered. I now understand that the way composers have constructed their compositions is very deliberate, and important to understand if I want to give an authentic and well thought out performance. For example, I found it very valuable to analyze famous German lieder while studying Modal Mixture. This unit of study made it obvious to me that what we study in theory has a direct effect on how I will learn and interpret the lieder I am given in studio. Since studying this in theory I am not as frustrated by the sometimes unexpected harmonies and moments in the lieder I am assigned, and try to use them as moments of great expression or outbursts of emotion, as the composer intended... This course has been very relevant to my learning and one of my favourites of fall term.

Table 6b Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience in the course
8. Our foray into chromatic harmony has benefitted my compositional skills by introducing me to concepts I innately heard but could not transcribe from my inner ear onto paper. ... Overall, I believe my skills as a composer have been greatly enhanced because our practice in aurally identifying these sonorities (my main difficulty) and then applying our aural skills to their construction has greatly improved. I can (for the most part) hear a passage and be able to transcribe it with relative ease now, whereas it was a very time consuming and dissatisfying process before.
9. Understanding theory has improved my process for learning repertoire. I find it useful to see skips or runs in melodies as arpeggiated or embellished harmonies, in addition to their respective solfège names. Recently I encountered a phrase that outlines an applied chord, which made tuning easier to accomplish. In addition, while I doubt that I will analyze specific chords in my repertoire, hearing the voice leading related to resolving and prolonging augmented sixth chords and Neapolitan chords (moving between tendency tones on either side of a scale step) is helpful when sight-reading. In addition, it is easier to memorize songs by seeing the overall form of the music, and how the form is comprised of harmonic and melodic patterns in the phrases.
10. After learning new harmonies and most recently, chromatic sequences, I have discovered connections with my lesson repertoire. I play trombone, and many of my study [sic] are sequential, often containing many accidentals. As the trombone is a chromatic instrument, I also realized that many warm-ups I do daily, could be analyzed as a chromatic sequence. Having this knowledge means that I fully understand what I am playing, and I am now able to create more warm-up patterns as I understand the harmonic groundwork they follow.
11. I found that the content in this theory class could be easily applied to my repertoire. For example, I am working on a Mozart sonata and although I have not studied sonata form in detail yet, I can understand the tonal map of the piece by understanding how it modulates. Modulation is also important in song writing and since I hope to go into music therapy, I can apply my knowledge to modulate a song according to the needs of the client. I enjoyed studying modal mixture. Modal mixture is another application I know I will use in the future because it allows for word painting, another effective technique in song writing.

Table 6b Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience in the course
12. I found this course relevant to me particularly as an aspiring composer, for which I think it is crucial to have a solid grounding in harmony and previous conventions for harmonization. Also as a piano player I can recognize what harmonic motion is taking place in the pieces I'm playing quicker and with greater accuracy and thus play with a greater understanding of the music. ... Overall I feel I've gained valuable knowledge that will help me as a musician moving forward. I believe I can more intelligently perceive and communicate about music which are important skills to have and build upon as a professional musician.
13. The further I progress along my journey as a musician, the more I come to appreciate the importance of learning music theory. [This course] has definitely provided me with the most practical knowledge out of all the theory courses I've taken so far. Because the concepts covered in first-year theory were more limited and basic, they weren't as helpful in my understanding of the repertoire I was studying and singing. Of course the basic harmonies and forms learned in first year were <i>present</i> in the repertoire, but in general there was a lot more to the songs I was learning that what I could understand. Having completed [this course] now, I really feel like I have a much more comprehensive understanding of the music that I sing and study outside of theory class. Because the breadth of my knowledge has increased, I have the ability to really appreciate what goes on in the music I learn. In turn, this understanding helps me not only to learn music faster, but also to have a better appreciation for what the composer was trying to accomplish in a song. I can then work towards bringing the composer's objectives to life in my interpretation of their music. The building blocks that were given to me in [this course] really have impacted the way I understand and listen to music, and I truly believe that this richness of understanding makes me a better musician.
14. As a potential music therapist, it is important to be a good musician. The more familiar I am with music and its workings, the more easily I will be able to incorporate complicated music into therapy sessions...I do feel that improving my harmonic dictation skills would be helpful in my future, whether that involves music therapy or not. The skills I gain from harmonic dictation include things like paying attention to more than one aural cue at a time, musical memory, and solfege, all of which will be helpful in a career involving music. I would like for these skills to continue to grow, as they can only help me as a musician.

Table 6b Statements that recognize relevance and transfer of learning: Excerpts from student reflections on their learning experience in the course
15. I can read and listen to music with a greater understanding. When I was younger I really had a very blank mind when I examined music, and now it swarms because so many things jump out at me that I can recognise. This is important to me because when my professors point things out in the music I fully understand what they mean, and I can better follow their advice and suggestions. It helps with learning notes, with knowing where to place emphasis, and even with highlighting the most expressive moments. Before I took this course, I would often try to see if I could analyse, by myself, music that I was signing [sic], but I found it difficult because there were often chords that simply did not fall under any category that I had learned yet. I always wondered what they were, or if they were real chords that could be labelled by a theorist. Now I know of many new chord possibilities, of more sequences, and of chromatic contrary motion. As a result I rarely find chords that I cannot name, or at least, in most of the repertoire that I sing. It makes music something altogether more familiar to me. Music becomes less of a distant and incomprehensible entity with each new lecture and chapter topic. ... What we learn in theory will always be useful to me in my life as a musician, and I am very grateful for it.
16. I have noticed during most of my 'jam sessions' with musicians I play with occasionally outside of school that my improvisational skills have greatly increased. I am able to guess what is going to happen before it does, and act accordingly. Finally, I have a reason to be excited about theory! This is very important to me, because playing music with other people is something I enjoy immensely. However, time is precious—so the more efficiently I can produce better music, the better it is for me, and for those involved. ... Overall, this course was relevant to me mostly in terms of musical thinking. It's one thing to play notes off a page, and another to feel the music, to put emotion into it and make it my own. However, this course has helped me see that there is much more in understanding what music does. How it creates emotions, how the form and harmonic analysis plays such an important role, and shapes the voice of the composer.
17. With each class that was taught, I felt a deeper understanding of the music being shown to us and the music I was playing. This, I found, allowed it to be easier to understand why my music was following a certain contour and harmonic structure.

REFERENCES

- Anderson, Lorin W., David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard E. Mayer, Paul R. Pintrich, James Rath, and Merlin C. Wittrock, eds., *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Abridged ed. New York: Longman, 2001.
- Bain, Ken. *What the Best College Students Do*. Cambridge, MA: Harvard University Press, 2012.
- Bandura, Albert. "Self-efficacy: Toward a Unifying Theory of Behavioral Change." *Psychological Review* 84, no. 2 (1977): 191–215.
- Bathgate, Meghan, Judith Sims-Knight, and Christian Schunn. "Thoughts on Thinking: Engaging Novice Music Students in Metacognition." *Applied Cognitive Psychology* 26 (2012): 403–9.
- Benton, Carol W. "Promoting Metacognition in Music Classes." *Music Educators Journal* 100, no. 2 (2013): 52–59.
- Benton, Carol W. *Thinking about Thinking: Metacognition for Music Learning*. Lanham, MD: Rowman & Littlefield Education, 2014.
- Berardi-Coletta, Bernadette, Linda S. Buyer, Roger L. Dominowski, and Elizabeth R. Rellinger. "Metacognition and Problem Solving: A Process-Oriented Approach." *Journal of Experimental Psychology: Learning, Memory, and Cognition* 21, no. 1 (1995): 205–23.
- Bloom, Benjamin S., ed., *Taxonomy of Educational Objectives: The Classification of Educational Goals Handbook 1: Cognitive Domain*. New York: David McKay, 1956.
- Boardman, Eunice. "The Relation of Music Study to Thinking." In *Dimensions of Musical Thinking*, edited by Eunice Boardman, 1–7. Reston, VA: Music Educators National Conference, 1989.
- Boekaerts, Monique. "Self-Regulated Learning: A New Concept Embraced by Researchers, Policy Makers, Educators, Teachers, and Students." *Learning and Instruction* 7, no. 2 (1997): 161–86.
- Brown, Ann. "Knowing When, Where, and How to Remember: A Problem of Metacognition." In *Advances in Instructional Psychology*, edited by Robert Glaser. Vol. 1, 77–165, Hillsdale, NJ: Lawrence Erlbaum Associates.

- Brown, Ann. "Metacognition, Executive Control, Self-Regulation, and Other More Mysterious Mechanisms." In *Metacognition, Motivation, and Understanding*, edited by Franz E. Weinert and Rainer H. Kluwe, 65–116. Hillside, NJ: Lawrence Erlbaum, 1987.
- Conway, Colleen M., and Hodgman, Thomas M. *Teaching Music in Higher Education*. New York: Oxford University Press, 2009.
- Davidson, Lyle, Larry Scripp, and Alan Fletcher. "Enhancing Sight-Singing Skills Through Reflective Writing: A New Approach to the Undergraduate Theory Curriculum." *Journal of Music Theory Pedagogy* 9 (1995): 1–30.
- Dewey, John. *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process*. Boston: D.C. Heath and Company, 1933.
- Dunlosky, John, and Janet Metcalfe. *Metacognition*. Los Angeles: Sage, 2009.
- Egan, Marilyn M. "Effects of Metacognition on Music Achievement of University Students." PhD diss., Kent State University, 1995.
- Ertmer, Peggy A., and Timothy J. Newby. "The Expert Learner: Strategic, Self-Regulated, and Reflective." *Instructional Science* 24 (1996): 1–24.
- Flavell, John H. "Metacognitive Aspects of Problem Solving." In *The Nature of Intelligence*, edited by Lauren B. Resnick, 231–35. Hillsdale, NJ: Lawrence Erlbaum Associates, 1976.
- Fogarty, Robin. *How to Teach for Metacognitive Reflection*. Palatine, IL: IRI/Skylight Publishing, 1994.
- Georghiades, Petros. "From the General to the Situated: Three Decades of Metacognition." *International Journal of Science Education* 26, no. 3 (2004): 365–83.
- Hacker, Douglas J. "Definitions and Empirical Foundations." In *Metacognition in Educational Theory and Practice*, edited by Douglas J. Hacker, John Dunlosky, and Arthur C. Graesser, 1–23. Mahwah, NJ: Lawrence Erlbaum Associates, 1998.
- Hacker, Douglas J., John Dunlosky, and Arthur C. Graesser, eds. *Handbook of Metacognition in Education*. New York: Routledge, 2009.

- Hacker, Douglas J., John Dunlosky, and Arthur C. Graesser, eds. *Metacognition in Educational Theory and Practice*. Mahwah, NJ: Lawrence Erlbaum Associates, 1998.
- Hallam, Susan. "The Development of Metacognition in Musicians: Implications for Education." *British Journal of Music Education* 18, no. 1 (2001): 27–39.
- Hanna, Wendell. "The New Bloom's Taxonomy: Implications for Music Education." *Arts Education Policy Review* 108, no. 4 (2007): 7–16.
- Harrison, Charles J. "Metacognition and Motivation." *Reading Improvement* 28, no. 1 (1991): 35–39.
- Harter, Courtenay L. "Bridging Common Practice and the Twentieth-Century: Cadences in Prokofiev's Piano Sonatas." *Journal of Music Theory Pedagogy* 23 (2009): 57–77.
- Holm, D., and S. Stephenson. "Reflection—A Student's Perspective." In *Reflective Practice in Nursing*, edited by Anthony M. Palmer, Sarah Burns, and Chris Bulman, 53–62. Oxford: Blackwell Science, 1994.
- Jordan, Anne, Orison Carlile, and Annetta Stack. *Approaches to Learning: A Guide for Teachers*. Berkshire and New York: McGraw Hill Open University Press, 2008.
- Kaplan, Matthew, Naomi Silver, Danielle LaVaque-Manty, and Deborah Meizlish, eds. *Using Reflection and Metacognition to Improve Student Learning*. Sterling, VA: Stylus, 2013.
- Kaune, Christina. "Reflection and Metacognition in Mathematics Education—Tools for the Improvement of Teaching Quality." *ZDM* 38, no. 4 (2006): 350–60.
- Kolb, David. *Experiential Learning: Experience as the Source of Learning and Development*, 2nd ed. Upper Saddle River, NJ: Pearson Education, 2015.
- Marzano, Robert J., Ronald S. Brandt, Carolyn Sue Hughes, Beau Fly Jones, Barbara Z. Presseisen, Stuart C. Rankin, and Charles Suhor. *Dimensions of Thinking: A Framework for Curriculum and Instruction*. Alexandria, VA: Association for Supervision and Curriculum Development, 1988.

- McGee, Deron L. "The Power of Prose: Writing in the Undergraduate Music Theory Curriculum." *Journal of Music Theory Pedagogy* 7 (1993): 85–104.
- McPherson, Gary E. and Barry J. Zimmerman. "Self-Regulation of Musical Learning: A Social Cognitive Perspective on Developing Performance Skills." In *MENC Handbook of Research on Music Learning*, edited by Richard Colwell and Peter R. Webster. Vol. 2, *Applications*, 130–75. New York: Oxford University Press, 2011.
- Mezirow, Jack. "How Critical Reflection Triggers Transformative Learning." In *Fostering Critical Reflection in Adulthood: A Guide to Transformative and Emancipatory Learning*, edited by Jack Mezirow and Associates, 1–20. San Fransisco, CA: Jossey-Bass, 1990.
- Mezirow, Jack. *Transformative Dimensions of Adult Learning*. San Fransisco, CA: Jossey-Bass, 1991.
- Moon, Jennifer. *Reflection in Learning & Professional Development. Theory & Practice*. London: Kogan Page, 1999.
- Moon, Jenny. "The Higher Education Academy Guide for Busy Academics No. 4: Learning Through Reflection." November 2005. <https://nursing-midwifery.tcd.ie/assets/director-staff-edu-dev/pdf/Guide-for-Busy-Academics-No1-4-HEA.pdf>.
- Moon, Jenny. "Reflection in Higher Education Learning." PDP Working Paper 4, Learning and Teaching Support Network Generic Centre, January 2001. https://www.researchgate.net/publication/255648945_PDP_Working_Paper_4_Reflection_in_Higher_Education_Learning.
- Palinscar, Annemarie Sullivan and Ann L. Brown. "Reciprocal Teaching of Comprehension-Fostering and Comprehension-Monitoring Activities." *Cognition and Instruction* 1, no. 2 (1984): 117–75.
- Parncutt, Richard, and Gary McPherson, eds. *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*. New York: Oxford University Press, 2002.
- Pogonowski, Lenore. "Metacognition: A Dimension of Musical Thinking." In *Dimensions of Musical Thinking*, edited by Eunice Boardman, 9-32. Reston, VA: Music Educators National Conference, 1989.

- Race, Phil. "Evidencing Reflection: Putting the 'W' into Reflection: Why reflect?" *The Higher Education Academy ESCalate Education Subject Centre, Resources*, updated 15 November, 2006. <http://escalate.ac.uk/resources/reflection/02.html>.
- Risko, Victoria J., Kathleen Roskos, and Carol Vukelich. "Reflection and the Self-Analytic Turn of Mind: Toward a More Robust Instruction in Teacher Education." In *Metacognition in Literacy Learning. Theory, Assessment, Instruction, and Professional Development*, edited by Susan E. Israel, Cathy Collins Block, Kathryn L. Bauserman, and Kathryn Kinnucan-Welsch, 315–33. Mahwah, NJ: Lawrence Erlbaum Associates, 2005.
- Rogers, Michael R. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*. Carbondale: Southern Illinois University Press, 1984.
- Schön, Donald. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. San Francisco: Jossey-Bass, 1987.
- Schön, Donald. *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books, 1983.
- Schunk, Dale H. "Self-Efficacy and Academic Motivation." *Educational Psychologist* 26, nos. 3–4, (1991): 207–31.
- Schunk, Dale H., and Barry J. Zimmerman, eds. *Self-Regulation of Learning and Performance: Issues and Educational Applications*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1994.
- Silver, Naomi. "Reflective Pedagogies and the Metacognitive Turn in College Teaching." In *Using Reflection and Metacognition to Improve Student Learning*, edited by Matthew Kaplan, Naomi Silver, Danielle LaVaque-Manty, and Deborah Meizlish, 1–17. Sterling, VA: Stylus, 2013.
- Steffe, Leslie P., and Jerry Edward Gale, eds. *Constructivism in Education*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1995.
- Tanner, Kimberly D. "Promoting Student Metacognition." *CBE—Life Sciences Education* 11 (2012): 113–20.
- Tarricone, Pina. *The Taxonomy of Metacognition*. Hove and New York: Psychology Press, 2011.

Task Force on the Undergraduate Music Major. "Transforming Music Study from its Foundations: A Manifesto for Progressive Change in the Undergraduate Preparation for Music Majors." *College Music Symposium* 56 (2016). <http://dx.doi.org/10.18177/sym.2016.56.fr.11118>.

Webster, Peter R. "Construction of Music Learning." In *MENC Handbook of Research on Music Learning*, edited by Richard Colwell and Peter R. Webster. Vol. 1, *Strategies*, 35–83. New York: Oxford University Press, 2011.

Weinert, Franz E. "Introduction and Overview: Metacognition and Motivation as Determinants of Effective Learning and Understanding." In *Metacognition, Motivation, and Understanding*, edited by Franz E. Weinert and Rainer H. Kluwe, 1–16. Hillsdale, NJ: Lawrence Erlbaum, 1987.

Zimmerman, Barry J. "Self-Efficacy: An Essential Motive to Learn." *Contemporary Educational Psychology* 25 (2000): 82–91.

Zimmerman, Barry J. "Self-Regulated Learning and Academic Achievement: An Overview." *Educational Psychologist* 25, no. 1 (1990): 3–17.

Zimmerman, Barry J., and Dale H. Schunk, eds. *Self-Regulated Learning and Academic Achievement: Theoretical Perspectives*, 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates, 2001.

What Did the West Wind See? Teaching Whole-Tone Scales through Debussy's "Ce qu'a vu le vent d'ouest"

BY ANGELA RIPLEY

Nestled between the pensive longing of "Des pas sur la neige" and the graceful beauty of "La fille aux cheveux de lin," the seventh of Claude Debussy's *Préludes*, Book I (1910), "Ce qu'a vu le vent d'ouest," provides a musical experience as variable as the wind itself. The constant activity of the piece encompasses rapid arpeggiations, trills, tremolos, long pedal points, and strident chords. Beneath the textural variety of the musical surface lies a work fashioned out of whole-tone scales, connected by chromatic passages, and bounded by vestiges of tonality. For the undergraduate music student, this prelude provides a useful introduction to some of the many resources available to the early-twentieth-century composer. After presenting an analysis of the piece, this article proposes two lesson plans for discussing the prelude in an undergraduate course in post-tonal music theory.¹ Both plans feature small-group peer discussions examining important intervallic and melodic aspects of the piece as well as significant musical similarities and differences across discrete sections. Students are encouraged to support their analytical findings with specific musical examples. Collaboration among students is further promoted by the joint construction of a musical timeline. Aided by the familiar solo-piano instrumentation of the work and opportunities for repeated listening, students explore the ways in which Debussy blends diatonic and whole-tone elements in this piece.

ANALYSIS

Low in the bass, F $\sharp$ 1 emerges as the first note of the prelude.² It pauses only to repeat itself at once, morphing into a pedal tone that implacably withstands rapid waves of thirty-second notes that first arpeggiate a major-minor seventh chord on D, then reach for

¹ The analysis and lesson plans presented here focus primarily on the pitch content of the piece.

² I specify octave register throughout this article in relation to middle C as C4.

notes outside the chord—first E $\flat$ 4, then A $\flat$ 4 and G $\flat$ 4 as a pair of grace notes—until the dam bursts, admitting in its entirety a major-minor seventh chord on A $\flat$, and the two chords, conjoined by the tritone C–F $\sharp$ / G $\flat$, are simultaneously juxtaposed and intertwined in a torrent of sound. At last silence falls, save for the low tremolo between F $\sharp$ 1 and C $\sharp$ 2 that heralds the arrival of the first pure triad of the piece, F $\sharp$ major, in m. 7. The succession of the F $\sharp$ major triad by major triads on E $\flat$ and A does not phase the F $\sharp$ pedal, which remains secure in the knowledge of its established centrality (see Example 1).

A quasi-tonal framework for the prelude emerges through Debussy's persistent use of pedals. However, the majority of the piece, in contrast to this framework, stands outside the realm of functional tonality by synthesizing elements of the WT $_0$ and WT $_1$ collections while employing diatonic sonorities in non-functional ways. In essence, Debussy seems to shift the emphasis from the tonal system to its constituent elements in such a way that diatonic sonorities become intrinsically complete without reference to the norms of functional tonality. This paradigm shift complicates matters for analysts—and especially for students—as the diatonic collection, joined by whole-tone and octatonic collections, becomes simply one of several sources of melodic and harmonic material in this prelude. While the interplay of octatonic and whole-tone collections throughout the piece is intriguing, the more salient of these collections remains the whole-tone. In light of the pedagogical focus of this article, I will supply a brief discussion of some octatonic elements identified by other theorists before presenting an analysis and lesson plans that focus on whole-tone and diatonic aspects of the prelude.

WHAT DID THE WEST WIND SEE? TEACHING WHOLE-TONE
SCALES THROUGH DEBUSSY'S "CE QU'À VU LE VENT D'OUEST"

Animé et tumultueux

pp

1 2 3 5

3

mf

4

5

6

molto

7

p

pp

plaintif et lointain

p

pp

5 4 3 1

Example 1. Debussy, "Ce qu'à vu le vent d'ouest," from *Préludes* (Book I), mm. 1–10. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

Octatonic elements in this prelude tend to appear via the combination of diatonic sonorities.³ According to Allen Forte,

³ The scholars whose work I discuss in this article use a variety of different methods for labeling whole-tone and octatonic scales. In order to facilitate terminological continuity throughout the article, I adopt Miguel Roig-Francolí's respective designations of whole-tone scales as WT_0 or WT_1 and octatonic scales as $OCT(0,1)$, $OCT(1,2)$, or $OCT(2,3)$,

Debussy most often creates octatonic collections from diatonic materials such as triads and seventh chords, particularly the major-minor seventh chord.⁴ For example, the opening D7 and A $\flat$ 7 chords form the octatonic hexachord 6-30 (013679), which Forte traces to the pitch-class-equivalent coronation chord from Modest Musorgsky's opera *Boris Godunov*. Non-functional triadic successions like those in mm. 7–9 are also common generators of octatonic collections in the music of Debussy.⁵

Because of scale segments which the diatonic collection respectively shares with the octatonic and whole-tone collections, Richard Bass notes that motivic continuity between these collections is feasible in spite of their diverging harmonic foundations.⁶ Continuity between octatonic and whole-tone collections—without recourse to the intermediary function of the diatonic—flows from common-tone retention; for example, every octatonic collection shares four pitch classes with each of the two whole-tone collections.⁷ One such example appears in Forte's relation of OCT (0,1) in mm. 15–18 to WT₀ in mm. 19–20 via four common pitch classes, which collectively form a 4-25 (0268) tetrachord, and continuity of motive.⁸

Although the musical surface does reflect octatonic collections to some extent, Kip Wile argues—and I concur—that the primary role of the octatonic collection in this prelude is one of organization below the musical surface. Wile divides the prelude's self-defined middleground into two 4-25 tetrachords that, when combined, yield

where the numbers associated with each label refer to pitch-class content. See Roig-Francolí's *Understanding Post-Tonal Music* (New York: McGraw-Hill Higher Education, 2008), 52.

⁴ Allen Forte, "Debussy and the Octatonic," *Music Analysis* 10, no. 1–2 (March–July 1991): 139.

⁵ *Ibid.*, 128, 157.

⁶ Richard Bass, "Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors," *Journal of Music Theory* 38, no. 2 (Autumn 1994): 157.

⁷ *Ibid.*, 158, 161.

⁸ Allen Forte, "Table II: Structure According to PC Sets and Genera," in Unpublished Analysis of "Ce qu'a vu le vent d'ouest," Allen Forte Electronic Archive, http://forte.music.unt.edu/files/images/Forte_Papers/Debussy/Cequavu/Dbssy_Cequavu_p2.jpg (accessed July 1, 2017).

the complete OCT (0,1) collection.⁹ The versatility of tetrachord 4-25 presents a wealth of options for embellishing the structure of the middleground at the surface of the piece with octatonic, whole-tone, or other pitch materials.¹⁰ Transitions between collections are facilitated by invariant members of set class 4-25; for example, the constituent tritone A–D $\sharp$ /E $\flat$ from one of these tetrachords acts as a bridge between the octatonic-forming chords of mm. 7–9 (see Example 1) and the WT₁ collection in mm. 11–14 (see Example 6).¹¹

The most overt use of either whole-tone scale in this piece appears in mm. 19–20 (see Example 2). Debussy combines thick chords with ascending scalar sweeps that comprise the only complete, stepwise presentation of WT₀ found in the piece.¹² Within this two-measure span, Debussy emphasizes WT₀ as a source of both melodic and harmonic elements. Providing a sense of stability amid the busy texture, the first chord of m. 19 (a 4-25 tetrachord) recurs every two beats in this passage. Each of the interpolated sixteenth-note chords reaches successively higher, but the first three of these chords collapse back into the opening sonority. Only with the final attempt

⁹ Kip Wile, "Recurrence, Level Organization and Collection Interaction in Three Piano Preludes by Debussy," *Indiana Theory Review* 22, no. 2 (Fall 2001): 79, 73–74. Wile's term "self-defined" denotes "pitch organization that is guided by principles other than those that produce tonal functionality." Wile explains that his use of the term "middleground" is not strictly Schenkerian but remains analogous to that method as it "describes medium-range voice-leading events" that "produce structure that underlies and joins to the compositional surface" and "elaborate still deeper organization" (53nn3–4).

¹⁰ Forte, "Octatonic," 141; Wile, "Recurrence," 74. Tetrachord 4-25 is the only one of three whole-tone tetrachords that can also be octatonic (Forte, "Octatonic," 141). This tetrachord also regularly appears in tonal music in the guise of a French augmented-sixth chord, or as a dominant seventh chord with lowered fifth. The reinterpretation of this sonority as either a whole-tone or an octatonic entity tightens the bonds of musical continuity, as observed by Bass, and recalls Forte's argument that the formation of octatonic collections in the music of Debussy can most often be traced to diatonic materials (Bass, "Models," 157; Forte, "Octatonic," 139).

¹¹ Wile, "Recurrence," 73–74.

¹² However, the whole-tone melody in mm. 63–66 does present a stepwise five-note subset of WT₀.

at the end of m. 20 is the sixteenth-note chord able to break free from the gravitational pull of the opening sonority—and the WT_0 collection—to reach the $B\flat 7 / A\flat$ that begins m. 21.¹³

Example 2. Debussy, "Ce qu'a vu le vent d'ouest," mm. 19–21. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

The WT_0 collection reappears, in its entirety, in mm. 23 and 24. The following section (mm. 26–29) retains the notated trill between C4 and D4 that begins in m. 23; with two exceptions, the pitch material of this section can also be traced back to WT_0 (see Example 3). Broken octaves appearing over the trill give a concise melodic impression that, to my ear, briefly implies the key of G minor. The most frequently appearing notes, $B\flat$ and $F\sharp$, belong to the prevailing WT_0 collection. However, two notes from outside this collection (A and B) each appear once during this passage. Because of their proximity in pitch space, both additions may be explained as neighbors to $B\flat$. The ambiguity involved in distinguishing notes within the prevailing pitch collection from those outside that collection—and in determining what the prevailing pitch collection might be—provides fertile ground for discussing with students the need to grapple with contradictions and conflicts within the music in order to arrive at a nuanced hearing of the piece.

¹³ The resolution of the prevailing 4-25 tetrachord in mm. 19–20—enharmonically a French augmented-sixth chord with a tonic note of $B\flat$ (with $F\sharp$ in its usual position in the bass)—to a $B\flat$ major-minor seventh chord in m. 21 is reminiscent of a common-tone augmented-sixth chord.

WHAT DID THE WEST WIND SEE? TEACHING WHOLE-TONE
SCALES THROUGH DEBUSSY'S "CE QU'À VU LE VENT D'OUEST"

The image shows a musical score for Debussy's "Ce qu'à vu le vent d'ouest", measures 23-30. The score is in 3/8 time and features a whole-tone scale. Measures 23-24 are marked *ff* and *strident*. Measures 25-26 are marked *dim. molto* and *Un peu retenu*. Measures 27-28 are marked *p* and *mais en dehors et angoissé*. Measures 29-30 are marked *f* and *3 2 3*.

Example 3. Debussy, "Ce qu'à vu le vent d'ouest," mm. 23–30. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

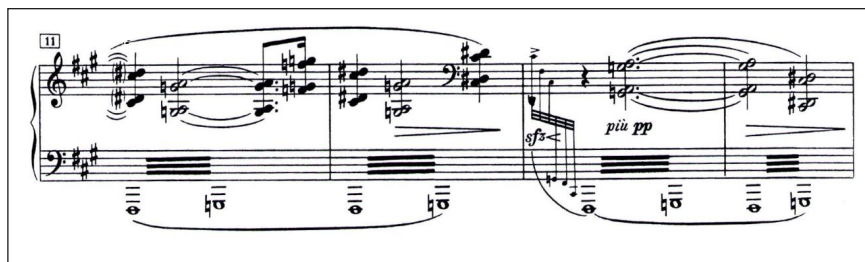
Debussy also makes good use of the other whole-tone scale, WT_1 . This pitch collection is most prominently displayed in the section beginning at m. 35, where $C\sharp 7$ and $B0$ respectively hold the highest and lowest registral positions and the other members of the collection appear in three major-second dyads with octave doublings: $C\sharp-D\sharp$, $G-A$, and $F-G$ (see Example 4). When combined, the first two of these dyads form a pair of tritones ($C\sharp-G$ and $D\sharp-A$) that yields pitch-class set 4-25. The two tritones are separated by a major second, an interval that also appears prominently throughout the piece in trill figures and simultaneous chromatic scales. Debussy makes this relationship explicit in m. 52 when he presents all four notes of this 4-25 tetrachord simultaneously in close position (see Example 5). His emphasis of tritones a major second apart also extends to other pairs of tritones that combine to form 4-25 tetrachords in m. 51. The presentation of WT_1 as a series of major-

second dyads is foreshadowed in mm. 11–14 (see Example 6) and echoed near the end of the piece in mm. 69–70 (see Example 7). By means of this consistent presentation, Debussy clearly connects the passages that feature WT_1 while emphasizing the major second—a singularly important interval for a piece that draws heavily on whole-tone scales—and the tritone. By emphasizing multiple tritones, Debussy undermines tonality in both narrow and broad contexts. For instance, the opening section of the prelude (mm. 1–6) features major-minor seventh chords whose roots are a tritone apart (D and $A\flat$). The tritone also emerges as an element of large-scale organization through Debussy's choice of key signatures, which respectively imply F# minor and C major.

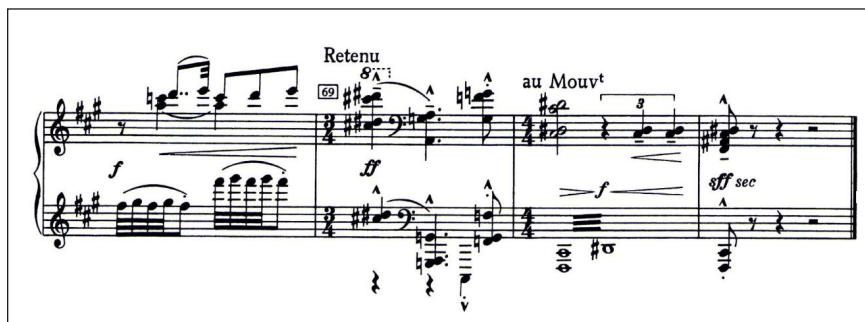
Example 4. Debussy, "Ce qu'a vu le vent d'ouest," m. 35. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

Example 5. Debussy, "Ce qu'a vu le vent d'ouest," mm. 50–52. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

WHAT DID THE WEST WIND SEE? TEACHING WHOLE-TONE
SCALES THROUGH DEBUSSY'S "CE QU'A VU LE VENT D'OUEST"



Example 6. Debussy, "Ce qu'a vu le vent d'ouest," mm. 11–14. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.



Example 7. Debussy, "Ce qu'a vu le vent d'ouest," mm. 68b–71. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

The penultimate section of the piece, mm. 63–68, returns to the F#1 pedal and D⁷ chord with which the piece began. The texture, however, changes. Instead of the rapid arpeggiation that characterized the beginning, D⁷ now appears as a simultaneity in short, accented chords (see Example 8). Something far more significant than the texture also changes from the beginning of the piece to this point. In the opening section, D⁷ initially appears alone with the F#1 pedal, betraying no hint of the whole-tone material that is to come. However, when the chord returns in m. 63, it is accompanied by a melody from the WT₀ collection. By synthesizing the opening diatonic sonority with a whole-tone melody, Debussy alludes to the beginning of the piece while acknowledging that the piece is permanently changed by its journey through both whole-tone scales.

The image shows a musical score for Debussy's "Ce qu'a vu le vent d'ouest," measures 63-68. The score is written for piano and includes the following details:

- Measure 63:** Starts with the instruction "Serrez et augmentez" above the staff. The piano part features a triplet of eighth notes in the right hand and a triplet of eighth notes in the left hand, marked with a piano (*p*) dynamic.
- Measure 65:** Continues the triplet pattern in both hands.
- Measure 67:** The piano part transitions to a triplet of eighth notes, marked with a piano (*p*) dynamic. The instruction "sempre cresc." is written below the staff.
- Measure 68:** The piano part features a triplet of eighth notes, marked with a forte (*f*) dynamic.
- Measure 69:** The piano part features a triplet of eighth notes, marked with a forte (*f*) dynamic.

Example 8. Debussy, "Ce qu'a vu le vent d'ouest," mm. 63–68. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition

Although the majority of the piece features material drawn from whole-tone scales, Debussy does not shy away from conventionally tonal sonorities. He does, however, use these sonorities in ways that are far from conventional by tonal standards. For instance, mm. 47–48 feature a series of chords in the left hand (see Example 9). The top note of each chord reveals a melody from the WT_1 collection. Rather than remain strictly within the framework provided by WT_1 , Debussy harmonizes the melody with a succession of inverted major-minor seventh chords, keeping the pitch structure static in the pianist's hands through parallel voice-leading and drawing the listener's attention to the coloristic harmonization of the whole-tone melody without engendering expectations that

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these chords will resolve tonally. A similar passage featuring a WT_0 melody harmonized with inverted major-minor seventh chords and whole-tone chords appears in mm. 21–22. Motivic similarities between these passages enhance the musical coherence of the work by bridging the gap between the two whole-tone scales and making explicit the synthesis of diatonic and whole-tone elements that pervades the piece.

Example 9. Debussy, "Ce qu'a vu le vent d'ouest," mm. 47–49. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

In this prelude, diatonic chords that do not function in tonal ways often occur in chromatically based transitional material. One such passage appears in m. 46 when Debussy uses parallel major triads to harmonize an ascending chromatic scale (see Example 10).¹⁴ Another example of Debussy's non-functional employment of diatonic sonorities comprises the brief series of major triads—highly disjunct in contour—that appears in mm. 7–9 (see Example 1).¹⁵

¹⁴ Other major-triad harmonizations of chromatic passages appear in mm. 15–18.

¹⁵ A similar passage occurs in mm. 59–61, and m. 8 subsequently returns as m. 62 during the "transformed and telescoped" reprise Forte locates in mm. 54–62. Recall Forte's identification of an octatonic passage



Example 10. Debussy, "Ce qu'a vu le vent d'ouest," mm. 45–46. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

Fluctuating musical textures are stabilized by pedal points throughout the majority of the piece—55 of 71 measures contain a pedal of some sort.¹⁶ It is from these pedals that a quasi-tonal framework emerges. In keeping with the prevailing key signature of three sharps (F# minor), the most common pedal point is F#. With brief interruptions, the F# pedal covers the first twenty-four, and the last ten, measures of the piece. A shorter instance of the F# pedal occurs in mm. 54–57. Altogether, the F# pedal is present in slightly more than half the piece (36 measures).

The second pedal point is C#, the dominant of F# minor. Appearing primarily in the middle of the piece, this pedal occupies mm. 35–37 and mm. 39–41. A C# pedal also appears in the final three measures of the piece, the last two of which overlap with the concluding F# pedal. The transition from m. 69, which features a C# pedal without F#, to mm. 70–71, which contain both C# and F# pedals, subtly suggests an authentic cadence and retrospectively affirms an F#-centric reading of the prelude's opening.

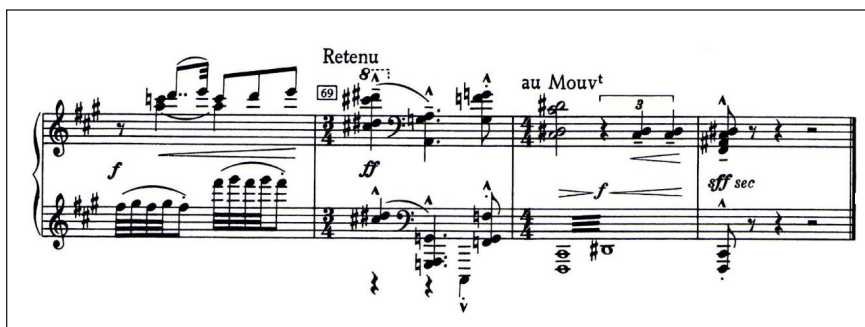
arising from non-functional triadic succession in mm. 7–9 ("Octatonic," 128; "Table II" of his unpublished analysis).

¹⁶ While many of these pedals fit the conventional notion of sustained notes in the lowest voice, they do sometimes occur in other voices. In addition to sustained notes, the pedal points mentioned here include repeated notes with octave displacement, trill or tremolo figures, and low, non-sustained notes occurring on downbeats.

¹⁷ It is also possible to think of the tonal framework as F# major instead of F# minor. A# (or Bb) does occur throughout the piece, and some of the thirty-second notes interpolated with the F# pedal in mm. 15–18 outline an F# major triad.

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Finally, D $\sharp$ also appears as a pedal. Like C $\sharp$, the D $\sharp$ pedal occurs primarily in the middle of the piece (mm. 38, 42–45, 47–48a, and 49–53a). As the (raised) submediant, the D $\sharp$ pedal first appears between two C $\sharp$ pedals, acting as an upper neighbor to C $\sharp$. This relationship is also maintained near the end of the piece in m. 70 (see Example 11). Here, all three points of tonal reference (F $\sharp$, C $\sharp$, and D $\sharp$) coalesce into the final sonority; D $\sharp$ 2 is presented with C $\sharp$ 2 in a tremolo figure that ultimately resolves to C $\sharp$ 2 in m. 71, while D $\sharp$ 3 enters in m. 70 and persists through the final F $\sharp$ ^{add6} chord in m. 71.



Example 11. Debussy, "Ce qu'a vu le vent d'ouest," mm. 68b–71. © Copyright 1969 by Peters Edition (Leipzig). Reprinted by Permission of Peters Edition.

What, then, did the west wind see? It saw a piece replete with fluctuating musical textures, a piece indebted to both whole-tone collections for melodic and harmonic material. It saw familiar diatonic sonorities—such as the major triad and major-minor seventh chord—used in non-functional ways, often as coloristic harmonizations of whole-tone melodies or chromatic scales. It saw tonality simultaneously undermined through Debussy's emphasis of multiple tritones and embraced through tonal relationships among the pedal points F $\sharp$, C $\sharp$, and D $\sharp$. After a breath-taking journey through the prelude "Ce qu'a vu le vent d'ouest," the west wind looked into the music, as into a mirror, and saw itself.

