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From the Editor

Volume 33 once again contains a wealth of methods and materials for application across a broad spectrum of pedagogical contexts. Ranging from pedagogy of fundamentals to advanced topics in polymorphic canon composition and Schenkerian interpretation of fugue, and referencing musical styles from sixteenth-century counterpoint, through baroque, classical, and romantic European art music, to contemporary North American popular music, this volume contains articles that will be useful to instructors regardless of curricular circumstance. We include eight articles, two conference reports, one book review, and links to ten online resources.

Our congratulations go to Peter Schubert, recipient of the 2019 Gail Boyd de Swolinski Prize for Lifetime Achievement in Music Theory Pedagogy. In honor of Peter's innovative teaching methods, the Journal commissioned two articles from his former students Frauke Jürgensen and Gilad Rabinovitch; these articles appear in the current volume.

Once again, my thanks go to our Production Manager Christopher Winders for his design and layout expertise, to Jennifer Snodgrass, Philip Chang, Jena Root, and Melissa Hoag for their editorial assistance with this volume, and to David Marvel for management of the website.

We are currently accepting material for Volume 34 (2020); instructions for contributors can be found at our website, <http://jmtpp.appstate.edu>. Finally, I draw your attention to the upcoming Third Pedagogy into Practice Conference, to be held at Michigan State University, May 20-22, 2021. A call for papers and other information will be forthcoming on our website.

— William Marvin, EDITOR (Eastman School of Music)

The Nashville Number System: A Framework for Teaching Harmony in Popular Music

TREVOR DE CLERCQ

The Nashville number system is a notational practice used by commercial musicians to represent the functional harmony of a complete song on a single sheet of paper. As a result, it can be considered an alternative format to the standard system of Roman numerals and figured bass commonly used in North American music theory classrooms. This article explains the mechanics of the Nashville number system, highlighting its differences with Roman numerals while also discussing some pedagogical applications. For the analysis of popular music especially, the Nashville number system arguably offers a more faithful, efficient, and flexible approach to representing functional harmonic syntax than is possible using traditional Roman numerals.



Introduction

While Roman numerals are currently the standard format used by music scholars to notate functional harmony—particularly for Western common-practice-era art music, hereafter “classical” music—many musicians working in popular music styles use an alternative format known as the Nashville number system. The Nashville number system was first developed in Nashville recording studios during the 1950s, but the system has become standard across North America and beyond among various cohorts of commercial musicians, including professional session players, backing musicians for live tours, and contemporary worship band members.¹ Yet despite the popularity of Nashville numbers within the music industry, the system is not well known within the music theory community.² The central objective of this essay is thus to highlight the differences between Nashville numbers and the traditional system of Roman numerals and figured bass, especially as these differences pertain to teaching harmony in the music theory classroom. As I hope to show, Nashville numbers are often better suited for analyzing harmony in popular music. In some cases (to be discussed below), the analytical presumptions that underlie Roman numerals arguably skew our analyses of harmonic syntax in popular music, which Nashville numbers more faithfully represent.

1 For a more complete history of the Nashville number system, see Matthews (1984).

2 This claim is based primarily on my perception. As some evidence, though, few if any existing journal articles in music theory mention or employ the Nashville number system.

Before delving further, consider a simple illustration of the Nashville number system. Example 1 shows a complete Nashville number chart for the song “Rockin’ Robin,” as recorded by Bobby Day in 1958.³ From this bare-bones representation, a commercial musician would be expected to improvise a stylistically-appropriate arrangement on their instrument at sight. For readers familiar with Roman numerals, the main aspects of the Nashville number system should be easy to understand. In essence, a Nashville number indicates the chord root via an Arabic number (rather than a Roman numeral), with each number equivalent to one measure unless otherwise indicated (more on that below). Reading down the first column of this chart, for example, the eight-bar verse (Vr) and eight-bar chorus (Ch) together constitute a prototypical sixteen-bar blues, whereas the solo section (So) constitutes a standard twelve-bar blues. The “X” notation indicates a measure in which there is no clear harmonic content;⁴ superscripts (e.g., 5⁷) indicate chord tones beyond (or altered from) the triad; other details, such as indications of key and meter, should be obvious. A complete accounting of the system’s syntax, such as the caret symbol (^) and other rhythmic notation (such as how to notate chord lengths other than a bar), will be provided in the sections that follow.

In contrast with other typical representations of a popular song, such as a lead sheet or letter-based chord chart, a Nashville number chart has some distinct advantages. By avoiding a five-line staff, for example, it is much easier to fit the harmonic content of an entire song onto a single page. This has the benefit of avoiding page turns, but more importantly for a theory instructor, allows the entire form, phrase structure, and harmonic content of the song to be seen at a glance. Also unlike typical lead sheets or chord charts, the use of a key-agnostic harmonic notation (rather than literal chord symbols such as C7 or Gm) not only allows for easy transposition to different keys based on the requirements of a particular singer, but more importantly for a theory instructor, clearly shows the functional relationships of each chord to the prevailing key.

Admittedly, the chart in Example 1 could have been written using Roman numerals, thereby offering these same advantages. But as chord changes become even slightly more dense, Roman numerals can quickly become visually confusing. Consider in this

3 I created this chart by ear, a task not without its challenges. For instance, I struggled with whether the sixth chord of the chorus was a dominant or subdominant chord. See Winkler (1997) for a detailed discussion of transcription issues in popular music.

4 One can often infer the harmonic function of measures with an X. The last bar of the bridge (Br), for example, sounds like a dominant (V) chord, even though the bar contains only melodic content.

KEY OF G

ROCKIN' ROBIN
(BOBBY DAY)

$\frac{4}{4}$ ♩ = 172
SWING 8THS

VOX & DRUMS ONLY									
IN)	X	X	X	X	VR)	1	1	1	1
	X	X	X	X		1	1	1	1
	GTR IN								
VR)	1	1	1	1	CH)	4	4	1	1
	1	1	1	1		5 ⁷	5 ⁷	1	1
CH)	4	4	1	1	BR)	4	4	1	1
	5 ⁷	5 ⁷	1	1		4	4	[^] 5	X
VR)	1	1	1	1	VR)	1	1	1	1
	1	1	1	1		1	1	1	1
CH)	4	4	1	1	CH)	4	4	1	1
	5 ⁷	5 ⁷	1	1		5 ⁷	5 ⁷	1	1
SO)	1	1	1	1 ⁷	VOX & DRUMS ONLY				
	4	4	1	1	OUT)	X	X	X	X
	5	4	1	1		X	X	X	X
BR)	4	4	1	1					
	4	4	[^] 5	X					

Example 1

Nashville number chart of "Rockin' Robin" (Bobby Day, 1958).

regard the chart in Example 2, excerpted from Neal (2007), which shows a Nashville-number-style chart with Roman numerals instead of Arabic numbers.⁵ The fourth and twelfth bars contain multiple chords, as indicated by the bracket: IV then I then V. But the small margin of error in spacing could easily cause a reader to misinterpret the chord progression as I then V then I then V, or I then V then IV, especially were this

⁵ Neal (2007) provides the full chart of the song as Example 10.

chord chart written by hand as is common among gigging commercial musicians. This is one of many ways that Nashville number charts prioritize efficiency and clarity in representing the functional harmonic structure of a musical work, and as such, can be an especially useful format in the music theory classroom.

Verse 1 [D Major] (0:24)			
I	I	I	<u>IV I V</u>
V	V	V	I
I	I	I	<u>IV I V</u>
V	V	V	I

Example 2

Transcription of opening verse (0:24–0:46) from “Long Time Gone,” (Dixie Chicks, 2002).

In what follows, I describe the principal mechanics of the Nashville number system, including how to notate rhythmic features, mixture, inversions, extensions, and applied chords. That said, purely descriptive overviews of the system already exist in publications meant for a non-specialist audience,⁶ so my focus here will be on how various aspects can be leveraged to teach students about harmony in general and harmony in popular music in particular. In doing so, the discussion will raise issues related to the typical music theory curriculum as it stands today, and so I will engage with more philosophical considerations as well. These insights derive from my own teaching of harmony to undergraduate students using Nashville numbers over the past few years.⁷

Two final preliminary points are worth mentioning. First, the Nashville number system is not strictly standardized; like Roman numerals, slightly different customs exist among its users. These differences are mostly cosmetic, however. I will describe

6 See Riley (2010), Williams (2012), or de Clercq (2015) for comprehensive explanations of the Nashville number system. Snodgrass (2016a) also contains an introduction to Nashville numbers aimed at undergraduate music students.

7 Note that I teach in the Department of Recording Industry at Middle Tennessee State University, which is a separate academic unit from the School of Music. Technically speaking, therefore, I teach primarily non-music majors. That said, Recording Industry students at MTSU choose one of three concentrations—Songwriting, Music Business, or Audio Production—which are degree programs typically housed within the music department of other schools. I thus believe that the issues I discuss in this article apply to music theory programs at other schools, especially for those with degrees that are more oriented around commercial and popular music.

one prevalent version here, with the understanding that small variations may be found in practice. Second, although one benefit of the Nashville number system is that it can show the harmonic structure of an entire song on a single page, Example 1 will be the only complete chart provided in this article. Although a chord progression cannot be copyrighted, some copyright holders believe that the publication of a complete Nashville number chart infringes on copyright protection.⁸ For this reason, I will use only short excerpts in the rest of the examples. This limitation should not affect the reader's understanding of the system, as long as the reader keeps the full chart format of Example 1 in mind.

Drummer's Charts and Rhythmic Notation

Because a Nashville number chart captures not only harmonic information but also information on phrase structure and form, the system can be a practical tool to attune students to musical aspects that are arguably “pre-harmonic,” i.e., musical features that will prepare them for hearing chord progressions in context. Traditionally, the topic of form in full-length music works is reserved until near the end of the undergraduate curriculum, after a student has mastered many if not most tonal harmonic concepts.⁹ Yet understanding the contexts, both large and small, in which harmony operates is arguably a critical reference point for students, especially beginners. Moreover, form is one of the few musical elements that can be intuitively understood without much music theory background.¹⁰ Once a student has internalized the basic concepts of the beat and the measure (which even most non-musicians master quickly), the student is sufficiently prepared to start tackling their own form charts.