LESSON PLANS

With its tumultuous journey through whole-tone and diatonic elements, "Ce qu'a vu le vent d'ouest" provides an intriguing focus for two consecutive classes of an undergraduate course in post-tonal theory. The lesson plans presented here—intended

for students who have already been introduced to the concept of whole-tone scales but may not yet have encountered them in a musical context—provide opportunities for students to

- explore their aesthetic responses to an unfamiliar piece of post-tonal music;
- identify melodic and harmonic examples of whole-tone collections (differentiating between WT_0 and WT_1) in a musical context;
- evaluate these examples for clarity in relation to an audience of high-school students;
- collaborate with classmates in small groups to examine melodic, harmonic, tonal, and textural features of the piece in dialogue with analogous features of common-practice-period music;
- present their findings to the class and support those findings with specific musical examples; and
- compare their initial aesthetic responses to their responses after analyzing the music.

Some students may find it challenging to deal with the sound of the piece, which is rather dissonant at times. Because of their previous experience analyzing tonal music, students may be frustrated when their carefully formed tonal expectations are thwarted. In the hope that continued exposure to the piece will help students to find it less strange and to comprehend its distinctive aural characteristics more fully, the pedagogical process outlined here includes opportunities for students to listen to the piece multiple times.

At the beginning of the first class, students listen twice to a recording of the piece (first without the score in order to focus on the contour, then with the score to connect the sounding music to its notation) and write down their first impressions in response to the following questions:

1. List three words you would use to describe the piece. Briefly explain why you chose these words.
2. What is one spot in the music that you find surprising or intriguing? Provide measure numbers.¹⁸

¹⁸ To save class time and minimize confusion, the instructor should provide students with scores in which the measure numbers are already marked.

Collecting these responses for a participation grade allows the instructor to obtain early feedback on the initial reactions of students to the piece.¹⁹

After students take a few minutes to identify changes in texture and other potentially important points of articulation, they work together to construct a musical timeline on the board. This timeline provides a concise summary of the piece as well as a common frame of reference for further analysis.²⁰ The timeline should identify by measure number all changes in key signature, time signature, and texture that occur during the piece. Any other pertinent observations made by students may also be added. To expedite the process of constructing the timeline, the instructor can divide the class into small groups, each of which is responsible for a certain aspect of the timeline (e.g., Group 1 adds key signatures and time signatures to the timeline; Group 2 finds textural changes in mm. 1–22 and marks them on the timeline; and so forth). Alternatively, each group of students may be responsible for all aspects of the musical timeline that correspond to an assigned section of the prelude. Moving beyond the prelude's most obvious features, the instructor can ask students which notes occur as pedal points throughout the piece. Students add these to the timeline and discuss, at the prompting of the instructor, how the different pedals might combine to give the

¹⁹ John Bean notes the power of exploratory writing at the beginning of class to focus students' thoughts, stimulate discussion, and provide instructors with insight into the thought processes of students through formative assessment. John C. Bean, *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*, 2nd ed., The Jossey-Bass Higher and Adult Education Series (San Francisco: Jossey-Bass, 2011), 132, 124, 122).

²⁰ The musical timeline bears some similarities to the "road map" suggested by Brian Alegant and Gordon Sly for teaching post-tonal music analysis; Alegant and Sly apply this strategy to two Debussy preludes: "La fille aux cheveux de lin" and "Feuilles mortes." "Taking Stock of Collections: A Strategy for Teaching the Analysis of Post-Tonal Music," *Journal of Music Theory Pedagogy* 18 (2004): 23–51. The road map as pedagogical strategy also appears in Philip Stoecker and Brian Alegant, "Upon Further Reflection: Teaching Inversion through Jean Papineau-Couture's *Nuit*," *Journal of Music Theory Pedagogy* 25 (2011): 129–52. Alegant provides further information and examples of road maps for tonal and post-tonal works in "A Picture is Worth a Thousand Words: Road Maps as Analytical Tools," *Current Musicology* 95 (Spring 2013): 162–76.

piece something of a tonal framework.²¹ A sample timeline for the prelude appears in Figure 1.

In this timeline, the top two lines respectively show key and time signatures throughout the piece. The third (middle) line describes textural features while the fourth line displays, from top to bottom, the pedal points D#, C#, and F#. The bottom line supplies measure numbers for the prelude; each segment of this line represents a two-measure unit. Musical features included in the timeline align with the grid provided by the measure numbers. For example, the C#pedal in mm. 35–37 occupies one whole unit (mm. 35–36) plus one half unit (m. 37) on the timeline. Similarly, the D# pedal in m. 38 appears one-half of the way through the unit that begins in m. 37.

As they consider more detailed pitch aspects of the piece, students can examine features of Debussy's chord construction. While the major triads and major-minor seventh chords that pervade the piece should be familiar to students from their previous study of music theory, students may find the enharmonic spellings and diverse textures associated with some of these chords confusing.²² A timely reminder from the instructor to consider the possibility of enharmonic spellings and chords that do not appear in block form may prove helpful as students label the triads and seventh chords they find with lead-sheet symbols and determine whether or not they function tonally. When students realize these familiar chords do not function tonally, they can consider the settings—primarily chromatic passages and busy textures—in which the chords appear in the piece.

²¹ Students can copy down the timeline, or use their cell phones to take pictures of it, for future reference.

²² The E# or F major triad in m. 15, spelled as E#2–A2–B#2, provides one such potentially confusing example. These examples can prompt class discussion of why Debussy chose to use enharmonic spellings. In this instance, the spelling emphasizes $\hat{7}$ and $\#4$ as tendency tones in an F#-centric reading of the piece.

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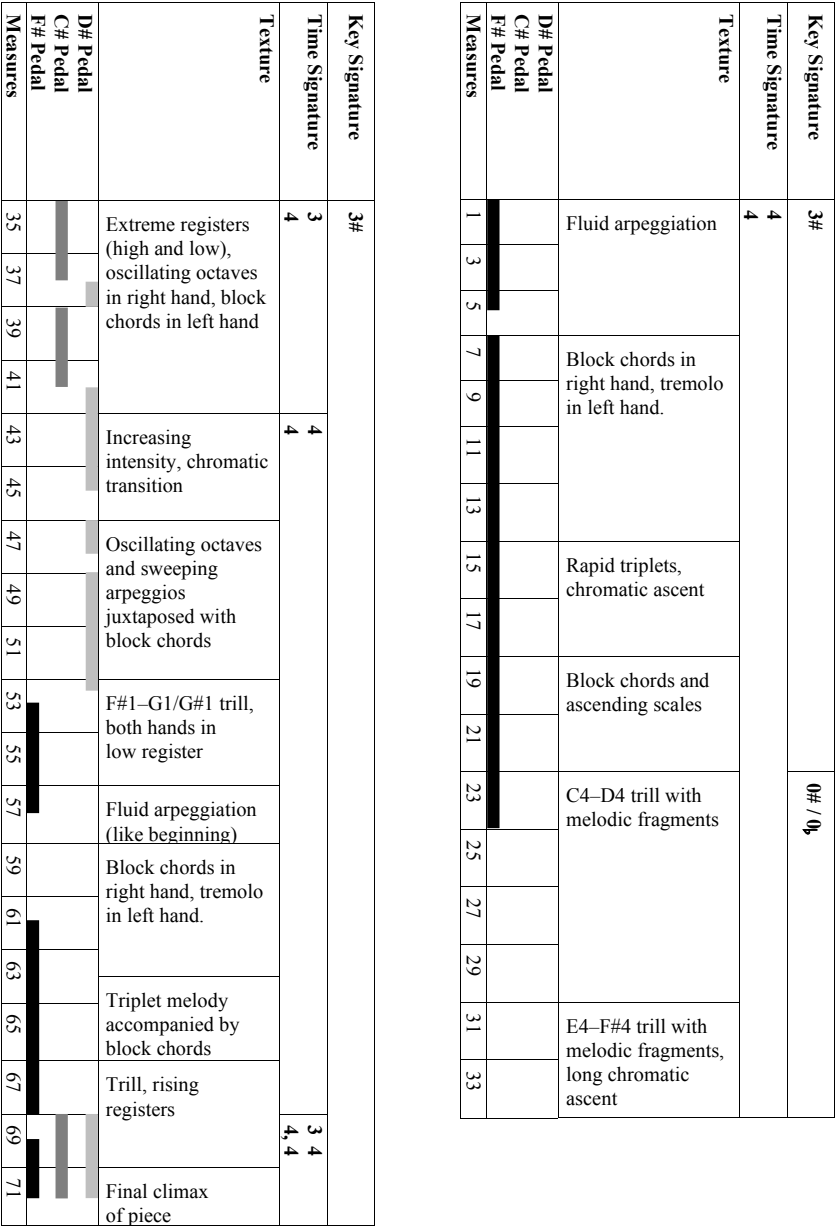


Figure 1. Timeline for Debussy’s “Ce qu’a vu le vent d’ouest.”

In conjunction with the class’s examination of diatonic chords throughout the piece, the instructor can prepare students to identify whole-tone-based portions of the prelude by pointing out non-

diatonic chords whose members belong to an underlying whole-tone collection.²³ After briefly reviewing the two whole-tone scales, the instructor can pose the following scenario as homework for the next class:

Several years after graduation, you have been asked by your high school theory students to explain whole-tone scales. Sitting at your piano happens to be a copy of this Debussy prelude. Look through the piece and find the clearest examples of the two whole-tone collections that you can share with your students. Mark all the whole-tone passages you find on the score and indicate which whole-tone collection is featured in each example.

This assignment requires students to apply their understanding of whole-tone scales to finding whole-tone-based examples in a musical context and prompts students to evaluate the clarity of these examples in relation to an audience of high school theory students.²⁴

It may be challenging for students to identify which passages are based on whole-tone collections. When the instructor reviews the different types of whole-tone scales, he or she can help students to formulate each one in terms of the notes that occur most frequently in the piece; for example, WT_0 is usually spelled here as C, D, E, F $\sharp$, A $\flat$, B $\flat$. Students who require more time to find examples of whole-tone scales in a musical context can work at their own paces because that portion of the analysis is assigned for homework.

Students begin the second class period by listening to the piece again before comparing the whole-tone passages they have found with those found by their peers. This exchange of ideas provides students with clarification and reassurance as they solidify their grasp of whole-tone scales in a musical context. Following this conversation, the instructor divides the class into groups of three or

²³ If students are familiar with the use of integer notation to represent pitch classes, the conventional designations of WT_0 and WT_1 may be used. If not, students can refer to the respective scales as WT-C and WT-C $\sharp$. At the instructor's discretion, the basics of integer notation may also be informally introduced at this time.

²⁴ The assignment accords with Bean's argument that a simple and effective means of promoting critical thinking is to invite students to "explain course concepts to a new learner." The rhetorical context of explaining material to a naïve audience allows students to act as experts relative to that audience and helps students engage course content from a new perspective (*Engaging Ideas*, 152, 42).

four students to discuss a short list of questions (see Figure 2). While the questions remain the same for each group, their order may vary so each question is addressed by at least one group within the time available for discussion.

1. Does this piece have a melody? What do you consider the most melodic aspects of the piece? Provide specific musical examples.
2. Conventionally tonal pieces often emphasize fifths and thirds. What intervals do you think are most important in this piece? Support your answer with specific musical examples.
3. Despite their different textures, what similarities can you find between the opening section of the piece (mm. 1–6) and the penultimate section (mm. 63–68)?
4. How do appearances of the WT_0 and WT_1 collections interact with textural changes throughout the piece? Refer to the timeline for changes in texture and provide specific musical examples.

Figure 2. Discussion questions for "Ce qu'a vu le vent d'ouest."

After students consider the questions in small groups, they come together to discuss the findings of each group. If, for instance, students identify the major second as an important interval in response to question two, this provides an opportunity to consider the significance—and likelihood—of this interval holding a prominent position in a whole-tone piece. Wrapping up the large-group discussion, the instructor can ask students to identify which aspects of their analyses they hear when listening to the piece before playing the recording one more time. Students can also reflect—either orally or in writing—on their current impressions of the piece and how these may or may not have changed since their first hearing (e.g., "Now that you have spent time analyzing this piece, would you still use the same three words to describe it as you did at first? Why or why not?").²⁵

If scheduling constraints preclude spending two class periods on this piece, the foregoing lesson plan may be modified to fit a single class. In this case, students listen to the prelude before they come

²⁵ Such reflections emphasize the relationship between aural and written analysis and place students—as Bean puts it in his discussion of double-entry notebooks—"in dialogue with their own ideas" (*Engaging Ideas*, 135).

to class and submit their initial responses via posts to the course's online discussion board—their post-analysis reflections may likewise be submitted online. After listening to the piece again at the beginning of class, students take a few moments to familiarize themselves with salient changes in key signature, time signature, and texture. Omitting the construction of a musical timeline, the instructor can use the previously posed high-school teaching scenario to ask students to mark portions of the piece that use WT_0 or WT_1 and identify the clearest examples of the two whole-tone collections. In small groups, students consider the questions mentioned above; other questions may be added to replace large-group discussions accommodated by the two-day lesson plan (see Figure 3). The students in each group focus their discussion on a single question before summarizing their conclusions for the rest of the class. A final hearing of the piece wraps up the class's investigation of the prelude.²⁶

By combining whole-tone and diatonic sonorities, Debussy's "Ce qu'a vu le vent d'ouest" provides a challenging, yet feasible, entry for undergraduate students into the realm of post-tonal music analysis. The familiar instrumentation and manageable length of the piece permit students to engage the entire work with a moderate amount of time and effort. In a setting that invites both tonal and post-tonal analysis, students can embrace the versatility of music theory and learn to discern which analytical tools are appropriate in diverse musical contexts.

²⁶ The piece can serve as a bridge for students from studying whole-tone scales to studying octatonic scales. If desired, the instructor may reserve the last few minutes of the final discussion for students to catalog the pitches in an octatonic section of the piece (such as mm. 7–9) and list these pitches in ascending order. The resulting pattern of half- and whole-steps acquaints students with the structure of an octatonic scale and shows students how Debussy, as noted by Forte, creates octatonic passages by combining traditional tertian sonorities ("Octatonic," 139).

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1. Does this piece have a melody? What do you consider the most melodic aspects of the piece? Provide specific musical examples.
2. Conventionally tonal pieces often emphasize fifths and thirds. What intervals do you think are most important in this piece? Support your answer with specific musical examples.
3. Despite their different textures, what similarities can you find between the opening section of the piece (mm. 1–6) and the penultimate section (mm. 63–68)?
4. How do appearances of the WT_0 and WT_1 collections interact with textural changes throughout the piece? Provide specific musical examples.
5. Which notes occur as pedal points throughout the piece? Provide an example of each of these notes serving as a pedal. How might these pedals combine to give the piece something of a tonal framework?
6. How does Debussy construct chords in which several notes appear simultaneously? What types of chords are familiar from your previous experience with music theory? What types are different? Provide specific musical examples.

Figure 3. Expanded discussion questions for “Ce qu’à vu le vent d’ouest.”

BIBLIOGRAPHY

- Alegant, Brian. "A Picture is Worth a Thousand Words: Road Maps as Analytical Tools." *Current Musicology* 95 (Spring 2013): 162–76.
- Alegant, Brian, and Gordon Sly. "Taking Stock of Collections: A Strategy for Teaching the Analysis of Post-Tonal Music." *Journal of Music Theory Pedagogy* 18 (2004): 23–51.
- Bass, Richard. "Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors." *Journal of Music Theory* 38, no. 2 (Autumn 1994): 155–86.
- Bean, John C. *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. 2nd ed. The Jossey-Bass Higher and Adult Education Series. San Francisco: Jossey-Bass, 2011.
- Debussy, Claude. "Ce qu'a vu le vent d'ouest." In *Piano Works*, vol. 2 (*Préludes*, Book I). Edited by Eberhardt Klemm. Leipzig: Peters Edition, 1969. http://imslp.org/wiki/Pr%C3%A9ludes_%28Book_1%29_%28Debussy,_Claude%29.
- Forte, Allen. "Debussy and the Octatonic." *Music Analysis* 10, no. 1–2 (March–July 1991): 125–69.
- . Unpublished Analysis of "Ce qu'a vu le vent d'ouest." Allen Forte Electronic Archive. <http://forte.music.unt.edu/?q=node/333>. Accessed July 1, 2017.
- Roig-Francolí, Miguel A. *Understanding Post-Tonal Music*. New York: McGraw-Hill Higher Education, 2008.
- Stoecker, Philip, and Brian Alegant. "Upon Further Reflection: Teaching Inversion through Jean Papineau-Couture's *Nuit*." *Journal of Music Theory Pedagogy* 25 (2011): 129–52.
- Wile, Kip. "Recurrence, Level Organization and Collection Interaction in Three Piano Preludes by Debussy." *Indiana Theory Review* 22, no. 2 (Fall 2001): 51–82.

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Symphonic Hearing: Mastering Harmonic Dictation Using the Do/Ti Test

By DANIEL STEVENS

Many students struggle to aurally identify the harmonic progression that opens the Adagio cantabile of Beethoven's Piano Sonata No. 8 in C Minor, op. 13 ("Pathétique"), given in Example 1a, despite its idiomatic character. Examples 1b and 1c show two common incorrect responses.¹

a. Excerpt for dictation: mm. 9–11 (reduction)

A^b: I V I V I

b. Common student response (no. 1)

A^b: I ii I V I

c. Common student response (no. 2)

A^b: I IV I V I

*In all examples, I place Roman numerals and figured bass symbols on separate lines to distinguish the unique musical relationships that they signify.

Example 1. Beethoven Piano Sonata in C Minor, op. 13, Adagio cantabile, mm. 9–11

For their many helpful comments and suggestions, I thank William Wheeler, Philip Duker, and three anonymous reviewers.

¹I have used the progression in Example 1a in harmonic dictation assessments of undergraduate and graduate students for over a decade, and I have seen the responses in Examples 1b and 1c numerous times from students at every level. At my current institution, only a handful of incoming graduate students correctly identify the progression each year.

What might be going wrong? In Example 1b, the bass and soprano are correct, but the function and quality of the second chord are incorrect. Students who provide this response probably approach harmonic dictation by notating the outer voices, and then deducing the harmony. Instead of coordinating the notated pitches with elements like chord quality, function, and idiomatic harmonic expansions, such students may make a series of faulty calculations and premature assumptions (e.g., “the chord most likely to contain *re* and *fa* is *ii*,” “*fa* in the bass indicates a predominant,” “the chord sounded funny, kind of like a *ii*”).² Deducing harmonic function from outer voices becomes even more problematic when students incorrectly notate those voices. Combined, these errors and premature assumptions spell disaster for identifying harmonies later. Other students, perhaps recalling that *ii*⁶ does not typically expand tonic, may “correct” the soprano line to produce the syntactically acceptable (though still incorrect) harmonic progression shown in Example 1c. These students take their mistake one step further, changing a correctly identified note in the soprano voice to fit their false conclusion that the second chord is a subdominant. Still other students might catch their mistake(s) after several playings and eventually provide the correct outer voices and harmonic analysis given in Example 1a. But can we steer students to the correct result more directly, more musically, and with fewer opportunities to go astray?

The mistakes shown in Examples 1b and 1c illustrate a worse problem: namely, that harmonic dictation as it is conventionally practiced may not support the holistic musical skills such exercises ought to instill, such as perceiving the harmonic and linear design of phrases and larger sections, applying listening techniques outside of class in a wide range of listening and performance contexts, using listening techniques to analyze music by ear, and listening in a way that integrates multiple areas of learning (written theory, aural skills, outside listening and performing experiences, etc.).³

²Compounding these difficulties, beginning students of harmonic dictation also tend to latch on to premature decisions, making it difficult for them to consider that a chord could be anything other than what they initially thought it to be.

³By “conventional practice,” I refer primarily to atomistic methods of harmonic dictation in which students focus on notating individual elements (usually specific notes) and retrospectively deduce harmonic identity only after the music has ended (see Michael Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Carbondale: Southern Illinois University Press, 1984), 121). Some

Students who struggle over multiple semesters to identify basic diatonic progressions may ultimately learn to distrust their ears and to disconnect their theory training from their other musical experiences. When lengthier harmonic dictations require numerous playings to complete, even high-achieving students may rightfully suspect that the activity has limited relevance for their day-to-day listening, and that understanding the harmonic design of real pieces by ear without the advantage of multiple playings is well beyond their capacity. These problems challenge music theory teachers and other musicians to reconsider the relevance and applicability of harmonic dictation as it is conventionally taught to developing an aural understanding of real pieces of different styles and genres. How might listeners quickly and accurately identify harmonies in real time, so that notation signifies musical perceptions instead of deductions and guesswork made after a listening experience? How might theory teachers change their approach to harmonic dictation so that the skills developed are applicable while hearing longer excerpts and full pieces?

PART 1: THE DO/TI TEST

The *Do/Ti Test*, an extension and update of the guide-tone method, offers an effective response to these challenges by enabling listeners to understand harmonies quickly, accurately, and holistically, in both chordal examples and real pieces.⁴ This article introduces and

teachers recommend a hybrid approach in which weaker students first notate the harmonies they recognize by ear, then fill in the blanks with educated or even random guesses. For instance, see Thomas L. Durham, "Teaching Harmonic Dictation," in *AP Music Theory Teacher's Guide*, ed. David Lockart (New York: The College Board, 2007), 138, http://apcentral.collegeboard.com/apc/members/repository/ap07_musictheory_teachersguide_2.pdf. Holistic hearing, by contrast, could be likened to recognizing a face: it is a synthesizing mode of hearing in which each individual element is considered in relation to the others to form a perception of the whole. For a critical overview of seven approaches to harmonic dictation, see Gary Karpinski, *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians* (Oxford: Oxford University Press, 2000), 117–127.

⁴The guide-tone method was first described in print by Jay Rahn and James R. McKay, who reported its use at the Eastman School of Music in the late 1930s, and then much later in the 1980s at the University of Toronto, York University, and the University of Oklahoma (Jay Rahn

explains the Do/Ti Test, suggests ways of implementing it using modern technologies, and offers further support and justification for the method's use in college and high-school theory classrooms.

The guide-tone method establishes a set of guide tones that students audiate and compare to music that is heard in order to help identify harmonies in real time. The Do/Ti Test refines and extends the guide-tone method, systematically introducing a set of primary guide tones (*do*, *ti*, *te*, *di*, and *ra*), secondary guide tones (*fa*, *sol*, and *le*), and consideration of chord quality and phrase function as harmonic dictation increases in complexity. The Do/Ti Test begins with students learning to identify harmonies based on whether a harmony fits with a particular guide tone, beginning with only *do* and *ti* (all solfège syllables reflect moveable *do*, and *do*-based minor). As they listen to chord progressions, students sing or audiate *do*, sustaining this guide tone and only moving to *ti* when the harmonies require it. Students begin harmonic dictation by noting which diatonic chords fit with *do* and which with *ti*.⁵ Distinguishing between "*do* chords" and "*ti* chords" narrows the possibilities for each chord in the progression, increasing the chance that listeners will arrive at the correct label.

The Do/Ti Test encourages active, responsive listening in which listeners make music along with the sounds they hear as a way to

and James R. McKay, "The Guide-Tone Method: An Approach to Harmonic Dictation," *Journal of Music Theory Pedagogy* 2 (1988): 101–111). The effectiveness of the guide-tone method has been supported experimentally by Manuel Alvarez in "A Comparison of Scalar and Root Harmonic Aural Perception Techniques," *Journal of Research in Music Education* 28, no. 4 (Winter, 1980): 229–235; and "Effects of Sequencing, Classifying, and Coding on Identifying Harmonic Functions," *Journal of Research in Music Education* 29, no. 2 (Summer, 1981): 135–141. More recently, variations of this method have been employed by Joán Groom at the University of North Texas, Cynthia Gonzales at Texas State University, Barbara Wallace at Dallas Baptist University, and Cynthia Folio at Temple University, among others.

⁵Rahn and McKay provide excellent ideas for introducing the guide-tone method to students ("The Guide-Tone Method," 103–106). For example, they suggest that instructors begin by asking all students to sing the guide tone aloud. This activity provides a self-correcting mechanism, in which weaker students can hear stronger students change guide tones and thereby learn to move as the harmonies require. From its first use forward, the guide-tone method trains students to think in sound.

understand them. I call this intentional, structured form of active participation *symphonic hearing*, because listeners who hear in this way become performers, creating a new part within the musical texture in a manner experientially similar to playing in a symphony. Because the Do/Ti Test involves active listening in real time, it can be readily applied while listening to didactic chord progressions and to real musical works. In fact, implementing the Do/Ti Test at my institution has allowed the use of examples from the repertoire (from Baroque to popular styles) almost exclusively beginning in the first semester, allowing students to apply their aural skills while listening throughout every stage of the learning process. The following sections explain the application of the Do/Ti Test in the major and minor modes and extend the method to hearing sequences, chromatic harmonies, and modulations.

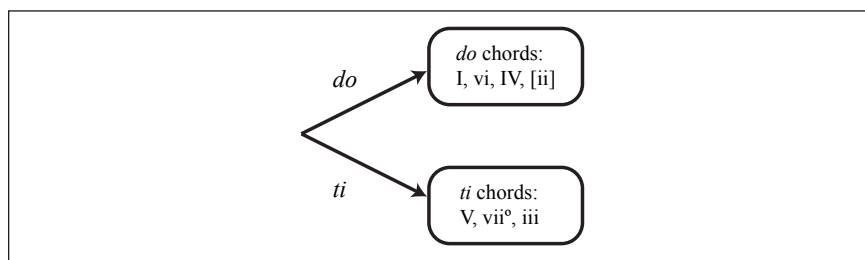
The Do/Ti Test in the Major Mode

The Do/Ti Test presents the listening process as a series of stages in which listeners make distinctions involving guide tone, chord quality, and *phrase function*—tonic (T), predominant (P), or dominant (D)—that progressively narrow the harmonic possibilities.⁶ While presenting the Do/Ti Test in stages has pedagogical advantages, these stages are not ultimately meant to result in a strictly linear thought process; rather, students should learn to hear and think

⁶Rudy Marcozzi uses a similar approach to harmonic dictation involving a different set of distinctions in his “The Use of Binary Logic and Processing to Enhance Learning and Instruction in the Undergraduate Theory Classroom,” *Journal of Music Theory Pedagogy* 12 (1988): 25–38; and *Strategies and Patterns for Ear Training* (Upper Saddle River: Pearson Prentice Hall, 2008). Throughout this article, I distinguish between a harmony’s *chordal function* and its *phrase function*. Chordal function primarily refers to the root of a harmony in relation to tonic and is indicated using Roman numerals (e.g., ii, V, vii^o) and scale degrees (e.g., supertonic, dominant, leading-tone chord). Identifying the chordal function of each harmony in a progression is the primary goal of the Do/Ti Test. The phrase function of a harmony indicates its role within the context of a phrase (e.g., tonic, predominant, or cadential dominant), harmonic prolongation (e.g., tonic-expanding V chords), or function group (e.g., dominant-functioning chords). A chord’s designation as a *do* or *ti* chord does not indicate its phrase function; for instance, the mediant is a *ti* chord but does not share the dominant function of the other two diatonic *ti* chords (V and vii^o). Conversely, phrase function can be used with the Do/Ti Test to help determine chordal function.

through the stages simultaneously, coordinating guide tone, quality, and phrase function to identify chord function. The stages presented below are intended to prioritize and organize the multiple layers of information to which listeners attend.

At the first stage of the Do/Ti Test, represented in Example 2, listeners distinguish between *do* and *ti* chords (i.e., chords with which listeners sing either *do* or *ti*). In most chords in Example 2, *do* or *ti* is contained in the chord itself. Although the supertonic triad contains neither *do* nor *ti*, I include it with the *do* chords (albeit in brackets) for reasons explained in greater detail later. Suffice it to say that the basic categorization of *do* and *ti* chords is not meant to be rigid or taxonomic, but instead is based on the notes that students are inclined to sing along with the harmonies. Thus, my implementation of the method does not necessitate that the guide tone be a member of the chord in question, however normative a goal this may be. In other words, in the process of listening to a real piece, a listener may fleetingly sing *ti* along with a IV chord, conclude that the *ti* does not fit, and adjust the guide tone accordingly. Similarly, one may sing *do* along with a ii chord and acknowledge that while the guide tone may be dissonant to and not contained by the chord, this guide tone fits better in context than *ti*. The question of whether to introduce a new guide tone (*re*) for the supertonic is addressed in greater detail below, and is one that instructors must decide for themselves.⁷

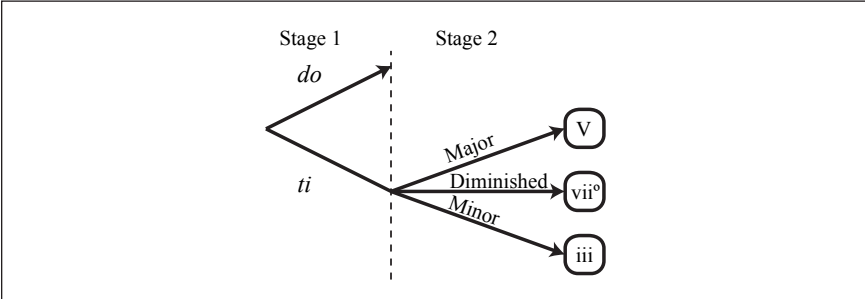


Example 2. Do/Ti Test, major mode, stage 1: diatonic harmonies distinguished by guide tone

Next, listeners focus on chord quality and phrase function to determine each chord's function. For diatonic *ti* chords, guide tone and chord quality are sufficient to identify chordal function. If the chord is major, it is dominant (V); if diminished, leading-tone (*vii*°);

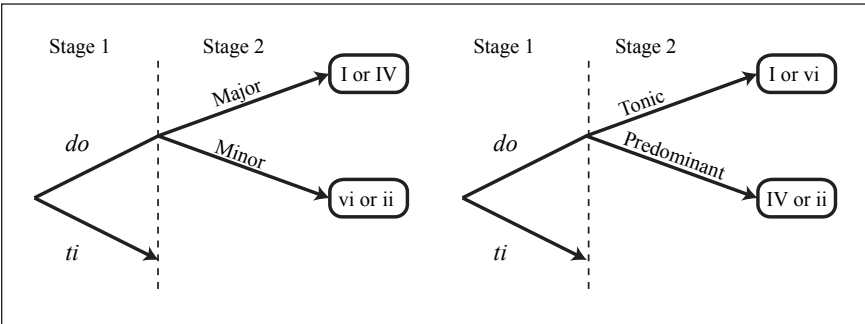
⁷One other diatonic harmony, the *I*⁷, frustrates the Do/Ti Test because it contains both guide tones. Both of these exceptional harmonies (*I*⁷ and *ii*) will be discussed in greater detail later.

if minor, mediant (iii) (see Example 3).



Example 3. Do/Ti Test, stage 2 (major mode): *ti* chords distinguished by quality

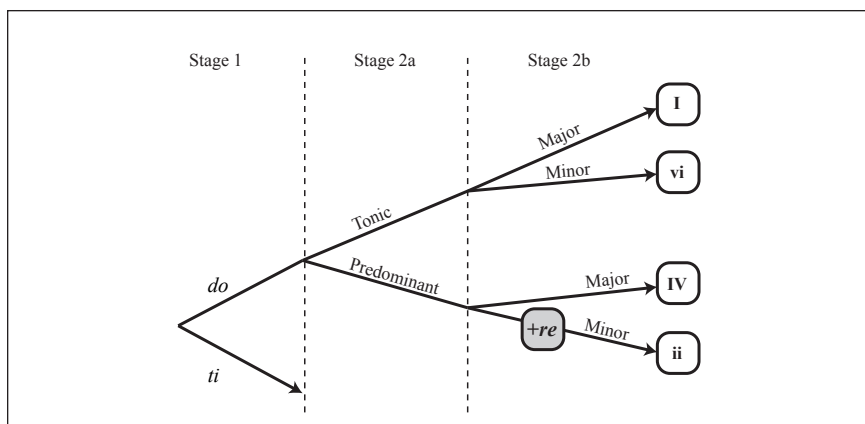
Identifying *do* chords requires identifying both phrase function (tonic or predominant) and quality: neither is sufficient by itself (see Example 4).



Example 4. Do/Ti Test, stage 2 (major mode): *do* chords distinguished by quality and phrase function

Listeners must combine quality and phrase function to arrive at harmonic identity (see Example 5). I consider phrase function before chord quality in order to reinforce the connections between I and vi and between IV and ii, though the reverse order also works.⁸

⁸The phrase function of each chord on the Do/Ti Test refers to its prototypical usage within short model phrases (e.g., I–ii⁶–V–vi–IV–V–I). As students learn other idiomatic usages of each harmony (e.g., tonic-expanding V chords, vi as a predominant), instructors may invite students to move beyond the classifications of the Do/Ti Test. In my courses, students group harmonic expansions by bass line and guide-tone pattern, as I explain in “So You Want to Write a Chord Progression?: Teaching Core Music Theory Using the Phrase Model Handout,” *Music Theory Pedagogy Online* 6 (2016), <https://music.appstate.edu/about/jmtp/so-you-want-write-chord-progression-teaching-core-music-theory-using-phrase-model-handout>. Whereas the



Example 5. Do/Ti Test, stage 2 (major mode): *do* chords distinguished by phrase function and quality

Guide-Tone Figurations and the Supertonic

Guide-tone figurations provide students who struggle with stage 2a and 2b distinctions an effective tool that builds on the guide tones already being sung or audiated. Guide-tone figurations are short, simple, memorable patterns that ornament guide tones and explore the intervallic structure and unique pitches of the harmonies to which they are applied. Guide-tone figurations can be learned in advance or improvised while listening as a type of musical “noodling.”⁹ Either way, they reinforce the core principle of

Do/Ti Test places focus on perceiving individual harmonies, listening for harmonic expansions helps students understand harmonies in their contrapuntal and prolongational contexts. The following textbooks cover harmonic expansions in a manner useful for developing aural skills: Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Harmony, and Listening*, 4th ed. (New York: Oxford University Press, 2015); Edward Aldwell and Carl Schachter, *Harmony and Voice Leading*, 4th ed. (Boston: Schirmer, 2011); and William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998).

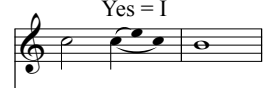
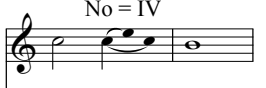
⁹I borrow the idea of musical “noodling” from David Lewin, who writes, “I imagine [a ‘theory of music’] including the broader study of what we call people’s ‘musical behavior,’ a category that includes competent listening to be sure, but also competent production and performance. Here I understand production and performance not only in the sense of high art but also as manifest in everyday acts of musical ‘noodling,’ and in a whole spectrum of intermediate activities....

the Do/Ti Test that understanding music by ear involves comparing music that is heard with sound patterns that are already in the mind, and they provide a quick and accurate means of clarifying the music that is heard.¹⁰ For instance, listeners prone to confuse I and IV could sing a simple “do–mi–do” guide-tone figuration and hear whether *do* and *mi* are consonant with the harmony (see Example 6). If *do* and *mi* are consonant, the chord is tonic; if not, the chord is subdominant.¹¹

Creation is thus a species of perception.” See David Lewin, “Music Theory, Phenomenology, and Modes of Perception,” *Music Perception: An Interdisciplinary Journal* 3, no. 4 (Summer, 1986): 377.

¹⁰ This use of guide-tone figurations builds on Rahn and McKay’s suggestion that students distinguish between I and IV by arpeggiating tonic above the guide tone *do* and the subdominant below *do*, using either numbers to indicate chord members or solfège syllables (“The Guide-Tone Method,” 107–108). By extension, students may also focus on the guide tone’s position within the chord: if listeners can arpeggiate through at least two thirds above the guide tone *do*, then the guide tone is the root, and the chord is tonic; however, if the guide tone *do* is perched at the top of the chordal structure and two descending thirds drop below it, then the chord is subdominant. Cynthia Gonzales and Bonnie Smith employ similar arpeggiated figurations in their engaging implementation of the guide-tone method (“From Harmonic Looking to Harmonic Listening: Harmonic Dictation via Harmonic Singing,” paper presented at the Pedagogy Into Practice conference, Lee University, Cleveland, TN, June 2, 2017). In general, I refrain from teaching the extensive figurations discussed by Rahn and McKay due to the practical difficulties of singing complete arpeggiations in real musical contexts and the propensity for students either to incorrectly identify the notes of sung arpeggiations or to become distracted from other musical elements (e.g., quality, function, bass). In my own experience, adding simple figurations only when necessary is sufficient for most students.

¹¹ Of course, the IV⁷ contains both *do* and *mi*, problematizing the *do–mi* figuration for listeners who overly rely on this single listening technique. However, IV⁷ is rare, and students who encounter it later in their studies are able to perceive bass line and harmonic function, so I have not found this chord to frustrate students’ use of guide-tone figurations. This chord is best addressed after students have mastered applying the Do/Ti Test to common diatonic harmonies.

	a.	b.
	match? Yes = I	match? No = IV
Guide tones and <i>do-mi</i> figuration:		
Stimulus:		
Preliminary analysis:	C: I ? V	C: I ? V

Example 6. Do/Ti Test, stage 2 (major mode): *do-mi* guide-tone figuration for distinguishing between I and IV

Students often face similar difficulties with the stage 2 distinctions (phrase function and quality) when identifying minor *do* chords. Generally, the submediant (vi) is not problematic: most students easily recognize that the chord is minor and can sense that the guide tone *do* is the chordal third of the harmony, fitting between the root below and the chordal fifth above.¹²

The supertonic (ii) is more challenging. When the supertonic triad in root position is clearly minor, students almost always perceive that the guide tone *do* sounds foreign to the harmony. When the supertonic is used in inversion, *do* fits much better with the harmony, but many students perceive the harmony as major, not minor, though less stable than a root position IV.¹³ Example 5 labels all supertonic chords as minor, though some students may find it beneficial to distinguish the root position supertonic, which sounds minor, and the supertonic in inversion, which may sound major or unstable.

¹²Rahn and McKay ("The Guide-Tone Method," 109) recommend a new arpeggiation for harmonies in which the guide tone is the chordal third (i.e., V and vi): 3–5–3–1–3 (chord members) or *do-mi-do-la-do* and *ti-re-ti-sol-ti*.

¹³For such listeners, the major triad formed between the harmony's chordal third, fifth, and seventh (present either literally or in the overtones) of the ii⁶ and ii⁵ is perceptually dominant, giving the chord an unstable but decidedly major quality, similar to Maj^{add6} chords common in jazz and popular styles. Rameau described this chord as a "Sixte ajoutée à l'Accord parfait" ("sixth added to a perfect chord"). See Jean-Philippe Rameau, *Traité de l'harmonie reduite à ses principes naturels* (Paris: Jean-Baptiste-Christophe Ballard, 1722): 64.

Given the absence of *do* from the supertonic, why call the supertonic a *do* chord at all (as in Examples 2 and 5)? Rahn and McKay suggest using a new guide tone, *re*, to identify the supertonic, and for many teachers and students, this may seem like the best option.¹⁴ Many listeners feel drawn to sing this note when they first encounter the supertonic, and including *re* will satisfy those who prefer singing a guide tone that is a member of the given harmony.

Despite these reasons for singing *re* during the supertonic, I have found several advantages to grouping the supertonic with other *do* chords by sustaining the tonic pitch through this harmony. Practically speaking, expanding the number of guide tones can destabilize weaker students' sense of tonic and increase their anxiety. In addition, *re* is also consonant with the dominant—the chord that most often follows the supertonic—making it easy to remain on *re* and thus sing the incorrect guide tone for the dominant. Singing *re* during the supertonic requires a skip down to *ti* for the dominant, whereas limiting guide tones to *do* and *ti* means that all movements between guide tones are stepwise, decreasing the chance for error.

Further still, guide tones can be equally productive when they do not belong to the chord that is heard: the absence of either guide tone (*do* or *ti*) in the supertonic triad signals this predominant harmony. When added to the root position supertonic, the guide tone *do* creates a dissonant chordal seventh; the strong tendency of the guide tone to resolve down by step further characterizes the supertonic, distinguishing it from every other harmony. By persistently audiating *do* throughout the supertonic, students are better able to discriminate the presence or absence of the chordal seventh. Finally, *do* is acoustically present whenever the supertonic chord is used in first inversion, either as a chordal seventh or as an overtone above *fa* in the bass.¹⁵ Given the prevalence of first-inversion supertonic chords in common practice classical music and their typical predominant function, training students to sing *do* through the supertonic has significant practical and musical value.¹⁶

¹⁴ Rahn and McKay, "The Guide-Tone Method," 109.