Example 3 shows an excerpt from the type of form chart I ask students to create in their first homework assignment of a first-semester music theory class. This type of

8 This position is held by Hal Leonard, for example, which I have gleaned through discussions with company representatives. Note that “Rockin’ Robin,” written by Leon René, requires no usage permission since its copyright was not renewed, as discussed in Nichols (2010) and Halloran (2017, 97). In contrast, the 1972 Michael Jackson cover of this song falls under different copyright protections.

9 Kostka, Payne, and Almén (2018), for instance, introduce binary, ternary, and other work-length forms only in Chapter 20 (out of 25 on tonal music). Similarly, form is the last of 79 chapters in Karpinski’s 2017 aural skills textbook.

10 For example, Covach and Flory (2018) offer numerous form charts of songs without any reference to harmonic content.

chart is sometimes referred to as a “drummer’s chart” among commercial musicians,¹¹ since the specific harmonic content (which is less relevant to the drummer in the band) is not included. Instead of numbers, blank underlines indicate the number of measures in each section. Obviously, students must have some knowledge of section labels and their meaning to create a chart like this.¹² Rather than giving a lengthy list of definitions to students, though, I have found it more worthwhile to have students infer the labels and the meaning of these labels through the process of making charts for homework and comparing them to my versions. This approach encourages class discussions in the first weeks of a course, hopefully setting a tone for open dialog throughout the semester. Why, for example, did I choose two verses in Example 3 rather than one long cohesive verse section?

VR)	—	—	—	—
	—	—	—	
	—	—		
VR)	—	—	—	—
	—	—	—	
	—	—	—	—
CH)	—	—	—	—
	—	—	—	—
LN)	—	—	—	—

Example 3

Drummer’s chart for opening sections (0:18–1:05) of “If You Wanna” (The Vaccines, 2011).

The drummer’s chart in Example 3 shows not only the order and length of sections, but also the particular phrase structure of each section. The second verse, for example, has a four-bar phrase, followed by a three-bar phrase, followed by a four-bar phrase. There are many factors that contribute to our perception of phrase

11 This is the term used by Riley (2010), who himself is a drummer.

12 For an overview of teaching form in popular music to undergraduate students, see Covach (2005).

segmentation, including instrumentation and melodic content, all topics worthy of in-class discussion. Harmony is also a central factor, and thus a drummer's chart naturally leads into the topic of chords and chord progressions. In a traditional classroom, the concept of harmonic rhythm is often not addressed until after a student has mastered the details of chord spelling, chord inversion, and voice-leading.¹³ Yet because listening for chord changes is one of the more ineffable and difficult-to-explain topics in music theory (at least in my experience), it may be preferable to begin at an early academic stage the iterative work of having students listen for harmonic changes and compare their perceptions to that of their instructor. Accordingly, I introduce the basic concept of a triad as early in the first semester as possible, before students are necessarily even proficient with all key signatures and intervals.

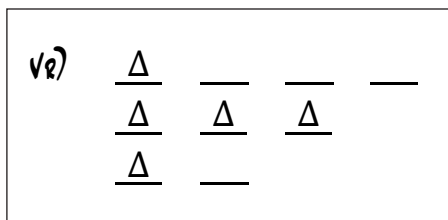
To facilitate the transition from a drummer's chart to a chart with harmonic content, it can be helpful to have students use a "proto-notation" for harmonic rhythm, as shown in Example 4.¹⁴ In this proto-notation, the triangles (or "delta" symbols) indicate a change of chord.¹⁵ The chart in Example 4 thus shows that the first four bars of the verse are all the same chord, after which each new bar introduces a new chord until the last two bars, which both have the same chord. Theoretically, it would be possible to create a more elaborate proto-notation system, in which a student would identify chords that are the same. In Example 4, for instance, the first and last chord of the second phrase are the same. But at that level of aural awareness, it is often not much more challenging for a student to identify the actual Nashville number of each chord (presuming the song is simple enough). A student with a decent sense of tonic, for instance, will hopefully recognize that the first and last phrases of Example 4 are all tonic. And assuming the instructor tells the student that the chord palette of the song is limited to tonic, subdominant, and dominant, a student will hopefully hear the rising and falling motion of the harmony in the second phrase to guess that the chords are IV then V then IV (or, in Nashville numbers, 4 then 5 then 4).¹⁶

13 For example, Kostka, Payne, and Almén (2018) do not introduce the concept of harmonic rhythm until Chapter 10, only after a student has completed extensive diatonic part-writing exercises in essentially mono-rhythmic settings. Similarly, Karpinski (2017) waits until Chapter 35 (out of 79) to introduce harmonic rhythm.

14 By "proto-notation," I mean some notation scheme that precedes or prepares for the more standard notation scheme. The term is often associated with a specific method introduced by Karpinski (2017, 1), which differs from the particular proto-notation described here.

15 Any symbol could be used to represent a new chord. The delta is simply my symbol of choice.

16 Unfortunately, "Do-Ti" tests are often problematic tools to assess harmonic function in popular

**Example 4**

Proto-notation for opening verse (0:18–0:31) of “If You Wanna” (The Vaccines, 2011).

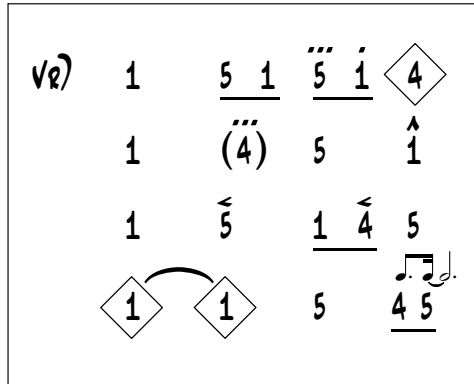
The pacing of harmony in a real song, of course, is not always constrained to one chord per bar. To maintain readable and efficient charts, the Nashville number system includes some unconventional but nonetheless fairly straightforward rhythmic notation. The most common symbols are included in Example 5, which presents a hypothetical passage for the sake of demonstration. Chords that are grouped together by an underline indicate that they belong to the same bar, such as the two bars of dominant then tonic in the first phrase of Example 5. Underlined chords are presumed to split the bar evenly, with dots (or tick marks) above the chord numbers to indicate any non-even division of the bar.¹⁷ In the second bar, therefore, the dominant and tonic chords each last two beats (presuming a 4/4 meter), whereas in the third bar, the dominant chord lasts three beats and the tonic chord lasts one beat. Brief time signature changes can be indicated by parentheses around the chord, with the number of beats in the odd bar shown via dots.¹⁸ The second bar of the second phrase is thus a momentary bar of 3/4. The angle bracket (<) above a chord, often called a “push” by commercial musicians, indicates an eighth-note syncopation forward in time. The dominant chord in the second bar of the third phrase should thus begin on the “and” of the fourth beat in the measure prior; similarly, the subdominant chord in the third measure of the third phrase should begin on the “and” of the second beat. In more complex rhythmic situations, traditional rhythmic notation can be used, such as in the last bar of Example 5. Other traditional symbols—such as repeat signs, first and second endings, and *Dal segno* markings—are also used on Nashville number charts when appropriate, as long as the readability of the chart is not significantly compromised.

music due to the melodic-harmonic divorce, where a prominent scale-degree 1 in the melody may sit atop an otherwise clear dominant chord, such as in the chorus of “Out of the Woods” by Taylor Swift (2014); see Snodgrass (2016a, 168) and Temperley (2007).

¹⁷ Some versions of Nashville numbers use a box around chords that belong in the same measure.

¹⁸ More complicated time signature changes can be indicated by a traditional time signature.

Finally, two special symbols are often used to specify further details of chord duration. These symbols are the diamond (as in the fourth bar of Example 5), which indicates that the chord should be struck and then held; and the caret (as in the eighth bar), which indicates that the chord should be struck and then cut off. The first two bars of the last phrase thus indicate a tonic chord that is held (or tied) for two full bars.



Example 5

Instances of special rhythmic notation (in a 4/4 meter).

For those new to the Nashville number system, this rhythmic shorthand may seem rather quirky, perhaps even cumbersome as compared to traditional rhythmic notation. But this system usually becomes intuitive very quickly, even for untrained musicians. Its power lies not only in its ability to succinctly represent the rhythmic details of a song's harmonic structure, but also in its ability to do so without necessarily relying on traditional rhythmic notation. For students that enter a first-year class with weak or non-existent rhythm reading skills, therefore, the Nashville number system offers the opportunity to interact with harmony in a rhythmic context while at the same time (hopefully) developing traditional rhythm notation skills.

Triad Notation and Minor Keys

Because the Nashville number system uses Arabic numbers to represent the chord root, major and minor chords are not differentiated through upper- and lower-case numbers, as is frequently done with Roman numerals. Instead, Nashville numbers presume the chord to be major unless otherwise indicated. To indicate a minor chord,

a dash (–) is normally used after the Arabic number, e.g., 6– would indicate an A minor chord in the key of C.¹⁹ In short, Nashville numbers take the lead-sheet notation for a chord and convert the letter-based content into scale degrees. Thus in the key of D, an F#+ chord (i.e., an F-sharp augmented chord) would be 3+ in Nashville numbers. Example 6 shows an illustration of this methodology for the song “Peace of Mind” by Boston (1976), which is in E major; the $\flat 7$ here refers to a D major chord, the 6– to a C#m chord, and so on. This basic protocol for turning jazz/pop chord symbols into functional harmonic notation holds true for chord extensions, additions, and inversions, but these subjects raise issues that warrant their own treatment in dedicated sections (addressed below).

Example 6

Verse and chorus (0:30–1:06) from “Peace of Mind” (Boston, 1976).

In a traditional theory curriculum, students often learn about chord inversions and tones beyond the triad (such as sevenths) before they gain fluency with the syntax of root-position diatonic triads.²⁰ This ordering of topics derives, presumably, from the preponderance in classical music of tonic, dominant, and dominant seventh chords and their inversions. Indeed, these are common chords in popular music as

19 As in pop chord symbols, it is also valid in Nashville numbers to indicate a minor chord with a small “m” after the Arabic number. For example, 6m would indicate an Am chord in the key of C.

20 This is the approach, for example, in Kostka, Payne, Almén (2018), where sevenths chords and inversions are introduced immediately after the triad in Chapter 3, while the discussion of diatonic chords is reserved until Chapter 7. A similar approach is used in Laitz (2016), where inversions and extensions to tonic and dominant triads are introduced prior to pre-dominant chords.

well, although perhaps not to the extent found in classical music. By some measures, for example, subdominant chords are more common in popular music than dominant chords, with fewer inverted chords in total than either submediant or subtonic chords.²¹ Using Nashville number charts early in undergraduate-level coursework thus offers the opportunity to have students internalize (both conceptually and aurally) rudimentary aspects of harmonic function prior to the complicating factors of chord extensions, additions, and inversions.²²

A variety of classroom and homework exercises can be brought to bear using Nashville number charts once students have a fundamental understanding of triads in a key. For example, I now assign after every class (in addition to other things) a partial chart to transcribe for homework, typically about one minute of a song (such as the verse and chorus sections). As keyboard exercises, students can be asked to prepare an arrangement from an assigned chart, or they can be asked to “comp” a chart at sight.²³ Nashville number charts were originally designed to guide the back-up singers for Elvis Presley,²⁴ so it seems historically appropriate to employ charts in sight-singing activities. Students can be asked individually to improvise a vocal harmony line through the chord progression (with or without the original recording), or the entire class can be asked to improvise an on-the-spot *a cappella* rendition of the song’s harmony (with or without someone singing lead vocal). Admittedly, it is certainly possible to do these activities using Roman numerals, but the combination of rhythmic information with chord functions makes these tasks easier to notate.

One of the biggest differences between Nashville numbers and traditional Roman numerals involves the way in which minor keys are conventionally represented. As illustration, Example 7 shows a excerpt from a Nashville number chart created by Matt Lund, director of the commercial music ensembles at MTSU, for the song “It’s a Man’s Man’s Man’s World” by James Brown (1966).²⁵ Although Example 7 shows only

21 de Clercq and Temperley (2011).

22 Admittedly, this approach is somewhat in opposition to the view that counterpoint drives harmony more than chord function, although this stance is debatable for popular music.

23 “Comping” is the standard term used by popular and jazz musicians to refer to playing a harmonic accompaniment for a song. It is usually improvised and typically follows the performance practice norms for the instrument within the style.

24 Matthews (1984, 6-9).

25 The original version of this chart sets the song in 12/8, but it is set here in 6/8 to afford comparison with Example 8. For more examples of songs with a strong minor tonic charted in this way, see Williams (2017) (e.g., “Rolling in the Deep” by Adele).

a portion of the song, the rest of the song does not include any new harmonic events. Specifically, the full chart contains no instance of a 1 chord, which as charted would be G-flat major. But while recent research in popular music has argued that many songs can be viewed as having an “absent tonic,”²⁶ most listeners (whether from a classical or popular music background) would probably say that the tonic of this song is E-flat minor, if simply because its phrases consistently begin and end on an E-flat minor chord. Accordingly, a musician more familiar with traditional Roman numeral

CH)	6-	3-	6-	3-
	2-	2-	3 ⁷	3 ⁷
	6-	3-	6-	3-
VR)	6-	3-	6-	3-
	6-	3-	6-	3-

Example 7

Excerpt (0:12–0:56) from “It’s a Man’s Man’s Man’s World”
(James Brown, 1966), as charted in the key of G-flat.

CH)	1-	5-	1-	5-
	4-	4-	5 ⁷	5 ⁷
	1-	5-	1-	5-
VR)	1-	5-	1-	5-
	1-	5-	1-	5-

Example 8

Excerpt (0:12–0:56) from “It’s a Man’s Man’s Man’s World”
(James Brown, 1966), as charted in the key of E-flat.

²⁶ Spicer (2017).

analysis would probably chart the song using Nashville numbers as in Example 8, with the E-flat chord as the 1- chord.²⁷

To be clear, Examples 7 and 8 are both valid Nashville number charts with regard to the purely mechanical aspects of the system's syntax. The differences are instead more philosophical. Example 8 takes a parallel-key (or "Do-based") approach to the minor tonic, whereas the convention in Nashville numbers (as shown in Example 7) is to take a relative-key (or "La-based") approach to the minor tonic. There is, of course, nothing inherent about Roman numerals that precludes them from being used in a La-based-minor way. But the traditions of the two systems are important to acknowledge, for they reflect important differences in the way harmony is conceptualized by musicians working within different repertoires.

To attempt to better understand why this difference exists, consider the chart shown in Example 9. In the chorus of this song, the tonic is clearly E major. But prior to this chorus, which first occurs only after a minute into the song, the sole chords are A major and C# minor, such that C# minor arguably sounds like tonic. It would not be unreasonable, therefore, to imagine charting the verse of the song in C# minor, i.e., with the C# minor chord being 1-, and then positing a modulation to E major in the chorus. This strategy of moving from a minor tonic in the verse to a major tonic in the

VR)	4	4	6-	6-
	4	4	6-	6-
	4	4	6-	6-
	4	4		
		4		
CH)	1	1	3-	3-
	1	1	3-	3-
	4	4	4	

Example 9

Verse and chorus (0:36–1:32) from "Need You Now" (Lady Antebellum, 2009).

²⁷ Indeed, this is the way both David Temperley and I charted the song in our corpus of rock music (2013).

chorus is very common in popular music.²⁸ But while some theorists²⁹ may think of this relative-key move as a modulation, commercial musicians typically avoid labeling this relationship as a change of key.

There are a few reasons why commercial musicians might prefer to think in this way. From a purely practical perspective, it is arguably easier to improvise an arrangement by considering a song in a single key whenever possible rather than mentally juggling key changes. Moreover, songs in major keys are more common, especially in certain commercial styles, than songs in minor keys,³⁰ and so an improvising musician may be more comfortable thinking in a major key because it is more familiar. From a more perceptual perspective, the major tonic in the chorus also potentially biases our hearing of the verse, whether we hear the second verse immediately after the chorus or rehear the first verse in a replay of the song. That is to say, it is difficult to “unhear” the tonal pull of the E major tonic, especially when it is given such a prominent place in the structure of the song.

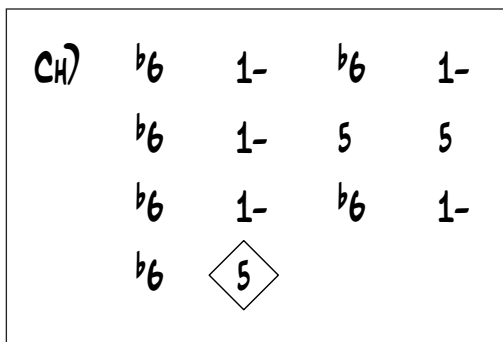
Admittedly, there are some songs in popular music for which it is convenient and arguably more appropriate to conceptualize the minor tonic in a Do-based way. This is especially the case when central sections of a song toggle between parallel keys, such as in “Wolf at the Door” (Radiohead, 2003). Unlike the common-practice style of Roman numerals, though, Nashville numbers are not contextual to the modality of the “one” chord. Using Roman numerals as typically taught in the music theory classroom, for example, a B-flat major triad in C minor is VII but in C major is $\flat$ VII. In contrast, chord labels in Nashville numbers always presume the 1 chord to be major, even if the 1 chord is minor. In Example 10, for instance, the 1- chord is F# minor, and thus the D major chord that opens the chorus is $\flat$ 6, as if the song were in F# major. This modality-agnostic approach to chord labeling has, in fact, become standard practice in the style of Roman numerals used by scholars of popular music,³¹ in part due to the extensive use of mixture in songs and the concomitant difficulty in determining a single modality.

28 Spicer (2017).

29 e.g., Doll (2011).

30 Temperley and de Clercq (2011).

31 e.g., Biamonte (2010).

**Example 10**

Chorus (0:40–1:03) from “Before He Cheats” (Carrie Underwood, 2005).

Beyond the Root-Position Triad

Perhaps an even greater difference between Nashville numbers and Roman numerals involves the method for indicating chord inversions, extensions, alterations, and additions. With Roman numerals, these aspects are all conveyed through figured bass notation, which creates some notational limitations when dealing with harmony in popular music. In contrast, Nashville numbers explicitly distinguish between the inversion of a chord and extensions, alterations, or additions to that chord. Example 11, which is in the key of G, illustrates this point.³² As discussed previously, Nashville numbers convert the letter-based portions of a lead-sheet chord symbol into scale degrees. Thus in Example 11, the 5/7 chord would be a D/F# chord, the 6–7 an Em7 chord, the 1/3 a G/B chord, etc. Different flavors of lead-sheet chord symbols exist, of course, which is responsible for some of the variation in Nashville number styles. A major-seventh chord can be represented on a lead sheet, for example, by a triangle, a triangle followed by a seven, or the “maj7” suffix. Without question, fluency in Nashville numbers presupposes fluency in lead-sheet chord symbols, which is beyond the scope of this article.³³ As a personal preference, I use shorter versions of these symbols whenever possible since horizontal space on a Nashville chart is at a premium.

³² The label “PCH” in this chart refers to the “prechorus” section, which is the term most commonly used by music theorists for the transitional section between the verse and chorus of a song, e.g., Summach (2011). In the country music community, however, this same section is often referred to as the “channel,” abbreviated as “CHNL” or “CHA”; see Riley (2010) or Williams (2012).

³³ For one introduction to a system of lead-sheet chord symbols, see Wyatt and Schroeder (1998).

In the penultimate bar of Example 11, for instance, I chose to indicate the suspended fourth on the dominant chord through simply the superscript of “4” so as to minimize visual clutter, even though a “sus4” or “sus” label is more standard among commercial musicians.³⁴

VR)	1	$\frac{5}{7}$	6^{-7}	6^{-7}
	4	4	5	5
	1	$\frac{5}{7}$	6^{-7}	6^{-7}
	4	4	5	5
PCH)	2^{-7}	2^{-7}	$\frac{1}{3}$	$\frac{1}{3}$
	4	4	5^4	$\overset{\wedge}{5}$

Example 11

Opening verse and prechorus (0:17–0:58) of “When You’re Gone”
(Avril Lavigne, 2007), key of G, 2/4 meter (or 4/4 with a half-time feel).