¹⁵ The distinction between ii^6 and $ii^{\sharp}$ is difficult for many students to perceive by ear, given their acoustic similarity. Paying close attention to the presence or absence of the guide tone *do* and the chordal dissonance it creates in the first-inversion supertonic is enormously helpful in this regard.

¹⁶ There are some contexts in which using *re* as a guide tone is warranted both musically and practically, including passages where

Guide-tone figurations provide a useful middle ground between adding a new guide tone and sticking rigidly to *do* during the supertonic. Given the supertonic's juxtaposition of *do* and *re*, listeners might respond by singing or audiating the guide-tone figuration shown in Example 7. In most harmonies, the closest chord tone to the guide tone is a third away; in the supertonic, however, the chord tone *re* is only one step above the guide tone.¹⁷ Singing from *do* to *re* reinforces this distinctive intervallic relationship and distinguishes the supertonic from the subdominant by highlighting its unique pitch (*re*). By returning to the dissonant, downward-trending *do* at the end of the figuration, listeners better anticipate the chord most likely to follow, the dominant.

Guide tones and figuration:					
Stimulus:					
Analysis:	C:	I	6	7	I
			ii	V	

Example 7. Do/Ti Test, stage 2 (major mode): *do–re* figuration

In addition to the supertonic, only one other diatonic chord frustrates the binary logic of the Do/Ti Test: the I^7 , which contains both *do* and *ti*. That the I^7 contains both guide tones is its unique hallmark, one that students may highlight by embellishing the guide tone *do* with a quick move to *ti*. This guide-tone figuration is more complex than most others: because *ti* is a chordal seventh that resolves down by step, the guide-tone figuration concludes by following *ti* down

the supertonic is prolonged and/or tonicized, and in modulating progressions. In cases of harmonic emphasis, I recommend that listeners who audiate *re* be prepared to shift quickly back to *do*. In examples that modulate to the supertonic, *re* (in the original key) is sung only until the new scale degree (*do*) is assigned to the new tonic. While I think that neither case warrants including *re* in the group of primary guide tones alongside *do* and *ti*, the guide-tone method may be applied flexibly according to the demands of the music and needs of the students.

¹⁷ The I^7 and $vii^{\circ 7}$ also feature pitches adjacent to their guide tones.

to *la*, then returning stepwise to *do* during the subsequent IV chord (see Example 8).¹⁸ The linear quality and flexible application of this guide-tone figuration allows teachers to point out the passing status of the chordal seventh in many I^7 chords. Students who trace linear motions as a means of tracking harmonic relationships are often well prepared to conceptualize the play between music's horizontal and vertical dimensions. Although the I^7 (as a vertical sonority, rather than the product of passing motion) appears infrequently in the musical and didactic examples used in my classes, students tend to relish its paradoxical status and savor the salient dissonance created by audiating both guide tones at once.

The image displays a musical score for four chords: C, I, IV, and V. The top staff, labeled 'Guide tones and figuration:', shows a single melodic line in 4/4 time. It begins with a half note C4, followed by a dotted half note D4, then a half note E4, and finally a half note F4. The bottom staff, labeled 'Stimulus:', shows the harmonic accompaniment. The C chord is a C major triad (C4, E4, G4). The I chord is a C major triad (C4, E4, G4). The IV chord is an F major triad (F4, A4, C5). The V chord is a G major triad (G4, B4, D5). The analysis below the staff identifies the chords as C, I, IV, and V.

Guide tones and figuration:

Stimulus:

Analysis: C: I $\frac{6}{5}$ I IV V

Example 8. Guide-tone figuration for identifying I^7 (in all positions)

The Do/Ti Test: Later Stages and Secondary Guide Tones

In stage 3 of the Do/Ti Test, listeners identify the bass note of each harmony in order to determine chord inversion. Keep in mind that this stage should ultimately occur simultaneously with stages 1 and 2. For most listeners, developing a holistic understanding of each chord helps with identifying the notes of the bass line. For instance, students are less likely to confuse a bass motion from *do* to *fa* with a motion to *sol* if they have already understood the second chord to be subdominant (IV).

¹⁸Of course, other chords may follow the I^7 , so students must be prepared to alter and adjust guide-tone figurations on the spot. Commonly, *ti* moves to *te*, converting the I^7 into a V^7/IV . Students who master the guide-tone figuration for I^7 are well prepared for the chromatic variant.

In stage 4 of the Do/Ti Test, listeners synthesize all they have heard and place the harmonies they have identified in context. The bass line helps listeners understand chord inversion and distinguish the intervals above the bass, represented by figured bass symbols. At this stage, listeners with a solid written theory background may also consider likely chord progressions, especially in the case of harmonies whose resolution is restricted (e.g., ii_2^4 or V_2^6). Finally, listeners may consider whether particular harmonies participate in idiomatic or harmonic-expanding progressions (e.g., $I-V_2^4-I^6$) and how each harmony functions within the phrase as a whole.¹⁹

A final extension of the guide-tone method is the use of secondary guide tones and guide-tone profiles.²⁰ Generally, the notes of guide-tone figurations described above function as secondary guide tones because they help clarify the identity of difficult harmonies. In addition to those figurations around *do* and *ti*, secondary guide tones around *sol*, shown in Example 9, can assist students who struggle to distinguish between V , vii^o , and vii^{o7} . For example, hearing a static *sol* line through a $I-V-I$ progression clarifies the dominant root of the middle chord. Hearing *sol* and *fa* together signals a V^7 , and hearing *fa* or *le* without *sol* signals a vii^o or vii^{o7} , respectively. Example 9b shows the primary and secondary guide-tone profiles for four tonic-expanding progressions.²¹

¹⁹ Each stage of the Do/Ti Test explained above is available as a one-page student handout, including a list of the idiomatic harmonic expansions in which each harmony participates. See Daniel Stevens, "The Do/Ti Test Handouts," *Music Theory Pedagogy Online* (2016), <https://music.appstate.edu/about/jmtp/doti-test-handouts>.

²⁰ A guide-tone profile (or guide-tone line) is a melodic sequence of guide tones that fits a particular harmonic progression. Idiomatic progressions such as those in Example 9b can be identified partly by their unique guide-tone patterns. In this article, guide-tone "lines" and "profiles" are nearly synonymous. I use guide-tone profiles primarily in reference to idiomatic and sequential progressions with identifiable patterns of guide tones. Guide-tone lines, by contrast, refer to longer sequences of guide tones such as those created when listening to whole phrases and real pieces.

²¹ As helpful as secondary guide tones can be, listeners should take care not to become distracted from the primary guide tones *do* and *ti*. After all, there is positive value (and perhaps even partial credit) in recognizing a chord as dominant functioning, even if the quality and Roman numeral are mistaken. When grading harmonic dictation, I often give partial credit when an incorrect dominant-functioning harmony is given, as long as the correct bass note and plausible figures are included in the response.

a.

Secondary guide tones	
triads:	seventh chords:
sol	sol + fa
fa	le (+fa)

b.

Primary Guide-tone Profile:

Secondary Guide-tone Profile:

Stimulus:

C: I V I I V I I vii° I I vii° I

Example 9. Secondary guide-tone lines

I have suggested that some approaches to listening, such as those that require students to notate outer voices before deducing harmonic identity, do not support the broader skills that harmonic dictation ought to instill and develop. Since the Do/Ti Test also involves listening for specific pitches, how is the Do/Ti Test different? A key difference is that the pitches that receive focus when using the Do/Ti Test all have strategic value for identifying the harmony holistically and for differentiating between closely related chords. The Do/Ti Test limits the pitches that students must hear to the two most salient pitches in the diatonic collection, *do* and *ti*, making them easier to hear accurately and quickly. While students do listen for specific pitches in the stimulus, they actively audiate and compare what is heard to known musical patterns, thus developing true harmonic hearing from the outset. Further, listening for pitches other than *do* or *ti* is done only after a holistic (albeit partial) understanding of the chord has been developed within the Do/Ti Test framework. In short, the Do/Ti Test provides an organized system of thought that allows each observation, perception, and source of input to converge on a particular chordal identity. Equally significantly, by teaching students which pitches do not lead directly to a holistic perception

of harmony, the Do/Ti Test eliminates extraneous musical data that impedes understanding. When harmonic dictation is done in real time, ignoring the incidental is as important as identifying the vital.

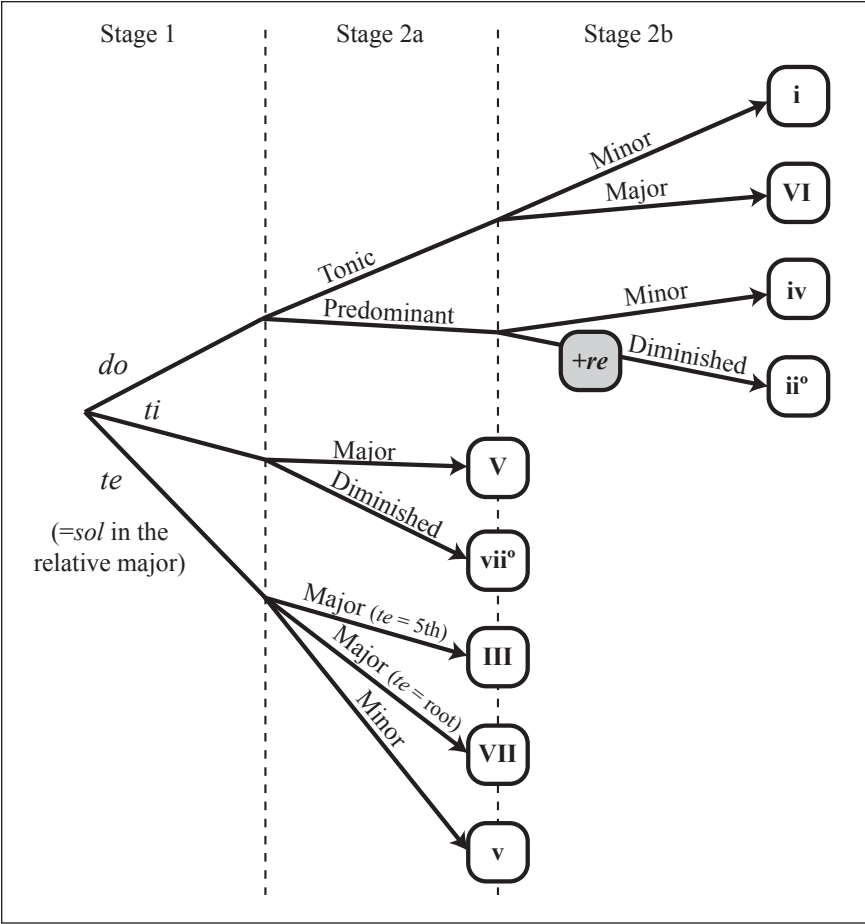
The Do/Ti/Te Test in the Minor Mode

Applying the Do/Ti Test in the minor mode is similar to its application in major. One obvious difference is the change in chord qualities, most of which need not be spelled out. The minor mode has two diminished triads (ii^o and vii^o) versus one in the major mode, and the half-diminished supertonic seventh chord. Another change in the minor mode is the new guide tone *te* and the introduction of *te* chords. The changes in chord quality, new guide tone, and new harmonies that occur in the minor mode are shown in Example 10.²²

Students face a number of new challenges when identifying the three possible *te* chords. The first involves the perceived shift to the relative major caused by the loss of the leading tone. This scale-degree shift from *te* to *sol* is illustrated in stage 1 in Example 10. Instructors may also wish to point out that VII to III in minor may be heard and notated as V to I in the relative major, though the Roman numerals provided in Example 10 all presume a minor tonic. Another challenge to identifying *te* chords is that two of the three are major. Thus, it is necessary to perceive whether *te* is the chordal root or fifth of major *te* chords. If *te* provides the chordal root, the harmony is the subtonic (VII). If *te* is the chordal fifth, the chord is mediant (III). As Example 10 shows, the minor *te* chord is the minor dominant (v), which is typically used in minor-key sequences, to harmonize a lament bass, or to set-up a Phrygian cadence.²³

²² Given their infrequent usage in real and didactic examples, III+ and vi^o are not included in Example 10 or on the Do/Ti/Te Test Handout. See Stevens, "The Do/Ti Test Handouts."

²³ Differentiating *te* chords can also be accomplished using chord member or scale degree arpeggiations, as suggested by Rahn and McKay, "The Guide-Tone Method," 107–109.



Example 10. Do/Ti/Te Test (minor mode)

Diatonic and Chromatic Sequences

The most common harmonic sequences are easily recognized by their guide-tone profiles, which remain consistent no matter which chordal inversions are employed. Example 11 provides the guide-tone profiles for descending fifths and descending thirds harmonic sequences. In Example 11a, the unit of harmonic repetition is a single chord; in Example 11b, the unit of harmonic repetition is two chords (as indicated by the brackets).

a. Descending 5th Sequence ($\downarrow 5$) from Mozart, Piano Sonata in C Major, K. 545, I, mm. 18–21

Guide-tone

Profile: *do do ti ti*

G: I IV $\#6$ vii° $\#5$ iii
vi ii V I

b. Descending 3rd Sequence ($\downarrow 4 \uparrow 2$) from Chopin, Mazurka, op. 68, no. 3, mm. 1–6

Guide-tone

Profile: *do ti do ti do do*

F: I V vi iii IV I

Example 11. Guide-tone profiles of two common sequences

As Example 11 illustrates, the guide-tone profile associated with descending fifths sequences begins with a recognizable pattern—*do–do, ti–ti, do–do*—which is followed by a cadential *ti–do* pattern. (In minor, the guide-tone profile is *do–do, te–te, do–do*; the second pair, *te–te*, profiles the major *te* chords VII and III.) In contrast, the descending thirds sequence features alternating *do* and *ti* guide tones until the sequence returns to tonic: *do–ti–do–ti–do–do*. In minor, the guide tone for the second and fourth chords is typically *te*.

Sometimes, the chords of diatonic descending fifths or thirds sequences are chromatically altered to create secondary dominant or leading-tone seventh chords. As Example 12 shows, these alterations do not change the guide-tone pattern enough to obscure the underlying harmonic sequence. In each sequence, only one guide tone, marked with (!), differs from its diatonic counterpart.²⁴

²⁴ The new guide tones introduced by secondary chords, *di* and *ra*, will be discussed in the following two sections.

a. Descending 5th Sequence with Chromatic Alterations

Guide-tone Profile: *do do ti ti (!) do ti do*

C: I IV V/iii V/vi V/ii V/V V I

b. Descending 3rd Sequence with Chromatic Alterations

Guide-tone Profile: *do ti do te do do*

C: I vii°/vi vi vii°/IV IV I

Example 12. Guide-tone profiles of chromatically altered harmonic sequences

Maintaining guide tones through chromatic sequences (those that ascend or descend by chromatic step) is more difficult. Chromatic voice leading patterns destabilize the scale degrees associated with the guide tones; remaining anchored to the correct pitches and solfège can be extraordinarily difficult. Upon encountering a chromatic sequence, listeners can (1) sing the same guide tone (*do* or *ti*) throughout the progression, or (2) employ “floating” guide tones by tracking the sequence’s pitches, then assigning new scale degrees once the sequence reaches its conclusion.²⁵ Example 13 demonstrates both approaches using an excerpt from Haydn’s Piano Sonata in E $\flat$ Major, Hob. XVI:52. In the sonata’s transition, a diatonic 7–6 sequence is embellished with chromatic inflections in the two lowest voices. Listeners unfamiliar with the piece would

²⁵ It can be difficult for listeners to determine during a first hearing which strategy is best suited to a given chromatic passage. In some cases, either strategy will work. I generally recommend that students employ the first strategy until the music makes sustaining the original guide tones impossible or unnecessary (as in cases of modulation or extended chromaticism).

most likely follow the guide-tone line through the first three notes of Example 13b. Once they realize by beat 2 or 3 of m. 11 that they are hearing a chromatic sequence, it may already be too difficult to reestablish E_b as the guide tone. At this point, tracking the melodic pitches of the sequence may be the only option. Listeners who know the piece and anticipate the sequence may also choose to sustain the guide tone *do* until the sequence ends. In this excerpt, the entire sequence serves to prolong *do* (and the tonic harmony) following an initial 5–6 contrapuntal expansion. At the sequence's conclusion, E_b (*do*) ascends to $E\sharp$, which functions as the leading tone to F.

Examples 13a and 13b show two ways listeners might reassign scale degrees to the pitches at the end of the sequence. The general principle that raised chromatic pitches should be interpreted as leading tones at points of modulation or transition is applied in both cases. In Example 13a, *di* ($E\sharp$) is quickly reinterpreted as *ti*, and F is provisionally understood as *do*.

Once it becomes clear that F is a dominant pedal, this note is reinterpreted as *sol*, allowing the listener to step up to the new guide tone *ti* ($A\sharp$). Listeners who successfully employ the second strategy, shown in Example 13b, simply assign *ti* to the final note of the sequence and *do* to its note of resolution (F). Like the first strategy, *do* is then reinterpreted as *sol*, establishing B_b as the new tonic. This shift in scale-degree assignment would likely take place during the first two beats of m. 14 when listeners hear that F is a dominant pedal.

Secondary Chord Guide-Tone Profiles

Guide-tone profiles provide a useful way to identify secondary dominants while maintaining the guide-tone line. As Example 14 shows, the guide-tone profiles of each secondary dominant chord and resolution are unique. Listeners who recognize the presence of a secondary dominant need only follow its guide-tone profile to identify which type of secondary harmony it is.²⁶ The alignment between three major-mode and three minor-mode profiles (V/III, V/IV, and V/V) makes them easier to learn.

²⁶Students who struggle to distinguish chromatic applied chords from diatonic chords may find guide-tone figurations (covered in the next section) more helpful than guide-tone profiles.

a. Strategy No. 1: Sustain the Original Guide Tone

do

6.

E♭: vi

7

b6

4

1

V

pedal bass

V-exp.

b. Strategy No. 2: Floating Guide Tones

(track pitches by name, not scale degree)

do

6.

E♭: vi

7

b6

4

1

V

pedal bass

V-exp.

Example 13. Haydn, Piano Sonata No. 52 in E♭ Major, Hob. XVI:52, I, mm. 10–15: chromatic 7–6 sequence

a. Secondary Dominants in Major:

GT Profiles: *di re* *ti ti* *do do* (*te → la*) *do ti* *ti do*

Additional GTs:

C: $\overset{7}{V} \rightarrow ii$ $\overset{7}{V} \rightarrow iii$ $\overset{7}{V} \rightarrow IV$ $\overset{7}{V} \rightarrow V$ $\overset{7}{V} \rightarrow vi$

b. Secondary Dominants in Minor:

GT Profiles: *do te* *te te* *do do* (*te → le*) *do ti* *ra do* (*te → do*)

Additional GTs:

a: $\overset{7}{V} \rightarrow VII$ $\overset{7}{V} \rightarrow III$ $\overset{7}{V} \rightarrow iv$ $\overset{7}{V} \rightarrow V$ $\overset{7}{V} \rightarrow VI$

Example 14. Secondary dominant and resolution guide tone profiles

Two of the profiles feature new guide tones. The V/ii in the major mode requires the listener to move up a half step, from *do* to *di*. The raised tonic, *di*, temporarily becomes a leading tone and resolves to *re*. Once *re* has been sung, listeners should move back to the guide tone *do*, as the supertonic figuration shows in Example 7. The second new guide tone, *ra*, is introduced by the V^7/VI in minor. This harmony takes practice to identify correctly, since two of its notes—*te* and *ra*—could be sung as guide tones. As students learn the V^7/VI in minor, they should train their ears to follow the guide tone upward by half step to the pitch that marks this particular harmony, *ra*, whose status as chordal seventh creates a strong downward tendency.

Although the examples in Example 14 feature seventh chords, in most cases, the guide-tone profiles correspond to members of the applied triad and thus work equally well when no chordal sevenths are used. Only in the V^7/V and V^7/VI (in minor) is the first guide tone of the profile a chordal seventh. As with the supertonic, I recommend that students sing *do* during the V/V regardless of whether or not the seventh is present. Persisting on *do* allows students to use the same figuration outlined in Example 7, helping cement the idea of V/V as an altered *ii* chord. Further, singing *do* helps students maintain their sense of tonic during the chord that strongly challenges it and provides them a stable point of

reference for singing figurations that include the applied chromatic tone (*fi*), as explained below. The V^7/VI in minor, like the V^7/IV in major, requires the addition of the chordal seventh to be recognized incontrovertibly as a secondary dominant. Thus, it is appropriate for students to associate the guide tone *ra*, the seventh of the V^7/VI in minor, with this chord.

Guide-tone profiles are of limited use in identifying secondary leading tone seventh chords and their resolutions. Unlike secondary dominants, different secondary leading tone sevenths and resolutions can have the same guide-tone profile. Further, composers commonly respell fully diminished sevenths using enharmonic equivalents when modulating to distant keys. When listeners encounter fully diminished seventh chords, it is generally advisable to track one or more specific pitches from the fully diminished seventh chord to its resolution, where the relevant scale degrees can be reestablished. Nevertheless, the three guide-tone profiles shown in Example 15 can be provisionally associated with the corresponding fully diminished seventh chords and their resolutions; listeners must confirm each chord's function by identifying the diatonic chord of resolution of every fully diminished seventh chord.

GT Profiles: ti do do ti di re

C: $\overset{7}{vii}^\circ$ I
 $\overset{7}{vii}^\circ$ V
 $\overset{7}{vii}^\circ$ ii

Example 15. Guide-tone profiles for fully diminished seventh chords

There are advantages and disadvantages to using guide-tone profiles to identify secondary dominants and leading tone chords. The main advantage is that these profiles add another application to the guide tones that students are already singing. With almost no extra effort, students who memorize the profiles can identify most applied dominant and leading tone seventh chords. However,

if a student fails to identify a chord that is chromatic and dominant functioning, the guide tones alone will not usually signal an applied chord. Another disadvantage is that it can encourage atomistic, deductive hearing, in which one element is interpreted to identify a harmony, without hearing other essential musical elements such as the applied leading tone.

Secondary Chord Guide-Tone Figurations

Guide-tone figurations may also be used to identify secondary dominants. As noted earlier, guide-tone figurations can be simple or ornate, improvised or learned in advance. Example 16 offers some examples of guide-tone figurations used to identify secondary chords. Not every secondary chord is covered, nor are the figurations provided the only ways to sing and hear through each harmony.

Example 16. Guide-tone figurations for selected secondary chords

The figuration for the V^7/IV in Example 16a is similar to the figuration for the I^7 shown in Example 8. The optional movement back and forth between *do* and *te* highlights the unique chromatic element of this chord. The second and third figurations, shown in Examples 16b and 16c, are of higher value for students: the *do-la-fi* figuration and the diminished fifth it outlines are clearly audible in harmonies that tonicize the dominant. Both figurations highlight the common chromatic pitch, *fi*, and the two minor third intervals that connect *do* and *fi* make the patterns easily singable and identifiable. Once listeners hear *do-la-fi*, they need only determine the chord quality to tell whether the chord is an applied dominant or leading tone chord. Tempo permitting, an optional *do-re-do* or *do-me-do* may be added to the figuration to distinguish between the two possible applied chords. Each figuration ends with a return to *ti*, the arrival of which may be delayed by a cadential $\frac{6}{4}$.²⁷ The

²⁷ In pieces with expected modulations to the dominant (such as during the exposition of a major-mode piece in sonata form), the *do-la-fi*

fourth figuration, shown in Example 16d, may be used to identify V^7/vi and vii^{o7}/vi . These applied chords disrupt the primary guide tones *do* and *ti* more strongly than do the applied dominants of V and IV; by tonicizing *la*, V^7/vi and vii^{o7}/vi make *ti* feel like *re*, a shift that can be disorienting for some students. In order to remain anchored on the correct guide tone, listeners may sing the entire *ti-la-si-ti* figuration as a melisma on a single syllable *ti*, which returns to *do* only when the V^7/vi or vii^{o7}/vi resolve to *vi*. Like the guide-tone profile discussed earlier, the figuration for the V^7/ii and vii^{o7}/ii given in Example 16e articulates the guide tone *di* resolving to *re*. Although I recommend using *do* as the guide tone for the supertonic in general, when the supertonic is tonicized, I suggest that students stress and hold *re* (as indicated by the tenuto mark on the figuration) before returning to the supertonic's guide tone *do* in order to capture the special emphasis given to *re*. Many of the figurations above are employed in the guide-tone analysis of the opening of Chopin's Nocturne in E $\flat$ Major, op. 9, no. 2, given with a reduction of the left hand figuration in Example 17. The level of analysis represented in Example 17 might be expected of an undergraduate music major nearing the end of a unit on applied chords. In this analysis, open noteheads are reserved for guide tones *do* and *ti*, large solid noteheads indicate secondary chord guide-tone profiles or embellishments of the guide-tone line (such as the 4–3 suspension before the cadence). Small noteheads are used to show guide-tone patterns and guide-tone figurations that expand the given harmonies. For this excerpt, students could be asked to dictate the bass line and add figured bass symbols as well.

guide-tone figuration is particularly useful for shifting to the new tonic. In cases where the modulation occurs in the transition (before the medial caesura), listeners simply redefine *fi* as *ti*, and continue singing the guide tones in the new tonal area of the dominant.

Guide-tone line, figurations, and analysis:

tonic expansion -
tonic pedal in bass

Re in bass -
suspension
resolution

Stimulus:

Example 17. Guide-tone analysis of Chopin, Nocturne in E $\flat$ Major, op. 9, no. 2, mm. 1–4

Common-Tone Diminished Sevenths and Augmented Dominants

Common-tone diminished seventh chords (ct^{o7}) merit special attention due to their frequent confusion with secondary diminished seventh chords (o7). The ct^{o7} that prolongs the tonic chord (typically built on $\sharp\hat{2}$) and the vii^{o7}/V are both consonant with *do* and contain enharmonically equivalent pitch material. However, the ct^{o7} of I does not tonicize V. The two harmonies can be distinguished by their guide-tone profiles: while the progression from vii^{o7}/V to V creates *do–ti* profile, the guide-tone profile of the tonic-expanding ct^{o7} resolving to I is *do–do–do* (when situated between two tonic chords). Students are not likely to confuse the dominant-expanding ct^{o7} (typically built on $\sharp\hat{6}$) with the vii^{o7}/ii , even though both contain *di*, due to the distinctive guide-tone profile associated with the ct^{o7} (when situated between two dominant chords): *ti–li–ti*. The unique guide-tone profiles of the common ct^{o7} chords make it possible to identify and distinguish them from enharmonically equivalent secondary diminished seventh chords.

Altered tonic and dominant harmonies fit nicely into the harmonic dichotomies of the Do/Ti Test. Like tonic (I), the augmented triad built on tonic is a *do* chord. The altered tonic typically acts as a secondary $V+/IV$, which leads to another *do* chord, IV, via the chromatic voice leading *si–la*. Similarly, $V+$ is consonant with *ti* and typically resolves to a tonic *do* chord. Beyond their guide-tone profiles, altered tonics and dominants provide a unique opportunity for students to create

figurations that outline augmented triads. Students who regularly use guide-tone figurations to explore harmonies will often express delight as they move through the successive major 3rds around the guide tones *do* and *ti*.

Guide-Tone Figurations for Chromatic Predominants

The Neapolitan is identifiable by its unique guide tone, *ra*—the final guide tone in the set of primary guide tones (i.e., *do*, *ti*, *te*, *di*, and *ra*).²⁸ Distinguishing between *ra* and *di* is not a problem for most students: *di* tends to resolve up to *re*, while *ra* resolves down to *ti*, sometimes passing through *do*. As Example 18 illustrates, if the diminished third between *ra* and *ti* is filled in by *do* as a passing tone, *do* is typically harmonized as a vii^{o7}/V , a cadential $\frac{6}{4}$, or both (in that order). Also, students may listen for the Neapolitan's function as a predominant harmony, most often with *fa* in the bass. The guide-tones profiles that involve *ra* and its continuation to *ti* add a linear dimension to students' understanding and aural experience of the Neapolitan and its resolution. Example 19 provides a guide-tone analysis of a minor-mode excerpt that employs the Neapolitan, taken from the Adagio of Mozart's Piano Concerto in A Major, K. 488.²⁹

The image shows a musical staff in C major with a key signature of one flat (B-flat). The staff contains three notes: a whole note G4 (labeled '6'), a half note F#4 (labeled '6' and '4' inside a bracket with 'V' below it), and a whole note E4 (labeled '(7)' and '5' inside a bracket with '3' and 'V' below it). Below the staff, the text 'C: bII' is written. An arrow points from the F#4 note to the text 'or: vii°' with a '7' above it, indicating a chromatic resolution.

Example 18. Guide-tone profiles of the Neapolitan and its resolution

²⁸ See also Rahn and McKay, "Guide-Tone Method," 110.

²⁹ The first chord in m. 7 of Example 19, a major $\text{IV}^{\frac{6}{4}}$, is challenging due to its dominant seventh quality, which may imply a V/VII function to students. However, as is typical in minor, this harmony functions as part of a tonic expansion spanning from beat 2 of m. 6 to the downbeat of m. 8, over *la-ti-do* in the bass. This prolonged tonic itself participates in a descending third progression (III-i-VI) whose final chord (*iv*) is substituted by the $\frac{6}{4}\text{II}^{\circ}$.

Guide-tone line, figurations, and harmonic analysis: HC/f#

5- 6 4 6 5 6 6 4 5 6 6

f#: i (VI) ii# V i ii# Cad V VI VII III i

Stimulus:

PAC/f#

6 6 # b6 6 5

IV V i VI bII Cad V i

Example 19. Guide-tone analysis of Mozart, Piano Concerto in A Major, K. 488, II, mm. 1–12

The Do/Ti Test and guide-tone figurations are useful for distinguishing between different types of predominant-functioning augmented sixth chords. However, they are less helpful for identifying augmented sixth chords in the first place, for two reasons: all predominant-functioning augmented sixth chords are *do* chords, and the unique chromatic features (*le* and *fi*) are not easily accessible via guide-tone figurations. Listeners who have already identified an augmented sixth harmony can use the guide-tone figurations in Example 20 to identify the augmented sixth type. The It^{+6} is identifiable because it does not contain a second or third above the guide tone: it only contains *le*, *do*, and *fi*. The Fr^{+6} contains a major second above the guide tone (*do* + *re*), and the Gr^{+6} a minor third (*do* + *me*).

C: It^{+6} Fr^{+6} Gr^{+6}

Example 20. Guide-tone figurations for distinguishing augmented sixth type

Some listeners may find it helpful to create a guide-tone figuration for recognizing augmented sixth chords or for distinguishing them from other chromatic harmonies. The figurations in Example 21 build on those in Example 20 to suggest one possible approach. These figurations begin with passing motion through *te* to get to *le* and *fi*. The diminished third descent from *le* to *fi* is different enough from the minor-third descent from *la* to *fi* associated with the V/V and vii°/V that these figurations may be beneficial. Comparing these augmented sixth and secondary dominant figurations can help students attune their ears to small but significant intervallic differences (*do-la-fi* vs. *do-le-fi*).

The image displays three musical staves, each representing a different type of augmented sixth chord in C minor. Each staff begins with a treble clef, a key signature of two flats (Bb and Eb), and a common time signature (c:). The first staff is for the Italian augmented sixth (It⁺⁶), showing a half note Gb, a half note Bb, and a whole note Eb. The second staff is for the French augmented sixth (Fr⁺⁶), showing a half note Gb, a half note Bb, and a whole note Eb. The third staff is for the German augmented sixth (Gr⁺⁶), showing a half note Gb, a half note Bb, and a whole note Eb. Each staff includes a guide-tone figuration (le and fi) and a resolution to a V chord (dominant). The Gr⁺⁶ staff also includes a Cad. V (Cadenza) with a 6/4 and 5/3 interval.

Example 21. Guide-tone figurations for identifying augmented sixth chords and types

Alternatively, some students have more success identifying the tones that comprise the augmented sixth interval in relation to the secondary guide tone *sol*, to which both *le* and *fi* resolve by half step. Given that augmented sixth chords only last for a moment in real musical contexts, I have found that guide-tone figurations are primarily useful for distinguishing their type. Once students have learned to identify augmented sixth chords by their characteristic interval and resolution, the guide-tone figurations in Example 20 provide a handy guide for making finer distinctions.

Extending the Do/Ti Test: Modulations to Closely Related Keys

Using the Do/Ti Test as an introduction to identifying modulations may be one its most promising applications.³⁰ Unlike modulating phrase-length examples often used in theory classes, real pieces rarely afford the listener time after a modulation to figure out the new tonal center. The Do/Ti Test and figurations offer listeners a means of identifying modulations in real time in the phrase. In most cases, listeners need only sing the guide-tone figuration of the chromatic chord used to modulate, then reassign scale-degree and solfège to the tones of that figuration. The guide-tone analysis of the parallel period that begins the Andante of Haydn's Symphony No. 90 in C Major, shown in the orchestral reduction in Example 22, demonstrates this application. The antecedent phrase (mm. 1–4) reaches a half cadence in the tonic. The consequent phrase modulates to the dominant, ending in a perfect authentic cadence. At m. 6, listeners who have learned a guide-tone figuration for the V/V should respond to the harmony by singing or audiating *do-la-fi*. Given the parallel phrase structure and the cadential bass line that follows this chromatic harmony, listeners should be able to hear rather quickly that *fi* in m. 6 is reinterpreted as *ti* and resolved to the new tonic, C.³¹

³⁰ Identifying modulations by ear is a topic that has received relatively little treatment in pedagogical literature. In *Aural Skills Acquisition*, Karpinski focuses primarily on sight reading modulating passages, and Michael Rogers, in *Teaching Approaches in Music Theory*, mentions modulations only in passing, and not at all in relation to harmonic dictation. In "Listen Up!: Thoughts on iPods, Sonata Form, and Analysis without Score," *Journal of Music Theory Pedagogy* 22 (2008): 149–176, Brian Alegant offers an excellent model for teaching students to analyze large forms by ear. In his model, teachers provide, then gradually remove, visual aids (including changing tonal centers) that serve as listening signposts for the students, whose task is to write the time points of each signpost while listening. Timothy S. Cutler addresses modulation directly and thoroughly, providing a collection of exercises and analyses that illustrate different ways that modulations produce a change in tonal context in "An Aural Skills Approach to Context and Modulation in Tonal Music," *Journal of Music Theory Pedagogy* 16 (2002): 79–104.

³¹ This beautifully crafted Andante provides further excellent listening examples. The subsequent two phrases (mm. 9–16) contain three applied harmonies. The B section, in the parallel minor, features a modulation to the mediant (♭III), another back to the minor tonic, and includes an excellent example of the Neapolitan followed by vii^{o7}/V and the cadential ♯.

Guide-tone line, figurations, and analysis:

HC/F

F: I V vi IV ii V Pedal Bass V-exp.

Andante

1 2 3 4

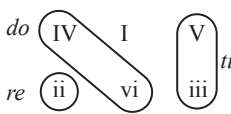
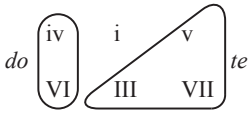
5 6 7 8

PAC/C

I V vi V C: I vi Cad V I

Example 22. Haydn, Symphony No. 90 in C Major, Hob. I:90, II, mm. 1–8: Guide-tone analysis

Another application of the Do/Ti Test to modulation is best suited for single phrases with diatonic modulations like the didactic examples often used in aural skills classes. In this approach, listeners persist in singing the guide tones of the original key (*do*, *ti*, or sometimes *re* for phrases that begin in major; *do* or *te* for those that begin in minor) to an authentic cadence in the new key. When working on modulations in major, I include *re* as a guide tone given the possibility of a modulation to the supertonic (in which *re* will be reinterpreted as *do*). Based on the guide tone from the original key and mode of the new tonic, listeners determine the new key using a thought process similar to the Do/Ti Test (see Example 23). Before each new dictation exercise begins, I encourage students to sketch the chart modeled in Example 23 (using either Roman numerals or letter names) on their practice sheets. As they listen, students can use the final guide tone to limit the possibilities to the corresponding options circled on their chart, then distinguish by mode and sometimes by scale degree to determine the new tonal center. In minor, a new cadential tonic that is consonant with the original key's *te* is the mediant (III) when *te* is the chordal fifth and the subtonic (VII) when *te* is the chordal root.

Modulation from Major	Modulation from Minor
 <i>do</i> + Major = IV <i>do</i> + Minor = vi <i>ti</i> + Major = V <i>ti</i> + Minor = iii <i>re</i> + Minor = ii	 <i>do</i> + Minor = iv <i>do</i> + Major = VI <i>te</i> + Minor = v <i>te</i> + Major = III (if <i>te=sol</i>) <i>te</i> + Major = VII (if <i>te=do</i>)

Example 23. Closely related keys: guide tones and quality

Example 24 demonstrates how students can apply this technique to modulating harmonic dictations in class. In the first two modulations shown in Examples 24a and 24b, listeners can easily persist in using the original guide tones to the cadence. In Example 24c, maintaining the original *do* is much more difficult after the supertonic has been tonicized. In this case, it is advisable to sing *re* as soon as it has been tonicized and to reassign *do* to this pitch as soon as a modulation is suspected, even before the cadence has been reached.

In this approach, modulations are identified only after they have been confirmed by an authentic cadence in the new tonal area. Pedagogically, this approach reminds students of the widely held definition that modulations (as opposed to tonicizations) must be established and confirmed by a cadence in a new tonal area. Further, it trains students to keep all the closely related keys in mind when listening to phrases. A disadvantage of this approach is that it is designed primarily for phrase-length examples: the method is difficult to apply to musical compositions that continue without pause following a cadence. Methodologically, this approach is limited in that the diagrams in Example 23 are designed to work only with authentic cadences in the new key. Neither creating additional diagrams for half cadences nor training students to imagine the tonic after a half cadence in the new key is practical or reliable.³² Teachers who employ this method may choose to bypass

³² Applying this method to modulating phrases ending in half cadences would simultaneously require students to imagine and compare a guide tone from the original key and the tonic chord of the new key. To

this problem altogether by simply using phrases that end with authentic cadences until students become more comfortable with the method.

a. Modulation from I to vi in major.

Guide tones: do ————— ti do ti do ti do + minor = vi



b. Modulation from i to VII in minor.

Guide tones: do ti do ti do te do te te + major + te is root = VII



c. Modulation from I to ii in major.

Guide tones: do ————— di re-do di re re di re + minor = ii

better: $\begin{matrix} re \\ \downarrow \\ do \end{matrix}$ (+re) do ti do = ii



Example 24. Three modulating phrases

Once students have identified the key of the final cadence, they are often better able to identify the point of modulation by finding the first chord with the leading tone in the new key and sketching out the bass line at the cadence. For some students, singing *do* through the phrase can help them pinpoint when the old tonic no longer holds, helping them to model a viable pivot-chord modulation in their analysis. More advanced students may use the guide-tone figurations and modulations described above to better discern the point of modulation. And for weaker students who struggle with

avoid this difficulty, I recommend using guide-tone figurations to identify the cadential dominant (and the new key to which it points).

harmonic dictation in modulating contexts, the Do/Ti Test can provide a vital confidence boost by helping them accurately identify the final tonic.

Concluding Thoughts on the Do/Ti Test

The Do/Ti Test and its extension to chromatic harmonies and modulation provide a method for organizing musical observations to quickly and accurately arrive at a holistic understanding of harmonic identity. It is effective because it allows students to concentrate their efforts on the most vital elements of what they hear: the five primary guide tones (*do*, *ti*, *te*, *di*, and *ra*), three secondary guide tones (*fa*, *sol*, and *le*), chord quality, and phrase function. All other harmonic pitches are identified using guide-tone figurations. Methodologically, the Do/Ti Test invites students to make music as a way of listening, ensuring that the notations produced during dictations reflect real musical experiences, and enabling teachers to measure each student's ability to think in sound.