Separating the notation of a chord’s inversion from non-triadic chord tones offers a number of advantages. In an undergraduate classroom, for example, the distinction between a cadential $\frac{6}{4}$ chord and a dominant chord in second inversion can be confusing, since both are represented in Roman numerals as $V\frac{6}{4}$. In Nashville numbers, however, the second-inversion dominant chord would be notated as $5/2$ whereas the cadential $\frac{6}{4}$ could be notated as a 5 chord with $\frac{6}{4}$ as a superscript, as shown in the last bar of Example 12.³⁵ Nashville numbers also readily accommodate inversions of extended or altered chords, such as the first-inversion dominant ninth chord (C9/E) heard at the end of every second bar in “Escape” by Rupert Holmes (1979). Representing a

34 In my charts, I similarly prefer to use a horizontal slash rather than a forward slash (/), so as to more clearly indicate a harmonic sonority over a note in the bass.

35 Admittedly, notating a 5 chord with $\frac{6}{4}$ as a superscript implies that a chordal fifth still exists in the sonority, since neither the 4 nor the 6 necessarily displaces the fifth. In practice, therefore, this particular notation should be taken to imply a double suspension rather than a suspension with an “add 6.” While still not perfect, I find this solution offers more clarity than the standard Roman numeral approach.

sonority like this with Roman numerals would be at minimum confusing (e.g., V_6^7) if not disallowed. Overall, I have found Nashville numbers to be easier for students (or at least my students) to learn than Roman numerals. Roman numerals seem to require a bit more decoding and pattern recognition due to the uncomfortable marriage between one aspect that presumes the existence of a chord root (the Roman numeral) with another aspect that does not (the figured bass).

IN^7	1	6-	$\frac{1}{5}$	4	
V_6^7	1	6-	4	1	1
	1	6-	4	<u>$5^{\frac{6}{4}}$</u>	<u>$\tilde{5}$</u>

Example 12

Intro and opening verse (0:00–0:48) of “Faithfully” (Journey, 1983).

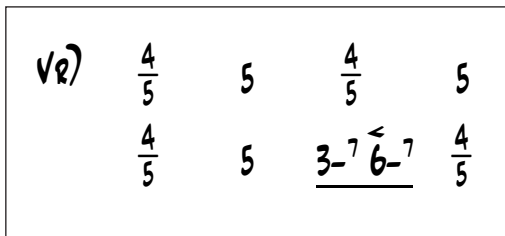
To be fair, a figured bass line has the power to accurately represent any sonority. But when paired with a Roman numeral, these figures are missing a critical component: the bass itself. This often creates awkward labels even in the analysis of classical music, such as a bass suspension (e.g., $V_2^5-V_3^6$) or a suspension over an inversion (e.g., V_7-6). For popular music analysis, the inability of Roman numerals to flexibly account for the bass as a separate entity from what is occurring above the bass is especially problematic. Consider in this regard the chart excerpt from “She’s Gone” by Hall & Oates (1974) shown Example 13, which is in the key of E major. The $4/5$ chords—here an A major triad over a B in the bass, i.e., A/B—are a common sonority in popular music.³⁶ It is unclear what an appropriate Roman numeral representation would be for this simultaneity. Some authors refer to it as a V_{11} chord, although this label implies a chordal third that is instead absent.³⁷ Others refer to it as a V_9sus_4 chord, although this label implies a chordal fifth that is instead absent.³⁸ Both of these labels presume that the sonority has a dominant function, despite the complete subdominant triad in

³⁶ For example, see Spicer’s discussion of harmony in “She’s Gone,” his Example 1 (2017).

³⁷ Stephenson (2002, 87).

³⁸ Buckingham and Pascal (1997, 64).

the upper voices and lack of a leading tone. Other authors view the sonority as a blend of subdominant and dominant functions, an analytical stance that Roman numerals are not very well positioned to handle.³⁹



Example 13

Opening verse (0:32–0:57) to “She’s Gone” (Hall & Oates, 1974).

The “IV over 5” sonority is not the only instance of what might be called “functional blends” in popular music; they are simply the most common. The most accepted label for such sonorities is “hybrid chord,” which speaks to the composite nature of such harmonic events.⁴⁰ Hybrid chords can arise from chordal motion over a bass pedal, such as in the keyboard introduction to “Jump” by Van Halen (1984) or “Can’t Fight This Feeling” by REO Speedwagon (1984). They can also appear at important structural points in a song, such as the held $D\flat/E\flat$ chord (V over scale-degree 6 in the key of $G\flat$) found just prior to the chorus (around 0:58) in “I Wanna Dance With Somebody” by Whitney Houston (1987). Hybrid chords may also be seen as the product of voice-leading factors, where upper voices and bass appear to split into two different streams, such as the G/C (IV over scale-degree $\flat 7$ in the key of D) and D/G (I over scale-degree 4 in the key of D) chords in the second and third bars of the chorus to “Across the River” by Bruce Hornsby and the Range (1990).⁴¹

In some cases, Roman numerals can be shoehorned into representing hybrid chords but will arguably misrepresent harmonic function. Consider in this regard the chords for the first verse of “Beautiful” by Christina Aguilera (2002), as shown in Example 14. The descending bass line evokes the lament pattern, although (perhaps not surprisingly) the harmonization here is not what we would expect of an 18th-

³⁹ Doll (2017, 64).

⁴⁰ For more on hybrid chords, see Felts (2002, 146), Schenkus (2011), or Stephenson (2002, 178). Also, de Clercq (2019) discusses hybrid chords in the larger context of the harmonic-bass divorce in rock music.

⁴¹ These are the lead-sheet symbols found in Hornsby (1994, 110).

century setting; specifically, we find a root-position submediant rather than a first-inversion subdominant as the harmonization for scale-degree 6 in the bass. But while the label V_2^4 of IV could adequately capture the scale-degree content of the second chord (and is the only way to do so using Roman numerals), the following chord (the root-position submediant) calls into question whether the chord prior to it is in fact a secondary dominant. Certainly, one could view the harmony in this passage as involving a deceptively deceptive resolution of a secondary dominant to IV. If we were using Roman numerals, though, we would be forced into that analysis, since there is no other way of representing the harmony of the second bar, since the bass note must be a part of the chord. In contrast, the Nashville number system provides a functional label while still reserving our analysis of the chord's role in the overall harmonic progression. This last point brings up the topic of applied and secondary chords more broadly, which will be the focus of the next and final section.

V_2^4	1	$\frac{1}{b7}$	6-	$b6^{b5}$
	1	$\frac{1}{b7}$	6-	$b6^{b5}$

Example 14

Opening verse (0:26–0:51) for “Beautiful” (Christina Aguilera, 2002).

Secondary and Applied Chords

Because Nashville numbers use the slash to indicate the inversion of chord, there is no corresponding method as in Roman numerals to indicate applied or secondary functions, e.g., V/ii . This inability to reflect applied functions could be seen as a significant limitation to Nashville numbers. Indeed, it was the aspect I found most problematic when first learning the system. After using Nashville numbers for awhile, though, I began to view this lack of specialized notation for applied chords more as a positive feature than a flaw, particularly due to the nature of harmony in popular music.

To illustrate the general practice of how an applied chord would be notated in Nashville numbers, consider the excerpt from “Desperado” by the Eagles (1973)

shown Example 15, which is in G major. In the seventh bar of this example, we find a clear V/V chord, which resolves to the dominant in the following bar. The lead-sheet symbol would be A7, given the key, so it is notated here as 2⁷. There are other secondary dominant chords in this passage as well, such as the first-inversion V/vi in the first bar of the last phrase (a B7/D# chord). Perhaps less obvious to those readers more familiar with Roman numerals, the second bar of the first phrase is a V/IV, since the Nashville number refers to a G7 (dominant seventh) sonority, which then leads to C (IV) in the next bar. These opening bars highlight a difference between the two systems that was implied in the previous section but should be stressed here. While the common-practice variety of Roman numerals typically assumes the figured bass portion to be in the key, e.g., I7 implies a major-seventh chord given a major key, in Nashville numbers there is no assumption that the sevenths, extensions, or added chord tones are in the key. This practice follows directly from the lead-sheet symbols, which themselves are key-agnostic.

V7	1	1 ⁷	4	4- ⁶
	1	6- ⁷	2 ⁷	5 ⁷
	1	1 ⁴ ₂	4	4- ⁶
	<u>$\frac{1}{5}$</u> <u>$\frac{3}{\#5}$</u>	6- ⁷	<u>2⁷ 5⁷</u>	1

Example 15

Opening verse (0:20–0:55) from “Desperado” (Eagles, 1973).

From a pedagogical perspective, the benefit of not having an explicit notation for applied chords is that the analysis of chord function within a phrase can be separated from the key-specific function label. Recent work by Nobile (2016) draws attention to the importance of making this distinction in popular music harmony. In particular, one of Nobile’s central arguments is that chords do not necessarily have the same syntactic function as we might presume by their function label. A IV chord, for example, can act in the syntactical role of a dominant, such as at the cadential moment in a parallel period. Nobile’s theory reflects an important feature of harmonic syntax in popular music, in that we cannot presume a one-to-one mapping between

the scale-degree-based chord label and its role in a particular chord progression. Consider in this regard the chorus of “Who Loves the Sun” by the Velvet Underground (1970), shown in Example 16. In the first three phrases, we seem to have a V/V chord moving to a dominant. But what about the last phrase? Is it a V/V that gets evaded by moving to the IV chord? Or is it its own thing? After all, a dominant-seventh chord on scale-degree 2 moving directly to a subdominant is a common harmonic trope in popular music, e.g., “Forget You” by CeeLo Green (2010). Nashville numbers allow for a nuanced analysis (“both/and”) since there is no higher-level analysis inherent in the key-specific label itself.

CH)	2⁷	5⁷	1	1
	2⁷	5⁷	1	1
	2⁷	5⁷	1	1
	2⁷	4	1	1

Example 16

Chorus (0:32–1:01) from “Who Loves the Sun” (The Velvet Underground, 1970).

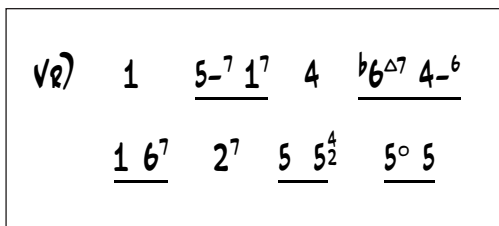
From a more practical perspective, the lack of any explicit applied chord notation makes chord progressions more straightforward to read at sight. With Roman numerals, a reader would see V7/ii, presumably have to think about what scale-degree 2 is in the key first, and then have to think about what a fifth above that scale degree would be before being able to spell the dominant seventh chord. In contrast, Nashville numbers tell the reader directly on which scale degree to build the dominant seventh chord. When explaining secondary dominants using Nashville numbers in class, I usually provide students with the table shown in Example 17. On the bottom row are the diatonic targets (abbreviated “Tar”), with the top row showing the secondary dominants of those target chords. Students can easily recreate this table, since the numbers in each row increase sequentially within the diatonic space. Despite my advanced training in music theory, I must admit that it was not until I created this table for the first time that I realized that all the roots for the secondary dominants of the diatonic chords in a major key are themselves members of the diatonic scale. In

other words, the use of applied chord notation with Roman numerals was hiding from me the manifestation of those chords within the home key.

V OF)	5 ⁷	6 ⁷	7 ⁷	1 ⁷	2 ⁷	3 ⁷
TAR)	1	2-	3-	4	5	6-

Example 17
Secondary dominant chord relationships.

To be clear, I do believe that students should be analyzing chord progressions at a higher level than merely the key-based scale-degree labels. These are simply different stages in a harmonic analysis. Once a chord progression has been converted into Nashville numbers, students can be asked to create an additional analytical layer. The arrows sometimes used in Roman numeral analysis to indicate secondary dominants can be employed for this purpose, for example. I also ask my students to circle borrowed chords, put triangles around tritone substitutions, and put a box around any portion of a song that represents a tonicization. In Example 18, for instance, the second and third bars arguably comprise a local move to the subdominant, with the minor seventh chord on scale-degree 5 acting as ii/IV, which is then followed by V/IV. Note that for a true change of key, i.e., something more permanent than a two- or three-bar tonicization, the typical practice in Nashville numbers is to simply write something like “Modulate up a half step” or “Modulate to the dominant” at that moment in the chart. For music that is constantly changing keys (such as bebop-influenced pop) or music that is not clearly tonal (such as some math rock), it is probably easier to stick with the letter-based chord symbols and avoid function labels altogether (akin to avoiding scale-degrees or moveable-Do solfège syllables in the singing of atonal melodies).

**Example 18**

Opening verse (0:16–0:47) to “Misery” (P!nk featuring Steven Tyler, 2001).

Conclusion

Admittedly, the Nashville number system may not be appropriate for every music theory curriculum. In a conservatory setting, where perhaps the entirety of the repertoire studied in the undergraduate core is classical music, traditional Roman numerals are undoubtedly a more suitable choice. Knowledge of the two systems is not mutually exclusive, though, and it is not unreasonable to expect that some classically-trained musicians may go on to work in more commercial settings. Similarly, I do not necessarily advise jettisoning Roman numerals in a music program focused exclusively on popular music, if only because the use of Roman numerals is so widespread within academia (and thus among its graduates). But if a music program intends to train students for a career in the commercial music industry, then teaching these students about the Nashville number system is certainly relevant to their future careers.

Most college-level music curriculums fall somewhere between these two extremes, of course. That said, survey results show that the vast majority of programs today are strongly weighted towards music of the common-practice era.⁴² Some authors,⁴³ as a result, have recently called for more inclusion of popular music in the undergraduate music core, and contemporary theory textbooks have begun to include more examples of popular music than they did years ago. If programs do begin to shift more in this direction, though, we must be careful to ensure that the concepts we teach (and the way we teach those concepts) do not unintentionally reinforce ways of thinking that implicitly preference certain styles of music over others.

⁴² Snodgrass (2016b).

⁴³ e.g., Campbell et al. (2014) and Covach (2015).

It is thus worth considering to what extent Roman numerals and figured bass are part of the “hidden curriculum”⁴⁴ that shapes the way our students view and understand harmony. In this article, I have not just given an overview of the mechanics of the Nashville number system and some of its possible uses in the classroom; I have also discussed some of the limitations of (and possible analytical distortions created by) Roman numerals when they are applied to popular music. In addition, I have offered a somewhat different ordering of topics as typically presented in traditional theory textbooks. Ultimately, music theory is the study of musical style, and it may be that the pedagogical approaches for one repertoire may not be ideally suited for the other. How to best address the calls for a more inclusive curriculum, stylistically-speaking, undoubtedly promises to be one of the greatest challenges facing music theory pedagogy in the coming years.

44 Palfy and Gilson (2018).

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The Analysis and Composition of Polymorphic Canons

ROBERT GAULDIN

Although theorists have examined various aspects of the canonic genre, scant attention has been given to the polymorphic canon, a designation which Prout bestowed on those pieces with multiple solutions. This article focuses on two prototypical examples, the anonymous *Non nobis Domine* and a seven-measure *dux* by G. H. Stölzel quoted in Marpurg's *Abhandlung*, from whose analyses we may extract recurring melodic paradigms prior to providing practical guidelines for their composition.



Matthew Haakenson's insightful discussion of the canons which Bach sketched inside the cover of his personal copy of the *Goldberg Variations* continues the recent interest in this intriguing musical genre, as evidenced by articles of Robert Morris, Robert Gauldin, and Alan Gosman.¹ Commencing with such Renaissance notables as Glarean, Zarlino, and Morley and working through Berardi, Albrechtsberger, and Marpurg to Ebenezer Prout in the late nineteenth century, theorists have examined numerous aspects of this strict discipline, such as canons employing inversion, retrogression, diminution and/or augmentation, as well as examples of double, stretto, infinite, modulating, accompanied, and puzzle canons.² However, scant attention has been paid the *polymorphic canon*, a designation bestowed by Prout on those pieces whose *dux* may be realized in more than one way, or in other words, canons with *multiple solutions*.³

Most canonic commentaries are limited to providing examples from the literature, offering solutions to puzzle pieces, or supplying general observations on formal/tonal structure. Only rarely do they specify compositional problems inherent in particular

1 Haakenson (2017); Morris (1995) establishes a series of rigorous and exhaustive paradigms for two-voice canons in various styles; Gauldin (1996) proposes algorithms for the composition of three-voice symmetrical/asymmetrical stretto canons in 16th-century style; Gosman (1997) discusses the characteristics of “stacked” canons, whose entries occur on different pitch classes, such as successive perfect 4ths or 5ths; and Gosman (2009) isolates melodic-harmonic patterns of first-species reductions and their application within a wide range of the subsequent two-voice canonic literature.

2 Bach's “canonic variations” on Frederick's “Royal Theme” in his *Musical Offering* display no fewer than five of these varieties.

3 See Prout (1891, 249–253).

canonic types or the manner in which these issues have been resolved. Nor do they impart much in the way of practical guidelines for the prospective composer, all of which imply more pedagogical approaches. The following discussion focuses on two celebrated pieces that will serve as prototypical examples, from whose analyses we may extract recurring melodic paradigms prior to providing practical guidelines for their composition: the anonymous *Non nobis Domine*,⁴ and an untitled piece by G. H. Stölzel,⁵ quoted in Marpurg's *Abhandlung von der Fuge* ([1753–54] 1970).⁶ Both are exemplars of *stretto* canons, in that their initial point of imitation is complete within the first few measures, a rather common procedure in the Renaissance.⁷ Although this pair share certain characteristics, they nevertheless represent different ways in which the *dux* may be utilized in the imitative process.

The analyses will incorporate first-species reductions, previously exploited by Morris, Gauldin, and Gosman as a means for examining their underlying structure. Example 1 lays out the *dux* of *Non nobis Domine* with its Latin text based on Psalm 113, verse 9, as well as its semibreve reduction aligned below.⁸ The surface melodic elaborations of this first-species background will prove crucial in its subsequent realizations. The durational alterations in mm. 2 and 6 permit a continuous rhythmic flow between the various voices. While the inserted B_4^9 in m. 1 results in simple passing motion, the remaining pitch changes in mm. 4 and 5 either prevent parallel/direct motions to perfect intervals or produce various types of suspensions.

4 The *dux* of this notable Renaissance canon was supposedly compiled by an unknown English composer from two melodic phrases of a motet *Aspice Domine* by Philip van Wilder (d. 1554), although as the subsequent reduction of mm. 1--3 and 4--6 reveals, their underlying first-species frameworks are identical. Several realizations of this piece, previously attributed to William Byrd, may be found under "Canon" in *The New Grove Dictionary of Music and Musicians*, 2nd edition (2001), Stanley Sadie, editor.

5 Gottfried H. Stölzel (1690–1749) was a German composer of numerous operas, oratorios, and church cantatas.

6 Marpurg's remarks on canon ("Vom Canon") comprise Chapter 6 of Volume II.

7 This process contrasts with those lengthier and more self-contained fugue subjects of the Baroque period.

8 For his meticulous preparation of the musical examples for this article, I would like to thank Richard Desinord, a Ph.D. candidate in theory at the Eastman School of Music.

9 The system of pitch designation employs that of the American Acoustical Society, where middle C = C_4 and an octave higher = C_5 .

Example 1 shows three systems of musical notation, each with two staves (A and B). The first system is labeled "Seg on G" and the second "Seg on D". The third system is labeled "Seg on A" and includes repeat signs. The lyrics are: "Non no - bis Do - mi-ne, non no - bis, sed no-mi-ni tu - o da glo - ri-am."

Example 1

The *dux* of *Non nobis Domine* and its first-species reduction.

The above reduction reveals a basic six-note melodic *segment* (pcs G A C B A G) whose two successive sequences ascend by fifths—first on D and then on A (denoted by brackets). This canonic technique, hereafter designated as *segmental sequence*, is discussed in Gauldin (1996), which cites several examples.¹⁰ Sequential extensions of this initial six-tone segment can produce *perpetual* or *infinite* canons of various lengths.¹¹ For instance, the second sequence (on A) may be succeeded by a restatement of the original segment (on G), as indicated by the inserted repeat signs in Example 1. These sequences may also continue as a series of ascending fifths which cycle through the entire diatonic collection.