PART 2: IMPLEMENTING THE DO/TI TEST IN THE CORE THEORY SEQUENCE

The Do/Ti Test's unique approach to harmonic dictation invites new ways of implementing harmonic dictation activities in core aural skills classes. In this section, I describe five aspects of course and curricular design that changed as a result of using the Do/Ti Test in the aural skills sequence at my institution and share strategies for integrating the Do/Ti Test with other approaches to harmonic dictation already in use.

Strategies for Developing Active Listening

The core pedagogical principle of the Do/Ti Test is that musical understanding occurs when the listener links music that is heard with patterns that are already in the mind. Thus, from the beginning of instruction, students should actively make music as they listen. Having the entire class perform the Do/Ti Test at the same time is an excellent way to introduce the technique. During group singing,

weaker students can learn from their peers how to move between guide tones with the music, and respond to the stimuli with energy and confidence. As Rahn and McKay point out, at this stage, “much of the communication is truly musical rather than verbal or notational.”³³ Between class singing and individual listening practice lie numerous variations and approaches. For instance, students can work in small groups to create a guide-tone analysis of a passage, a process that balances individual accountability with the benefits of group learning and peer-to-peer feedback. After each group has finished their analysis, they can teach it to the class as a whole, sharing how they learned to hear through difficult passages.

Alternatively, students can bring their instruments to class and play along with an example, dividing the bass line, guide-tone line, and guide-tone figurations between different instruments and voices. Still another approach is to assign a problem-based learning activity in which each student chooses a popular song and then teaches a non-music student on campus how to identify the tonic note and sing guide tones with each harmony. This activity requires that students learn the listening strategy well enough to teach it to someone without a similar musical background and to reflect on the experience of each participant in the teaching and learning process. In-class activities can be supplemented by listening assignments outside of class and facilitated by assessment tools available in most course management systems, allowing students and teachers to closely follow student progress. No matter which approach is used, training students to habitually respond to music by thinking creatively in sound helps them to cement the connection between the music they audiate and hear, so that the analytical symbols they eventually notate capture real musical experiences rather than only the results of rational calculations or deductions.

In the methods described above, students are allowed and encouraged to sing the guide tones aloud while listening. In general, beginning students apply the Do/Ti Test more accurately when singing than they do when audiating. Because students are not used to singing while listening, especially in a classroom setting, some students may need to be encouraged to sing aloud during the earlier stages of implementation. However, the time will come when the demands of assessing student progress en masse necessitate audiating guide tones silently. In addition to allowing plenty of time for singing in class, it is important that teachers allow enough time

³³ Rahn and McKay, “The Guide-Tone Method,” 104.

to train students how to audiate while listening. Further, students who struggle to audiate the Do/Ti Test during in-class assessments may be offered alternative assessment opportunities in which they can sing in a different environment or even play the guide tone on their instrument. Ultimately, students should be encouraged to develop the ability to audiate while listening so that they can apply their listening skills in a wide variety of contexts (e.g., concerts, other music courses, study halls).

Because the Do/Ti Test, at its earliest stage of introduction, is focused on only two guide tones, it can be applied to a wide variety of styles, genres, textures, and harmonic rhythms. The wider the variety, the likely students will be to find something relevant to their own everyday listening experiences, and the sooner they will begin to apply the technique outside of class. In addition to using recorded examples, teachers can improvise extended melodies over a variety of accompanimental figurations and styles, including Alberti bass, waltz, minuet, pop/rock, and so on. Improvised examples allow the teacher to directly target the needs of the class, and control the harmonic rhythm. It can be effective to engage students' whole bodies by having them stand at their desks, walk around the room, conduct, or improvise some other set of movements that correspond to the guide tones or chordal functions that they hear.³⁴ Such activities help students develop the ability to listen actively while performing other tasks, a skill that is essential for musicians.

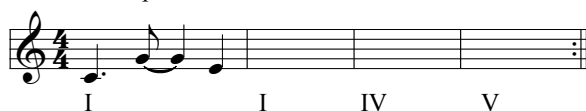
Recent editions of *Music for Sight Singing*, by Robert Ottman and Nancy Rogers, provide improvisation exercises that could be adapted for use with the Do/Ti Test.³⁵ Example 25a provides an example improvisation similar to those suggested by Rogers. In this exercise, students continue the melodic and rhythmic pattern

³⁴For more ideas on incorporating movement and signing into listening activities, see Nicholas Bannon, "Embodied Music Theory: New Pedagogy for Creative and Aural Development," *Journal of Music Theory Pedagogy* 24 (2010): 197–216.

³⁵See Robert W. Ottman and Nancy Rogers, *Music for Sight Singing*, 8th ed. (Upper Saddle River: Pearson Prentice Hall, 2011), 278. In addition to authoring the improvisation exercises in recent editions of *Music for Sight Singing*, Rogers also applies improvisation to the development of aural skills more broadly in "How Structured Improvisation Can Improve Sight Singing Performance (and More)," in *Teaching Sight Singing* (New York: The College Board, 2008), 49–58, http://apcentral.collegeboard.com/apc/public/repository/Music_Teaching_Sight_Singing_SF.pdf.

in a manner that realizes the harmonies provided under the staff. Example 25b provides one possible melodic realization of the chord progression. To adapt this exercise for use with the Do/Ti Test, the instructor provides a starting figuration like the one in Example 25c but plays the harmonies at the keyboard (at a slow tempo) rather than provide them under the staff. As students listen, they sing a melodic pattern outlining the harmony being played and transition from one melodic figuration to another when the harmonies change. At first, students may need to drop out for a measure when a harmonic change occurs, but with practice, most students are able to make this transition within one or two beats. To facilitate harmonic changes, instructors may modify the starting melodic pattern to provide a space on the downbeat, as in Example 25c. Giving students slow harmonic changes can often be helpful at first: staying on a single harmony for several measures allows students time to find suitable melodic patterns and explore the melodic possibilities of each harmony. In addition, when students first try this improvisation, they may be encouraged to start their figurations on a guide tone (*do* or *ti*) to reinforce the connection between Do/Ti Test and the melodic figurations. As students become more comfortable, many will naturally choose to improvise more freely, producing music like that in Example 25d.

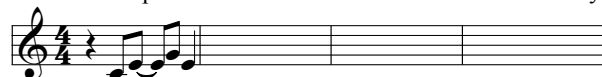
a. Melodic Improvisation Exercise No. 1 – Harmonies Written



b. Realization of Melodic Improvisation Exercise No. 1



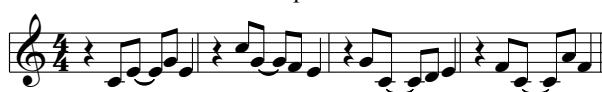
c. Melodic Improvisation Exercise No. 2 – Harmonies Played



Stimulus:



d. Realization of Melodic Improvisation Exercise No. 2



Example 25. Sample improvisation exercises

At my institution, Rogers's exercises provide the basis for free melodic improvisations. During these improvisations, students work in small groups of three to four students, using patterns and chord progressions like those in Example 25a. In turn, each group member improvises a free melody over the harmonies sung by the other members of the group and signals impending harmonic changes to the other members by holding up one (I), four (IV), or five (V) fingers.³⁶ In this activity, students directly experience

³⁶For more suggestions about using improvisation to teach theory, see Kate Covington, "Improvisation in the Aural Curriculum: An Imperative," *College Music Symposium* 37 (1997), http://symposium.music.org/index.php?option=com_k2&view=item&id=2135:improvisation-in-the-aural-curriculum-an-imperative; and Garrett Michaelsen, "Improvising to Learn/Learning to Improvise: Designing Scaffolded

how melodic and harmonic structure relate and learn to choose harmonies based on melodic design (and vice versa).

Another improvisation activity is designed to apply the Do/Ti Test to learning the contrapuntal structures and guide-tone profiles of idiomatic tonic expansions. In this activity, students work in pairs, with one student (S1) freely improvising a bass line similar to a *cantus firmus* and the other (S2) singing guide tones. The result is music similar to first-species counterpoint: the notes are sung in a 1:1 relationship and all intervals must be consonant (thus any *re* in the *cantus firmus* will be dominant function, and take the guide tone *ti* rather than *do*). Unlike first species, the upper voice in this activity is limited to singing only *do* or *ti*. Students begin the improvisation singing at a perfect octave; they sing in whole notes while conducting in $\frac{4}{4}$. At the downbeat of every measure, S1 leads by changing bass notes by step, skip, or leap in any direction. As Example 26a illustrates, S2 responds by changing as quickly as possible (by beat 3 at the latest) to the guide tone that is consonant with the new bass note.³⁷ Once the students are comfortable with the exercise, S1 is asked to create a phrase by singing several tonic-expanding bass progressions followed by a predominant and cadence (see Example 26b).³⁸

Group Improvisations for the Music Theory Classroom," *Engaging Students: Essays in Music Pedagogy* 2, <http://www.flipcamp.org/engagingstudents2/essays/michaelsen.html>.

³⁷ Even though the rhythms are staggered, the students are asked to imagine that the changes are aligned, thereby eliminating the need to worry about fourth-species rules.

³⁸ For a single-page collection of idiomatic tonic- and non-tonic-expanding progressions, see Daniel Stevens, "The Phrase Model Handout," *Music Theory Pedagogy Online*, 2016, <https://music.appstate.edu/about/jmtp/so-you-want-write-chord-progression>.

a. Improvised Cantus Firmus

S2: 

S1: 

b. Improvised Phrase (Tonic Expansions + PD + Cadence)

S2: 

S1: 

Example 26. Contrapuntal Do/Ti Test improvisations

Once students are comfortable creating consonant intervals, teachers can loosen the rules to allow dissonances in limited contexts. For instance, students might be allowed to form a dissonant seventh between *re* and *do*, indicating the supertonic, with the added rule that the bass must resolve up to *sol* and the guide tone down to *ti*. Similarly, an augmented fourth could be allowed between *fa* in the bass and the guide tone *ti*, as long as the dissonance is correctly resolved. Adding the possibility of dissonance allows students to explore new intervallic relationships and dissonance resolution. More significantly, these changes give S2 the power to influence the direction of the improvisation. If S1 sings *re* or *fa*, S2 gets to choose whether to create a consonant or dissonant interval.³⁹

Listening journals, in which students notate on staff paper their musical responses to the pieces they hear, are an excellent way to help students develop the habits of active listening and musical thinking. While listening journals can be scaled to fit the learning goals of any course in the aural skills sequence, they are particularly

³⁹ In all the improvisations above, a third student could be added to the group and given the role of calling out which expansion type is being modeled in the counterpoint. The improvisation activity is complete when all students have had a chance at each role. For a similar improvisation activity more focused on learning the voice leading patterns of harmonic expansions, see Stevens, "So You Want to Write a Chord Progression?"

valuable once students have advanced to chromatic harmonies and modulation, in which audiating both guide tones and figurations are appropriate forms of response. Another benefit is that students can scale the complexity of their musical response to their comfort level in both improvisation and dictation. The resulting notations provide teachers a much better idea of each student's progress and can help teachers better customize instruction to the needs of the class and the individual student.⁴⁰ As a structured form of improvisation itself, the Do/Ti Test provides teachers multiple ways of connecting music listening with music making. The inclusion of improvisation activities is critical because it helps students integrate their musical understanding, performance, listening, and creativity.

Strategies for Incorporating Real Pieces

At many institutions, harmonic dictation assessments require students to notate the bass line, soprano line, Roman numerals, figured-bass symbols, cadence type, and in some cases, phrase function, idiomatic harmonic usages (e.g., $\frac{6}{4}$ type, harmonic prolongations), and pivot chords. The high level of complexity of these required responses virtually necessitates the use of simplified didactic examples played at the keyboard while teaching and assessing students. As a result, the complexity of the stimulus and that of the responses teachers can reasonably expect students to provide are inversely related.

It follows that the primary strategy for meaningfully incorporating real pieces into the curriculum is to teach techniques that can be flexibly scaled to the demands of listening to real music. Such techniques need to be holistic in orientation, since an approach that retrospectively relies on deducing harmonic design from atomistic details cannot easily be applied to hearing real music in real time. To develop listening strategies relevant to understanding real pieces by ear, and to master their application, students need to spend significant time focusing on real musical examples rather than didactic progressions.

⁴⁰ The guide-tone analyses in Examples 13, 17, 19, and 22 model the types of notations that students might be expected to record in their listening journals.

Using the Do/Ti test, we emphasize the use of examples from the repertoire almost exclusively beginning in the first semester.⁴¹ Because the timbres, textures, melodic figurations and embellishments, and harmonic rhythms of real pieces are so different from those of didactic chord progressions at the piano, students whose training centers around the piano tend to struggle applying their dictation skills to pieces played by multiple, varying instruments. Using popular and art pieces of different instrumentations throughout the aural skills sequence easily solves this problem. Appendix 1 suggests excerpts for dictation at every stage of the learning process.

Given the complexity of real pieces and the variability of recording quality, dictating outer voices is generally quite difficult for students at the earliest stages of their training. Instead, I have found it beneficial for students to indicate guide tones, chord quality, phrase function, and cadence type and location for most of the first semester. Pursuing these listening goals helps students build a strong foundation for future growth.

When students move from singing to audiating and notating the guide-tone line, this new mode of attention tends to make them focus more on details than on listening holistically. Consequently, choosing real pieces for dictation practice at this transitional stage can become surprisingly difficult. In some pieces, melodic or contrapuntal embellishments complicate hearing the guide tones, leading students to notate too many guide tones rather than listening for changes of harmony. In other pieces, accented dissonances in the melody, galant-style cadences, and pedal tones might cause confusion about which guide tone is active. Though students only learn how to handle these difficulties through experience, teachers may wish to avoid these problems early on by carefully selecting examples for class. When ambiguities arise, teachers can ask students to choose the best guide tone for an entire measure, or to focus on the harmonic rhythm, and then notate guide tones no shorter than the shortest duration of the harmonic rhythm. Another approach is to give students the harmonic rhythm above a difficult portion of the dictation so they know when to expect changes of harmony or guide tone.

⁴¹ Playing chord progressions at the piano remains a useful tool for assessing how well students can apply the Do/Ti Test to musical examples that lack the textural complexities of real pieces, and in situations where students may benefit from listening to an acoustic instrument instead of a recording.

In my classroom, listening to real music beginning in the first semester has had two significant consequences. First, harmonic dictation is no longer treated as the culminating aural skills exercise. As students learn more pieces through scaffolded listening exercises in and out of class, they become motivated to make finer distinctions and observations. Listening to real pieces can motivate students to attend more closely to chord quality, phrase function, harmonic expansions, and melodic profile in order to better comprehend and articulate musical structures and experiences. A piece that students first encounter as an example in which to identify harmonies can return later in the semester as an example for melodic dictation, deepening students' knowledge of the repertoire.

Second, by focusing on real music, students acquire both the confidence that they can understand music well by listening as well as the techniques and skills to do so. The ability to analyze music by ear changes a student's relationship with the score, which becomes a tool used to clarify an aural impression rather than the starting point for serious analysis. Further, learning to analyze music by ear is far more enjoyable and efficient than plodding measure by measure through a score. Prioritizing analysis by ear enables students to aurally discover those spots that are particularly interesting, beautiful, or troublesome. They then approach the score with questions that are personal, meaningful, and specific.

Strategies for Using Multimedia and Classroom Response Technologies

Modern technology offers new ways to create practice and assessment materials and to monitor students' hearing in real time. Using video creation programs (e.g., iMovie or Windows Movie Maker) or screen-capture software, it is easy to make videos with visual markers synchronized to harmonic changes in an audio track. These videos can be used by students to practice and self assess, or they can be used by teachers to assess students' progress. (Two sample videos designed for practice and self-assessment can be viewed at <http://tinyurl.com/DoTiTestVid01> and <http://tinyurl.com/DoTiTestVid02>.) By removing the answers, teachers could use videos like these as the basis for take-home dictation assignments or in-class assessments. The quiz options found in most course management systems (e.g., Blackboard, Sakai, Canvas) can also be used for this purpose; instructors can then see how well each student is doing and which parts of the assignment caused the most problems for the class as a whole.

Classroom response systems (CRSs) offer teachers real-time insight into their students' thinking.⁴² Using CRS software, teachers can pose multiple-choice questions, and students respond in real time using either a "clicker" or an application or web page on their smart phone, tablet, or computer. The instructor and students then see the aggregate responses from the entire class immediately, including the number of students who have chosen a particular answer and the percentage this number represents. The lag time between a student's response and its appearance on the screen is near zero, making CRSs useful for capturing real-time listening. Most CRS systems are limited to multiple-choice responses; appendix 2 provides a sample set of CRS questions for use throughout the aural skills sequence.

The three videos discussed below demonstrate CRS technology in action. They illustrate how a group of students responded to each chord in a progression. Because the graph showing students' answers updates in real time to reflect the latest response of each student, it reveals the challenges some chords present.⁴³ For some chords, the graph shifts quickly to the correct answer, while for other chords, a slower shift indicates a more tentative commitment to a guide tone. In many CRSs, it is also possible to collect individual assessment data in real time. In the first video (<http://tinyurl.com/DoTiTestVid03>), the students were asked to identify whether chords were consonant with *do* or *ti*. In the second video (<http://tinyurl.com/DoTiTestVid04>), the introduction of the supertonic calls for a new clicker response: the *do* + *re* figuration. In the third video (<http://tinyurl.com/DoTiTestVid05>), students respond to the music by indicating both guide tone and quality. In this video,

⁴² Philip Duker has described a variety of innovative applications of CRS technology in the theory classroom, including using CRSs to assess the application of the Do/Ti Test by the class as a whole. See Philip Duker, "Capturing Thinking in Time—Using 'Clickers' to Measure Student Understanding," in *Engaging Students: Essays in Music Pedagogy* (2013), <http://www.flipcamp.org/engagingstudents/duker.html>.

⁴³ These videos were made with a group of sixteen first-year music majors at the University of Delaware who had been introduced to the Do/Ti Test only a few weeks before. During the exercises, the students could not see the graph shown in the video. Students were asked to hold their CRS clickers in a manner that did not allow other students to see their responses, eliminating the possibility that one student's response could affect another's.

the students seem more hesitant to choose a response, perhaps due to uncertainty or confusion with the response options.

Web-based examples and classroom response systems offer teachers new ways of creating assignments and measuring student growth. Because these measurements can be made in real time during class, teachers can better adjust their teaching to the needs of students and ensure that lessons do not proceed until prerequisite skills have been mastered.⁴⁴ Finally, teachers who employ flipped pedagogy and just-in-time teaching may find these web-based and CRS applications an effective way to engage students outside of class and quickly measure their learning in class.⁴⁵

New Approaches to Dictation and Assessment

How might teachers implement the Do/Ti Test when students add notation to their listening skills? What assessment techniques might measure students' acquisition of the listening skills and values supported by this new approach? One approach asks students to notate harmonic dictations in layers, beginning with guide tones (in rhythm) and later adding cadence types (PAC, IAC, HC, or evaded cadences), chord quality, and phrase function (see Example 29).⁴⁶

⁴⁴Crystal Peebles's suggestions for using Audacity to foster active listening could also be adapted for practicing and assessing harmonic dictation using the Do/Ti Test. See Crystal Peebles, "Using Audacity to Participate in Active Musical Listening," in *Engaging Students: Essays in Music Pedagogy* (2013), <http://www.flipcamp.org/engagingstudents/peebles.html>.

⁴⁵Kris Shaffer and Bryn Hughes, "Flipping the Classroom: Three Methods," in *Engaging Students: Essays in Music Pedagogy* (2013), <http://www.flipcamp.org/engagingstudents/shafferintro.html>. See also Philip Duker et al., "Hacking the Music Theory Classroom: Standards-Based Grading, Just-in-Time Teaching, and the Inverted Class," *Music Theory Online* 21, no. 1 (March, 2015), http://www.mtosmt.org/issues/mto.15.21.1/mto.15.21.1.duker_gawboy_hughes_shaffer.html.

⁴⁶As students begin learning to notate their musical thoughts on paper, instructors may wish to provide selected guide tones. This can keep student's ears on track and help them remain focused on listening actively instead of being distracted by the task of filling an empty staff. As students improve, the provided guide tones may be removed gradually.

Student Response (in four layers):

Cadence(s):											HC/G	
Quality:	M	M	M	M	M		M	M	M	M	M	M
Phrase Function:	T ————— D											

Guide *do*:

Tones: *ti*:

Stimulus:

Andante con espressione

Example 27. Mozart, Piano Sonata in D Major, K. 311, II, mm. 1–4:
harmonic dictation

At this first stage, guide tones can be indicated using solfège or notated on a single-line staff, using the space above and below the line to indicate *do* and *ti*.⁴⁷ In this example, *ti* is present only by implication on the downbeat of m. 2; teachers may wish to suggest that students choose the guide tone that best fits the entire beat. Alternatively, teachers can use this beat as a teaching moment, pointing out after the dictation how Mozart gracefully unfolds the dominant.

Once students have learned to hear guide tones, quality, and function, they begin studying the bass line, developing a holistic impression of how the bass articulates phrase structure. At this second stage, students are first asked to notate the solfège or pitches that occur in the bass at the onset of tonic, predominant, and cadential dominant and tonic. Later, students are asked to indicate any harmonic expansion types they notice, which helps draw their attention to the bass's contour, even if they cannot yet dictate every pitch. Example 28 shows what a completed guide-tone and harmonic analysis might look like at this stage. In this example, students use guide tones, quality, and function in addition to Roman numerals. With the addition of new layers (RN and harmonic expansions),

⁴⁷ A five-line staff only becomes necessary when students begin notating the bass line and guide-tone figurations.

it is advisable to remove other elements, such as chord quality, to keep the required notations manageable.

In the third stage, students dictate the entire bass line to identify chord inversion and contrapuntal structure with figured bass symbols, to notate tonic-, predominant-, and dominant-expanding bass progressions, and to better understand how the bass shapes the phrase as a whole. A dictation at this stage of the Haydn String Quartet excerpt in Example 28 includes a complete bass line and figured bass symbols in addition to the information already notated. At this stage, the one-line guide-tone staff may be replaced with a regular treble clef staff, so that students can begin notating simple guide-tone figurations, such as the *re-do* figuration associated with the supertonic.

The fourth stage of this approach to harmonic dictation involves developing guide-tone figurations to identify secondary chords, other chromatic harmonies, and modulations. In this stage, students are expected to produce analyses similar to those in Examples 13, 17, 19, and 22. In one or two hearings, students should be able to fully grasp the harmonic structure of phrases 8–10 chords in length, including their cadence types and keys, the locations of predominants and cadential dominants, harmonic expansions, and chromatic harmonies. After the third or fourth playing, students should be able to sketch the bass line and most guide tones and figurations.⁴⁸

⁴⁸ I recommend keeping the number of playings to a minimum, so the relevance of the activity is not sacrificed in an effort to capture every detail.

Student Response:

Cadences:

Guide Tones:

Bass:

RN:

Harmonic Expansions:

Phrase Function:

do: (ti:)

(+re)

(+re)

PAC/B

susp. cadence

HC/B

6 4 3 V

6 6 6 7 4 V I

I V I V vi ii Cad V I

Neighbor Subdom. Ap. (I-vi-IV)

Neighbor bass T ——— P D T

T ——— P D, D, T

Stimulus:

Adagio

p

Example 28. Haydn, String Quartet in E♭ Major, op. 76, no. 6, II, mm. 1–8: guide tone dictation

Instructors can also assess students' development of active listening skills in ways that do not involve notation on paper. For instance, students can demonstrate listening skills by singing a guide-tone line while listening, or even by playing a guide-tone line on their instrument. Students can also play an excerpt of music they are studying (on their instrument, if they are able to sing and play at the same time, or using a recording otherwise) and sing a guide-tone line with the music.⁴⁹ Listening journals that record responses in musical notation provide another assessment point and reinforce the values of applying techniques learned in aural skills habitually and widely. These alternative assessment strategies allow teachers to understand and assess how students hear and think through passages in real time, apply their skills to pieces they are learning, and articulate the knowledge and insights they have gained through listening.

Using a variety of assessment techniques benefits both students and teachers.⁵⁰ Students who struggle with translating musical thoughts into symbols on paper are offered alternative ways to demonstrate their competence and are encouraged to work with the instructor to develop useful assessment strategies. Conversely, using varied assessment techniques challenges students who excel at rendering a dictation example on paper but find it difficult to communicate musical thoughts verbally or by using an instrument

⁴⁹ These activities further reinforce that the music we play can become a key to perceiving musical structure; in other words, musical playing is musical thinking. As an active pianist, my personal experience of applying the Do/Ti Test as I play fundamentally transforms the way I hear, think about, and experience the music as I perform it.

⁵⁰ Linda Suskie asserts that valid assessment practices always involve multiple points and forms of measurement in *Assessing Student Learning: A Common Sense Guide*, 2nd ed. (San Francisco: John Wiley & Sons, 2009). Kris Shaffer discusses the purpose and ideology of assessment in "Part 3: Assessing Problem-Based Learning," *Engaging Students: Essays in Music Pedagogy* 2 (2014), <http://www.flipcamp.org/engagingstudents2/essays/shaffer.html>. Bruce W. Quaglia addresses ways in which music theory teachers can address learner variability in "Planning for Student Variability: Universal Design for Learning in the Music Theory Classroom and Curriculum," *Music Theory Online* 21, no. 1 (March, 2015), <http://www.mtosmt.org/issues/mto.15.21.1/mto.15.21.1.quaglia.html>.

or their voice.⁵¹ Granting students flexibility in how they are assessed allows them to develop trust in their learning and instruction, and helps them understand and develop their own unique modes of musical expression and response. Teachers gain greater insight into the musical intelligence of their students, allowing them to tailor their instruction to build on and develop students' musical understanding.

Integrating the Do/Ti Test and Other Harmonic Dictation Methods

While the Do/Ti Test works effectively as the primary method for harmonic dictation, it can also be used to complement other approaches. Guide tones provide a third point of reference that, when combined with the bass and soprano, enables listeners to better triangulate the harmonic terrain. Returning to Beethoven's Adagio cantabile from op. 13, shown in Example 1a, students who correctly apply the Do/Ti Test will likely call the second chord—a major *ti* chord—not ii⁶ or IV, but V (dominant). Students who identify the bass notes will likely get the figured bass symbols as well. The Do/Ti Test can also be used in conjunction with the phrase model and harmonic expansions so that students learn to listen contextually. The Do/Ti Test is not intended to supplant other effective methods already in use, but to strengthen them.

While the Do/Ti Test complements other methods, it also challenges them in both theory and practice. We have already seen how the Do/Ti Test reverses dictation procedures that start with hearing outer voices: these voices are the last things students focus on when applying the Do/Ti Test. Transcribing the soprano is focused on only in those situations where the harmonic movement is governed by the outer voice structure, such as diatonic sequences, chromatic predominants, and the Phrygian half cadence.⁵² Other

⁵¹ During theory entrance exams, I ask prospective graduate students to talk through a seven-chord harmonic progression and to sing the pitches they hear in harmonies that they cannot immediately identify. The students get two playings, and then describe what they hear during the third. The results are often not encouraging: most students struggle to identify basic diatonic harmonies, and the idea of freely singing pitches as a means to explore and identify harmonic structure seems foreign to many students.

⁵² Hearing upper melodic lines is important when analyzing formal structure by ear or when listening for outer voice contrapuntal or

practical differences include the applicability of the Do/Ti Test to real pieces and its efficiency in producing accurate results in fewer hearings.

The Do/Ti Test and methods involving harmonic deduction are also different in theory. While the end product of each method might be similar on paper (i.e., Roman numerals, figured bass symbols, bass line, and cadence identification), the quality of musical experience and the array of learning goals are distinct. By focusing the listener's ear on guide tones, the Do/Ti Test draws attention to the contrapuntal relationship between the bass and guide-tone lines (rather than bass and soprano) while simultaneously throwing the activity of outer parts (vs. abstracted outer voices) of real pieces into greater relief. By establishing *do* as a stable point of tonal reference against which students habitually audiate and compare what they are hearing, the Do/Ti Test helps listeners develop a spatial sense of harmony, one in which harmonic changes can shift a listener's orientation to the surrounding chord tones and prompt them to anticipate where the music might next move.⁵³

The Do/Ti Test also addresses a unique array of learning goals and aural skills. While conventional approaches require students to respond to musical stimuli with labels (e.g., Roman numerals and figured bass symbols) that may not immediately be tied to real musical experiences, the Do/Ti Test begins by encouraging a musical response to sound through active listening. Active listening involves numerous competencies of great value to musicians, including listening while singing or playing, handling multiple input streams, and comparing music that is heard with musical patterns already in the mind.

linear melodic structures. In my experience, students are better able to appreciate melodic design, the interaction of melody and harmony, and the formal implications of melody in more advanced undergraduate and graduate courses. However, as Gary Karpinski notes, there is an important difference between "parts" and "voices," and it is not safe to assume that years spent dictating upper voices in chordal dictations prepare students to comprehend the upper parts in real pieces. See Gary Karpinski, *Aural Skills Acquisition*, 125–126.

⁵³ For example, the move from I to vi is not only heard as a major sonority followed by minor but also as a shift in space in which *do* changes from being a strong foundation (as the root of I) to being suspended between root and fifth (as the chordal third of vi).

Developing a Curricular Plan

Developing a curricular plan that integrates the Do/Ti Test into the theory core sequence involves several challenges, some of which are institution specific. The curricular plan offered in Appendix 3 provides a model that can be adapted to different institutional and curricular situations.

The first issue is pacing. The fundamental learning goals addressed by the Do/Ti Test and the application of this technique to real pieces take significant time to introduce and develop if students are not accustomed to this approach. Thus teachers may wish to dedicate nearly an entire semester to the first stage of implementation, illustrated in Example 27 above. The pacing of later stages will depend on curricular demands and the students themselves: each year's class may require different pacing, although at my institution, integrating the Do/Ti Test into the first two semesters of the sequence has not caused us to reduce the number of topics covered in the remaining two semesters. Flexible pacing allows the focus to stay on developing and applying active listening to a wide variety of music. The second issue is clarifying educational goals and deciding how best to align desired learning outcomes (active, creative listeners) with teaching, learning, and assessment practices; when harmonic dictation is understood not as a goal in itself (in which students reduce sound to symbol) but as an exercise to develop active listening (in which students respond to sound with sound), the ways harmonic dictation is taught, practiced, and assessed become thoroughly transformed. Taking changes in teaching, learning, and assessment into account in the curriculum design will help ensure successful implementation of a new curriculum.

A final issue involves approaching curriculum development in such a way that students are kept at the center, so that their goals drive learning and their expertise is welcomed and valued. The Do/Ti Test is a listener-centered pedagogical tool, inviting the listener to co-create alongside the music, allowing the agency and creativity of the listener to become an integral part of what it means to listen. As such, the Do/Ti Test lends itself well to pedagogies and curriculums that are student-centered. Jesse Stommel argues that student-centered pedagogy:

“[1] centers its practice on community and collaboration;

[2] must remain open to diverse, international voices, and thus requires invention to reimagine the ways that communication and collaboration happen across cultural and political boundaries; [3] will not, cannot, be defined by a single voice but must gather together a cacophony of voices; and [4] must have use and application outside traditional institutions of education."⁵⁴

This article has explored ways of teaching the Do/Ti Test that involve collaboration and active participation by every member of the class, whether through class singing or small group improvisation activities. The community-building potential of the Do/Ti Test can be further developed in later semesters, when students can share, compare, and critique different ways of listening through difficult passages of music. Students can work in small groups to create improvised voice-leading structures of music heard in class. This approach values students' diverse ways of hearing by opening active listening to the creative impulses and ideas of every listener in the class. Rather than limiting students' voices to the analytical notations they submit on paper after a dictation, the Do/Ti Test encourages students to contribute their musical ideas to the listening experience. As they do so, they learn to think and listen critically to how their ideas relate to the music and to the contributions of their classmates. Because the creative musical contribution of every student is as essential to symphonic hearing as each member of the orchestra is to a symphonic composition, this mode of hearing remains open to a "cacophony of voices" in the most literal sense. Most importantly, the Do/Ti Test gives students a technique that is relevant to their everyday listening and performing experiences.⁵⁵

⁵⁴ Jesse Stommel, "Critical Digital Pedagogy: A Definition," *Hybrid Pedagogy: A Digital Journal of Learning, Teaching, and Technology* (Nov. 18, 2014), <http://www.hybridpedagogy.com/journal/critical-digital-pedagogy-definition/>; cited by Kris Shaffer, "Student-centered Curriculum," blog post (Dec. 6, 2014), <http://kris.shaffermusic.com/2014/12/student-centered-curriculum/>. Shaffer offers several suggestions for making the music theory core more student-centered without necessarily changing its content.

⁵⁵ Commenting on the decentering of disciplinary authority caused by inviting students to participate in the creation of disciplinary knowledge and focusing on music that students learn in ensemble, Kris Shaffer writes that "using a piece being performed by the college orchestra, choir, opera, etc. in class can help students connect course content

Toward Symphonic Hearing

The Do/Ti Test effectively meets the challenges of teaching harmonic dictation set forth at the beginning of this article by providing a technique that is both relevant to a musician's work outside the classroom and applicable to hearing real pieces from a variety of different musical styles and genres. By enabling listeners to perceive harmonic function quickly, accurately, and in real time, this technique supports a variety of transformative pedagogical objectives of value to professional musicians. Using the Do/Ti Test, listeners learn to listen horizontally as a way of organizing vertical sonorities. Critical distinctions are placed at the beginning of the listening process, allowing listeners to quickly understand harmonic progressions. The Do/Ti Test fosters a mode of musical response that is creative, yielding a richer, more stimulating listening experience. Because the Do/Ti Test is readily applicable to hearing real pieces, it allows teachers to prioritize analyzing music by ear. Most importantly, the Do/Ti Test draws students into active listening. By joining the creative process through symphonic hearing, they are not overwhelmed by the listening experience, but empowered to enter into it with pleasure.

Understanding Harmonies by Ear in One Playing

Shortly after arriving at the University of Delaware, three students from my sophomore aural skills course—call them Sarah, George, and Jennifer—arrived at my office completely exasperated. They had spent hours working together on some phrase-length harmonic dictations (eight to ten chords) posted online for practice, and claimed that after six hearings, they had each arrived at different responses for every dictation. Their work showed the same errors and guesswork discussed in Example 1 of this article: incorrect bass and soprano lines led to problems identifying harmonies, causing confusion and frustration. After some words of encouragement, I asked the students to put aside the approach they were using and to think through the Do/Ti Test one more time, focusing exclusively on the distinctions it presents. They were allowed to write down parts of the bass line only if it did not distract them from applying to other professional activity—and can empower them to contradict both the theory instructor and the orchestra conductor, as the students are in the midst of engaging the piece from multiple perspectives simultaneously." See Shaffer, "Student-Centered Curriculum."

the Do/Ti Test and hearing the chords holistically. I turned to the piano and played a new ten-chord phrase. After a moment, I turned around and beheld a sight I will not soon forget: as the three students compared their answers, Sarah's mouth fell open, George began to laugh, and tears welled up in Jennifer's eyes. After a single playing, they had each written down nearly identical Roman numerals and figures. To this day, I remain grateful to have witnessed Sarah, George, and Jennifer's breakthrough and hopeful that the Do/Ti Test will enable more students to share their joy.

APPENDIX 1. SUGGESTED PIECES

The implementation stage(s) for each piece is indicated below. The four stages are summarized below for reference:

Stage 1: Guide tones, chord quality, phrase function, cadences

Stage 2: Guide tones, phrase function, Roman numerals, bass notes at onset of TPD, harmonic expansions, and cadences

Stage 3: Stage 2 notations plus the entire bass line, simple guide-tone figurations

Stage 4: Stage 3 notations plus advanced guide-tone figurations

Although pieces with chromatic harmonies are treated most comprehensively by a stage 4 dictation, some of these pieces are also suitable for an early stage 1 dictation in which the focus is primarily on hearing guide tones. Each of these excerpts cadences in the original key.

SYMPHONIC HEARING: MASTERING HARMONIC DICTATION USING THE DO/TI TEST

Piece	Stages			
	1	2	3	4
The Beatles, "I Want to Hold Your Hand," first verse + refrain	X			X
Haydn, String Quartet in C Major, op. 76, no. 3, II, mm. 1–21	X			X
Mozart, Piano Sonata in D Major, K. 311, II, mm. 1–12 (PAC after repeat)	X			
Mozart, Piano Sonata in A Major, K. 331, I, mm. 1–8	X			
Johnny Cash, "I Walk the Line," first verse + refrain	X			
Barber, Violin Concerto, op. 14, II, mm. 1–14 (opening and oboe solo)	X			
Mozart, Horn Concerto in E♭ Major, K. 447, II, mm. 1–8	X	X		
Mozart, <i>Missa Brevis</i> in C Major, K. 259, Kyrie, mm. 1–8	X	X		
Mozart, "An Chloe," K. 524, mm. 1–16	X	X		
Mozart, Divertimento in D Major, K. 334, III, mm. 1–12		X		
Beethoven, Piano Concerto No. 5 in E♭ Major, op. 73, II, mm. 1–16		X		
Mozart, Piano Sonata in B♭ Major, K. 333, I, mm. 1–10		X		
Bach, Partita No. 2 in D Minor for Solo Violin, BWV1004, Chaconne, mm. 1–9		X		
Mozart, Piano Sonata in F Major, K. 332, I, mm. 1–22		X		
Mozart, Piano Sonata in C Major, K. 545, I, mm. 1–12		X	X	
Beethoven, Piano Sonata in F Minor, op. 2, no. 1, mm. 1–8		X	X	
Mozart, Serenade in G Major, K. 525 "Eine kleine Nachtmusik," II, mm. 1–8			X	
The Beatles, "I Saw Her Standing There," first verse + refrain			X	
The Beatles, "Ob-La-Di, Ob-La-Da," verse + chorus + bridge			X	
Brahms, Piano Quartet in C Minor, Op. 60, I, mm. 70–77 (2nd theme)			X	X
Regina Spektor, "Firewood," first verse	X		X	X
Schubert, Piano Sonata in B♭ Major, D. 960, II, mm. 1–13	X		X	X
Billy Joel, "Piano Man"	X			X
Bach, Suite in E♭ Major for Solo Violoncello, Prelude, mm. 1–7	X			X
Mozart, Piano Concerto in C Major, K. 467, II, mm. 1–22	X			X
Mozart, Symphony in C Major, K. 425 "Linz," mm. 1–19	X			X
Mozart, Overture to <i>Die Zauberflöte</i> , K. 620, mm. 1–16	X			X
Beethoven, Piano Variations in C Minor, WoO 80, theme, mm. 1–8	X			X
Beethoven, Symphony No. 5 in C Minor, op. 67, II, mm. 1–8				X
Beethoven, Piano Sonata in C Minor, op. 13 ("Pathétique"), II, mm. 1–8				X
Mozart, Trio in E♭ Major, K. 498 ("Kegelstadt"), I, mm. 1–16				X
Chopin, Nocturne in E♭ Major, op. 9, no. 2, mm. 1–8				X

APPENDIX 2.
CLASSROOM RESPONSE SYSTEM (CRS)
REMOTE RESPONSES

The following sample responses can be used with a variety of musical examples when a five-button CRS remote (“clicker”) or application or web-based response system is available. The options below can be reconfigured according to teacher preference.

Guide tones only:

- A. *do*
- B. *ti*
- C. *te*
- D. *do + re*
- E. *di / ra*

Three-chord guide-tone patterns:

These patterns may be used to practice hearing harmonic expansions.

- A. *do–ti–do*
- B. *do–do–do*
- C. *ti–do–ti*

Four-chord guide-tone patterns:

These patterns may be used to identify the guide-tone profile of numerous short progressions.