Analytical commentary on these polymorphic canons will incorporate the following abbreviations. The individual tones of the different voices (*a*, *b*, *c*, etc.) are indicated by superscripts (*a*¹, *a*², *a*³, *a*⁴), melodic motion (MI) by plus or minor diatonic intervals (+2, -5), diatonic harmonic intervals between voices (HI) in terms of their relationship to the bass (8/3, 5/3, 8/6) or to each other, the interval of imitation between successive entries by *P*, and the temporal distance between entries in semibreves by *T*. The pair of perpetual three-voice realizations in Examples 2a and 2b exemplify *stretto* canons which employ *asymmetrical* tonal and temporal distances

10 See especially the examples by Josquin and Palestrina in Gauldin (1996, 31 and 36).

11 As we will see later, this option is not possible in four-voice solutions.

between entries, such as P-4/P-5 tonally or T1/T2 temporally. Calculated from the initial upper voice, Example 2a employs a *dominant*-oriented relation (P-4/P-5), whereas Example 2b features a *plagal*-oriented relation (P-5/P-4), both characteristic of Renaissance imitative technique. Although some elaborative dissonance appears in the form of 7-6 and 2-3 suspensions, the ascending accented passing tone A₄ in both solutions runs counter to accepted stylistic practice.

The image displays two musical examples, A and B, each consisting of a two-staff system (treble and bass clef) with a common time signature. Example A is labeled 'A' and Example B is labeled 'B'. Both examples show three voices: Soprano (top staff), Alto (middle staff), and Bass (bottom staff). The notation includes various musical symbols such as notes, rests, and accidentals. In Example A, the Soprano voice starts with a note marked 'a' and the Bass voice with a note marked 'b'. In Example B, the Soprano voice starts with a note marked 'a' and the Bass voice with a note marked 'b'. The notation is complex, with many notes and rests, and includes some accidentals like flats and naturals. The examples are presented as two-part canons, with the first part (A or B) and the second part (B or A) showing the continuation of the canon.

Example 2

Two perpetual three-voice settings of *Non nobis Domine*.

Since by definition, a polymorphic canon is capable of multiple solutions, it is possible for a trio of distinct *biciniums*, each with differing imitative characteristics, to reside within a single three-voice realization, provided no dissonant harmonic intervals occur between the voices. Therefore, the three embedded two-part canons in Example 2a may be indicated as $a \rightarrow b$ (P -4/T1), $b \rightarrow c$ (P -5/T2), and $a \rightarrow c$ (P -8/T3). A comparison with Example 2b reveals that although b involves different pcs, it exhibits no “new” embedded canons, since the indicators remain constant: $a \rightarrow b$ (P -5/T2), $b \rightarrow c$ (P -4/T1), and the original $a \rightarrow c$ (P -8/T3). Disregarding “redundant” canons

whose basic indicators form duplicates, there are seven different canons embedded within the possible three- and four-voice solutions of this particular *dux*, assuming we remain within the dominant/plagal imitative paradigms.

The following analytical commentary will focus on three specific sections of the *Non nobis Domine* canons, employing first-species reductions: 1. the initial point of imitation, 2. the commencement of the segmental sequences, and 3. the concluding voice overlap necessary to produce a perpetual canon.

The initial point of imitation. It requires only a few cursory notes to realize that (P -5, -4/T1, 2) and (P -4, -5/T2, 1) are not possible.¹² An expedient procedure for examining its two remaining realizations (P -4, -5/T1, 2) and ((P -5, -4/T2, 1) would be to construct a hypothetical “four-part” solution including both dominant and plagal imitation, as shown in the first-species reduction of Example 3a. Each black note-head and stem denotes the beginning of a six-note segment. The interior voices (commencing on D_4 and C_4) are denoted as *b* and *B* respectively, in which *b* is notated as the “alto” voice and *B* as the “tenor” voice. In working out the initial point of imitation (mm. 1–3), the basic problem involves the two interior voices (*b* and *B*), which lie only a 2nd and one semibreve apart. To counter this quandary, the composer of this canon devised an ingenious solution. If the *dux* initiates a *descending stepwise* motion from C_5 down to G_4 to complete the original segment, then three of the pcs in *b* and *B* (F_4 , E_4 , and D_4) will *coincide*. As a result, it is only necessary to compute mm. 3 and 4 in terms of *three* voices. Consequently, the original *dux* segment is *framed* by a motion from $G_4 \rightarrow A_4$ and $A_4 \rightarrow G_4$, a feature which will prove crucial in the subsequent segmental overlaps.

The segmental sequences. Two sequential restatements by ascending fifths succeed the original *dux* segment, commencing with D_5 and A_4 in mm. 4 and 7 of Example 3a, respectively. In the process, the initial pitches of its first sequence must *overlap* with the lower voices *b*, *B*, and *c* by one, two, and three semibreves, respectively, a potential problem which the unknown composer cleverly alleviates. Since the first *a* segment commences with $G_4 \rightarrow A_4$ and concludes with a regressive $A_4 \rightarrow G_4$, the last tone of the dominant-oriented *b* segment (D_4) forms an octave with the initial D_5 of the *dux*’s first sequence in m. 4 (Example 3b). In a similar manner, the last notes of the plagal-oriented *B* segment ($D_4 \rightarrow C_4$) form an consonant 8va and 10th with the $D_5 \rightarrow E_5$ of the *dux*’s first sequence in m. 4 (Example 3c). Finally, because the

¹² Given the initial pitch, the point of imitation indicators, and successive melodic intervals (MI) of the *dux*, the pcs of the harmonic sonorities generated in three-voice settings may be ascertained using mod7 algorithms, although their complexity renders such calculations tedious.

The image displays a musical score for Example 3, consisting of four staves labeled A, B, C, and D. Staff A is a grand staff with a treble and bass clef, containing a sequence of chords and intervals. It includes markings for 'a', 'b', 'c', 'B', '5ths', and '7th'. Staff B is a single staff with a treble clef, showing a sequence of notes and rests, with markings for 'a', 'b', and '8'. Staff C is a single staff with a treble clef, showing a sequence of notes and rests, with markings for 'a', 'b', '8', and '10'. Staff D is a single staff with a treble clef, showing a sequence of notes and rests, with markings for '(m.2)', '-8', and '+12'. The score is written in a style that suggests a reduction of a more complex original work.

Example 3

A hypothetical “four-voice” realization of the *dux* in reduction.

original *dux* segment is six semibreves in length, and the c voice (an octave lower) does not enter in *both* cases until *after* three semi-breves, it is possible to *exchange* their trichords by employing double counterpoint at the 12th, in which the last three pcs of the original a segment descend an 8va lower to become the last three pcs of the c segment, while the first three pcs of the c segment ascend a twelfth to become the first three pcs of the second a segment (consult Example 3d).

The “perpetual” overlap. One final hurdle remains in our perpetual realization, since at some point the *dux* must “cycle back” on itself. This restatement of the original segment on G_4 must substitute for one of the sequential segments, creating an overlap of the concluding pcs in *b*, *B*, and *c* of the previous segment. In such a situation, does one particular positioning of this reprise prove more opportune than another? If its recurrence of the original *dux* segment substitutes for the anticipated segmental sequence on E_5 , then no harmonic problems arise with overlaps of the *middle* voices *b* and *B* (consult the final measures of Example 3a). However, our reduction does reveal two potential conflicts with the bass or c voice. Not only do parallel 5ths occur, but also the harmonic interval of a seventh appears between mm. 9–10. While the subsequent elaborations (refer to Example 2) cleverly disguise the former by means of a bass suspension, the rationalization of the *dux* A_4 as “passing motion” is less convincing, since such melodic dissonance was traditionally limited to *descending*

minims on *weak* beats 2 or 4.

The possibility of expanding dominant/plagal realizations for *Non nobis Domine* to four-voice texture considerably raises the ante; consult the “dual” reduction in Example 4. The former interior voices *b* or *B* now reappear as the *d* or *D* voices to assume the *bass* function previously performed by *c*. While the imitative entries between *a*, *b*, and *B* are duplicated an octave lower as *c*, *d*, and *D*, and the previous relations between *a*, *b*, and *c* recur a 4th lower as *b*, *c*, and *d*, the problem remains that the opening pcs of *d* and *D* must overlap with the last pcs of *a*, *b*, and *B* during the original *dux* segment; consult the “dual” first-species realization in Example 4. No harmonic conflicts occur within the initial point of imitation, but as the piece progresses, one encounters increasing instances of harmonic sevenths and parallel octaves/fifths.¹³

Example 4

A “dual” four-voice realization of *Non nobis Domine*’s point of imitation.

While it must be admitted that some of the solutions of *Non nobis Domine* are flawed, no such aberrations appear in Sötlzel’s polymorphic canon, which (in the words of the Emerald City’s gatekeeper) is a “horse of a different color.” In the former piece, the treatment of dissonance (passing tones and suspensions), the absence of motivic sequences, and non-functional harmonic progressions typify normative Renaissance practice. However, the latter work clearly represents a product of the subsequent tonal period, as characterized by its brief sequential patterns, block-chordal construct, and directed harmonic motion. Of its numerous realizations,¹⁴ the subsequent discussion will consider only three, each of which exhibits its own distinctive features. Whereas

¹³ The fourth between *d* and *D* and the parallel fifths between *B* and *d* in m. 4 will disappear when the three realizations appear separately.

¹⁴ Marpurg calculates that there are 392 possible realizations, including inversion and *arsin et thesin*.

Non nobis Domine involved a *single* six-note segment whose successive statements rose by cyclical fifths, a cursory glance at Stölzel's *dux* reveals a pair of seemingly contrasting segments (bracketed and denoted as Seg1 and Seg2 in Example 5), each of which consists of a three-note melodic cell (labeled Motive x and Motive y) that is immediately sequenced; while the first ascends stepwise, the second descends by step. The concluding pitch in Seg1 (the -3+4 motive) overlaps with its next statement, but no such imbrication occurs with the -3-3+4 motive in Seg2 (note the embedded -3+4 cell). All imitative distances are calculated in terms of half-note durations.



Example 5
Dual segmentation of the *dux* in Stölzel's canons.

In the first realization (hereafter labeled “Stölzel 1” and shown in Example 6),¹⁵ the *dux* is immediately subjected to a plagal-oriented four-voice stretto (P+8,-12,+8) whose entries occur at a distance of one half-note (T1,1,1). The two segments not only elide midway through but overlap in various ways during the closing measures to produce a perpetual canon.



Example 6
“Stölzel 1” realization.

A comparison of Motives x and y in these stretti reveals their close relation. Both originate from a basic descending MI -3, whose octave imitation occurs one minim later. On the other hand, their subsequent sequences take divergent directions—Motive x moves upward by 2nds (outlining I-ii-iii triads) while Motive y descends stepwise through a harmonic cycle of fifths (vi-ii-V triads) back toward tonic; an E-minor sonority functions as the connective link between the two stretti. The fifth cycle in Seg2 culminates in I-IV (mm. 8–9), which allows an effortless overlap back to the

¹⁵ Actually, this realization represents a later version; the original canon is shown as “Stölzel 3.”

canon's opening progression. But how is Stölzel able to facilitate these stretti with such apparent ease? The key to his success appears to lie in the retention of *common* tones between successive harmonic sonorities. Whereas the pcs in the chordal progression of the initial Seg1 projects a downward chain of 3rds, the following Seg2 reverts to the time-honored technique of falling fifth relations, revealing another third chain (consult Example 7).

I IV ii V iii vi ii V I

Motive x (mm. 1-5) Motive y (mm. 4-8)

Example 7

Chains of thirds in the harmonic progressions of “Stölzel 1.”

The conversion of this piece into a modulating canon (= “Stölzel 2”) that would eventually cycle through the *entire* chromatic spectrum of keys by ascending fifths presents few problems. Rather than reverting to the original C which jump-starts our former perpetual version, the concluding overlap now utilizes the pcs of the *dominant* function (G B D) to initiate a point of imitation in G major (as shown in Example 8), a process that is perpetuated throughout the remainder of the canon.

C: I vi V iii

 G: ii

Example 8

The pc overlap that commences the cyclical modulations in “Stölzel 2.”

Although our final realization (“Stölzel 3” in Example 9) retains the initial two-voice plagal stretto (P -5/T2, albeit displaced an octave), it displays a different set of characteristics. In some ways it even resembles a *round*, in which a series of distinctive melodic phrases are successively accumulated and contrapuntally aligned prior to their perpetual repetition. Since in this case, only two “phrases” (or segments) are involved, one might suggest the term *segmental superimposition*. A vertical alignment

of Seg1 and Seg2 takes place in m. 4, followed by octave exchange in mm. 7–8, although their simultaneous combination must also take into account the accompanying two-voice stretto of each. Since Stölzel’s canon is *seven* (rather than eight) measures in length, resulting in a “misalignment” of the segments, a simple double-counterpoint switch at the octave will not suffice (compare mm. 7–8 with m. 4). On the other hand, the concluding pc overlaps which are necessary for a perpetual canon are effortlessly realized, as the final measures of Example 9 illustrate.



Example 9
The realization of “Stölzel 3.”

Of other existent polymorphic canons which could supplement our previous analyses, we will cite only two.¹⁶ Marpurg quotes an example by Valentini which he claims is capable of over 2000 different realizations. But perhaps the most frequently cited instance is the two-voice Canon No. 10 in the *Musical Offering* which exploits inversion, and over which Bach inserted the cryptic scriptural inscription *Quaerendo invenietis* (“Seek and ye shall find”). It features prefatory clef signs for its proper realization (an upside-down bass clef), but no indication as to when the second voice enters. Although no fewer than *four* “solutions” of this puzzle canon appear in the *Bach-Gesellschaft*, Hans David is of the opinion that *only* the one which Bach actually intended employed strict *real* imitation after five and a half measures, a viewpoint with which this author concurs.¹⁷

¹⁶ Callender (2012) proposes algorithms capable of producing canons with multiple realizations. However, his mostly two-voice examples not only display a questionable treatment of dissonance along with “astylistic” melodic lines, but also avoid the more traditional octave/dominant orientation in points of imitation.

¹⁷ David (1945, 175).

William Renwick (1995) has posed the question that since “certain basic contrapuntal structures were reused over and over by generation after generation of composers,” to what extent did they consider “the process of composition to be the art of reworking *existing* patterns?” Were they even “bequeathed from teacher to pupil in an oral or improvisational tradition?”¹⁸ A survey of the canonic literature tends to confirm the recurrence of certain stretto paradigms which occur in various guises from the early Renaissance through the late Classical periods. In particular, the foregoing analyses have focused on three such prototypes, each of which will now be considered successively. The opening six-note segment of the *dux* of *Non nobis Domine* represents a variant of Renwick’s Fugue Subject Paradigm 2, omitting the initial $\hat{3}: \hat{1} \hat{2} () \hat{4} \hat{3} \hat{2} \hat{1}$. The stretto of this subject in Fux’s *Fuga in C* (Example 10a) may have provided the inspiration for J. K. Fischer’s miniature E-major Fugue in his *Ariadne*

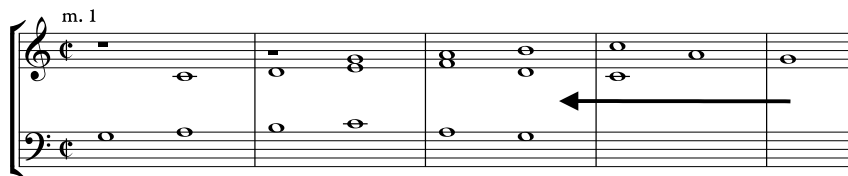
A. Fux: *Fuga in C* (*Gradus ad Parnassum*)



B. J.S. Bach: Fugue in E major (*Well-Tempered Clavier II*)



C. Palestrina: *Pleni sunt caeli* (*Missa ad fugam* 1567)



Example 10
Various stretti using the *Non nobis* paradigm.

¹⁸ Renwick (1995, 185).

Musica and its subsequent expansion in Bach's *Well Tempered Clavier II* (Example 10b). An interesting retrograde (!) version of the *Non nobis* segment occurs in Palestrina's "Pleni sunt caeli" (*Missa ad fugam*); see Example 10c.

Sequential treatment of the melodic cells in Stölzel's canon (Motive x = -3+4 and Motive y = -3-3, both of which lend themselves to multiple strettis) have been exploited by numerous composers. Josquin was already aware of the possibilities exhibited by the -3+4 motive, as his canonic tribute in Example 11a illustrates.¹⁹ Bach on the other hand employs its inverted form (+4-3) as the basis for a two-voice episodic passage

11A. Josquin: *Vive le Roi*
m. 2

(-3 +4) seq. -2

11B. J.S. Bach: Fugue in E♭ major (*Well-Tempered Clavier II*)
m. 39

(+4 -3) seq. -2

11C. Handel: "Worthy is the Lamb" (*Messiah*)
m. 143

(-3 -3) seq. -2

Example 11

Various strettis using the -3+4 and -3-3 paradigms (shown in reduction).

19 Its "mother" pitch set [025] spawns several other permutations that are especially compatible to sequential strettis. This characteristic may originate from its interval vector, which features the most common intervals in the diatonic collection (M2, m3, and P4).

(Example 11b). Since a “cycle of fifths” progression is normally involved in a -3-3 sequence, it was frequently utilized by Baroque composers; the excerpt from Handel’s *Messiah* (Example 11c) is a typical instance.

And then, there is Mozart. Aside from the celebrated Atwood studies in species counterpoint, the influence of Fux’s pedagogical methodology sporadically appears in the initial subjects of his hybrid fugue/sonata movements, of which the Finales of the *Jupiter* Symphony K. 551²⁰ and the G-major “Haydn” Quartet K. 387 are among the most notable. Indeed, the opening scale degrees $\hat{1} \hat{2} \hat{4} \hat{3}$ of the former²¹ duplicate those of the *dux* in *Non nobis Domine*,²² which is not surprising since Mozart possessed a personal copy of that little piece which probably dated from his earlier canonic studies under Martini. It is also likely that he was acquainted with Marpurg’s *Abhandlung* (1753-54), which may have paralleled his interest in Bach’s contrapuntal technique about 1762. If so, he was doubtless aware of Stölzel’s canon cited there. But does any tangible evidence exist to substantiate such a claim?

An examination of several passages from the “Jupiter” Finale raises the possibility that they may represent (conscious?) paraphrasing of Stölzel’s canon.²³ Set in the dominant key of G major, the movement’s secondary theme (mm. 80-83) appears to have been “lifted” directly out of Stölzel’s *dux*, even to the extent of retaining the *identical* pcs (Example 12a). Mozart’s subsequent expansion closely resembles the “Stölzel 1” realization. During the *tutti* passage that forms a portion of the exposition’s closing section, he first isolates Motive x (-3+4), whose two-voice plagal stretto ascends by 3rds accompanied by a “filler” voice (Example 12b). As it turns to descend, Mozart then employs Stölzel’s original four-voice stretto by sequential thirds (Example 12c). If a possible correlation does exist between the two passages, it is a testimony to Mozart’s genius that he was able to transform a pedantic little exercise into a symphonic pronouncement of powerful impact.

20 Gauldin (1991) explores the relation of the Finale’s thematic material and contrapuntal combinations to strict species technique.

21 Derr (1985) cites other occurrences of this melodic cell in Mozart’s output.

22 Although Mozart doubtless knew the little C-major fugue in *Parnassum* cited earlier, he refrained from exploiting stretto with this theme.

23 In his 1843 edition of Marpurg, Simon Sechter appended an analysis of the Finale to Mozart’s “Jupiter” Symphony. While Sechter employs examples of “first species” reduction, he makes no reference of a possible relationship to Stölzel’s canon.



Example 13

A *dux* by Stölzel capable of several realizations.

Some Practical Suggestions For Composing Polymorphic Canons

It is obviously easier to point out the structural characteristics of a pre-existent polymorphic canon than to construct one from scratch. The following guidelines are intended to maneuver a perspective composer through the potential minefields of this task. Needless to say, the choice of either a Renaissance or tonal style necessitates a subsequent adherence to their respective compositional practices and norms.