- A. *do–do–ti–do*
- B. *do–ti–ti–do*
- C. *do–do–do–ti*
- D. *do–do–ti–ti*
- E. *do–do–do–do*

Phrase function only:

- A. Tonic
- B. Predominant
- C. Dominant

Guide tones plus quality (in the major mode):

- A. *do + major*
- B. *do + minor*
- C. *ti + major*
- D. *ti + diminished*
- E. *ti + minor*

Guide tones plus quality (in the minor mode):

- A. *do* + minor or major
- B. *do* + diminished
- C. *ti* + major
- D. *te* + major
- E. *te* + minor

Guide tones plus phrase function (in the major mode):

- A. *do* + tonic functioning
- B. *ti* + tonic functioning
- C. *do* + predominant functioning
- D. *do* + dominant functioning (e.g., neighboring I⁴ or Cad I⁴)
- E. *ti* + dominant functioning

Guide tones plus phrase function (in the minor mode):

- A. *do* + tonic functioning
- B. *ti* + tonic functioning
- C. *do* + predominant functioning
- D. *do* or *ti* + dominant functioning (listen for *sol* in bass)
- E. *te* (VII, III, or v)

Secondary dominant-functioning chords:

- A. V or vii^o / ii (or VII in minor)
- B. V or vii^o / iii (or III)
- C. V or vii^o / IV (or iv)
- D. V or vii^o / V
- E. V or vii^o / vi (or VI)

Chromatic harmonies:

- A. Secondary Dominant (V)
- B. Secondary Leading tone (vii^o)
- C. Neapolitan
- D. Augmented Sixth
- E. Common-tone diminished seventh

APPENDIX 3.

MODEL HARMONIC DICTATION CURRICULUM FOR A FOUR-SEMESTER SEQUENCE

Semester 1:

- Pre-requisite knowledge: none
- Materials covered: all diatonic harmonies in the major mode; limited use of inversion; introduce minor mode (toward the end of semester); cadences (AC and HC); introduce tonic expansions; phrase functions (TPD); chord quality
- Do/Ti Test implementation (described in article, summarize here) stages: 1 and 2 (begin)

Semester 2:

- Pre-requisite knowledge: harmonic expansions
- Materials covered: all diatonic harmonies in the minor mode; greater use of inversion; most tonic and non-tonic expansions; bass line dictation; AC types (PAC and IAC); hearing longer excerpts
- Do/Ti Test implementation stages: 2 (complete) and 3

Semester 3:

- Pre-requisite knowledge: secondary and other chromatic harmonies
- Materials covered: secondary dominants and leading tone chords; chromatic predominants; ct⁰⁷
- Do/Ti Test implementation stages: 4 (chromatic harmonies); hearing longer excerpts with chromatic harmonies

Semester 4:

- Pre-requisite knowledge: modulation schemes
- Materials covered: modulation to closely-related keys; mode-change modulations; sequential modulations; enharmonic modulations; hearing extended passages and full pieces
- Do/Ti Test implementation stages: 4 (modulation to closely related and distant keys)

BIBLIOGRAPHY

- Aldwell, Edward, and Carl Schachter. *Harmony and Voice Leading*. 4th ed. Boston: Schirmer, 2011.
- Alegant, Brian. "Listen Up!: Thoughts on iPods, Sonata Form, and Analysis without Score." *Journal of Music Theory Pedagogy* 22 (2008): 149–176.
- Alvarez, Manuel. "Effects of Sequencing, Classifying, and Coding on Identifying Harmonic Functions." *Journal of Research in Music Education* 29, no. 2 (Summer, 1981): 135–141.
- . "A Comparison of Scalar and Root Harmonic Aural Perception Techniques." *Journal of Research in Music Education* 28, no. 4 (Winter, 1980): 229–235.
- Bannon, Nicholas. "Embodied Music Theory: New Pedagogy for Creative and Aural Development." *Journal of Music Theory Pedagogy* 24 (2010): 197–216.
- Caplin, William E. *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. New York: Oxford University Press, 1998.
- Covington, Kate. "Improvisation in the Aural Curriculum: An Imperative." *College Music Symposium* 37 (1997). http://symposium.music.org/index.php?option=com_k2&view=item&id=2135:improvisation-in-the-aural-curriculum-an-imperative.
- Cutler, Timothy S. "An Aural Skills Approach to Context and Modulation in Tonal Music." *Journal of Music Theory Pedagogy* 16 (2002): 79–104.
- Duker, Philip. "Capturing Thinking in Time – Using 'Clickers' to Measure Student Understanding." *Engaging Students: Essays in Music Pedagogy* 1 (2013). <http://www.flipcamp.org/engagingstudents/duker.html>.
- Duker, Philip, Anna Gawboy, Bryn Hughes, and Kris P. Shaffer. "Hacking the Music Theory Classroom: Standards-Based Grading, Just-in-Time Teaching, and the Inverted Class." *Music Theory Online* 21, no. 1 (March, 2015). http://www.mtosmt.org/issues/mto.15.21.1/mto.15.21.1.duker_gawboy_hughes_shaffer.html.

- Durham, Thomas L. "Teaching Harmonic Dictation." In *AP Music Theory Teacher's Guide*, ed. David Lockart, 132–139. New York: The College Board, 2007. http://apcentral.collegeboard.com/apc/members/repository/ap07_musictheory_teachersguide_2.pdf.
- Gonzales, Cynthia I., and Bonnie Smith. "From Harmonic Looking to Harmonic Listening: Harmonic Dictation via Harmonic Singing." Paper presented at the Pedagogy Into Practice Conference, Lee University, Cleveland, TN, June 2, 2017.
- Gosden, Stephen. "The 'Technology Tools' Session at FlipCamp Music Theory." *Engaging Students: Essays in Music Pedagogy* 1 (2013). <http://www.flipcamp.org/engagingstudents/gosden.html>.
- Huron, David. *Sweet Expectation: Music and the Psychology of Expectation*. Cambridge: Massachusetts Institute of Technology, 2006.
- Karpinski, Gary. *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians*. Oxford: Oxford University Press, 2000.
- Laitz, Steven G. *The Complete Musician: An Integrated Approach to Tonal Theory, Harmony, and Listening*. 3rd ed. New York: Oxford University Press, 2011.
- Lewin, David. "Music Theory, Phenomenology, and Modes of Perception." *Music Perception: An Interdisciplinary Journal* 3, no. 4 (Summer, 1986): 327–392. Reprinted in *Studies in Music with Text*. Oxford: Oxford University Press, 2006.
- Marcozzi, Rudy. *Strategies and Patterns for Ear Training*. Upper Saddle River: Pearson Prentice Hall, 2008.
- . "The Use of Binary Logic and Processing to Enhance Learning and Instruction in the Undergraduate Theory Classroom." *Journal of Music Theory Pedagogy* 12 (1988): 25–38.
- Michaelsen, Garrett. "Improvising to Learn/Learning to Improvise: Designing Scaffolded Group Improvisations for the Music Theory Classroom." *Engaging Students: Essays in Music Pedagogy* 2 (2014). <http://www.flipcamp.org/engagingstudents2/essays/michaelsen.html>.

Ottman, Robert, and Nancy Rogers. *Music for Sight Singing*. 8th ed. Upper Saddle River: Pearson Prentice Hall, 2011.

Peebles, Crystal. "Using Audacity to Participate in Active Musical Listening." *Engaging Students: Essays in Music Pedagogy* 1 (2013). <http://www.flipcamp.org/engagingstudents/peebles.html>.

Quaglia, Bruce W. "Planning for Student Variability: Universal Design for Learning in the Music Theory Classroom and Curriculum." *Music Theory Online* 21, no. 1 (March, 2015). <http://www.mtosmt.org/issues/mto.15.21.1/mto.15.21.1.quaglia.html>.

Rahn, Jay, and James R. McKay. "The Guide-Tone Method: An Approach to Harmonic Dictation." *Journal of Music Theory Pedagogy* 2 (1988): 101–111.

Rameau, Jean-Philippe. *Traité de l'harmonie reduite à ses principes naturels*. Paris: Jean-Baptiste-Christophe Ballard, 1722.

Rings, Steven. *Tonality and Transformation*. Oxford: Oxford University Press, 2011.

Rogers, Michael. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*. Carbondale: Southern Illinois University Press, 1984.

Rogers, Nancy. "How Structured Improvisation Can Improve Sight Singing Performance (and More)." In *Teaching Sight Singing*, 49–58. New York: The College Board, 2008. http://apcentral.collegeboard.com/apc/public/repository/Music_Teaching_Sight_Singing_SF.pdf.

Shaffer, Kris. "Part 3: Assessing Problem-Based Learning." *Engaging Students: Essays in Music Pedagogy* 2 (2014). <http://www.flipcamp.org/engagingstudents2/essays/shaffer.html>.

———. "Student-centered Curriculum." Blog post. Dec. 6, 2014. Accessed March 19, 2015. <http://kris.shaffermusic.com/2014/12/student-centered-curriculum/>.

Shaffer, Kris and Bryn Hughes. "Flipping the Classroom: Three Methods." *Engaging Students: Essays in Music Pedagogy* 1 (2013). <http://www.flipcamp.org/engagingstudents/shafferintro.html>.

Stevens, Daniel. "The Do/Ti Test Handouts." *Music Theory Pedagogy Online* (2016). <https://music.appstate.edu/about/jmtp/doti-test-handouts>.

———. "So You Want to Write a Chord Progression?: Teaching Core Music Theory Using the Phrase Model Handout." *Music Theory Pedagogy Online* 6 (2016). <https://music.appstate.edu/about/jmtp/so-you-want-write-chord-progression-teaching-core-music-theory-using-phrase-model-handout>.

Stommel, Jesse. "Critical Digital Pedagogy: A Definition." *Hybrid Pedagogy: A Digital Journal of Learning, Teaching, and Technology* (Nov. 18, 2014). <http://www.hybridpedagogy.com/journal/critical-digital-pedagogy-definition/>.

Suskie, Linda. *Assessing Student Learning: A Common Sense Guide*. 2nd ed. San Francisco: John Wiley & Sons, 2009.



Schenkerian Analysis for the Beginner

BY BENJAMIN K. WADSWORTH

INTRODUCTION: SCHENKER IN THE CLASSROOM

In its earliest days, and continuing throughout the 20th century, Schenkerian analysis was often taught by master teachers to highly gifted students. Elite musicians in this tradition included Schenker and his students, Ernst Oster and his students, and so on, creating a relatively small family of expert practitioners.¹ Schenker's Lesson Books (1913–1932) provide snapshots of the diverse analytical, theoretical, and critical activities possible in long-term, mentored relationships.² Mentored relationships are fruitful with highly motivated students who arrive with a solid theoretical and practical background. Across the United States and other countries, however, Schenkerian courses at many universities pose challenges:

This essay elaborates on research presented at the Pedagogy in Practice conference at Lee University (Cleveland, TN) on June 2, 2017. A word of thanks is due to students of my Introduction to Schenker classes at Kennesaw State (2014 and 2016), to William Marvin and Poundie Burstein for their comments on earlier drafts, and to the anonymous readers of this journal for their feedback.

¹Other notable students of Schenker included Hans Weisse, Oswald Jonas, and Viktor Zuckerkandl. For a sample of influential early pedagogical writings, see Oswald Jonas, *Introduction to the Theory of Heinrich Schenker: The Nature of the Musical Work of Art*, trans. and ed. John Rothgeb (Ann Arbor: Musicalia Press, 2005); Adele Katz, *Challenge to Musical Tradition: A New Concept of Tonality* (New York: Alfred Knopf, 1945); and Felix Salzer, *Structural Hearing: Tonal Coherence in Music* (New York: Charles Boni, 1952). For overviews of the early transmission of Schenker's thought, see William Rothstein, "The Americanization of Heinrich Schenker," in *Schenker Studies*, ed. Hedi Siegel (Cambridge: Cambridge University Press, 1990), 193–203; and David Carson Berry, "The Role of Adele T. Katz in the Expansion of the New York 'Schenker School,'" *Current Musicology* 74 (2002): 104–108.

²Allen Cadwallader and David Gagné, "The Spirit and Technique of Schenker Pedagogy," in *Structure and Meaning in Tonal Music: Festschrift in Honor of Carl Schachter*, ed. L. Poundie Burstein and David Gagné (Hillsdale: Pendragon, 2006), 45–46. Schenker's lesson diaries are transcribed and translated at <http://www.schenkerdocumentsonline.org>.

the teacher cannot address the needs of one student only, especially if class sizes are large; the length of study may be one semester or less; students may lack necessary academic skills; or students may struggle to retain theoretical content from their earlier training. Given these challenges in many university classrooms, and assuming that instructors want to incorporate research projects and interesting topics such as motivic parallelism and musical narrative (among others), it would seem useful to build students' graphing competency as effectively and quickly as possible. Why then is Schenkerian analysis so challenging for the beginner? I have offered an Introduction to Schenker course at Kennesaw State University in 2014 and 2016. The course was offered at the undergraduate level, in 2014 to seven music performance majors and one computer science major, and in 2016 to three music performance majors and one music education major. In the 2014 iteration, my students twice "froze" in starting graphs of previously unknown works, one time in preparation for an in-class, timed exam focused on the graphing of a short musical excerpt. Since then, I have concluded that their difficulties in starting graphs point to perceptual and cognitive challenges inherent in the method. Schenkerian analysis requires the analyst to weigh multiple parameters (melodic contour, pitch, pitch class, harmony, rhythm, and so on) while making decisions about structural depth, often on the basis of equivocal evidence. These challenges are acknowledged by certain of the method's finest practitioners: Cadwallader and Gagné state that "[the student] will learn how to evaluate a musical context based on [their] hearing and perception of *all* aspects of that context [emphasis mine];" and Schachter notes how the analysis of an ambiguous foreground requires consideration of the overall harmonic context.³ As noted by Schachter, Brahms's "Meerfahrt" (Op. 96, no. 4, mm. 1–6) includes a beautiful instance of foreground ambiguity: the F# in mm. 3–4 initially seems to be a neighbor, but is (surprisingly) chromatically raised; in m. 7, however, that F# proceeds up to G# and A, thereby reinterpreting the note as passing (see Example 1). I find this passage emblematic of Schenkerian analysis's challenges.⁴

³ Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd ed. (New York: Oxford University Press, [1996] 2011), 4; Carl Schachter, *The Art of Tonal Analysis: Twelve Lessons in Schenkerian Theory*, ed. Joseph N. Straus (New York: Oxford University Press, 2016), 3–7.

⁴Schachter, *The Art of Tonal Analysis*, 6.

The image shows a musical score for a piano piece in 8/8 time. The score consists of two systems. The first system has a treble and bass staff. The treble staff begins with a piano (p) dynamic and features a melodic line with a half note G4, a quarter note A4, and a half note B4. Above the B4, there is a bracketed section labeled 'N?' with notes E4 and F#4. The bass staff has a steady eighth-note accompaniment. The second system continues the melody in the treble staff, starting with a half note C5, followed by a half note B4, and then a half note A4. Above the A4, there is a bracketed section labeled 'G#' and 'A'. The bass staff continues with the eighth-note accompaniment.

Example 1: An Ambiguous Tone: Neighbor, or Passing?
(from Schachter's Example 1.5, *The Art of Tonal Analysis*, 6). (© Oxford University Press; used with permission)

Schenkerian analysis is thus challenging as it is both complex *and* holistic. For the beginner, however, effective learning must be sequential, proceeding from simple to complex, in the teacher's choice of learning objectives, their ordering in time, and the design of assessments and class activities.⁵ In designing a Schenkerian curriculum for the beginner, it is helpful to disentangle learning objectives and thereby slow down the presentation of new analytical steps. To do so, a cumulative hierarchy of learning objectives, in which each later stage depends upon and incorporates all previous ones, is an effective strategy.⁶

In this essay, I apply the perspective of a cumulative hierarchy to the graphing procedures suggested by Schenkerian textbooks, evaluating (as an "inverse" problem) if they reconstruct the graphing process from foreground to finished product.⁷ Second,

⁵Lorin W. Anderson and David R. Krathwohl, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (New York: Longman, 2001), 3–5.

⁶Two discussions of cumulative hierarchies in learning taxonomies include Benjamin Bloom et al., *Taxonomy of Educational Objectives: Handbook I: Cognitive Domain* (New York: David McKay, 1956), 16–19; and Anderson and Krathwohl, *A Revision*, 6.

⁷Schenkerian textbooks include Allen Forte and Steven Gilbert, *Introduction to Schenkerian Analysis* (New York: W.W. Norton, 1982);

I deduce a new cumulative hierarchy of learning objectives for Schenkerian analysis that works toward the creation of an accurate, internally consistent graph and its use in an end-of-term analytical paper. Third, I demonstrate course activities consistent with the cumulative hierarchy, using the well-known tune “Happy Birthday.” Fourth, I examine learning challenges that have inspired the greatest changes in my Schenker course between 2014 and 2016: (1) the need to gather adequate foreground data to avoid circular reasoning; (2) the method’s demands on long-term memory; and (3) the pervasiveness of hierarchical ambiguity, due to the large number of musical parameters considered in a graph, as well as the complexity of tonal practice. And finally, just as “Happy Birthday” was useful in the course’s first unit (simplified notation), I demonstrate the cumulative hierarchy in the course’s second unit (full Schenkerian notation) through analysis of a parallel interrupted period by Mozart (K. 545/iii, mm. 1–8). Overall, the cumulative hierarchy and its supporting classroom activities foster a spirit of critical thinking, shifting the locus of control from instructor to student and encouraging each student to apply the method toward ends they find relevant.

PART I: SCHENKERIAN ANALYTICAL ROUTINES FROM THE PERSPECTIVE OF A CUMULATIVE HIERARCHY

As defined above, a cumulative hierarchy is a sequence of learning objectives where later stages depend on earlier ones. By necessity, a cumulative hierarchy moves from simple to complex concepts.⁸ In applying the perspective of a cumulative hierarchy

David Neumeyer and Susan Tepping, *A Guide to Schenkerian Analysis* (Englewood Cliffs: Prentice Hall, 1992); Tom Pankhurst, *SchenkerGUIDE: A Brief Handbook and Website for Schenkerian Analysis* (New York: Routledge, 2008); Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd ed. (New York: Oxford University Press, 2011); David Beach, *Advanced Schenkerian Analysis: Perspectives on Phrase Rhythm, Motive, and Form* (New York: Routledge, 2012); and David Damschroder, *Tonal Analysis: A Schenkerian Perspective* (New York: W.W. Norton, forthcoming).

⁸ Readers may find similarities between my cumulative hierarchy and learning taxonomies across the cognitive domain: examples of taxonomies for general learning include Bloom et al., *Taxonomy*; and Anderson and Krathwohl, *A Revision*. A cumulative hierarchy leading

to Schenkerian analytical procedures, one may ask: are the steps discussed necessary and sufficient to generate a final analysis? Complicating the picture are parallels between the analysis of music and visual perception, as noted by Lerdahl and Jackendoff: principles in both domains include grouping by similarity and proximity.⁹ David Marr's 3-stage model of vision perception, which has proven invaluable as the basis of recent models of machine vision, also merits consideration as a corroboration of musical perceptual processes, thus of analytical routines.¹⁰ This model takes a "primal sketch" (a 2-D assortment of lines and blobs that starts with primitive intensity changes and then infers boundaries and groups) and transforms it into a "2½-D sketch" (shapes and depth, but only from the viewer's current perspective), and then a "3-D model representation" (shapes, depth, and object recognition from multiple perspectives).¹¹ Similarly, Schenkerian analysis takes a foreground (basic, isolated data such as chords and cadences), infers patterns (melodically fluent lines and bass paradigms such as <T-PD-D-T>), and then arrives at a sense of depth (structural levels)—although not to the point where "walking around" a

to a Schenkerian analysis and term paper, however, is specific to Schenkerian studies only; a learning taxonomy is instead an archetype of cognitive activities applicable across multiple subject areas (e.g., history, music, sociology, language studies). Thus, between the two a cumulative hierarchy may have a greater number of, and more specific learning objectives, than would be found in a learning taxonomy.

⁹Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge: MIT Press, [1983] 1996), 303–307.

¹⁰David Marr, *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information* (Cambridge: MIT Press, 1982). For a recent overview of developments in machine vision, see David Peebles and Richard P. Cooper, "Thirty Years after Marr's Vision: Levels of Analysis in Cognitive Science," *Topics in Cognitive Science* 7, no. 2 (2015): 187–190. Two innovative studies, the first using Bayesian probabilities and the second proposing refined algorithms for stereo vision, are Vicky Froyen, Jacob Feldman, and Manish Singh, "Bayesian hierarchical grouping: Perceptual Grouping as Mixture Estimation," *Psychological Review* 122, no. 4 (2015): 575–597; and Lazaros Nalpantidis and Antonios Gasteratos, "Stereo Vision for Robotic Applications in the Presence of Non-Ideal Lighting Conditions," *Image and Vision Computing* 28, no. 6 (2010): 940–951.

¹¹Marr, *Vision*, 37.

piece of music and hearing it from all angles are necessary for its comprehension. If we accept Marr's model as an analogue of Schenkerian analysis, our cumulative hierarchy should include a number of basic perceptual steps (foreground data, melodic patterns) in addition to the inference of structural levels. Given the typical ambiguity of hierarchical relationships (as demonstrated in Example 1), the generating of multiple analyses, as well as different weights attached to each analysis (similar to Lerdahl and Jackendoff's Preference Rules), will be essential.¹²

According to the perspective of a perceptually-driven cumulative hierarchy, recent Schenkerian textbooks and other writings often struggle in enumerating analytical procedures that explain finished analyses. Beach directs his textbook largely toward graduate students who have had previous practice in graphing.¹³ Forte and Gilbert, Neumeyer and Tepping, Pankhurst, and Cadwallader and Gagné describe and summarize analytical routines leading from the foreground to background, reversing the direction of Schenker's mature theory, but maintaining consistency with an analytical view of the process.¹⁴ Top-down considerations are also addressed: some methods consider the overall form, or assume a type of fundamental structure prior to creating a graph.¹⁵ Forte and Gilbert divide a procedure between different chapters, seeming to (1) identify figured bass labels, (2) distinguish between structural and contrapuntal chords, (3) create a rhythmic reduction in chorale texture, and (4) convert this reduction to elementary Schenkerian notation with structural background and prolongations included.¹⁶ Over several chapters, Neumeyer and Tepping offer a highly comprehensive routine: (1) create a bassline sketch; (2) in upper

¹²Lerdahl and Jackendoff, *A Generative Theory*, 8–11.

¹³Beach, *Advanced Schenkerian Analysis*, Ch. 1.

¹⁴Forte and Gilbert, *Introduction*, Ch. 2, 5, and 7; p. 224; Neumeyer and Tepping, *A Guide*, 33, 62, 66–71, and 76–77; Pankhurst, *SchenkerGUIDE*, 87–107; and Cadwallader and Gagné, *Analysis of Tonal Music*, 110–113.

¹⁵For the former, see Neumeyer and Tepping, *A Guide*, Ch. 1, and for the latter, Damschroder, *Tonal Analysis*.

¹⁶Forte and Gilbert, *Introduction*, 49–63, 103–109, and 135–137. Unfortunately, they wait until pp. 223–224 (Ch. 18) to discuss how to find a work's primary tone: (1) look for scale degrees beginning and ending formal sections; (2) look for ascending motions to a candidate tone; and (3) critique the counterpoint resulting from each choice.

voices, draw linear and arpeggiated connections between the initial, climactic, and final pitches of each phrase or period; (3) consider soprano events (e.g., primary tones) structural if they receive consonant support and stepwise embellishment; (4) determine the number and visual appearance of levels; (5) read the set of graphs in reverse from background to foreground to eliminate logical gaps between levels; and (6) add text commentary if necessary.¹⁷ Marlowe presents an analytical routine focused on the graphing of fugues: (1) perform a traditional formal analysis; (2) identify and compare all parallel material; (3) consider and test potential middleground structures in which arrivals align with stable harmonic events; (4) perform a complete foreground analysis; and (5) complete a multi-leveled graph.¹⁸ A three-step procedure with pedagogical aims is proposed by David Beach: (1) label the surface form of the piece at all levels, along with key centers and hypermeasures; (2) label foreground details, including motives, rhythmic and metrical features, and surface harmonies; and (3) analyze the contrapuntal structure in several steps, reducing a metrical foreground to a structural background.¹⁹

Examples 2 and 3 compare the analytical routine of Cadwallader and Gagné with Pankhurst's. In Example 2 (Cadwallader and Gagné), I have inferred four stages from their discussion of the Trio from Mozart's *Eine Kleine Nachtmusik*, K. 525/iii, mm. 1–8.²⁰ First, in Example 2a they infer an "imaginary continuo," a metrical reduction in keyboard style that has a flexible number of voices and idealized voice leading (the parallel octaves between vi and ii⁶ are

¹⁷Neumeyer and Tepping, *A Guide*, 33, 62, 66–71. On pp. 76–77, they offer additional pointers on analyzing upper parts. I have combined their shorter, separate procedures and renumbered the steps.

¹⁸Sarah Marlowe, "Fugue in Context: A Schenkerian Approach to Select Works by J.S. Bach and Dmitri Shostakovich" (Ph. D. diss., University of Rochester, 2013), 68.

¹⁹David Beach, "The Analytic Process: A Practical Demonstration [of] the Opening Theme from Beethoven's Op. 26," *Journal of Music Theory Pedagogy* 28 (2014): 8–9; and Beach, "Schenker's Theories: A Pedagogical View," in *Aspects of Schenkerian Theory*, ed. David Beach (New Haven: Yale University Press, 1983), 19–20.

²⁰Cadwallader and Gagné, *Analysis of Tonal Music*, 110–113.

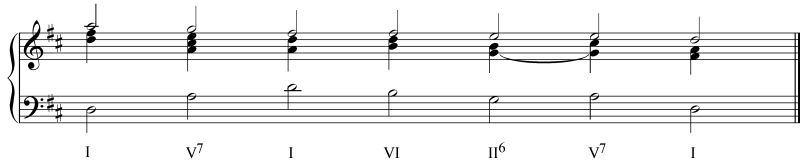
atypical): it guides all later analytical stages.²¹ Second, they return to the foreground (Example 2b) and interpret the surface in relation to a proposed *Ursatz*.²² Third, in Example 2c they reduce away local diminutions to create a middleground graph. And fourth, in Example 2d the background is isolated (*Ursatz* plus “intermediate,” or predominant chord).²³ With the exception of the second stage (Example 2b), which curiously *adds* events, the third and fourth remove foreground and middleground details. This procedure may be critiqued from logical and perceptual perspectives. First, reducing a work from foreground to background does not signify an increase in complexity: rules of harmony and counterpoint persist on all levels.²⁴ Second, at no time are multiple analyses weighed. Third, the *Ursatz* is implicit already in Example 2b, thereby conflating perceptual stages and rendering later analytical ones cosmetic. Fourth, full Schenkerian notation is used from Example 2b on, adding to a student’s challenges in mastering the routine.

²¹ Cadwallader and Gagné, *Analysis of Tonal Music*, 66–68 (their Example 3.22) distinguish different stages of the imaginary continuo: (1) a figural reduction; (2) blocked chords maintaining original register; and (3) blocked chords with normalized register. Example 2a is an instance of their second stage. The term “imaginary continuo” was originally coined by William Rothstein, “Rhythmic Displacement and Rhythmic Normalization,” in *Trends in Schenkerian Research*, ed. Allen Cadwallader (New York: Schirmer, 1990), 87–113.

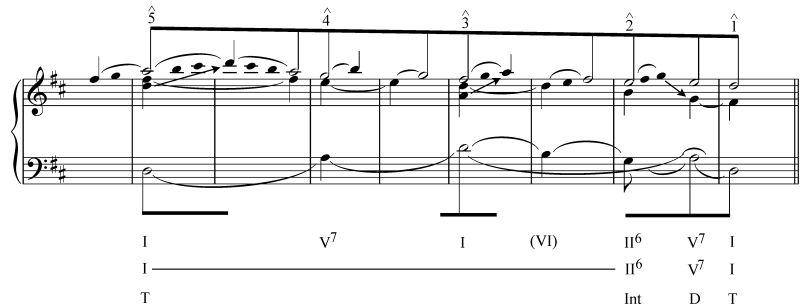
²² The brackets on Example 2b isolate repetitions of motion through the interval of a third (Cadwallader and Gagné, *Analysis of Tonal Music*, 112).

²³ Examples 2b–d comprise an *Urlinie-Tafel*, as noted on p. 113. For an *Urlinie-Tafel*, see Heinrich Schenker, *Five Graphic Analyses (Fünf Urlinie-Tafeln)* (New York: Dover, 1969), 33. The “*Ursatz*” here refers to the deepest structural level of the excerpt, a pedagogical compromise that treats excerpts as complete tonal entities.

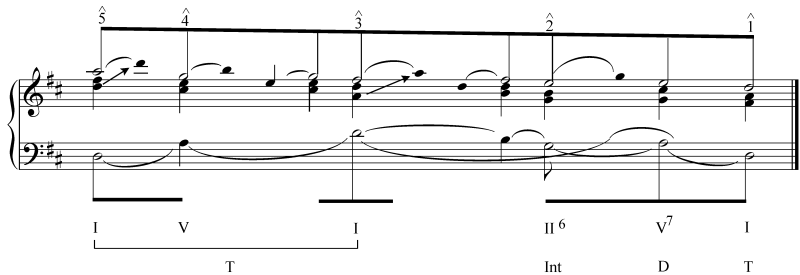
²⁴ Matthew Brown, *Explaining Tonality: Schenkerian Theory and Beyond* (Rochester: University of Rochester Press), 70.



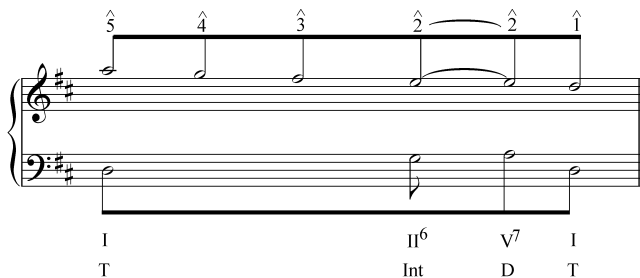
(a) Imaginary Continuo, a Figured Bass Realization (their Example 5.3).
(© Oxford University Press; used with permission)



(b) Multileveled Graph with Surface Embellishments (their Example 5.4a).
(© Oxford University Press; used with permission)



(c) Multileveled Graph with Surface Embellishments Reduced Out (their Example 5.4b). (© Oxford University Press; used with permission)



(d) Underlying Background Plus Predominant (their Example 5.4c).
(© Oxford University Press; used with permission)

Example 2 (a–d): Implied Analytical Routine of Cadwallader and Gagné's *Analysis of Tonal Music*.

Pankhurst's analytical stages, shown in Example 3 and described as "a four-stage method," include the following: (1) foreground harmonic analysis; (2) starting with unstemmed noteheads and reducing out repeated tones, the identification of foreground elaborations in the bass and upper voices; (3) alternative, multi-leveled analyses, each aligning large-scale linear and harmonic units; and (4) a top-down, theoretical evaluation of analytical alternatives leading to the selection of an *Ursatz* (here, an *Ursatz* parallelism due to the excerpt's short length).²⁵ While this procedure shows some evidence of a perceptual perspective, it still conflates computational tasks. Throughout Pankhurst's textbook, stages (3) and (4) blend into each other: in Example 3, for instance, background structures are identified by stage (3), while stage (4) is the relatively trivial identification of the more normative *Ursatz* (as proposed in stage 3b).²⁶ Pankhurst's method thus conflates pattern recognition, the evaluation of patterns, and depth perception. There are three interesting innovations in the procedure, though, which my cumulative hierarchy adopts: first, in stage (2) the soprano melody is reduced separately before being compared with the entire texture; second, in stage (3) different, alternative structures (3a and 3b) are considered and evaluated; and third, the notation in stages 2–3 is simplified, with both retention slurs and open noteheads absent. Pankhurst's routine thus hints at a teasing apart of perceptual stages.

²⁵ Pankhurst, *SchenkerGUIDE*, 88; deeper discussion of each stage is found on pp. 87–107.

²⁶ Pankhurst, *SchenkerGUIDE*, Example 4.2 (p. 92), as well, shows only stages 1–3; stage 4 is missing.

The image displays a four-step analytical routine for a musical excerpt from Haydn's Piano Sonata in G major. The steps are as follows:

- Stage 1:** Original notation. Treble and bass staves. Chords are labeled G, I, V⁷, and I.
- Stage 2:** First reduction. Treble staff shows a 3-prg (three-part progression) and notes N (Neumes). Bass staff shows the harmonic structure. Chords are labeled G, I, V⁷, and I.
- Stage 3a:** Second reduction. Treble staff shows notes N and asterisks. Bass staff shows the harmonic structure. Chords are labeled G, I, V⁷, and I.
- Stage 3b:** Third reduction. Treble staff shows a 3-prg and notes N. Bass staff shows the harmonic structure. Chords are labeled G, I, V⁷, and I.
- Stage 4:** Final reduction. Treble staff shows notes 3, 2, and 1. Bass staff shows the harmonic structure. Chords are labeled G, I, V⁷, and I.

Example 3: Four-Step Analytical Routine shown in Pankhurst's *SchenkerGUIDE*. Excerpt is Haydn's Piano Sonata in G major (Hob. XVI, No. 39, i), mm. 0–2. (Copyright Taylor and Francis Group LLC Books; used with permission)

What would a cumulative hierarchy of Schenkerian analysis, consistent with perceptual processes and increasing in complexity, look like? Example 4 proposes just such a scheme, with the first six levels culminating in a completed graph (assumed to be of a short work, or Ursatz parallelism, of about 16 or fewer bars), and the last, eighth one an analytical paper. The definition of cumulative hierarchy, the mapping onto Marr's 3-stage model, the necessity of probabilistic perception, and the assumption of the classroom environment allow us to deduce each step. Step 1, "collect foreground data," in which many surface insights are compiled (e.g., cadences, emphasized scale degrees, formal units), is necessitated by the raw primal sketch sub-stage of Marr's 3-stage model, which features intensity changes, but without boundaries and groupings present.²⁷ Step 2, "discuss the opening assumptions of the graph," is a top-down activity implied by the classroom environment: the teacher tells students to assume a particular inner form (1-part, 2-part, etc.), structural type (e.g., $\hat{3}$ -line, $\hat{5}$ -line), or recurrent prolongational technique (e.g., passing tone, neighbor, unfolding), or leaves these determinations to the students. Step 3, "hypothesize potential structures in bass and soprano," proposes multiple, well-formed structural patterns, first in the bass and then in the soprano, that lack hierarchical status. These patterns are perceived groupings of notes: in the upper voices, they are melodically fluent; in the bass, leaps can also be grouped together if the phrase model (<T-PD-D-T>) is inferred. This step corresponds to Marr's full primal sketch sub-stage, which includes boundaries and groupings.²⁸ Step 4, "evaluate structural hypotheses," assigns each pattern a probabilistic weight; it transitions to Step 5, "interpret the structural level(s) of each hypothesis and align outer voices." Step 5 corresponds to Marr's 2½-D stage, as both include some depth but only from the viewer's current perspective. Steps 6 and 7, respectively, include "notate the graph" (a long-standing Schenkerian convention)²⁹ and "describe,

²⁷ Marr, *Vision*, 52. This step in my model is more exhaustive than Pankhurst's Stage 1, which labels surface Roman numerals only, and Cadwallader and Gagné's imaginary continuo, which is overlaid with surface Roman numerals, figured bass, and structural harmonic functions (Tonic, Intermediate, and Dominant). See my Examples 2 and 3, as well as Cadwallader and Gagné, *Analysis of Tonal Music*, 66–68.

²⁸ Marr, *Vision*, 91–96.

²⁹ Kofi Agawu, "Schenkerian Notation in Theory and Practice," *Music Analysis* 8, no. 3 (1989): 276.

explain/interpret, or evaluate the graph,” a necessary transition to the final paper, Step 8, which uses the graph as evidence for a thesis. The intent of the 8-step model, while informed by a perceptual,

Step Number	Learning Objective	Detailed Description
8	Use graph to further the thesis of a final paper	Use graph as evidence in a paper focusing on analysis, music history and culture, or theory
7	Describe, explain/interpret, or evaluate the graph	Speculate on musical agency; infer compositional strategies; compare graph with other interpretations
6	Notate the graph	Moving toward the foreground, interpret structural dependencies; decide notational strategies
5	Interpret the structural level(s) of each hypothesis and align outer voices	Rank hypotheses by level; finish graphing deepest level; align outer voices at same level
4	Evaluate structural hypotheses	list criteria supporting each hypothesis; consider choices for primary tone
3	Hypothesize potential structures in bass and soprano	Infer possible basslines, both melodically fluent and prototypical (T-PD-D-T); infer possible fluent soprano lines; sketch unambiguous sections of graph, in bass then in principal melody
2	Discuss the opening assumptions of the graph	Assign students particular assumed interpretations in inner form, background structure, or prolongation techniques; or have them identify these on their own; find instances of techniques in other works
1	Collect foreground data	Do a foreground rhythmic reduction; identify tonal centers, surface Roman numerals, cadences, emphasized and cadential scale degrees, hypermeasures, surface formal units, surface non-chord tones

Example 4: A Cumulative, Eight-Step Hierarchy of Schenkerian Analytical Steps.

computational perspective,³⁰ is primarily pedagogical: it allows a teacher to slow down the presentation of graphing tasks, increasing the likelihood of success for weaker students.

The cumulative hierarchy is progressed through, at minimum, three times in my introductory Schenker course. As shown in Example 5, this course is organized into three units: one with simplified notation, a second with mainstream Schenkerian notation, and a third that moves on to more advanced topics and individual research. Framing the beginning and end of the course are discussions of the purpose of Schenkerian analysis. More specifically, Unit I introduces bassline reduction, soprano reduction, and their combination. The students practice reduction from excerpts in a variety of textures, culminating in the examination of passages from Bach's unaccompanied suites. Unit II covers prolongation types, Schenkerian structures, and notation; within this unit, I discuss how species counterpoint underlies Schenker's background structures. The class then practices reductions of various parallel interrupted periods (or other short forms) for four weeks, leading to a quiz and in-class midterm. Unit III covers advanced topics such as chromaticism, sequences, and types of inner form.

³⁰Marr, *Vision*, 24–27, defines a computational explanation as answering the “what” and “why” of a perceptual process: the tasks that must be performed for a person to gain knowledge of the outside world, not the representation of those tasks, their algorithms, nor the hardware that such tasks and algorithms are performed on. In this essay, the computational level (from his Tri-Level Hypothesis) is the only achievable one within the scope of a Schenkerian pedagogy. To begin to define algorithms, for instance within my Step 3 (structural patterns), would require a search procedure for melodically fluent lines, thus requiring the calculation of melodic distances between all notes of successive chords. Even this algorithm depends upon a prior harmonic analysis. Difficulties would thus accumulate.

Unit I: Simplified Notation

- Intro: why do Schenkerian analysis? What is the method's purpose?
- Bassline analysis (phrase model, prolongation)
- Principal melody analysis (melodic fluency)
- Coordination of bass and soprano (displacement, alignment)
- Practice reduction of well-known, short works
- Reduction of different textures
- Quiz 1 (bassline reduction)

Unit II: Schenkerian Notation and Graphing

- Prolongation types and notation (lacking non-chord tones, linear progressions, neighbors and others)
- Schenkerian structural types (Ursätze); derivation from strict counterpoint
- Schenkerian notation review
- Graphing practice with memory aids
 - Well-known works
 - New parallel interrupted periods
 - New works in other predictable forms
 - Quiz 2, Practice midterm, midterm (in-class)

Unit III: Advanced Topics, Research

- Chromaticism
- Sequences
- Inner forms (one-part, two-part, three-part, sonata)
- Individual research
- Conclusion: what do students believe Schenkerian analysis explains? What are its advantages? Disadvantages? How do they believe the method is useful?

Example 5: Design of *Introduction to Schenker* Class.

In Examples 6–10, I demonstrate classroom activities consistent with the cumulative hierarchy, using the well-known tune “Happy Birthday.” This tune is highly useful in an introductory Schenker course: it is short, is in the public domain in the United States (as of February 2016), contains memorable subphrases (three if one assumes a sentence form), and provides a light-hearted break from heavier classical fare.³¹ The activities use simplified Schenkerian symbols, restricted to slurs, quarter notes with stems and beams, eighth notes for neighbor tones and predominant bass notes, and

³¹ “Happy Birthday” can be reused throughout a Schenker course to great effect. Out of a 16-week semester, all of the upcoming examples can be covered in the first three weeks of a course. The tune can then be mined for examples of prolongation techniques and full graphing techniques (around weeks 4–6), and then briefly for form-types (usually week 9 and after).

diagonal lines for temporal displacements. Simplified notation helps one teach less advanced students how to make competent reductions as early as three weeks into a course (Unit I).³²

Step 1 in the cumulative hierarchy, “collect foreground data,” asks students to analyze a wide variety of foreground details, including tonal centers, Roman numerals, surface non-chord tones, thematic-motivic and formal labels (e.g., b.i. or “basic idea,” cont. or “continuation” of a sentence), cadences and tonal centers, cadential and emphasized scale degrees in upper voices, hypermeasures, and clues toward structural harmonic functions, such as beginning tonics and cadential V and I chords.³³ Listening to the tune, and performing different voices on solfège or scale degree numbers, will help students retain the data. Example 6 applies this step to “Happy Birthday,” including an imaginary continuo retaining the original registers of the bass and principal melody (following Cadwallader and Gagné). Most crucial, yet most neglected in published textbooks, is the labeling of scale degree emphases in the principal melody: $\hat{5}$ in mm. 1 and 3 due to the upper neighbor $\hat{6}$, as well as $\hat{7}$ and $\hat{8}$ (mm. 2 and 4) due to subphrase ends.³⁴ As well, cadential scale degrees in the principal melody include the $\hat{2}$ - $\hat{1}$ motion in mm. 7–8 during the final PAC. These emphases and cadential associations help students evaluate potential structures and avoid analytical circularity. All students should perform this step carefully.

³² This simplified approach to graphing contrasts with Proctor and Riggins’s insistence on presenting Schenkerian theory in its entirety before students attempt the analysis of works. See Gregory Proctor and Lee Riggins, “A Schenker Pedagogy,” *Journal of Music Theory Pedagogy* 3, no. 1 (1989): 1–24. It is not helpful to delay the analysis of works in a one-semester course. Further, if *Free Composition* is used as a textbook (as they advocate on p. 7), Schenker’s theory is presented starting with the background, thereby favoring top-down over bottom-up considerations (both are essential).

³³ The labels of basic idea, continuation, and sentence are defined in William Caplin, *Classical Form: A Theory of Formal Functions for the Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998), Ch. 3.

³⁴ I avoid the term “soprano melody” since the soprano voice (called a “descant” by Forte and Gilbert, *Introduction*, 68 to imply a degree of registral freedom) is melodically fluent; in contrast, the “principal melodic line” (in this essay) typically unfolds two or more fluent lines as a compound melody.

The image shows a musical score for "Happy Birthday" with Schenkerian analysis annotations. The score is in 3/4 time, key of F major. The first system shows measures 1-4 with annotations: b.i., ^5, ^7, b.i.', ^5, ^8, continuation. The second system shows measures 5-8 with annotations: ^5, APT, ^2, ^1, I: PAC. Below the staff, Roman numerals and figured bass are provided: F: I Beg. T, V, V6 5 3, I. The second system includes IV Cad. PD, ii:06, V6 8 7 5 3, I Cad. T, and Cad. D.

Example 6: (Step 1) Foreground Analysis of “Happy Birthday.”

Step 2, “discuss opening assumptions of graph,” involves having the class assume a particular inner form, or type of Urlinie (typically either a $\hat{3}$ - or $\hat{5}$ -line).³⁵ The choice of inner form or fundamental structure typically involves a degree of subjective interpretation; its recognition, though, is essential since it serves as a metaphorical container for the analysis, conditioning the placement and types of embellishing tones. Students and instructors often react differently to music: for instance, they may not agree upon a single inner form. To arrive at a common interpretation, it is most efficient, and not a detraction from the building of graphing competency, to assume an inner form. When students are familiar with Schenker’s fundamental structures and mappings between simple outer and inner forms (usually by the third unit of my course), they can determine inner forms on their own. Within such constraints, there are still questions of interpretation to maintain students’ interest, such as the choice of primary tone ($\hat{3}$, $\hat{5}$, or $\hat{8}$), or the location of that tone within the work’s outer form. In “Happy Birthday,” useful assumptions include the restriction of the background soprano line to a $\hat{3}$ - or $\hat{5}$ -line, the supporting <I-IV-V-I> progression, and a one-part inner form.

Steps 3 and 4 translate foreground data into a comparison of different potential analyses. Example 7 (a, b) demonstrates these

³⁵ Similarly, Proctor and Riggins have students look for works with a given structure or technique (Proctor and Riggins, “A Schenker Pedagogy,” 7–8); Damschoder, *Tonal Analysis*, organizes several chapters around top-down, structural patterns, e.g., the descending $\hat{3}$ -line Ursatz and PAC in Ch. 1.

two steps in the bass; Example 8 (a, b) demonstrates them in the principal melody. Note the use of horizontal lines, each highlighting a melodically fluent, potential structural voice.³⁶ (I sometimes ask each student in the class to contribute one or two melodically fluent notes, allowing all to participate.) Colors also help in disentangling possible structural melodies (in this essay's greyscale examples, textures are substituted).³⁷ The bass analysis begins with students mapping out the beginnings and ends of Tonic expansions (I or I⁶), structural harmonies, contrapuntal bass motions within expansions, and embellishing chords. As shown in Example 7a (Step 3), mm. 1–4 may be interpreted in two ways: (1) as the solid line shows, as a lower neighbor embellishment of F3 (via the pitch E3), which then implies a lower-level arpeggiation between C3 and E3; or (2) as the squiggly line shows, an arpeggiation of the tonic through V, which is itself elaborated through arpeggiation between C3 and E3. (Unambiguous events, such as the beginning Tonic harmonies and the tune's cadence, are graphed at this point, as shown in Example 7a.) In Step 4, as shown in Example 7b, each candidate pattern is then analyzed for its degree of melodic fluency, emphasis (whether by accent, restatement, neighbor decoration, occurrence in an outer voice, or placement at a formal boundary), consonant support, and prototypicality (melodic, contrapuntal, formal, or structural). The arpeggiated (squiggly) path aligns with the fluent soprano line <F-E-G-F> in mm. 1–4, and with the onsets of V in m. 2 and I in m. 4; in the other (solid) path, the E3 pitch in m. 3 (beat 1), as part of an inverted V, is typical of the presentation of a sentence (in which cadences are weak or absent), and is metrically accented as the third measure of a 4-bar hypermeasure. The third and fourth steps have proven necessary in my course, albeit as the focus of only 2–3 class demonstrations. Teachers could consider incorporating these steps in a fill-in-the-blank task to be completed outside of class. The visual clarity of the two steps, the relative ease of the first, and their robust effect on graphing ability recommend them to all students.

³⁶ Similarly, in Cadwallader and Gagné, *Analysis of Tonal Music*, 66–68, arrows show the most fluent connection between chord tones. This valuable step, which points toward my Step 3, is unfortunately not applied to other voices, nor in the rest of their text.

³⁷ This is a step that has yet to be acknowledged fully in a Schenkerian textbook. It is similar in spirit to Lerdahl and Jackendoff's cognitive approach (*A Generative Theory*, 8–11), which progresses from hypotheses (well-formedness rules) to a selected structure (preference rules).

(a) Hypothetical Bass Structures Displayed with Lines (Step 3).

- **Arpeggiation View of mm. 1–4’s bass (squiggly):**
 - C3 in m. 2 aligns with E4 in soprano and onset of V
 - F3 in m. 4 aligns with F4 in soprano and onset of I
 - Soprano line has greater variety than static <C-C-C> line supported by lower neighbor view
- **Lower Neighbor View of mm. 1–4’s bass (solid):**
 - E3 in m. 3 is metrically accented
 - Inverted V chord in m. 3 expected in sentence presentation
- **Remainder of Bass (mm. 5–8):**
 - <I⁶-IV-V^{6/4-5/3}-I> normative pattern

(b) Determine How Alternative Bass Structures are Preferred (Step 4).

Example 7 (a–b): Propose, then Evaluate Hypothetical Structures in the Bass (Steps 3–4).

In the principal melody (Example 8a), melodically fluent patterns are traced from each plausible note of the beginning, F major Tonic triad; so too are patterns that arrive on the upper-voice $\hat{1}$ in the final cadence. All violations of melodic fluency are noted and weighed: e.g., could students accept the melodic third in mm. 2–3 (<E4-G4>), or the octave jump in mm. 4–5 (<C4-C5>) within the same line? In the beginning of Example 8a, two contending lines emerge, one starting on C4 in m. 0 and drawn

solid ($\hat{5}$), the other on F4 in m. 1 and drawn dashed ($\hat{1}$ or $\hat{8}$). The solid line starting on C4 disintegrates by m. 6 on B $\flat$ 3; on the other hand, C4 is emphasized in mm. 1 and 3 at the beginnings of the two subphrases, is embellished by upper neighbor D4, and is an octave from the climax tone of C5 in m. 5 (i.e., they are the same pitch class).

What about the dashed line starting on F4 in m. 1 ($\hat{1}/\hat{8}$)? It has numerous advantages: emphases on E4 and F4, respectively (mm. 2 and 4), which align with the onsets of V and I; it is higher in pitch than the C4 line in mm. 1–4; it is more interesting than the static reiterations of C in the C4 line; and the structural note of F4 is only a fifth below the climax, C5. Nevertheless, it vanishes into an inner-voice A3 in m. 8. Since neither opening linear gambit has succeeded in reaching the cadential $\hat{1}$, we next work backwards from the final $\hat{2}$ - $\hat{1}$ in mm. 7–8: sticking to the squiggly line, there is a $\hat{3}$ in m. 7, a $\hat{4}$ in m. 6, and a $\hat{5}$ in m. 5. C5 is thus the tune's primary tone since the descent by fifth is a prototypical Urlinie, but we need to link this fifth progression in some way to the initial section of the piece. Do we join the prolonged $\hat{5}$ (solid) to $\langle \hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1} \rangle$ (squiggly), or $\langle \hat{1}-\hat{7}-\hat{2}-\hat{1} \rangle$ (dashed) to $\langle \hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1} \rangle$ (squiggly)? Based on the evidence given in Example 8b, the C5 $\hat{5}$ -line is most structural, followed by the F4 line and then the C4 one. As a result, beginning students of Schenker might understand the F4 that is prolonged in mm. 1–4 (dashed line) as arpeggiated up to C5 (squiggly) in m. 5.³⁸ Likewise in the bass (mm. 1–8, shown in Example 7b), the class has identified the overall $\langle I-IV-V^7-I \rangle$ motion as most structural, followed by the arpeggiated line in mm. 1–4 ($\langle F-C-F \rangle$), and then the lower neighbor line in the same bars ($\langle F-E-F \rangle$). We have thus begun Step 5 of the cumulative hierarchy, "interpret the structural level(s) of each hypothesis." Noting that the opening F3 in the bass (m. 1) aligns (via a normalized displacement) with the primary tone of C5 (m. 5), a single Ursatz is conceptualized as a top-down "container" for the entire tune. A student would now be ready to graph the background level. In the principal melody, the F4 line needs to be viewed overall as prolonging the notes of the C5 line; also, events from the C4 line need to prolong events from the F4 line. (Many works, however, will have more complex relationships between their candidate voice-leading lines.)

³⁸ Since the class is using basic notational symbols at this point, certain well-known voice-leading transformations are unavailable. Later in the course, however, the $\langle F4-C5 \rangle$ interval will be viewed as an unfolding of a perfect fifth and an initial, arpeggiated ascent to the C5 primary tone.

(a) Hypothetical Soprano Structures Displayed with Horizontal Lines (Step 3)

- C4 Line Advantages (solid):
 - Beginning emphasis on C4
 - Upper neighbor embellishment of C4
 - Is an octave from C5 climax in m. 5 (same pitch class as C5)
- F4 Line Advantages (dashed):
 - Attack points align with new harmonies
 - E4 and F4 ($\hat{7}$ and $\hat{8}$) are emphasized
 - Is higher in pitch than C4 line in mm. 1–4
 - Soprano line of <F-E-G-F> has greater variety than C4 line's repeated C's
 - Is a fifth below climax of C5 (shorter distance than octave)
- C5 Line Advantages (squiggly):
 - Is highest in pitch for all lines
 - C5 in m. 5 emphasized metrically, is climax of phrase
 - Contains cadential degrees $\hat{2}$ and $\hat{1}$

b) Determine How Each Soprano Structure Is Preferred (Step 4)

Example 8 (a–b): Propose, then Evaluate Hypothetical Structures in the Soprano Melody.

Step 6 is demonstrated in Example 9, a multi-layered graph combining background, middleground, and foreground levels. This graph uses simplified notation: unstemmed noteheads for foreground events; quarter notes with beams for structural notes; solid slurs for all prolongations; diagonal lines for rhythmic

displacements; and eighth notes for neighbors.³⁹ Simplified notation disentangles reduction from notation, thus leading to better graphing outcomes at early stages. At this point, the student must interpret prolongational techniques working from large to small: analyzing the C5 line, then the F4 line in relation to it, then the C4 line, until all events—at all levels—are explained: in the principal melody, common tones or leaping motions within the same chord are arpeggiations, whereas stepwise motions (depending on context) imply passing or neighbor relationships.⁴⁰ The student must then notate these relationships with enough detail to explain every note, but avoiding a cluttered appearance. In Example 9, the Ursatz-plus-predominant background is indicated using an encircled “1,” the first level of the middleground within encircled “2’s,” and the second level of the middleground with “3’s;” all other levels toward the foreground lack numbers (in the classroom, I use colors, with red as most structural).⁴¹

³⁹ Other simplified approaches to reductive notation include Steve Larson, “Strict Use of Analytic Notation,” *Journal of Music Theory Pedagogy* 10 (1996): 37–78, which uses only noteheads, stems, and slurs; and Steven Laitz, *The Complete Musician: An Integrated Approach to Theory, Analysis, and Listening*, 4th ed. (New York: Oxford University Press, 2016), 152: quarter notes with beams, filled noteheads only, eighth notes for neighbors, and slurs for neighbor dependencies, linear progressions, and arpeggiations.

⁴⁰ Larson provides a helpful classification of prolongational types in “Strict Use,” 43.

⁴¹ Students are less likely to confuse levels if they are asked to label each within a graph. In general, however, teasing apart and listing vertically the maximum number of possible levels can become a fruitless task. Other instructors, nevertheless, may wish to separate levels visually onto multiple staves. Although “Happy Birthday” is short enough that a multi-level graph of it will not overwhelm students, longer works may demand separate graphs, at least on the levels of background, middleground, and foreground.

Example 9: A notated graph within Unit I (Step 6).

Following the completion of the graph, Step 7 allows the class to describe, explain, and evaluate it. In this step, the instructor asks open-ended, then more specific questions to stimulate class discussion, or poses the questions in a collaborative homework assignment or on a group worksheet. “Explanations” differ from “descriptions:” a description reports features of a graph neutrally, whereas an explanation attempts to show the “why” for its features or resulting musical intuitions.⁴² Explanations may be strengthened by intuiting musical agents, which may help ferret out causal relationships within a work and place them within an overarching narrative.⁴³

⁴² For instance, Cadwallader and Gagné (*Analysis of Tonal Music*, 168) describe a graph when they begin a sentence with “The graph shows...” Note the use of clinical, neutral language aiming to downplay subjectivity. In its entirety, the sentence reads as follows: “The graph shows that a foreground line D-C-B shapes the path of the upper voice in bars 1–4, foreshadowing the later descent to the tonic.”

⁴³ One instance of explanation via a musical agent is found in Cadwallader and Gagné (*Analysis of Tonal Music*, 173), who note a “remarkable” motivic parallelism in Beethoven’s Piano Sonata, Op. 31, no. 1, mm. 1–8: “as Beethoven approaches the cadence...” and “fostering motion in the drive to the cadence.” Their language here implies a motive and Beethoven as causal agents, so as to make intuitions suggested by their analysis more vivid. For a comprehensive study of the different forms an agent may take ((1) individual musical elements such as themes, (2) the “persona” of the work, (3) the fictional composer,

An “evaluation” weighs the merits of various aspects of a Schenkerian analysis—coherence, musicality, perceptions of the work resulting from it, and aesthetic fallout being just four—so as to encourage students’ critical thinking. A fruitful classroom exercise is to debate different structural interpretations of a work: is a particular analysis accurate, complete, conceptually consistent, and musically insightful? After group work, the teacher may compare graphs from different groups, teasing out differences and asking the class to reply (after a performance of each analysis) if they can “hear” a given one, and whether they find one to be most compelling.⁴⁴ Students are thereby empowered to ask and answer their own evaluative questions.

Consider a focused, evaluative question on “Happy Birthday:” “Compare a $\hat{3}$ -line analysis of “Happy Birthday” to a $\hat{5}$ -line. Why is the $\hat{3}$ -line less effective? In your answer (5–6 sentences), describe at least two differences between the two readings.” The teacher provides a graph of a $\hat{3}$ -line at this point (Example 10). This Step 7 activity resembles an error detection since the student is forced to critique the $\hat{3}$ -line, in its claims of foreground emphasis, its simplicity or complexity, its logical coherence (or lack thereof), and the degree of normativity in its outer-voice counterpoint. In answering the question, students might note how $\hat{3}$ in m. 5, the proposed primary tone, occurs on beat 2, a weak beat; how this primary tone is introduced by a superposition (C5); how A4 is not present in the soprano in mm. 1–4; and how contrary octaves are present in mm. 4–5 (F to A), and parallel octaves in mm. 5–6 (A to B $\flat$). At this point, the teacher should remind students that Schenkerian theory is an adaptation of species counterpoint, since the poor counterpoint of the outer voices is decisive in rejecting Example 10. We thus allow theoretical issues to arise from debates

and (4) the analyst), see Seth Monahan, “Musical Action and Musical Agency,” *Journal of Music Theory* 57, no. 2 (2013): 321–371.

⁴⁴Segall calls the progression of activities leading from individual work, to the pinpointing of different analyses in group work, to an overall class discussion of interpretations, the “You, Y’all, We” model of a flipped classroom. See Christopher Segall, “You, Y’all, We: A Framework for Collaborative Learning,” *Engaging Students: Essays in Music Pedagogy* 3 (2015), <http://flipcamp.org/engagingstudents3/essays/segall.html>, accessed June 19, 2017.

over the analysis of repertoire.⁴⁵ Instructors can offer hints about the locations of the errors, or rephrase questions to be narrower in scope if discussion is not immediately forthcoming. (The pedagogy of the term paper, as corresponds to Step 8, is beyond the scope of this essay.)

Example 10: A 3-Line, Alternative Analysis for Classroom Discussion (Step 7).

Example 10: A 3-Line, Alternative Analysis for Classroom Discussion (Step 7).

Overall, in comparison with previous reductive routines, my cumulative hierarchy maps onto a well-known, fruitful model of visual perception, progresses methodically toward a completed graph, addresses ambiguities in hierarchical interpretation, and increases gradually in complexity. I will now return to three specialized challenges that Schenkerian analysis presents the beginner: *foreground data collection*; *long-term memory*; and *hierarchical ambiguity*.

(1) **Foreground Data Collection:** since foreground data of necessity informs hierarchical judgments, all students should be reminded to collect it thoroughly and intentionally to avoid circular or arbitrary analyses. Foreground analysis appears at times in Schenkerian textbooks, but it is sometimes disconnected from hierarchical concerns. Aspects of foreground analysis, including elementary Roman numeral analysis and cadence identification, are discussed in core theory texts such as Aldwell, Schachter, and Cadwallader,

⁴⁵ A similar point is made in Cadwallader and Gagné, "The Spirit and Technique," 49–52.

and in Laitz, typically from a Schenkerian perspective: these can be incorporated into weeks 1–2.⁴⁶ Schenkerian texts also discuss harmonic functions, distinguishing structural harmonies (Tonic, Dominant, and Intermediate or Predominant) from contrapuntal chords (e.g., vii⁰⁶), a topic that I cover in week 1 of my course.⁴⁷ These texts, however, neglect to label salient and cadential scale degrees in the principal melody, an activity that informs (more than any other) the selection of the Urlinie's tones. Foreground emphasis may be due to metrical and durational accent, the repetition of a scale degree, the decoration of a note by neighbor tones, occurrence in an outer voice, or placement at the beginning or end of a formal unit. (Of course, an isolated emphasis—say, a metrical downbeat—need not indicate a structural event on its own.) In general, time spent on foreground analysis is not wasted if a linear perspective is present: in fact, it may be essential if students are struggling to identify surface harmonies. To translate a foreground harmony into a linear one most easily, convert it into its associated scale degree (or moveable-do solfège) in the bass. My Schenker course thus not only starts with a brief review of Roman numeral and figured bass analysis, but also uses the solfège syllable of a bass note to predict the most likely Roman numeral and figured bass: in easy cases (for instance, where $\hat{1}$ is in the bass), the likely Roman numeral (I chord) can be rapidly identified; in less prototypical cases (e.g., a diminished seventh chord above $\hat{2}$ in 6/5 position), the chord can be identified

⁴⁶ Edward Aldwell, Carl Schachter, and Allen Cadwallader, *Harmony and Voice Leading*, 4th ed. (Boston: Schirmer and Cengage, 2011); and Laitz, *The Complete Musician*.

⁴⁷ See Forte and Gilbert, *Introduction*, Ch. 5 and Cadwallader and Gagné, *Analysis of Tonal Music*, Ch. 3.

through longer, slower calculation—thus vii^{06/5}. Other Schenkerian pedagogues agree on the importance of the foreground in graphing.⁴⁸

(2) Long-Term Memory: my students in 2014 repeatedly balked at starting a new graph, noting that they did not know where to begin, and showed anxiety at the prospect of creating a graph during an in-class quiz. Such experiences imply that a musician's long-term memory is strongly challenged by the Schenkerian method. For beginners, who have limited time to absorb the approach, the reuse of well-known works reinforces long-term memory and prevents backtracking to foreground topics, which quickly become uninteresting.⁴⁹ Another helpful technique is the use of temporary memory aids that allow students to master the method more quickly. Such memory aids could contain, for instance, lists of prolongational techniques presented in prototypical format (in the key of C major), normative tonic prolongations, and so on. In my course, memory aids are used in the second unit (weeks 6–8) as students begin graphing short excerpts from works, usually parallel interrupted periods. (The memory aids may be used during all group work, homework, and exams.)

One such published memory aid is Cadwallader and Gagné's summary of chord prolongations (not shown).⁵⁰ Their summary, however, is too loosely organized to serve as a ready reference during an exam. They place neighbor prolongations ahead of passing ones, despite Schenker's clear preference for linear progressions (i.e., passing tones) over neighbor complexes;⁵¹ the keys change

⁴⁸ Forte and Gilbert, *Introduction*, 387; William Rothstein, "The Americanization of Schenker Pedagogy?" *Journal of Music Theory Pedagogy* 4, no. 2 (1990): 296–297; Carl Schachter, "Either / Or," in *Schenker Studies*, ed. Hedi Siegel (Cambridge: Cambridge University Press, 1999), 168.

⁴⁹ Additional works that I reuse include mm. 1–8 from "Greensleeves" (also covered in Cadwallader and Gagné, *Analysis of Tonal Music*, 39) and mm. 1–8 from Beethoven's "Pathétique" Piano Sonata, Op. 13/ii. In both, inner forms are specified by the instructor before students begin graphing.

⁵⁰ Cadwallader and Gagné, *Analysis of Tonal Music*, 68–72.

⁵¹ Schenker, *Counterpoint*, transl. John Rothgeb and Jürgen Thym and ed. John Rothgeb (Ann Arbor: Musicalia Press, 2001), 178–179 views the passing tone as more natural than the neighbor in second-species counterpoint; and Schenker, *Free Composition*, transl. and ed. Ernst Oster (New York: Longman, 1979), 42 restricts neighbors at the first level of

between different techniques; and the techniques are notated using foreground rhythms instead of Schenkerian graphing symbols. How might this summary be refined into a memory aid useful in an in-class graphing exam? One with more robust Schenkerian symbols would be beneficial.⁵² Furthermore, each prolongation type could be shown in C major on a single page, in a simplified texture of 1–2 voices, and with structural levels labeled (in my course, using a variety of colors).

The result was my “Table of Schenkerian Graphing Symbols” (Example 11), a memory aid used in the graphing of tight-knit, parallel interrupted periods by Haydn or Mozart. As shown in Example 11, it presents prolongational techniques and associated graphing symbols in their simplest forms. Note the encircled numbers (1 for background; 2 for deep middleground; and 3 for the second level of the middleground), which are substituted for in my course by colors (red, yellow, and green). Working downwards, the *Ursatz* (or *Ursatz* parallelism), without and then with predominant, is shown in Nos. 1–2: its events are labeled with an encircled “1.” Besides having structural levels labeled, each prolongation technique is given in C major in a single staff: in No. 3, prolongations limited to harmonic tones; in No. 4, prolongations with passing tones; in No. 5, those with neighbors; and in No. 6, compound situations mixing different types. (No. 7 shows additional situations that are not classifiable by type of non-chord tone.) Types of chromaticism (tonicization, mixture) and sequences are withheld until a student masters the simpler graphing of diatonic units of no more than two phrases (by about week 8); so too are cover tones, which usually unfold across an entire work.⁵³ After being given initial and later versions of the Table, both the 2014 and 2016 classes successfully completed their midterms. Errors tended to be relatively insignificant: crossing branches (overlapping prolongations) and confusions between structural levels, often due to an overzealous use of slurs.

the middleground to upper neighbors; linear progressions, though, may descend or ascend (43–46).

⁵² On pp. 384–402, the authors have a very clear appendix devoted to notational symbols, of which many examples are in C major. This appendix, however, is more of a detailed reference than a quick memory aid.

⁵³ Schenker, *Free Composition*, 107.

Table of Schenkerian Graphing Symbols

Background: highest ①
Middleground: next down, ② then ③
Foreground: lowest level (no number)

1. Ursatz
Primary Tone ① (all) 1 3 2 V I Urlinie Bass Arpeggiation

2. Bass Arpeggiation plus Predominant
① (all) Beg. T Cad. PD Hooked Slur Cad. D Cad. T

3. Prolongations With Only Harmonic Tones
Arpeggiation Unfoldings ① ② ① Repetition (Retention Slur) ① (all)

8ve Coupling ① ② ① Obligatory Register
Registral Transfer (7th or 9th) I V Voice Exchange ① ① ①

4. Prolongations With Passing Tones
Linear progressions Motion into an Inner Voice Alternate Notation Primary Tone Superposition inner-voice tone

5. Prolongations With Neighbor Tones
Neighbor Tone Double Neighbor Incomplete Neighbor

6. Compound Prolongations
Initial Ascent Anstieg Motion From an Inner Voice Arpeggiated Ascent Reaching-Over ① ② ③ ④ (from inner voice)

7. Other Symbols
Interruption (Equal Two-Branch Notation) ① (all) 1st Branch Dividing Dominant 2nd Branch
Substitution (Implied Tone) ① ④ ④ ^7 replaces ^2
Displacement Symbol ① (all) 6 5 V4 4 3

Example 11: Table of Schenkerian Graphing Symbols as Used in Weeks 4–8.

(3) Hierarchical Ambiguity: whether of non-chord tone types, boundaries of prolonged harmonies, or inner form, hierarchical ambiguity is unavoidable in the process of graphing. Scholars have tended to claim that one analytical path through a forking of alternatives will be “the best answer,” a stance that has informed

Schenkerian pedagogy.⁵⁴ A focus on “correct” interpretations, however, can be pedagogically ineffective as it tamps down on the diversity of viewpoints in a class, thereby stifling debate. A cognitive and perceptual approach solves this problem: it explains the slippery, holistic intuitions of the method as ranging from definite to equivocal. Multiple criteria supporting one analysis lead to definite intuitions, mixed criteria to equivocal ones. According to this view, a final analysis must be preceded in the mind of the analyst by an evaluation of multiple analytical choices, each of which is assigned a weight (ideally represented by a probability).⁵⁵ Similarly, my cumulative hierarchy identifies hypothetical structures (Step 3) and then evaluates them (Step 4). For beginning students, these steps would seem essential: they reconstruct the process of graphing from foreground to notation; and the consideration of multiple choices promotes students’ critical thinking abilities. The teacher of Schenkerian analysis must thus help students propose and make analytical choices. Two strategies for refining them follow: (1) evaluating two or more analyses of a work (Step 7); and (2) telling the students when to override their perceptions or habits with top-down theoretical assumptions. (1) has been discussed previously; (2) requires more comment. Normative procedures within Schenkerian theory may, on occasion, contradict students’ perceptions, violate “common sense,” or seem arbitrary. The preference for descending over ascending passing motion, which underlies the claim that Ursätze are backgrounds, will need to be explained to students since it is not obvious why $\hat{2}-\hat{1}$ in a PAC is more “relaxed” than $\hat{7}-\hat{8}$, nor why $\hat{2}$ should “stand for” (or substitute for) $\hat{7}$ (both are

⁵⁴ V. Kofi Agawu, “Ambiguity in Tonal Music: A Preliminary Study,” in *Theory, Analysis and Meaning in Music*, ed. Anthony Pople (Cambridge: Cambridge University Press, 1994), 86–107 limits ambiguities to “50/50” choices; Schachter, “Either/Or,” 169 argues that ambiguities are sharply circumscribed by aspects of design; Cadwallader and Gagné (*Analysis of Tonal Music*, 110) say: “one path...usually serves as the best higher-ranking line...”

⁵⁵ Lerdahl and Jackendoff, *A Generative Theory*, 336n2, propose a model of preference rules (a probabilistic approach of selecting different analyses with different weights) as formally describing intuitions of variable strength; Chapters 8–9 apply the preference rule model to the concept of prolongation (which they interpret as an intuition of relaxation). For an examination of Schenkerian analysis from the perspective of probability, see David Temperley, *Music and Probability* (Cambridge: Cambridge University Press, 2007), 172–179.

melodically fluent).⁵⁶ Similarly, Schenker allows upper, but not lower neighbors at the first level of the middleground, claiming that a lower neighbor implies an interruption.⁵⁷ Both assumptions, seemingly arbitrary in certain situations, are necessary for defining the first middleground level, and thus should be discussed at the same time as Step 5 (the interpretation of structural levels for each hypothetical line). The strategy of intervening with top-down, theoretical assumptions, providing a recurring motif in Damschroder's forthcoming textbook,⁵⁸ should help students arrive at their analyses more quickly and confidently.

PART II: CLASSROOM APPLICATIONS OF THE CUMULATIVE HIERARCHY IN UNIT II

I adapt the cumulative hierarchy to Unit II (weeks 5–8) of my course by having students practice, repeatedly, the graphing of parallel interrupted periods using full Schenkerian notation; throughout the unit, their recall is helped by glancing at the Table of Graphing Symbols as they work. Each homework or in-class assignment is practice for the upcoming midterm; subsequent class discussions focus on graphing mechanics over expressive interpretation and more mechanical aspects of the foreground (e.g., surface Roman numerals). In this section, I demonstrate the cumulative hierarchy on mm. 1–8 from Mozart's Piano Sonata, K. 545/iii, one of the more challenging parallel interrupted periods used in Unit II. This excerpt is useful since a $\hat{5}$ -line structure, as implied in the first phrase, appears to fizzle out in the second phrase, forcing students to recheck their total voice-leading analysis (Step 3) and distinguish their structural soprano from displaced inner voices. Class time is structured by carefully designed handouts, to be completed individually or collaboratively. Example 12 shows a sample: at its top is a foreground score with expressive information omitted and some Roman numerals already labeled; emphasized or cadential scale degrees are hinted at; and spaces are given below each system for missing Roman numerals. (In the Mozart excerpt, the initial pickup is considered measure "0.") In the middle of the

⁵⁶ In Schenker, *Free Composition*, 13n5, Ernst Oster discusses why ascending forms of the fundamental structure are prohibited.

⁵⁷ Schenker, *Free Composition*, 42.

⁵⁸ Damschroder, *Tonal Analysis*.

handout, all note stems and immediately repeated notes are reduced out: here, the student draws colored lines to explore the total possible voice leading. (The absence of unfilled noteheads makes students identify the Ursatz on their own.) Students are then asked to list at least two criteria in favor of each view ($\hat{5}$ -line or $\hat{3}$ -line) of the principal melody. (The bass is not especially ambiguous here, so its total voice-leading is not pursued in ensuing examples.) At the bottom of the handout, students develop their finished, multi-level graph, using standard Schenkerian notation and colors for structural levels.

Mozart K. 545/iii Practice Test
 (assume parallel interrupted period)

cadence: _____

1. Foreground Analysis

Emph.: _____

0 1 Emph.: cad. ^:

(I) vi ii⁶ V I⁶ IV ii⁶ V (I)

Emph.: _____

Emph.: cad. ^:

cadence: _____

2. Structural Hypotheses (soprano): start on G5 and E5 (m. 0)

Criteria for 5-Line:

- 1.
- 2.

Criteria for 3-Line:

- 1.
- 2.

Rank Structural Candidates (circle backgr.):

5-Line 3-Line

3. Final Graph (use different colors for background and first level of the middleground)

Example 12: Mozart's Piano Sonata, K. 545/iii, mm. 1–8: A Sample Practice Test on a Parallel Interrupted Period.

The analysis of this excerpt in Unit II is intended to build, and then assess, students' individual graphing ability. In my class, I would start with an open discussion of Steps 1–2 (up to the discussion of an excerpt's assumed form or structure), have students work unassisted on Steps 3–6 (up to the notated graph), and then, if they were to produce a successful analysis,

end with an evaluative class discussion including a list of needed improvements. Before graphing begins, the foreground analysis (Example 13) reveals generally unproblematic Roman numerals and structural harmonies, allowing the class to focus on later steps of the cumulative hierarchy. Emphasized scale degrees in the principal melody include three prominent onsets of $\hat{5}$, with *two* upper neighbors (mm. 5 and 6) preceding the last one in m. 6, and a slightly lesser emphasis on $\hat{4}$ in m. 3. The HC in m. 4 has an associated scale degree in the principal melody of $\hat{7}$; the PAC in mm. 7–8 has associated scale degrees of $\hat{2}$ – $\hat{1}$, with $\hat{2}$ emphasized by its leading-tone C#.

Antecedent

b.i. $\hat{5}$ m. 0 C: (I) vi ii⁶ V I⁶ IV⁵—6 (ii) ii V (I) Beg. T Cad. PD I: HC $\hat{7}$ $\hat{5}$

b.i.' cont.

Consequent

UN $\hat{5}$ vi ii V I UN $\hat{5}$ $\hat{5}$ $\hat{2}$ $\hat{1}$ I: PAC I⁶ V⁷ I Cad. PD Cad. D Cad. T

Example 13: Foreground Analysis of Mozart's K. 545/i, mm. 1–8 (Step 1).

Next, in Step 2, only one basic assumption is necessary: each phrase begins on an implied root-position I in the bass. Although the harmonic support for I in m. 0, beat 2 and m. 4, beat 2 is missing in the bass, and mm. 1 and 5 announce salient vi chords, a graph beginning each phrase on vi encounters difficulties: (1) explaining the opening G5 pickup as the seventh of vi; and (2) parallel fifths between the V in m. 4 (G/D) and the coming vi in m. 5 (A/E). A tonic chord starting each phrase, then, seems preferable.

Skipping Step 3 in the bass, in Example 14 (a–c) the soprano melody's reduction is explored, evaluated, and then, once structural levels are decided, converted into notation and aligned with the

structural bass (Steps 3–6). Tracing lines starting with the opening I chord (Example 14a), in the first phrase a solid line begins on G5 in m. 0: it moves to F5 and E5 in mm. 1–2, but in measure 3 one faces a choice between D5 or F5 (the ambiguity is shown using dashed lines). More choices arise moving into m. 4, and approaching the HC: does F5 move to D5, does D5 stay put, or does D5 move down by third to B4? (The melodic A4 in m. 3 arises from an inner voice of G3 in m. 2 and is never in contention as part of a structural melody.) A squiggly line may also be traced starting on E5 in m. 1: this line proceeds by step to D5 and C5 in m. 2, and then back to D5 as part of a 5–6 shift in m. 3. Although the solid and squiggly lines are both emphasized, the former as the beginning of the b.i. of <G-G-E> in mm. 0–1, the latter as its end, the solid line (<G-F-E-D>) is preferred since it has a higher starting pitch and descends fluently to D5 in m. 3. In the second phrase, the solid G5 line presents a choice: either it toggles between G and A (upper neighbor of G) in mm. 4–6, or it descends to F5 and E5. The first path fizzles out, with the solid line stranded in m. 7 on F5; the descent through F5 (m. 5), however, reaches $\hat{1}$ (m. 8) by step. Although the E5 squiggly line in the second phrase moves to the emphasized D5 in m. 7, and then to the cadential C5 in m. 8, the E5 line had never previously received G5's level of emphasis, and thus the squiggly line is not in contention with the solid one.

As summarized in Example 14b, the G5 $\hat{5}$ -line emerges as most compelling since it has the highest starting pitch, and in the second phrase, it is supported by *two* upper neighbors in mm. 5–6. There are costs to the G5 view: there is similar motion to the octave in mm. 1–2 (G/F to E/E), whereas the E5 view begins with a simple voice exchange (C/E in m. 1 to E/C in m. 2). However, the E5 line never attains the G5 line's degree of emphasis. At this point, the class will probably settle upon a 5-line interpretation. The G5 interpretation, nonetheless, may seem counterintuitive since one has to override the fluent motion of <G5-A5> in mm. 4–5, instead preferring <G5-F5>. To prepare for the midterm, though, each student should be urged to decide upon a single interpretation (5-line) and pursue its consequences for structural levels (Step 5). In this step (Example 14c), the G5 solid line, within an interrupted, two-part inner form (interpreted here as two equal branches), is associated with the background, except for various paths that lie closer to the foreground, for instance, the motion to an inner voice (<D-C-B>) in mm. 3–4 and the upper neighbors (A5) in mm. 5 and 6, which are

The image shows two musical staves. The top staff is in treble clef and contains a melodic line with various ornaments and accidentals. Above the staff, the text "G5 Line (solid)" is written. Below the staff, there are several annotations: "E5 Line (squiggly)" with a squiggly line, "C to D (squiggly)" with a squiggly line, and "E to D or F? (dotted) F-D? D-B?" with a dotted line. The bottom staff is in bass clef and contains a melodic line with various ornaments and accidentals. Above the staff, the text "G to A or F? (solid)" is written. Below the staff, there are several annotations: "G5 Line fizzles?" with a squiggly line, "1!" with a circled 1, and "ii6" with a circled 6. The staves are connected by a long horizontal line.

(a) Soprano Structural Hypotheses (Step 3)

G5 Line (solid):

Advantages:

- Line starts at a higher pitch level than the E5 one
- G5 and F5 emphasized in mm. 0–2 at start of b.i., b.i.’
- G5 descends to $\hat{2}$ linearly (mm. 1–3)
- Upper neighbor emphasis of G5 occurs twice in mm. 5–6
- If line descends to F5 (m. 5), melodic parallelism between phrases
- If line descends to F5 (m. 5), reaches $\hat{1}$ in m. 8 by step

Disadvantages:

- Similar motion to a perfect octave on $\hat{3}$ in mm. 1–2

E5 Line (squiggly):

Advantages:

- Emphasized at ends of b.i. and b.i.' in mm. 1-2
- Voice exchange in mm. 1-2

(b) Evaluation of Hypotheses (Step 4)

The image displays two systems of a musical score for 'The Swan' by Camille Saint-Saëns. Each system consists of a piano accompaniment (piano) and a vocal line (soprano). The piano part is written in treble and bass clefs, while the vocal part is in soprano clef. The score includes various musical notations such as notes, rests, and ornaments. Below the piano staves, there are figured bass notations in parentheses, such as (I), (II), (V), (I), (ii), (V), (I), (ii6), (V7), and (I). Above the vocal staves, there are figured bass notations in hats, such as 5, 4, 3, 2, 1, 4, 3, 2, 1. The score is divided into two systems, with the first system ending with a double bar line and the second system continuing the piece.

(c) Finished Graph showing Bass, Soprano, and their Alignment (Steps 5–6)

Example 14 (a–c): Soprano Structural Hypotheses, Evaluation, and Finished Graph of Bass and Soprano.

generated by superposition above the structural soprano, which descends to F5 and E5. (As a side benefit, the superposition helps clarify the thematic parallelism between the two phrases.) The E5 solid line tends to have events on the first level of the middleground, for instance the E5 in m. 1, which is an unfolding of the primary tone, G5.⁵⁹ As a result of the $\hat{5}$ -line background, the second phrase contains two bassline arrivals on a root-position I (mm. 6 and 8). Overall, the analysis shows students the value of pursuing the total voice leading (Step 3), and backtracking to this stage as necessary.

By Step 6 in Unit II (Example 14c), the class can more easily use two colors for a graph in an exam: thus, in grayscale the graph uses only the encircled numbers “1” and “2.” In comparison with the “Happy Birthday” analysis, the students now distinguish between a wide variety of prolongational techniques (e.g., unfoldings versus superpositions); locating prototypes for them on the Table of Graphing Symbols, they inscribe them in the graph. Their graphs also use new notational techniques: retention (dotted), solid, and hooked slurs. Having settled upon their favored interpretation of the excerpt’s structure, students now focus on notation, trying to achieve visual clarity: in Example 14c, to counteract a relatively busy right-hand texture, the descent of <E5-D5-C5> within an inner voice (mm. 1–2) is preferably shown using beams and note stems instead of a slur. Once students complete their graphs, and the instructor offers hints on refining them, the class can pinpoint differences between graphs, which are illustrated through a performance of each. Relative advantages and disadvantages are then debated (Step 7). Lastly, the instructor notes recurrent errors for students to work on.

⁵⁹ Within Unit III, the class can return to this excerpt within the context of the entire movement, investigating whether $\hat{5}$ is a convincing primary tone, and demonstrating that the identification of primary tone is contingent upon events in an entire movement, not just its opening.

CONCLUDING THOUGHTS

We return, full circle, to the complex and holistic nature of Schenkerian analysis, and to its conflict with the sequential presentation of content in a course. The cumulative hierarchy for Schenkerian analysis, as presented in this essay, has sought to unpack and slow down this learning progression to enable beginners, especially undergraduates, to master the method quickly. Just as I have found in the 2014 and 2016 iterations of my introductory course, teachers should find, upon using the cumulative hierarchy and strategies to overcome problems of foreground data collection, long-term memory, and hierarchical ambiguity, that students of all levels retain material longer, make faster progress in graphing, and are more strongly motivated. The result should be a more engaging, vibrant Schenker course that develops in students a wide range of critical thinking skills and empowers them to use the method toward ends they find relevant (whether a musical performance with a sense of overall line, a deeper understanding of a work's form, or an understanding of a work's position within common-practice tonal tradition).

REFERENCE LIST

- V. Kofi Agawu. "Schenkerian Notation in Theory and Practice." *Music Analysis* 8, no. 3 (1989): 275–301.
- , "Ambiguity in Tonal Music: A Preliminary Study." In *Theory, Analysis and Meaning in Music*, edited by Anthony Pople, 86–107. Cambridge: Cambridge University Press, 1994.
- Aldwell, Edward, Carl Schachter, and Allen Cadwallader. *Harmony and Voice Leading*. 4th ed. Boston: Schirmer and Cengage, 2011.
- Anderson, Lorin W. and David R. Krathwohl, et al. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman, 2001.
- Bach, Carl Phillip Emanuel. *Essay on the True Art of Keyboard Instruments*. Edited and translated by William Mitchell. New York: W. W. Norton, 1947.
- Bain, Ken. *What the Best College Teachers Do*. Cambridge: Harvard University Press, 2004.
- Beach, David. "Schenker's Theories: A Pedagogical View." In *Aspects of Schenkerian Theory*, edited by David Beach, 1–38. New Haven: Yale University Press, 1983.
- , *Advanced Schenkerian Analysis: Perspectives on Phrase Rhythm, Motive, and Form*. New York: Routledge, 2012.
- , "The Analytic Process: A Practical Demonstration [of the Opening Theme from Beethoven's Op. 26]." *Journal of Music Theory Pedagogy* 28 (2014): 7–25.
- Berry, David Carson. "The Role of Adele T. Katz in the Expansion of the New York 'Schenker School'." *Current Musicology* 74 (2002): 103–151.
- , "Hans Weisse and the Dawn of American Schenkerism." *The Journal of Musicology* 20, no. 1 (2003): 104–156.
- Bloom, Benjamin, et al. *Taxonomy of Educational Objectives: Handbook I: Cognitive Domain*. New York: David McKay, 1956.
- Brown, Matthew. *Explaining Tonality: Schenkerian Theory and Beyond*. Rochester: University of Rochester Press, 2005.

Burstein, L. Poundie. "Unraveling Schenker's Concept of the Auxiliary Cadence." *Music Theory Spectrum* 27, no. 2 (2005): 159–185.

———, "Schenkerian Analysis and Occam's Razor." *Res Musica* 3 (2011): 112–122.

Cadwallader, Allen Clayton and David Gagné. "The Spirit and Technique of Schenker Pedagogy." In *Structure and Meaning in Tonal Music: Festschrift in Honor of Carl Schachter*, edited by L. Poundie Burstein and David Gagné, 43–54. Hillsdale: Pendragon, 2006.

———, *Analysis of Tonal Music: A Schenkerian Approach*. 3rd ed. New York: Oxford University Press, 2011.

Caplin, William. *Classical Form: A Theory of Formal Functions for the Music of Haydn, Mozart, and Beethoven*. New York: Oxford University Press, 1998.

Damschroder, David. *Tonal Analysis: A Schenkerian Perspective*. New York: W.W. Norton, forthcoming.

Forte, Allen and Steven Gilbert. *Introduction to Schenkerian Analysis*. New York: W. W. Norton, 1982.

Froyen, Vicky, Jacob Feldman, and Manish Singh. "Bayesian Hierarchical Grouping: Perceptual Grouping as Mixture Estimation." *Psychological Review* 122, no. 4 (2015): 575–597.

Gagné, David. "The Place of Schenkerian Analysis in Undergraduate and Graduate Curricula." *Indiana Theory Review* 15, no. 1 (1994): 21–33.

Jonas, Oswald. *Introduction to the Theory of Heinrich Schenker: The Nature of the Musical Work of Art*. Translated and edited by John Rothgeb. Ann Arbor: Musicalia Press, 2005.

Katz, Adele. *Challenge to Musical Tradition: A New Concept of Tonality*. New York: Alfred Knopf, 1945.

Laitz, Steven. *The Complete Musician: An integrated Approach to Theory, Analysis, and Listening*. 4th edition. New York: Oxford University Press, 2015.

Larson, Steve. "Strict Use of Analytic Notation." *Journal of Music Theory Pedagogy* 10 (1996): 37–78.

- Laufer, Edward. "Review: Heinrich Schenker, *Free Composition (Der freie Satz)*, Translated by Ernst Oster." *Music Theory Spectrum* 3 (1981): 158–184.
- Lerdahl, Fred. *Tonal Pitch Space*. Oxford: Oxford University Press, 2001.
- Lerdahl, Fred and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge: MIT Press, [1983] 1996.
- Marlowe, Sarah. "Fugue in Context: A Schenkerian Approach to Select Works by J.S. Bach and Dmitri Shostakovich." PhD diss., University of Rochester, 2013.
- Monahan, Seth. "Musical Action and Musical Agency." *Journal of Music Theory* 57, no. 2 (2013): 321–371.
- Marr, David. *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information*. Cambridge: MIT Press, 1982.
- Nalpantidis, Lazaros and Antonios Gasteratos. "Stereo Vision for Robotic Applications in the Presence of Non-Ideal Lighting Conditions." *Image and Vision Computing* 28, no. 6 (2010): 940–951.
- Neumeyer, David and Susan Tepping. *A Guide to Schenkerian Analysis*. Englewood Cliffs, New Jersey: Prentice Hall, 1992.
- Pankhurst, Tom. *SchenkerGUIDE: A Brief Handbook and Website for Schenkerian Analysis*. New York: Routledge, 2008.
- Peebles, David and Richard P. Cooper. "Thirty years after Marr's *Vision*: Levels of Analysis in Cognitive Science." *Topics in Cognitive Science* 7, no. 2 (2015): 187–190.
- Proctor, Gregory and Lee Riggins. "A Schenker Pedagogy." *Journal of Music Theory Pedagogy* 3, no. 1 (1989): 1–24.
- Rothstein, William. "The Americanization of Heinrich Schenker." In *Schenker Studies*, edited by Hedi Siegel, 193–203. Cambridge: Cambridge University Press, 1990.
- , "The Americanization of Schenker Pedagogy?" *Journal of Music Theory Pedagogy* 4, no. 2 (1990): 295–299.

-----, "Rhythmic Displacement and Rhythmic Normalization."
In *Trends in Schenkerian Research*, edited by Allen Cadwallader,
87–113. New York: Schirmer, 1990.

Salzer, Felix. *Structural Hearing: Tonal Coherence in Music*. New York:
Charles Boni, 1952.

Schachter, Carl. "Either/Or." In *Schenker Studies*, edited by Hedi
Siegel, 165–180 (Cambridge: Cambridge University Press, 1999).

-----, *The Art of Tonal Analysis: Twelve Lessons in Schenkerian
Theory*. Edited by Joseph N. Straus. New York: Oxford University
Press, 2016.

Schenker, Heinrich. *Five Graphic Analyses (Fünf Urlinie-Tafeln)*. New
York: Dover, 1969.

-----, *Counterpoint, Book I*. Translated by John Rothgeb and
Jürgen Thym. Edited by John Rothgeb. Ann Arbor: Musicalia
Press, [1910] 2001.

-----, *Free Composition*. Translated and edited by Ernst Oster.
New York: Longman, [1935] 1979.

Segall, Christopher. "You, Y'all, We: A Framework for Collaborative
Learning." *Engaging Students: Essays in Music Pedagogy*
3 (2015). Accessed June 20, 2016. [http://flipcamp.org/
engagingstudents3/essays/segall.html](http://flipcamp.org/engagingstudents3/essays/segall.html)

Temperley, David. *Music and Probability*. Cambridge: MIT Press,
2007.

-----, "Composition, Perception, and Schenkerian Theory."
Music Theory Spectrum 33, no. 2 (2011): 146–168.



Counterpoint in the Classroom: Pedagogical Considerations and a Detailed Review of Two Textbooks

BY SARAH MARLOWE

Green, Douglass M. and Evan Jones. *The Principles and Practice of Modal Counterpoint*. New York: Routledge, 2010.

_____. *The Principles and Practice of Tonal Counterpoint*. New York: Routledge, 2015.

Of all the topics taught by theory instructors, counterpoint is perhaps one of the most divergent in terms of pedagogical approach, repertoire discussed, and the intended learning outcomes. Should we teach via the species or “direct” approach? Should we focus on modal or tonal counterpoint? How much analysis and model composition will be included? What rules are favored over others? And the list goes on. Every instructor has their preferences, including the authors of the many popular counterpoint textbooks that are currently available. After experimenting with various methods, one thing I am certain of is that the authors themselves are best at teaching from their respective texts (and I am equally certain that studying with any of them would be wonderful); for the rest of us who teach counterpoint, the importance of finding a textbook that aligns with our own strengths and preferences is crucial if we are to provide convincing instruction for our students.

There are several criteria to consider when determining whether a particular textbook is appropriate for a course.

- Course Design: What type of course is the book intended for and what is the primary learning outcome? What is the general pedagogical approach?
- Target Audience: What is the target audience for the textbook (first-year or third-year undergraduates, or graduate students)? What is the overall content and organization? Do you need a book that begins with introductory material, or do you need a textbook that offers more for the advanced composition student?

The author is grateful to Rebecca Jemian and William Marvin for their helpful feedback during the writing of this article.

- Supplementary Materials (Musical Examples, Exercises for Assessment, etc.): Does the book provide you, the instructor, with a sufficient number of musical examples and exercises, or will you need supplementary texts, anthologies, and handouts?

With the above criteria in mind, this article reviews two of the most recently published textbooks on counterpoint: *The Principles and Practice of Modal Counterpoint* (2010) and *The Principles and Practice of Tonal Counterpoint* (2015) by Douglass M. Green and Evan Jones. This two-volume project was the *magnum opus* of Douglass Green, who passed away before the works were completed, and Evan Jones was selected to prepare the manuscripts for publication as co-author. The seamless organization and tone of the prose makes it impossible for the reader to decipher the individual contributions of Green and Jones, which attests to the highly compatible pedagogical views shared by both authors.

For the purposes of this review, these volumes will be evaluated primarily as textbooks for single-semester counterpoint courses or for a two-semester sequence for upper level (third- and fourth-year) undergraduate students. In terms of language and presentation, they are perhaps most appropriate for undergraduate students, although the books could also work well for introductory counterpoint courses at the graduate level. There are some similarities in presentation, but the volumes are quite different in many respects and will be summarized in separate sections dedicated to modal and tonal counterpoint pedagogy. While this article focuses specifically on these two texts, other textbooks will be mentioned alongside discussion of important pedagogical concerns involved with teaching counterpoint.

MODAL COUNTERPOINT

One important factor to consider when selecting a textbook is the pedagogical approach one wishes to take in their counterpoint class. The two main choices are the species approach—a series of graduated exercises in abstract rhythmic relationships set against a fixed melody or *cantus firmus*—or the “direct” approach, which places earlier emphasis on style-specific compositional techniques and idioms. Each approach has benefits and disadvantages.

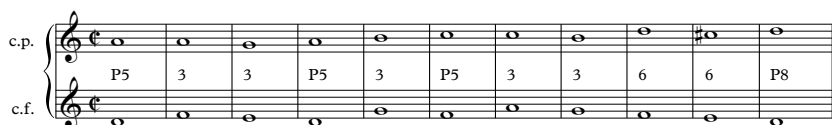
The species approach has long been praised for its strong pedagogical organization and, whether modal or tonal in nature, species relationships are generic to such a degree that the general aesthetic principles they espouse can be applied to a wide variety of musical styles.¹ Detailed study of each species is designed to sensitize students to the rules of voice leading and dissonance treatment, and this approach has the pedagogical advantage of gradually introducing one new idea at a time. Minimally, students need to read in at least one or, ideally, two clefs as well as know how to analyze melodic and harmonic intervals in order to begin study in species counterpoint. It is often incorporated into the early stages of the undergraduate theory curriculum precisely because it requires minimal knowledge of fundamentals and gradually introduces the rules of voice leading, and thus segues nicely into discussion of harmony and four-part writing. The disadvantage to this approach, particularly in a course devoted purely to the study of counterpoint, is that discussion and mastery of each of the five species can occupy a large portion of the semester, leaving little time for more in-depth study of advanced contrapuntal techniques or stylistic composition projects in various genres. If not complemented with other activities, the species approach has the potential to feel mechanical and mundane and the connection between rule-driven exercises and real musical compositions is potentially missed. Rhythm, in particular, is one feature that receives no attention in species study aside from the discussion of metric placement of consonance and dissonance.²

¹ Robert Gauldin, *A Practical Approach to 16th-Century Counterpoint*, revised ed. (Long Grove, Illinois: Waveland Press, Inc., 2013), 279. Gauldin provides a detailed overview of species counterpoint, complete with critical discussion of its pedagogical benefits and disadvantages in an appendix to this volume. For more detailed discussion of the species approach, see Ian Bent, "Steps to Parnassus: Contrapuntal Theory in 1725 Precursors and Successors," in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (New York: Cambridge University Press, 2002), 554–602.

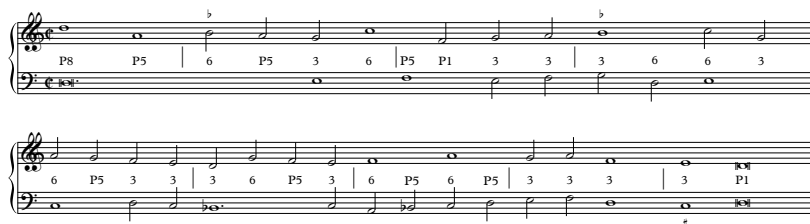
² Gauldin, *16th-Century Counterpoint*, 279. See also Michael Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*, 2nd ed. (Carbondale: Southern Illinois University Press, 2004), 66. Rogers writes, "Especially in sixteenth-century style, where durational flow and flexibility are critical, the predictable metric regularity of the early species might stifle the elastic feel for nuances and gentle differences between rhythmic lifts and landing."

The direct approach, on the other hand, skips ahead more quickly with the intention of exploring more nuanced features of a specific style and encourages students to begin composing more immediately. Proponents of the direct approach argue that species counterpoint is “artificial,”³ “inherently unmusical,”⁴ and that species exercises neglect important features of the Renaissance, including “topics of free counterpoint, imitation, and chromaticism” and text setting, among many others.⁵ In contrast to the species approach, this method combines the review of voice-leading rules with style-specific guidelines, idiomatic patterns, and contrapuntal techniques as derived from representative works of a particular composer or style.

a. First species counterpoint exercise (adapted from J.J. Fux 1725, p. 47)

c.p. 

b. Direct counterpoint exercise (adapted from Gauldin 2013, Example 3–5)



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From Gauldin, *A Practical Approach to 16th Century Counterpoint*
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Example 1. Species and direct approaches to teaching modal counterpoint

³ Gustave Frederic Soderlund, *Direct Approach to Counterpoint in 16th-Century Style* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1947), vii.

⁴ Thomas Benjamin, *The Craft of Modal Counterpoint: A Practical Approach*, 2nd ed. (New York: Routledge, 2005), xii.

⁵ Robert Gauldin, *16th-Century Counterpoint*, viii. Gauldin’s text is perhaps the most even-handed in its discussion of species counterpoint. He also provides a thorough annotated bibliography of counterpoint treatises organized by species and non-species or direct approaches.

Example 1 provides samples of a first species exercise (Fux) and introductory exercise using the direct approach (Gauldin). Both activities feature the exclusive use of consonant intervals, but Example 1b requires the added task of negotiating the rhythmic activity between each of the voices. The latter approach clearly results in solutions that emulate the Renaissance style right from the start, but this type of exercise assumes total command of theory fundamentals including melodic and harmonic intervals, voice-leading rules, dissonance treatment, embellishing tones, and so on, at the start of the semester. In fact, Gauldin's first chapter goes on to introduce passing tones and suspensions immediately after this exercise, which is roughly equivalent to teaching first, second, and fourth species simultaneously. On its own, the approach is quite sophisticated and is therefore best accompanied by introductory material early on, which of course requires an additional textbook or supplementary handouts. Because of the faster pace and added rhythmic complexity, the direct approach is not ideally suited for introductory level theory courses. But it is certainly worth consideration for a class comprised primarily of composition majors eager to write full-length compositions; it is also worth considering for upper-level undergraduates if the format of the course is less conducive to spending a large chunk of time on species counterpoint (a class that meets only once per week, for example).

Personal experience suggests that, regardless of the focus, a combination of both approaches yields the greatest results—all students benefit from at least some species counterpoint study and an introduction to (or review of) voice-leading rules, but it is also important to show them how to identify and apply that knowledge within a real musical context in both analysis and model composition. Furthermore, a combined approach will appeal to varied learning styles in the class: some students enjoy rule-driven exercises, others excel in the more creative application of concepts via model composition exercises, and still others shine when given the opportunity to express their thoughts verbally during class discussion or in written prose.

In *The Principles and Practice of Modal Counterpoint*, Green and Jones take a “modified” species approach and include style-specific composition exercises later in the text. In this way, the general learning outcomes are similar to those of Peter Schubert's

Modal Counterpoint: Renaissance Style,⁶ although the organization and presentation differs significantly as will be discussed below. What is the “modified” species approach? Traditional species counterpoint textbooks often follow the same presentation as Fux’s *Gradus ad Parnassum*:⁷ they present first, second, third, fourth, and fifth (mixed) species in two voices, then follow the same process for three voices, four voices, and so on. Green and Jones present the material in two notably different ways: first, they introduce each species of counterpoint in two and then three voices before moving onto the next;⁸ and second, they omit third species altogether and proceed directly from second to fourth species.⁹ Fourth species is, in my opinion and apparently the authors’ as well, a more natural outgrowth of second species; the rhythmic patterns are similar and they each focus on only one type of dissonance treatment, whereas third species involves a sudden increase in rhythmic activity combined with multiple idiomatic devices (neighbor tones, double neighbor tones, and *nota cambiata*, among others). The end result of the traditional ordering gives the impression that third species is far more complex than the others. In lieu of a chapter devoted specifically to third species, the authors defer discussion of shorter note values to the style-specific chapters later in the text, which aligns more closely with how proponents of the

⁶ Peter Schubert, *Modal Counterpoint, Renaissance Style*, 2nd ed. (New York: Oxford University Press, 2008).

⁷ Johann Joseph Fux, *The Study of Counterpoint from Johann Joseph Fux’s Gradus ad Parnassum*, trans. and ed. Alfred Mann (New York: W. W. Norton & Company, 1971). Other texts that follow this organization, yet differ in other respects, include Teresa Davidian, *Tonal Counterpoint for the 21st -Century Musician* (New York: Rowman & Littlefield, 2015); Knud Jeppesen, *Counterpoint: The Polyphonic Vocal Style of the Sixteenth Century*, trans. Glen Haydon (New York: Dover Publications, Inc., 1992); and Peter Schubert, *Modal Counterpoint*.

⁸ The same organization is used in Felix Salzer and Carl Schachter, *Counterpoint in Composition: The Study of Voice Leading* (New York: Columbia University Press Morningside Edition, 1989), although this textbook presents species rules in the context of tonal counterpoint.

⁹ Evan Jones writes, “I share Professor Green’s conviction that Fux’s third species (four notes against one) should be delayed until after fourth species (syncopes); the introduction of smaller note values thus coincides with the study of melody and rhythm in Palestrina, Lassus, and Victoria.” Green and Jones, *Modal Counterpoint*, xi.

direct approach present the material.¹⁰ Even if learning species counterpoint is the exclusive goal, this reordering of the species is pedagogically sound for the reasons outlined above. But in terms of model composition, reserving discussion of shorter note values for the style-specific chapters also has many advantages. First, placing shorter note values into a stylistic context allows for a more seamless transition from generic species exercises to actual musical composition. Students will have been sufficiently sensitized to the issues surrounding consonance and dissonance treatment with discussion of first, second, and fourth species, and rules regarding other melodic embellishments can then be easily folded into model composition exercises. Second, the third species task of writing four quarter notes per measure emphasizes a regular metric grouping that is otherwise de-emphasized when composing in the Renaissance style, and ultimately reinforces a habit that is stylistically inaccurate. Moreover, discussion of shorter note values pairs nicely with issues concerning text setting; text setting often influences rhythmic decisions and is a crucial factor to consider when composing in the Renaissance style. In the end, providing stylistic context at this stage can help students make more informed decisions about rhythm in their own writing.

One feature of Green and Jones's book that stands apart from many other textbooks is the chronological organization of historical materials. Whether the topic is the species or direct approach, most textbooks present the rules for writing in the late Renaissance style as a synthesis of multiple sources, with additional historical context provided where appropriate. Green and Jones present voice-leading rules in a similar fashion, yet they alternate species counterpoint chapters with style-specific chapters that span several centuries worth of music including Gregorian chant, Middle Ages (organum, conductus, rhythmic modes), 14th-century textures (canon, hocket, and fauxbourdon), and finally secular and sacred works from the Renaissance (rondeau, mass, parody and paraphrase technique, and mensuration canons). Inclusion of these chapters provides better context for students and could be equally useful as a supplement to a history survey course, assuming there is time for theoretical points of discussion.

¹⁰ Texts that take a direct approach without discussing species counterpoint first include Benjamin, *The Craft of Modal Counterpoint*; Gauldin, *16th-Century Counterpoint*; and Soderlund, *Direct Approach to Counterpoint*.

On the whole, the textbook organization is effective for many reasons. First, interweaving analysis chapters with the more technical species chapters allows time to digest specific voice-leading rules while simultaneously providing interesting analytic points for discussion; this, in turn, breaks up the routine of continued written counterpoint practice. Second, the chronological ordering of the analysis chapters allows students to experience a gradual transformation of contrapuntal practice over a large time span, resulting in their acquisition of a broader range of repertoire including a variety of composers and musical examples drawn from both sacred and secular works. Third, skipping third species and instead introducing shorter note values in combination with style-specific considerations, including text setting, helps minimize redundancy and provides a more natural transition into model composition. The model composition chapters that follow are likewise presented in a complementary ordering to the species sections; compositions in two voices (*Bicinium*) are followed by selected works by Palestrina, Lassus, and Victoria in three and, then, four or more voices.

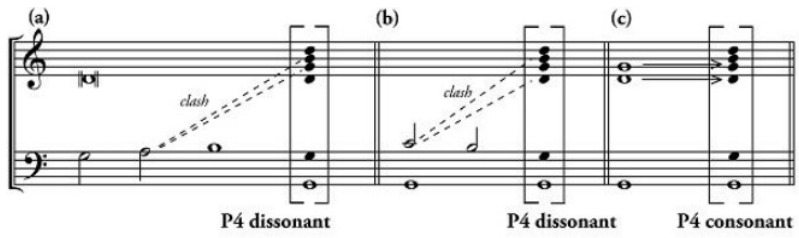
The conflict between the historical chapters and surrounding species counterpoint discussions creates difficulties of organization that are not entirely solved within the book. The species counterpoint rules are taught via the late 16th-century model, yet works introduced in the earlier historical chapters will not necessarily adhere to those rules and principles. The authors do not shy away from pointing out these discrepancies, but additional reminders to the student would be helpful. For instance, in the chapter 6 discussion of a 14th-century work by Machaut, the authors note, "Parallel unisons, fifths, and octaves continue to appear frequently. There seems to be no feeling [sic] against the doubling of the leading tone, which itself causes parallelism in most cases."¹¹ Without additional reminders, students could potentially forget that these works do not yet reflect the rules that they are studying in their written exercises.

In general, the authors provide more explanation of theoretical and historical concepts than are found in many other counterpoint texts, and their openness about concepts that are frequently taken for granted in the classroom is refreshing. For instance, many counterpoint textbooks begin by listing the harmonic consonances and dissonances and immediately progress to voice-leading rules, examples, and exercises without explaining *why* certain intervals

¹¹ Green and Jones, *Modal Counterpoint*, 58.

are considered consonant or dissonant. In contrast to this approach, Green and Jones begin their introduction of two-voice counterpoint with brief mention of the changing definitions of consonance and dissonance over time. Many students are willing to accept lists of rules and follow them, but taking the time to explicate *why* things are a certain way can appeal to some of the more critical thinkers in the class and is additionally useful for instructors who have less experience with the history of music theory.

That said, no text can anticipate every student question, and instructors should be prepared to research topics a bit more fully before discussing them in class. Green and Jones's explanation for why the perfect fourth is a dissonant interval is one such topic. After a brief explanation of how consonant intervals were derived from the small-numbered ratios within the overtone series, the authors take on the challenge of explaining why the perfect fourth is viewed as a dissonance above the lowest sounding voice. Most textbooks simply state that the fourth is dissonant without further explanation, but this is not always convincing for students—*why* are the perfect unison, perfect octave, and perfect fifth treated as consonances and not the perfect fourth? Green and Jones observe, “the perfect fourth has, over the years, been in the ambiguous position of being consonant in some contexts and dissonant in others.”¹² But their reliance on the overtone series as explanation for why the perfect fourth is treated as a dissonance above the bass in the 16th-century style is a bit unclear.



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Example 2. Explanation of the perfect fourth as dissonance (Green and Jones 2011, Ex. 4–3)

¹² Ibid., 33.

Example 2 illustrates their explanation via the triad that results from the first six partials of the overtone series. The fourths in examples *a* and *b* are dissonant with the surrounding sonority, whereas the fourth in example *c* is consonant. The authors admit, “undoubtedly the explanation given above is both incomplete and over-simplified. It is offered as at least a partial explanation for the fact that the perfect fourth, when it is formed from the lowest voice upwards has been usually (but not always) treated as a dissonance.”¹³ To be sure, this explanation is a bit incomplete and oversimplified, and, for the student who reads more closely, it will still not be entirely convincing. The visual distinction between “consonant” and “dissonant” in their example has potential to be misread and misunderstood, and could lead a student to infer that the perfect fourth is always allowed as long as it is consonant with the surrounding harmony. In place of this, as well as their comment that the perfect fourth was “perceived as so unstable as to be for all intents and purposes a dissonant interval,” it may prove simpler to observe that, unlike the other perfect intervals, the perfect fourth is not generated by the fundamental and is therefore treated as a dissonant interval against the bass.¹⁴

The final chapter, “The Rise of Tonality in the Seventeenth Century” is a welcome addition.¹⁵ While there are no full-length music examples included, and those presented are not as clearly annotated as earlier examples in the text, the chapter discusses

¹³ Ibid., 35.

¹⁴ Salzer and Schachter discuss the dissonant perfect fourth in terms of a historic shift of emphasis in the Renaissance: “when the third acquired consonant status, the fourth began to function as an interval with dissonant tendencies; this reversal of roles is already clearly in evidence in the music of fourteenth-century Italy.” Salzer and Schachter, *Counterpoint in Composition*, 15. But a purely historic view can also pose problems; although the perfect fourth was used in *organum*, for instance, it still posed problems that the perfect fifth did not. See Sarah Fuller, “Theoretical Foundations of Early Organum Theory,” *Acta Musicologica* 53/Fasc. 1 (Jan. –Jun., 1981), 52–84; and “Organum-discantus-contrapunctus in the Middle Ages,” in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (New York: Cambridge University Press, 2002), 477–502.

¹⁵ Of the textbooks on 16th-century counterpoint cited in this article, Gauldin’s *16th-Century Counterpoint* is the only other book to include this topic.

important transitions that occur at the turn of the 17th century: the *seconda pratica* (and its drastic changes in dissonance treatment), and developments in instrumental genres. Using continuous variations as the primary compositional genre in this chapter, Green and Jones introduce the concepts of rhythmic diminution and the importance of considering implied harmony when composing melodic lines. The shift from vocal to instrumental repertoire, as well as from the modal system to major-minor tonality, is more implicit than fully expressed, but prioritizing linear over vertical thinking prepares students well for study of Baroque compositional practices.¹⁶ Chapters like this, as well as the brief Epilogue at the end of the text, suggest to the student that the topics they study can, and should, be applied to other musical styles outside of class as well. This volume will either segue nicely into a second-semester course on tonal counterpoint or, for those using the text for a single-semester course, will serve to end the semester by positioning the detailed study of modal counterpoint within a broader musical context, raising important theoretical and stylistic questions to explore after the class has ended.

The general pedagogical approach conveyed in this text is quite compelling as a whole. First, it is presented musically: many of the species chapters extract voice-leading rules from analysis exercises, and the authors are emphatic about singing and performing as often as possible in an activity referred to as “sing-play-sing” (sight-read, play on an instrument to check for accuracy, and then sing again to reinforce the sound). Second, in terms of assessment, most chapters include questions for self-testing, guided reading, and analysis, as well as a sufficient number of written exercises so the instructor does not need to supplement with much (if any) of their own material. Third, model composition assignments are detailed and user-friendly, and they are especially helpful for instructors who may have less experience teaching these concepts. Fourth, counterpoint rules are often framed positively— “only consonances occur as harmonic intervals” or “oblique motion is always good,” etc.— which appeals to this author, who finds it much more encouraging to tell students what they *can* do as opposed to what that *cannot*

¹⁶ Two useful supplementary sources on the transition from the church modes to the major-minor system are Joel Lester, *Between Modes and Keys: German Theory 1592-1802* (Stuyvesant, NY: Pendragon Press, 1989); and part I of Alfred Mann, *The Study of Fugue* (New York: Dover Publications, Inc.) 1987.

do.¹⁷ Next, each species chapter is summarized with a succinct general “principle” followed by a section titled “practice” which involves more nuanced discussion of what might happen in a real musical context. And finally, detailed analytical discussions of full-length works are provided in almost every chapter. The inclusion of several full-length works additionally saves the instructor from having to produce an enormous amount of supplementary material.

The main drawback to this text, however, is in its usefulness as a resource outside of class. Finding definitions of specific terms and concepts within the book is not always easy as many terms highlighted in bold print within the chapters are not included in the index (the “leading-tone cadence” is one example).¹⁸ It would be preferable to include a glossary of terms at the end of the text along with an appendix that summarizes various contrapuntal devices described throughout the book. A list of anthologies where instructors can find additional musical examples, as well as suggested resources pertaining to specific topics in the endnotes (in addition to the general bibliography), would also be helpful. The amount of detail provided within each chapter is sufficient for most students, but instructors and more serious students of counterpoint could benefit from further guidance if they wish to seek out more information on a particular concept.

TONAL COUNTERPOINT

While the species approach remains a valid option for teaching tonal counterpoint,¹⁹ most authors opt for the direct approach, and

¹⁷ Green and Jones, *Modal Counterpoint*, 39.

¹⁸ Although not the fault of the authors, the electronic version of the modal counterpoint volume is highly problematic in that the Table of Contents lacks links to individual chapters, and there is no way to scroll to a specific page number.

¹⁹ Teresa Davidian, *Tonal Counterpoint*; and Salzer and Schachter, *Counterpoint in Composition*, use the species approach for tonal counterpoint. The direct approach is used in Thomas Benjamin, *The Craft of Tonal Counterpoint*, 2nd edition (New York: Routledge, 2003); Robert Gauldin, *A Practical Approach to Eighteenth-Century Counterpoint*, revised ed. (Long Grove, Illinois: Waveland Press, Inc., 2013); Kent Kennan, *Counterpoint*, 4th ed. (Upper Saddle River, NJ: Prentice Hall, 1999); and Peter Schubert and Christoph Neidhöfer, *Baroque Counterpoint* (Upper Saddle River, NJ: Pearson Prentice Hall, 2006).

some supplement it with studies in thoroughbass, focusing on four-part harmonization at the earliest stages of study.²⁰ From a historical point of view, the thoroughbass method is best suited to teaching Baroque counterpoint; it is reflective of the written score for works from the period and was a prominent pedagogical approach during that time (J.S. Bach was a famous advocate of this approach).²¹ This method, also known as *basso continuo*, emphasizes the realization of figured bass notation to complete an implied harmonic progression and it was taught within the framework of chorale harmonization. The approach is most appropriate for upper-level undergraduate students who have completed their core theory sequence, as they will already be familiar with tonal voice leading and figured bass notation.

The danger to this approach, however, lies in the potential to place too much emphasis on the vertical sonority, especially if the course aims to focus on the linear and imitative textures of the Baroque style, in particular.²² Robert Gauldin recommends consideration of functional harmonic progressions at cadence points, where we do hear functional predominant–dominant–tonic, but cautions the reader against otherwise applying functional harmonic analysis to music from the Baroque era. He explains that not all vertical sonorities are of equal structural importance, and there are other passages where “normal” functional progressions

²⁰ In addition to Green and Jones, Schubert and Neidhöfer are the most explicit about using this approach, although considerations of figured bass realization and chorale harmonizations are employed by Gauldin as well.

²¹ For more on the thoroughbass method in counterpoint pedagogy, see the section on “Baroque Music Theory,” in Robert Wason, “*Musica practica: music theory as pedagogy*,” in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (New York: Cambridge University Press, 2002), 46–77.

²² This is a valid concern when teaching species counterpoint as well. It is not uncommon for students to become increasingly focused on harmonic intervals, often to the detriment of the quality of their melodic contours, in an effort to produce a correct solution. The issue is compounded in the thoroughbass method, however, as students will understandably make connections between thoroughbass exercises and harmonic voice-leading exercises from previous theory study, exercises that often require labeling harmonies with functional Roman numerals and thus encourage vertical thinking.

do not occur.²³ Likewise, Peter Schubert and Christoph Neidhöfer explain, “traditional harmony teaching is more applicable to late eighteenth-century music in melody-and-accompaniment texture than to [Baroque] music.”²⁴ Thus, while the thoroughbass method appears to be more closely akin to the part-writing exercises students complete in their core theory study, the choice of repertoire will determine to what degree harmonic function should or should not be a consideration.

The Principles and Practice of Tonal Counterpoint is the companion volume to the modal counterpoint text discussed above. While similar in tone to Green and Jones’s modal counterpoint text, the approach and organization is somewhat different from the earlier volume. The text focuses on the Baroque style and follows the thoroughbass method, but the first chapter begins with a fast-paced overview of species counterpoint. In adapting the species approach to Baroque stylistic norms, the authors use chorale melodies as cantus firmus melodies and highlight the general principles of each species within the context of chorale harmonization. First, second, and fourth species are particularly well suited to four-part chorale textures, and the discussion of species counterpoint combined with study of chorales provides a helpful framework for reviewing the basic rules of voice leading.

Although the species chapter is intended as a quick-paced review of voice leading and not the focus of this volume, users may wish to defer assigning portions of the species discussion until slightly later in the text, for just as in the modal counterpoint volume, introducing third species too early can create unnecessary complications for the students. Personal experience suggests that the task of harmonizing a chorale melody (first species) and including melodic embellishments (usually second and fourth species) provides a more suitable introduction to the discussion of tonal harmony and voice leading; using more rhythmically active lines to imply harmony (third species) should be saved for a separate discussion of the chorale prelude (Chapter 3 in Green and Jones’s book), where more complex textures are meant to maintain a similar harmonic outline to the aforementioned chorale harmonizations.

²³ Gauldin, *18th-Century Counterpoint*, 47.

²⁴ Schubert and Neidhöfer, *Baroque Counterpoint*, 5.

With the species overview and voice-leading rules in place, Chapter 2 begins the thoroughbass method of counterpoint training. “There is a risk, however, that exercises done via the species approach may seem more rigid and artificial than is musically desirable. For that reason, although we will begin our study within species counterpoint, we will soon endeavor to imitate the contrapuntal style of the great composers of the eighteenth and nineteenth centuries more directly.”²⁵ Example 3 provides two excerpts illustrating Green and Jones’s approach to chorale harmonization. In Example 3a, after determining what types of cadences close each phrase, they provide a first species harmonization (a bass line with figured bass to indicate the implied harmonies). Example 3b then demonstrates how to elaborate the bass voice using principles discussed in the previous chapter on species counterpoint. Inner voices would then be supplied and embellished accordingly.

a. Identify cadences and add bass line and figures in first species (excerpt adapted from Examples 2–6 and 2–7).

b. Embellishing the bass line with notes of adjacency (excerpt adapted from Example 2–8)

Example 3. First stages in chorale harmonization (Green and Jones 2015)
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²⁵ Green and Jones, *Tonal Counterpoint*, 1.

The shift in pedagogical approach with this volume is useful for several reasons: first, if used as a companion to the modal counterpoint textbook, in-depth discussion of species counterpoint is unnecessary as it is discussed extensively in the earlier volume; second, assuming the focus is Baroque-style composition, the thoroughbass method is more stylistically appropriate and allows for the inclusion of real musical examples for written practice; and third, it makes more pedagogical sense to appeal to skills that students have already learned in their core theory classes and that more quickly lead to the task of model composition.

Like the *Modal Counterpoint* volume, each chapter of *Tonal Counterpoint* is devoted to a specific type of composition (chorale harmonization, chorale prelude, two-part inventions, rounds and canons, and fugues). These chapters alternate with general discussions of theoretical principles that gain prominence in the 18th century (diminution, sequences, invertible counterpoint, imitative textures, and so on) but the pace feels faster, perhaps partly due to the more advanced nature of these theoretical discussions in comparison to the generic species exercises. Depending on the number of class meetings, some instructors might find it best to omit certain topics, or to periodically place greater emphasis on analysis, to allow time for more detailed writing in fewer textures. Regardless, there is ample material for a single semester.

In an effort to review concepts “without duplicating a course in tonal harmony,”²⁶ abstract exercises are replaced by excerpts from the literature (or exercises that mimic real musical textures), but they are appropriately tailored so that even those with little to no compositional experience can provide well-formed solutions. For example, the authors introduce the concept of figured bass realization (which is essentially a review of voice leading) within the context of a chorale harmonization by J.S. Bach (the melody, bass line, and figures are provided, and students are asked to supply the inner voices).²⁷ Although essentially no different from a generic figured bass exercise in terms of the requisite skill-set, examples like this provide a helpful review of tonal voice leading while generating more musically satisfying end products.

Nearly every chapter closes with a “creative study” that requires detailed analytical or compositional exploration of the theme or a

²⁶ Ibid, xi.

²⁷ Ibid., see Example 2-1 on p. 18.

variation from J.S. Bach's Goldberg Variations (BWV 988). While the tasks might be quite challenging for some undergraduate students, they could perhaps be incorporated into the curriculum as group activities or as projects for advanced undergraduate and graduate students. The benefit of these studies is that students gain deeper familiarity with a single work over the span of the entire semester, and each study is thoughtfully tailored to reinforce concepts introduced earlier in its corresponding chapter.

The breadth of styles represented in this text contrasts with many other tonal counterpoint textbooks. The text not only covers eighteenth- and nineteenth-century contrapuntal procedures, but its final chapter, "The Twentieth Century and Beyond," includes 20th- and 21st-century composers (Xenakis, Hindemith, Bartók, Messiaen, and Schoenberg, among others) whose works reflect the general contrapuntal principles covered in earlier chapters. While no text can sufficiently cover everything, I applaud these authors for highlighting contrapuntal concepts as they appear in later styles. As with the earlier volume, the implication that the materials can be extended to later styles provides essential context for students.

A few areas in the text could benefit from greater clarification and expansion. In terms of harmony, there is a slight conflict between the analysis and composition exercises. In earlier chapters, Green and Jones ask students to analyze harmony with Roman numerals for the purpose of emphasizing harmonic rhythm and tonicization of closely related keys. However, they also note, "chorale melodies are harmonized not by choosing a series of chords, but by writing a coherent bass line to accompany the melody, and only then filling in inner voices that produce chords... . For the most part, it is only necessary to think of specific chords at cadences, and it is best to plan these out first."²⁸ The latter point is crucial when composing in the Baroque style, in particular, as there are often many vertical sonorities that occur purely as a result of linear motion between various voices. The authors' reasons for asking students to perform traditional Roman numeral analysis are clear, but the danger is that students will remain overly focused on the vertical sonorities rather than on individual lines in their own compositions as well. Instead, it is best to draw students' attention to the previous quotation and the authors' effective discussion for "adding a bass line to a chorale melody," as it properly demonstrates the process of identifying and establishing cadential goals, focusing on well-formed first species

²⁸ Ibid., 27.

counterpoint between the outer voices, and then adding melodic embellishments.²⁹

Some of the later chapters offer fewer written activities in favor of more detailed analytic discussion, and the written exercises that are included do not receive the same detailed attention as earlier chapters (or the earlier volume). For example, the written exercises in Chapter 6, on two-part inventions, include only brief verbal instructions to “compose the first few measures of four different two-part inventions,” and “write a complete invention based on your favorite fragment.”³⁰ The full instructions from Green and Jones are only slightly longer than what is included here. As someone who includes model composition of two-part inventions in my tonal counterpoint course, I find that composing an opening motive presents the one of the greatest challenges for most students. Establishing guidelines for how to compose a suitable motive or, as some other textbooks have done, providing a series of sample motives, is often necessary for students to get started.³¹

Similar issues occur later when students are instructed to “write a round” after encountering only two musical examples in the chapter and with no explicit instruction for how to approach the task, or to “compose a fugue subject that can be used in stretto” with no guidelines for how to do so. In these cases, the beginning counterpoint student is left behind in what seems to be an attempt to appeal to the more advanced composition majors. This is not to say one must be a composer in order to successfully complete the activities, but the lack of instructional detail in these sections stands out as compared to other chapters, which offer more thorough explanations. One exception to this critique is their instructions for composing a perpetual canon. The instructions clearly demonstrate how to plan the cadences, which is the most challenging aspect of composing in this contrapuntal genre.

Although less explicit compositional guidance is offered, the chapter on fugue provides a substantial amount of detail, presented engagingly and appropriately for undergraduate readers. Green and Jones’s decision to introduce tonal answers first is intriguing.

²⁹ Ibid., 27–30.

³⁰ Ibid., 101.

³¹ Schubert and Neidhöfer, *Baroque Counterpoint*, 297 ff.; and Gauldin, *18th-Century Counterpoint*, 109ff. Both texts offer helpful instruction along these lines.

The insistence that all fugue subjects begin on $\hat{1}$ or $\hat{5}$ in order to properly establish the key encourages students to view fugue subjects in terms of their implied harmonies, which is an extremely important aspect of tonal fugue. Although a step-by-step process is not supplied, greater attention is given to the concept of composing a fugue subject and countersubject through extensive analytic discussion, and their discussion of composing a countersubject reinforces the concept of “complementary rhythm” between the voices. If desired, instructors can extract a step-by-step process out of this discussion, and repurpose earlier exercises intended to practice composing fugal answers for practice composing countersubjects as well. More advanced topics such as double and triple fugues, multiple fugues, counterfugues, and fugal textures within larger forms are likely too big to cover in depth within the span of a single semester, but their inclusion among the analysis discussions, along with examples by later composers like Mozart, Beethoven, and Brahms, provides a valuable introduction to the tremendous variety and complexity of this contrapuntal genre.

Other important topics are surprisingly absent from this volume. First, cadences are mentioned in passing but there is no explicit outline of the various cadence types. It was also surprising to find no mention of compound (polyphonic) melody or Baroque dance suites, the former being an important feature of many Baroque melodies and the latter being a very approachable style to emulate in model composition.³² Finally, there is no index in this volume, which (like the modal counterpoint volume) poses challenges for using it outside of the classroom setting.

³² The minuet and sarabande are the most manageable for students new to the task of model composition; other dance types like the allemande, courante, and gigue are best left for the more advanced composition students. Assuming students are advanced enough that the latter are viable options, I recommend the following project: break the class up into small groups, asking each group to agree on a key and each student to select a dance type. The result is the creation (and ideally in-class performance) of complete dance suites, which provides substantially more variety than, say, a project where everyone composes and performs a minuet.

CONCLUSION

This article raises several important issues that one should consider when teaching a course in counterpoint. If the end goal is to teach general voice-leading principles and musical aesthetics, then species counterpoint can be very effective. Since the approach is stylistically generic, it can lead to important analytic discussion of several centuries worth of music. If, however, the aim is detailed study of a specific musical style, a direct approach will effectively facilitate more immediate entry into the activity of model composition. Regardless, either approach is best complemented with at least some discussion of the other. Once the repertoire and pedagogical approach are established, the instructor is left with the task of choosing a textbook that aligns best with their plan for the course. Consideration of audience is essential, not only in terms of the general layout and presentation of material, but also in terms of the content covered within the book (such as the balance of introductory versus advanced topics, for instance). And from a practical standpoint, how useful will the book be after the semester has ended?

The two volumes by Douglass M. Green and Evan Jones incorporate both the species and direct methods for teaching counterpoint, although discussion of species counterpoint is more limited in the tonal counterpoint volume in favor of the thoroughbass method. For the most part, the presentation of material is clear, informative, and friendly in tone; and the written exercises are ideally suited to the upper-level undergraduate student. Supplementary materials, including detailed analyses of full-length compositions, are a useful contribution, and many activities outlined in each volume can lead toward additional take-home activities. The way both volumes conclude with a chapter that discusses “what comes next” helps situate counterpoint study within a larger continuous framework. The tonal counterpoint volume will require instructors to provide supplementary explanations and discussion of missing topics; hopefully a later edition will fill these pedagogical gaps. The clear instruction provided in earlier written activities should be matched in later chapters involving advanced contrapuntal topics. However, the few drawbacks outlined in this review are minimal as compared to the imaginative organization and overall content provided by the authors. These new counterpoint texts can certainly be counted among the many other fine options currently available; it is simply a matter of finding the approach that best aligns with your own.

WORKS CITED

- Benjamin, Thomas. *The Craft of Modal Counterpoint: A Practical Approach*, 2nd edition. New York: Routledge, 2005.
- . *The Craft of Tonal Counterpoint*, 2nd edition. New York: Routledge, 2003.
- Bent, Ian. "Steps to Parnassus: Contrapuntal Theory in 1725 Precursors and Successors." In *The Cambridge History of Western Music Theory*, edited by Thomas Christensen, 554–602. New York: Cambridge University Press, 2002.
- Davidian, Teresa. *Tonal Counterpoint for the 21st-Century Musician*. New York: Rowman & Littlefield, 2015.
- Fuller, Sarah. "Organum-discantus-contrapunctus in the Middle Ages." In *The Cambridge History of Western Music Theory*, 477–502. Edited by Thomas Christensen. New York: Cambridge University Press, 2002.
- . "Theoretical Foundations of Early Organum Theory." *Acta Musicologica* 53/1 (1981): 52–84, 1981.
- Fux, Johann Joseph. 1725. *Gradus ad Parnassum, sive manuductio ad compositionem musicae regularem*. Vienna: Van Ghelen. Book II translated and edited by Alfred Mann, in *The Study of Counterpoint from Johann Joseph Fux's Gradus ad Parnassum*. New York: W. W. Norton & Company, 1943.
- Gauldin, Robert. *A Practical Approach to 16th-Century Counterpoint*, Revised edition. Long Grove, Illinois: Waveland Press, Inc., 2013.
- . *A Practical Approach to 18th-Century Counterpoint*, Revised edition. Long Grove, Illinois: Waveland Press, Inc., 2013.
- Green, Douglass M. and Evan Jones. *The Principles and Practice of Modal Counterpoint*. New York: Routledge, 2010.
- . *The Principles and Practice of Tonal Counterpoint*. New York: Routledge, 2015.
- Jeppesen, Knud. *Counterpoint: The Polyphonic Vocal Style of the Sixteenth Century*. Trans. by Glen Haydon. New York: Dover Publications, Inc., 1992.

Lester, Joel. *Between Modes and Keys: German Theory 1592-1802*. Stuyvesant, NY: Pendragon, 1989.

Mann, Alfred. *The Study of Fugue*. New York: Dover Publications, Inc., 1987.

Rogers, Michael R. *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*, 2nd edition. Carbondale: Southern Illinois University Press, 2004.

Salzer, Felix and Carl Schachter. *Counterpoint in Composition: The Study of Voice Leading*. New York: Columbia University Press Morningside Edition, 1989.

Schubert, Peter. *Modal Counterpoint: Renaissance Style*, 2nd edition. New York: Oxford University Press, 2008.

Schubert, Peter and Christoph Neidhöfer. *Baroque Counterpoint*. Upper Saddle River, NJ: Pearson Prentice Hall, 2006.

Soderlund, Gustave Frederic. *Direct Approach to Counterpoint in 16th Century Style*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1947.

Wason, Robert. "Musica practica: music theory as pedagogy." In *The Cambridge History of Western Music Theory*, 46–77. Edited by Thomas Christensen. New York: Cambridge University Press, 2002.



Report on the 2016 Workshops in Music Theory Pedagogy at the University of Massachusetts Amherst

BY MORGAN MARKEL AND NICHOLAS J. SHEA

Nearly fifty college-level instructors and graduate students from six countries and twenty-two U.S. states gathered at the University of Massachusetts Amherst for the fourth triennial Workshops in Music Theory Pedagogy from Sunday, June 26 through Thursday, June 30, 2016. Gary S. Karpinski, Coordinator of the Music Theory program at the University of Massachusetts Amherst, assembled some of the leading voices in music theory pedagogy for the Workshops: Poundie Burstein (counterpoint and four-part harmony), Walter Everett (popular music), David Huron (music cognition), Gary S. Karpinski (aural skills), and Deborah Stein (nineteenth-century harmony and form). Throughout the week, workshop faculty members hosted daily, hour-long symposiums on their area of expertise along with individual breakout sessions in the afternoon. Participants had the opportunity to attend each of the five non-overlapping sessions given by the workshop faculty; however, they were required to choose one of the simultaneously running breakout sessions on Sunday, Monday, Tuesday, and Wednesday afternoon. In addition to these daily sessions, participants also had the option of attending Jason Hooper's presentation on team-based learning in the undergraduate music theory curriculum, which was held on Tuesday night.

Lectures during the Workshops were presented in a variety of formats: some involved traditional PowerPoint presentations, whereas others were more discussion based. After each session, participants were provided with a copy of the lecture slides or a supplementary handout that they could then take home with them. The handouts included sample assignments and grading schemes, extensive bibliographies on select topics, lists of musical examples illustrating specific concepts, and concise summaries of the lecture material.

Networking and social activities were also offered throughout the course of the Workshops on Sunday, Monday, and Wednesday night. By the end of the week, participants had the chance to connect with many new contacts from across the world.

The following is a summary of the presentations given by the workshop faculty.

COUNTERPOINT AND FOUR-PART HARMONY

L. Poundie Burstein (City University of New York) addressed four-part harmony and voice leading during his five workshop sessions. On Sunday, Burstein provided a list of symbols that instructors can use to help students identify tendency tones and potential part-writing errors in their four-part harmonization exercises. Some of these symbols included circles for leading tones, inverted triangles for chordal sevenths, angled brackets for octaves, curved brackets for fifths, and squiggly lines for all leaps greater than a third. To demonstrate the usefulness of these symbols, Burstein had participants sing and play through different part-writing examples annotated with the symbols listed above. Through this interactive exercise, Burstein explained how such symbols can help students better visualize and hear tendency tones and prohibited intervallic successions. Burstein's session on Monday supplemented these symbols with a series of additional strategies for circumventing common part-writing errors, which included a set of preferred doublings for inverted and root position triads. His most useful part-writing "hack" addressed doublings within tonic and dominant chords in first, second, and third inversion. The "hack" specifies that the bass in the I^6 chord should be doubled when it is either preceded or followed by a dominant seventh chord in either first, second, or third inversion. In cases where the dominant seventh chord is in first or third inversion, the upper three voices should move in contrary motion to the bass to next closest note. In contrast, the upper three voices can move in either direction to the nearest available note when the I^6 chord succeeds or leads to a $V^{4/3}$ chord.

On Tuesday, Burstein addressed the topic of chorale harmonization. He suggested that students begin with the cadence at the end of the chorale when first learning how to harmonize a melody in four parts. The rest of chorale, he stated, becomes much easier when students establish a clear harmonic goal at the outset. Burstein also recommended that students be provided with a list of prototypical progressions that can appear at the beginning, middle, or end of the phrase at the start of the chorale-harmonization unit. He insisted that such a list ensures that students learn and memorize harmonic progressions known to work in a variety of functional contexts.

Counterpoint was the main topic of Burstein's session on

Wednesday. Again, he encouraged instructors to make students identify dissonances and perfect consonances with various symbols, which included circles for the former and squares for the latter. He argued that such symbols are an essential line of communication between the student and instructor, since they indicate whether or not a student understands a given concept. Burstein also offered thoughts on curriculum design and flow. Throughout the lecture, he repeatedly stressed the importance of introducing new topics in a logical sequence. The principles of a well-formed melody, for example, should not be placed at the beginning of the unit on counterpoint; rather, they should be presented gradually as students work through the five species until they can be discussed as a coherent whole.

Burstein's final session on Thursday investigated some of the ways in which instructors can bridge the gap between abstract exercises and real music in the theory classroom. As part of the lecture, Burstein offered participants various assignments designed to teach how real music can explain four-part harmony and vice versa. In one of his proposed assignments, students are instructed to reduce an elaborate melody and accompaniment into a simple homophonic texture. In another, students are asked to develop a basic melody and accompaniment from a set of Roman numerals or blocked chords. Burstein concluded his lecture by emphasizing the relevance that such assignments can carry for student musicians in the music theory classroom.

POPULAR MUSIC

To equip instructors with the proper terminology and knowledge to teach popular music in the undergraduate classroom, Walter Everett (University of Michigan) centered his lectures around the topics of harmony and form. On Sunday, he introduced the basic terminology that theorists use to discuss harmony, rhythm, meter, and form in popular music, focusing on the subtleties and ambiguities of each term. On the following day, Everett went on to discuss phrase structure in pop and rock music. He showed how structures like the 8- and 16-bar period and the sentence, which he refers to as the SRDC, also appear in popular music—with some modifications of course.¹ When overviewing these different phrase

¹ For more information on the SRDC, see Walter Everett, *The Beatles as Musicians: Revolver through the Anthology* (New York: Oxford University

groupings, Everett suggested that participants describe them as closing with one of four cadence types: half, plagal, deceptive, and full. Everett's definitions of deceptive and full cadences are more generalized than those found in many traditional harmony textbooks. For him, the deceptive cadence involves a dominant chord moving to some non-tonic chord, and the full cadence entails a dominant chord moving to a tonic chord. In each case, the root motion and chord identity is privileged over the scale degrees in the melody for determining the cadence type.

Everett expanded upon Monday's discussion of phrase structure by providing an overview of popular song form in his session on Tuesday. Drawing on his extensive knowledge of the Beatles, Everett spoke at length about the different formal sections in the verse–chorus and verse–prechorus–chorus songs of the 1950s and 1960s. Here, he focused his discussion on the verse, prechorus, chorus, and bridge—the most important sections of these two formal types. Using famous songs such as “Hey Jude” and “I Want to Hold Your Hand,” Everett examined the different harmonic, rhythm, textural, and lyrical features that distinguish these four sections from one another.

Harmonic function in popular music provided the topic for Wednesday's lecture. During his second-to-last session, Everett explored the various syntactic roles that different chords can assume in pop and rock music. He began his lecture by overviewing eight fundamental principles to consider when determining tonal relations. The principles were as follows:

1. Sonorities assert themselves as tonic until proven otherwise.
2. Diatony determines possible characteristics of tonal centers.
3. Tonal music is goal directed in both harmony and upper-voice melody.
4. Root motion in descending fifths tends to appear goal-directed.
5. Tonic, dominant-preparation, and dominant are the three functions.
6. Harmonic drive may be tempered or masked by voice leading.
7. The listener's imagination plays a role in interpretation.²

After reviewing these eight core axioms, Everett discussed

Press, 1999): 16, and Walter Everett, *The Foundations of Rock: From “Blue Suede Shoes” to “Suite: Judy Blue Eyes”* (New York: Oxford University Press, 2009): 141–43.

²The text in this list is taken from Walter Everett's handout “Incorporating Popular Music in the Curriculum,” which participants received as part of his lecture on Wednesday.

how chords and chord progressions in pop and rock music could be described as either diatonic, chromatic, or modal. In this discussion, he stressed how chords and chord progressions in these three categories can support fundamental root motions, such as descending fifths and thirds, and prolong different harmonic functions. To provide participants with sufficient teaching material on this topic, Everett furnished participants with a comprehensive list of songs that featured different chord progressions and chords from the three categories listed above.

In his fifth and final session on Thursday, Everett discussed some of the many ways in which the Beatles altered their phrase structures to produce metric dissonance. Using the song "All I've Got to Do," Everett demonstrated how the Beatles often challenged audiences' expectations by manipulating hypermetric groupings. In addition, Everett gave a brief presentation on the recording session and rehearsals for the final track on the Beatles' 1967 album *Sgt. Pepper's Lonely Hearts Club Band*: "A Day in the Life." The presentation provided participants provided with valuable insights into the Beatles' creative process, while placing all the material covered in Everett's sessions into context.

MUSIC COGNITION

On Sunday, David Huron (Ohio State University) discussed how implicit learning can affect aural skills training. Throughout his lecture, Huron stressed the importance of exposing students to the harmonies, rhythms, and meters they will be expected to identify in listening exams. He recommended that aural skills instructors provide at least thirty examples of a specific concept since students and humans, in general, tend to identify familiar objects faster than unfamiliar ones. To facilitate implicit learning, Huron also suggested that concepts be presented in categories (i.e., scale degrees, chord qualities, chordal inversions, etc.) and be introduced and reinforced by clear-cut examples.

Huron's session on Monday reviewed the scientific literature on how listeners respond emotionally to music. In this session, Huron discussed why certain music sounds "happy" or "sad" and why "sad" music in various cultures tends to have more lowered tones than "happy" music. He also spoke about the six qualia typically experienced when listening to music: yearning/tending, deceptive/surprising, weird/wrong, open/beginning, closed/

ending, pause/repose. When overviewing these qualia, Huron explained how they are internalized by individuals in a specific cultural environment through implicit learning.³ Table 1 lists the six qualia Huron reviewed along with the generic experience they tend to elicit for the reader.⁴

³For more information on qualia as they relate to specific scale degrees, see David Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge: MIT Press, 2006): 144–50.

⁴The text in this table is taken from David Huron's handout: "The Implicit Origins of Expectation-Related Qualia," which participants received as part of his lecture on Monday.

Yearning/Tending	Given my past experience, in this context, this pitch/chord/gesture has one and only one reasonable consequence. Therefore I hear the pitch/chord/gesture as unstable, with a strong feeling of tendency, a sense of anticipation, or a feeling of incompleteness.
Deceptive/Surprising	Given my past experience, in this context, this pitch/chord/gesture is mildly unexpected. Therefore I hear the pitch/chord/gesture as deceptive, somewhat surprising, perhaps thrilling.
Weird/Wrong	Given my past experience, in this context, this pitch/chord/gesture is completely unexpected. Therefore I hear the pitch/chord/gesture as wrong, a mistake—at best, it is weird.
Open/Beginning	Given my past experience, in this context, this pitch/chord/gesture is an appropriate beginning to something. Therefore I hear the pitch/chord/gesture as open, pregnant with possibilities.
Closed/Ending	Given my past experience, in this context, this pitch/chord/gesture, in this context, this pitch/chord/gesture is likely to occur at the end of a musical work. Therefore I hear the pitch/chord/gesture as stable and giving a sense of completion or closure.
Pause/Repose	Given my past experience, in this context, this pitch/chord/gesture is likely to be followed by a pause, but not a stop. Therefore I hear the pitch/chord/gesture as stable, and offering a feeling of repose, but not a sense of completion—I anticipate more to come.

Table 1. Six common qualia experienced when listening to music.

Music and the sublime was the main topic for Huron's Wednesday session. In this lecture, Huron expanded upon his theory of expectation that he first wrote about in *Sweet Anticipation: Music and the Psychology of Expectation* (2006). His new "suppressed-fear theory of emotions" attempts to explain why humans experience the sublime when listening to music. The foundation of Huron's suppressed-fear theory lies in the fact that humans have

two cognitive systems for evaluating incoming stimuli: a fast-track and a slow-track system. As the names imply, the fast-track system provides an immediate response to an incoming stimulus, while the slow-track system provides a thoughtful appraisal of the incoming stimulus. Huron argues that sublime emotions are experienced when the response of the slow-track system cancels the response of the fast-track system; that is to say, sublime emotions tend to be experienced when the slow-track system negates the fear-induced response of the fast-track system. According to Huron, the contrast between the two systems' appraisals then produces one of four sublime responses: frisson, awe, lacrimation, or laughter. In brief, Huron's suppressed-fear theory of emotion suggests that each of these sublime emotions is produced as a result of a suppressed response to fear.

In his final session on Thursday, Huron examined the American entertainment industry's influence on the global marketplace. To do so, he explored the history of media technology and, in particular, the history of the radio, television, and computer. In discussing these histories, Huron observed how the radio, television, and computer were eventually transformed into vehicles for personal entertainment. Thus, while these technologies were initially conceived for use in businesses and schools, they were ultimately appropriated by the arts and entertainment industries. Today, the music and entertainment industries are larger than countless non-entertainment industries in the United States. For example, the music and entertainment industries, with their blockbuster films and hit albums, make even more money than the U.S. pharmaceutical industry. Given the vast earning potential of the music and entertainment industries, Huron states that we should now look to the arts and entertainment industries to help drive our economy forward.

Although Professor Huron's final two sessions deviated from the pedagogical focus of the Workshops, participants remarked how much they enjoyed learning about how humans respond to music from a cognitive perspective. Wednesday's lecture, in fact, was chosen by participants over another lecture Huron had prepared on a pedagogy related topic, and Thursday's session left participants eager to continue their careers as practicing musicians and teachers.

AURAL SKILLS

Gary Karpinski (University of Massachusetts Amherst) began with a fundamental pedagogical question: "What are the goals of undergraduate training in aural skills?" He encouraged instructors to begin with the audible elements of meter. To demonstrate, he had participants "clap along" to the slow movement of Beethoven's Seventh Symphony. Different responses to the intentionally generic prompt allowed Karpinski to draw distinctions between the rhythm and the various levels of pulse. By tracking the responses on the chalkboard, Karpinski showed how the intersection of these elements can contribute to a student's understanding of pulse, meter, and rhythm. The resulting visual representation was then used to distinguish between duple and triple meters, and to measure rhythms within those meters, in a system of protonotation.⁵ In regards to pitch and its production, the major scale was recommended as the best point of entry, since nearly all students arrive in the aural skills classroom with the major scale well ensconced in their minds through years of enculturation. Karpinski demonstrated how to link functional solmization syllables to the pitches of the scale, and urged instructors to demand both speed and accuracy in various beginning exercises (scales and sequentials), in an effort to begin the "brainwashing" process of having students think fluidly in pitch space when sight singing or taking dictation.

Cognition and perception as they pertain to musical memory and dictation were the focus of Karpinski's session on Monday. Here, metric protonotation was used in conjunction with solmization syllables ("functional solmization") to highlight the mental processes involved in hearing, remembering, understanding, and notating a melody, skills that students can develop and improve over time through aural-skills training. Karpinski expressed that these four phases of musical cognition should be developed through using restricted melodic content when first attempting dictation.⁶ Explaining some traits of such restricted melodies, Karpinski stated, "Melodies should be short, about 6-10 'bits' in length, in the major mode, with skips only to $\hat{1}$, $\hat{3}$, and $\hat{5}$, in simple meters, with rhythms of one half beat and longer, and no dotted rhythms." More

⁵ See Gary Karpinski, *Aural Skills Acquisition: The Development of Listening, Reading, and Performance Skills in College-Level Musicians* (New York: Oxford University Press, 2000): 83.

⁶ Karpinski, *Aural Skills Acquisition*, 64–103.

advanced topics—e.g., dotted rhythms, syncopation, skips to other scale degrees, triplets, etc.—should be introduced one-by-one, and only after sufficient time is spent with simple melodies. Throughout the demonstration, Karpinski also frequently linked the cognitive processes used for dictation to those involved in effective error-detection, which many participants agreed is an invaluable skill for all musicians.

On Tuesday, Karpinski built on Monday's discussion of cognition and memory, but addressed more advanced topics that move beyond the first-semester aural skills course. He highlighted three important skills involved in singing prepared music and singing at sight. First, before students even begin they must be able to mentally establish the tonic, meter, and tempo of the piece. Then, they should scan the music to determine characteristics like clef, meter, starting pitch, and how the pitches translate to solmization syllables. Finally, once they begin to sing, they then draw on their knowledge of solmization and rhythm patterns to as they read in real time. Karpinski also discussed how to integrate conducting to reinforce meter and general musicality.

Wednesday's session explored how to diagnose and remediate problems students might encounter when singing or doing dictation. Again referring to the four phases of cognition, Karpinski discussed strategies that can be used during each stage to help students who struggle with hearing, remembering (short and long-term memory), understanding, and/or notating an excerpt. For example, one student who frequently misidentifies the starting pitch of a melody might have problems inferring the tonic from what they hear, whereas another who exhibits the same errors might simply have difficulty remembering the beginning (even before attempting to apply syllables). Karpinski provided instructors with a myriad of tools to anticipate and address such potential problems.

In his final session, Karpinski spoke about grading and assessment in aural skills training. Participants were first asked to define the differences between the two. Karpinski pointed out that, in the simplest terms, assessment involves marking what's correct and what's incorrect, but that evaluation then makes value judgements about those results. He encouraged instructors to think about these as separate phases of the grading process, and to develop and make public the assessment rubrics and evaluation criteria used in every graded activity. Various approaches used by prominent aural-skills texts and software were then explored, and

Karpinski discussed his own method of assessment and grading in response. He detailed his approach to assessing dictation work⁷ and he encouraged instructors to embrace a strict, simple approach to sight singing early in the curriculum—grading on a scale of A (perfect, or one quickly corrected error), B (two to three corrected errors), or zero.⁸ This “you know it or you don’t” approach was strongly advocated to better serve student mastery over the long term. Karpinski stressed that, although this approach is strict, students should always be given the opportunity to make up any failing work within a week’s time. To conclude, he also highlighted strategies instructors can use to assess the abilities of incoming students, and what to do with students who need remedial help.

NINETEENTH-CENTURY HARMONY AND FORM

Deborah Stein (New England Conservatory) began her discussion on Sunday by addressing the limitations of Roman-numeral analysis when attempting to analyze non-functional chords and chord progressions. She maintained that instructors need to make students aware that Roman numerals will often fail to explicate passages where there are other compositional techniques at work. She took the first nine measures of the Chopin Prelude in E minor, Op. 28, No. 4, as a case in point. The first nine measures, she argued, can be best explained in terms of contrapuntal passing motion: each new sonority is produced by one or two voices moving down by semitone in the left hand. She asserted that examples like the Chopin prelude can be used to teach students how contrapuntal motion can produce non-functional chords and chord progressions.

Stein’s session on Monday explored the tenuous relationship between tonicization and modulation in music from the common-practice period. In this session, Stein had participants debate the tenets of tonicization and modulation in passages from works such as the third movement from Mozart’s Piano Sonata in D major, K. 284 and Schubert’s “Heidenröslein,” D. 257. After demonstrating how conflicting interpretations of the same ambiguous passage can spark lively conversations about the technical aspects of music, Stein encouraged participants to initiate similar exchanges in their

⁷Karpinski, *Aural Skills Acquisition*, 103–110.

⁸Both students and the instructor can acknowledge errors to address. Students often receive a better score if they can identify their own mistakes and correct them efficiently.

own classrooms as a way to develop students' communication and critical thinking skills.

Stein's sessions on Tuesday and Wednesday addressed the topic of formal ambiguity in eighteenth- and nineteenth-century instrumental music. Binary and ternary form were the focus of Tuesday's session, while sonata form was the center of attention on Wednesday. In discussing sonata form, Stein made sure to point out the three main approaches to sonata form that had been developed over the last twenty years.⁹ She noted that analyses of sonatas will differ depending on which theory or set of theories instructors choose to teach from.

Stein's final session on Thursday examined the issue of tonal ambiguity in nineteenth-century German *lieder*. Here, Stein reviewed techniques that students and instructors can use to analyze pieces that have two or more competing tonal centers. She cited music-text relations as one of the many possible angles for approaching tonally ambiguous German *lieder*. To demonstrate the rich potential of this type of analysis, she discussed two famous songs by Robert Schumann: "Im wunderschönen Monat Mai" from *Dichterliebe*, Op. 38, and "In der Fremde" from *Liederkreis*, Op. 39. In her discussion of each piece, she highlighted how the shift in tonal center often coincides with a brief, but important change in topic. In "In der Fremde," she noted how the temporary shift from F# minor to A major accompanies the narrator's momentary excursion into thoughts about peace and quiet during his lament about having been forgotten in his homeland. Likewise, the play between the implied F# minor and A major tonal centers in "Im wunderschönen Monat Mai" reflects how the narrator's pleasant memories of the past mix with his present anguish. Stein concluded her final session by reinforcing the importance of teaching students how to discuss and interpret moments of formal and tonal ambiguity in their undergraduate theory coursework.

⁹William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998); James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Eighteenth-Century Sonata* (New York: Oxford University Press, 2006); and Charles Rosen, *The Classical Style: Haydn, Mozart, Beethoven* (New York: W. W. Norton & Company, 1997).

TEAM-BASED LEARNING AND “FLIPPED” CLASSROOMS

In a special session on Tuesday night, Jason Hooper (University of Massachusetts Amherst) challenged workshop participants to reconsider the roles of the instructor and student in the undergraduate theory classroom. Hooper placed participants in a SCALE-UP learning environment, similar in format to the Music Theory I and II classes he teaches.¹⁰ Participants were split into teams of five to six persons and tasked to collaborate in answering a set of pedagogical questions. Prompts such as “What are the three most important *values* [emphasis his] that you want your teaching to reflect?” not only required a great deal of critical thinking and pedagogical reflection to arrive at an individual answer, but also challenged groups to come to a consensus amongst their peers. The result of their efforts was then submitted as the group’s response. This process was repeated throughout the session in order to demonstrate the intensive decision-making processes students encounter in classrooms of this format, and, more importantly, highlight the benefits of collaboration in diverse groups.

Between team discussions, Hooper introduced the basic tenets of flipped-classroom¹¹ and team-based-learning strategies¹² to show how one might design an effective course around these models. Key components to this approach included how to build diverse teams,¹³ foster peer-to-peer evaluation and instruction, maintain student accountability, and create a culminating team project. Integrating technology into sessions was also heavily emphasized, with Hooper encouraging instructors to keep readings short, create their own notes and handouts, use instructor videos, and record lectures for students to review later when possible. A lively question-and-answer session followed Hooper’s demonstration, where participants inquired about the difficulties and benefits of teaching music theory in this format.

¹⁰<http://scaleup.ncsu.edu/>.

¹¹Johnathan Bergman and Aaron Sams, *Flipped Learning: Gateway to Student Engagement* (Eugene, OR: International Society for Technology in Education, 2014).

¹²Larry K. Michaelsen and Michael Sweet, “Team-Based Learning,” *New Directions for Teaching and Learning* 128 (Winter 2011): 41–51.

¹³Charles Duhigg, “What Google Learned From its Quest to Build the Perfect Team,” *The New York Times* (February 25, 2016).

ADDITIONAL ACTIVITIES

A variety of additional activities were offered after the daily sessions throughout the workshop. On Sunday night, a catered ice cream social allowed participants to network with other theory instructors from around the world. The next evening, a number of participants competed against one another in a game-show-like quiz on different musical topics. On Wednesday evening, Gary Karpinski presented his unpublished paper: "A Private Universe: Quarter-Note Beats, Melodic Minor, and Other Prejudices," which addressed learned biases students bring with them to the theory classroom. Afterward, participants gathered at The Hangar, a popular restaurant in Amherst, to socialize over food and drinks. The workshops ended with a final session on Thursday in which all the faculty joined together for an open question-and-answer session. Broader issues, such as the role of musicality in music theory, curriculum reform, and the increasing demands placed on undergraduate music majors were cordially discussed to conclude the 2016 Workshops in Music Theory Pedagogy at the University of Massachusetts Amherst.

PARTICIPANT PERSPECTIVES

The authors of this report, in addition to assisting with the Workshops, attended all the symposiums and most of the hour-long breakout sessions that followed. Our time with the faculty left us with a positive impression overall: we received an abundance of new teaching material and nuanced our understanding of concepts taught in our graduate coursework. After speaking with several participants throughout the Workshops, it was clear that most of the other attendees felt the same. For many participants, the Workshops offered the opportunity to hear alternative perspectives on teaching music theory to undergraduates and to learn new strategies for addressing common problems in student assignments, such as parallel fifths and octaves. In addition, the Workshops allowed participants to exchange ideas and contact information with one another, broadening their professional circle.

As then second-year master's students and teaching assistants in music theory, we attended the conference with a thorough grounding in many of the topics that would be covered. The sessions that were therefore most beneficial to us were those that

focused almost exclusively on pedagogical technique. The sessions led by Poundie Burstein, Gary Karpinski, and Jason Hooper on counterpoint and four-part harmony, aural skills, and team-based learning demonstrated the most value because they offered tools for confronting recurring challenges in the theory classroom. Some of these tools included “tried and true” techniques for instructional efficiency (marking dissonances and consonances in counterpoint), effective assessment methods, and alternative solutions to reinforce student accountability.

It is important to note, however, that not all the participants attending the Workshops were instructors of music theory or professional music theorists. Indeed, many participants were from other related disciplines, such as musicology and performance, and were attending the Workshops to acquire the conceptual knowledge needed to teach elementary musicianship classes at their home institutions. Moreover, there were several participants from outside the United States who had heterogeneous (non-American) theoretical backgrounds. The nineteenth-century harmony and form, music cognition, and popular music symposiums often served as halfway points for the mixture of participants present, since they contained a careful balance of pedagogical and instructional content. Many of the participants, the authors included, walked away from these sessions with a deeper understanding of the concepts presented and a greater knowledge of how to integrate them into existing course material. In the case of David Huron’s sessions, we learned how to answer those tough questions about why we experience music the way we do. Valuable discussions also arose from these particular sessions. Perhaps the best example of this was a debate over cadence types that occurred in Deborah Stein’s first symposium. When discussing phrase structure in Schubert’s *Impromptu in A♭ Major, Op. 142, No. 2*, Professor Stein was met with minor protest from some participants, who argued that the V⁶ to I motion in mm. 7–8 was indeed cadential since it coincides with the end of the phrase. This ultimately resulted in a lively discussion amongst the participants and faculty about the relationship between phrase, harmony, and form. Such candid and cordial exchanges occurred frequently throughout the Workshops and served as a model for discussions that could (and likely will) occur in music theory classrooms.

WORKS CITED

- Bergmann, Johnathan and Aaron Sams. *Flipped Learning: Gateway to Student Engagement*. Eugene, OR: International Society for Technology in Education, 2014.
- Caplin, William E. *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. New York: Oxford University Press, 1998.
- Duhigg, Charles. "What Google Learned From its Quest to Build the Perfect Team." *The New York Times*, February 25, 2016. Accessed June 22, 2017. <https://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html>.
- Everett, Walter. *The Beatles as Musicians: Revolver through the Anthology*. New York: Oxford University Press, 1999.
- . *The Foundations of Rock: From "Blue Suede Shoes" to "Suite: Judy Blue Eyes"*. New York: Oxford University Press, 2009.
- Hepokoski, James, and Warren Darcy. *Elements of Sonata Theory: Norms, Types, and Deformations in the Eighteenth-Century Sonata*. New York: Oxford University Press, 2006.
- Hooper, Jason. "Discovering Music Theory Through Team-Based Learning." Paper presented at the Society for Music Theory Conference, St. Louis, MO, 2015.
- Huron, David. *Sweet Anticipation: Music and the Psychology of Expectation*. Cambridge: MIT Press, 2006.
- Karpinski, Gary S. "A Model for Music Perception and its Implications in Melodic Dictation." *Journal of Music Theory Pedagogy* 4 (1990): 191–229.
- . *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians*. New York: Oxford University Press, 2000.
- Michaelson, Larry K. and Michael Sweet. "The Essential Elements of Team-Based Learning." *New Directions for Teaching and Learning* 116 (2008): 7–27.

North Carolina State University Physics Educations R & D Group.
“SCALE-UP: Student-Centered Active Learning Environment
with Upside-down Pedagogies.” Last modified 2011. Accessed
June 4, 2017. <http://scaleup.ncsu.edu/>.

Rosen, Charles. *The Classical Style: Haydn, Mozart, Beethoven*. New
York: W. W. Norton & Company, 1997.

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GUIDELINES FOR CONTRIBUTORS

We welcome articles on any aspect of teaching or learning music theory. Contributions will be judged on originality, relevance, interest to a diverse audience, and clarity of writing.

Manuscripts should be submitted via the JMTP Submissions link at <https://music.appstate.edu/about/music-theory-pedagogy-online/jmtp-submissions>. Submissions should be in Microsoft Word format, use 12-point type and be double spaced (including footnotes, references and quotations), with at least one-inch margins. Footnotes, tables, figures, musical examples, and other materials should be inline with the text. Long musical examples and complex diagrams or charts should be avoided when possible.

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