1. It is better to restrict any initial attempts to three-voice settings, as the addition of a fourth part considerably increases the degree of difficulty.
2. The *dux* normally originates in the soprano or bass voice. The first note should be scale degree 1, since other choices may require tonal answers, whose intervallic adjustments are foreign to canonic technique.
3. Try to confine the scale degrees of the *dux* within a major or minor hexachord (scale steps 1 through 6). The use of the leading tone sometimes results in cross relations or melodic/harmonic tritones.
4. The opening point of imitation in three-voice settings may conveniently employ those stretto models found in *Non nobis Domine*: either dominant or plagal orientation at T1 or T2, assuming the *dux* starts in the upper voice.²⁵ Lay out the initial pcs of the entries (*a*, *b*, *B* and *c*) in semi-breve reduction using a “dual” format (see one of the four possibilities as a model in Example 14a).
5. As each new pc is added to the original note of the *dux*, it is imitated in the succeeding voices. In Example 14b, G_4 is the first note, and A_4 has been selected for its second tone and subsequently distributed in the other parts, forming the HI of a fifth between a^2/b^1 and b^2/c^1 . Disregard any harmonic dissonant intervals between b/B , since they will not appear in either of our eventual realizations.

²⁵ If the canon begins in the bass, the resulting imitation indicators would tend to be “inverted”: either plagal (P +4,+5 /T1,2) or dominant (P +5,+4/ T2,1).

6. This procedure is then continued in like manner, with the new G_4 in the *dux* (a^3) forming a third between a^3/b^2 and B^3/c^2 as well as a fifth between a^3/B^1 and b^3/c^1 (Example 14c). During the subsequent process, the choices for each new *dux* note will become increasingly restrictive (a natural consequent of the “nature of the beast” with which we are dealing). Of course, other compositional formats are possible for the initial point of imitation of polymorphic canons. For instance, one may sketch a four-voice dominant-oriented canon (in first species) employing *lengthier* temporal distances between entries, as shown in Example 16d.²⁶ Provided that no harmonic $\sharp_4$ s occur, four *different* embedded three-voice realizations may then be extracted: (a,b,c) , (b,c,d) , (a,b,d) , and (a,c,d) .²⁷ While the (a,b,c) canon retains its dominant orientation ($P+5,+4/T2,4$), the (b,c,d) version transposes to G major with a resultant plagal orientation ($P+4,+5/T4,2$).

Example 14

Suggested procedures for the initiation of a polymorphic three-voice canon.

7. Several paths of continuation are available, depending on the overall “nature” of the canon desired. a. New pcs may be appended to the *dux* until an appropriate conclusion seems feasible, resulting in a kind of *through-*

²⁶ Generally speaking, the lengthier temporal distances (T) between entries, the easier the construction of the first-species tonal framework, a situation which occurs more frequently in Baroque and Classical practice.

²⁷ Altogether, there are a total of eight two- to four-voice solutions for this *dux*.

composed format; b. An opening “segment” of the *dux* (usually between six to eight pcs in species reduction) may be restated by diatonic sequence to produce a perpetual canon (as in *Non nobis*), in which case various “overlappings” must be navigated; and c. The *dux* may consist of two superimposed stretto segments built on different melodic cells, as was the case in “Stölzel 3.” Other possible constructs depend on the discretion of the composer.

8. The elaboration of the first-species framework is left to the ingenuity of the composer. It may proceed concurrently with the framework or wait until the basic structure is complete. Based on Example 14c, Example 15a employs some passing motion in invoking a Renaissance style, while Example 15b assumes a more Baroque character with its suspensions. The F $\sharp$ /F clash in the latter will obviously cancel out.

A

B

Example 15

Two elaborations of the framework in Example 14b.

9. A single issue remains: how to bring our composition to a satisfactory termination. Each of the two options is fraught with differing problems. In those “perpetual” situations where the canon cycles back to its initial point of imitation, the concluding pcs must overlap harmonically with those of their commencement, a procedure previously discussed in the *Non nobis* and Stölzel pieces. The alternative—that of establishing a standard cadential formula *within* the strict canonic confines—can prove a fiendishly difficult

task, since not only must those melodic scale degrees associated with a particular close be “anticipated” in the previous voices,²⁸ but *two* different versions of the cadence must be worked out to accommodate the *b* and *B* strands. The solutions for an authentic close appear in Example 16. In the first plagal imitation (Example 16a) the initial MI +4 moves successively to the middle voice before providing $\hat{5}$ to $\hat{1}$ in the bass for the cadence. In like manner, the rising third in m. 2 is also transferred, leaving the soprano to supply the remaining $\hat{7}$ – $\hat{8}$ of the close. A similar process occurs in Example 16 as well, using dominant imitation.

The image displays two musical systems, A and B, for a canon in C major. Each system consists of a soprano voice (labeled 'a'), a middle voice (labeled 'b' in A and 'B' in B), and a common bass line (labeled 'c'). System A represents a plagal imitation, while System B represents a dominant imitation. Arrows in both systems indicate the transfer of melodic material from the soprano to the middle voice and then to the bass line, illustrating the cadential formula used to terminate the canon.

Example 16

The use of a standard cadential formula to terminate the canon.

Employing the above guidelines, Example 17 illustrates a pair of short three-voice perpetual canons based on the same *dux* in the bass voice. Example 17a lays out their “dual” first-species framework. Note that the B natural/B flat clash in m. 4 will not appear when the two realizations are separated in Examples 17b (plagal) and 17c (dominant).²⁹ Their elaborations feature suspensions and repeated notes but no passing tones, some of which would produce parallel fifths.

28 This procedure for asymmetrical canons is briefly discussed in Gauldin (1996, 47–50).

29 The imitation is real throughout. While the *dux* (a) exploits the natural hexachord, (b) and (B) employ the moll and durum, respectively.

The image displays three musical staves, labeled A, B, and C, each representing a three-voice realization of a canon. Each staff consists of a treble and a bass clef. Staff A shows a canon with three voices (a, b, c) and a repeat sign. Staff B shows a canon with three voices (a, b, c) and a repeat sign. Staff C shows a canon with three voices (a, b, c) and a repeat sign.

Example 17

A brief original *dux* with two three-voice realizations.

In conclusion, this study could be considered as an addendum to the section of Prout's *Double Counterpoint and Canon* devoted to that particular polyphonic idiom. Although he includes both of the canons examined here, he only cites various realizations of the Stölzel piece.³⁰ Therefore, the detailed analyses, "homework," and compositional guidelines in this article provide a more pedagogically oriented supplement to Prout's discussion of the polymorphic genre.

One might ask where the preceding material would occupy in a curriculum. Although it is hardly appropriate for a beginning course in tonal counterpoint, it could be assigned as auxiliary reading in a graduate class, or function as a special topics seminar, or even form the subject for individual research or a possible thesis. A survey of the preceding analyses suggest several questions of a more general nature which could provide viable topics for future research. Are there only a limited number of

³⁰ Curiously enough, Prout fails to mention that *Non nobis Domine* (incorrectly attributed to William Byrd on p. 208) is polymorphic.

melodic paradigms which are compatible to the construction of polymorphic canons? Would comparisons of those paradigms in different stretto sections of the same fugue (such as those listed by William Renwick) provide clues in the regard? Excluding those canons extended by cyclical transposition, is there a “practical limit” to the duration of polymorphic canons? Is there a “parallel universe” of these canons which eschew imitations by perfect intervals in favor of thirds or seconds? Are chromatic idioms to be completely avoided, or do a small group of such feasible melodic paradigms exist?

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Increasing Retention and Motivation: Making a Case for Conscious Long-Term Repetition and Leveraging Peer Learning

BRIAN EDWARD JARVIS AND JOHN PETERSON

In this article we share two strategies to address issues of retention and motivation in an inter-university, co-taught Form and Analysis course: (1) a cyclic quizzing strategy that fosters long-term retention and gradual accumulation of skill in a manner similar to how musicians learn new repertoire, and (2) a final project that leverages peer learning to maintain student motivation and participation throughout the semester. For their final projects, students became teachers by creating a video analysis of a piece. These videos were evaluated by students from a different institution's Form and Analysis course which was taught using materials co-designed by the instructors of both courses. This peer-evaluation model motivated the students to master course content so they could positively represent themselves and their institutions. Quizzes deployed through our Learning Management Systems helped students continually practice key concepts. These quizzes allowed us to scaffold and repeat content, both aural and written, without consuming precious class time.



Introduction

In our classes, we regularly encounter variations of the scenarios listed in Example 1.¹ The challenge in Scenario 1 is retention. Students are typically busy with other classes, ensembles, lessons, extra-curricular activities, and often outside jobs and family responsibilities. Beyond completing course assignments, they often lack the time or motivation to review past concepts and may not encounter them before they reappear, for instance, on the final exam. Scenario 2 suggests that students value peer learning highly, but this scenario may also result from students wanting to be respectful of the instructor's time. Scenario 3 illustrates a problem of motivation. Students quickly lose the incentive to engage with the class beyond earning a passing grade to satisfy their curricular requirement. In this article, we share two strategies we employed to address these issues in an inter-university, co-taught, Form and Analysis course: (1) a cyclic assessment strategy that fosters long-term retention and gradual accumulation of skill in a manner similar to how musicians learn new

¹ Throughout the article first-person plural pronouns such as “our,” “we,” and “us” refer to the authors only.

repertoire, and (2) an inter-university final project that leverages peer learning to maintain student motivation and participation throughout the semester. After a survey of studies that discuss motivation, retention, and engagement, we detail our assessment strategy, outline the final project, and conclude by suggesting ways in which these strategies may be employed beyond the Form and Analysis course for which they were originally designed.

Scenario 1. Students will forget well-established concepts from earlier topics when revisited later in the semester.

Scenario 2. Students turn to their peers first, not the instructor, for help outside of class.

Scenario 3. Most students initially participate in class, but only a handful continue to do so voluntarily by mid-semester.

Example 1

Sample classroom scenarios.

Survey of Studies Concerning Motivation, Retention, and Engagement

In a study examining the practice techniques of musicians at various levels of experience, Lisa Maynard defines “practice” as “the act of repeating a motor skill with the intention that repetition of the skill will lead to increased accuracy, fluency, velocity, consistency, automaticity, and flexibility in performing the skill.”² Maynard finds that the musicians she studies all typically follow several steps in the practice room. They first select a passage from their target work, divide it into small fragments, repeat those fragments several times, and finally place them back into context by performing the larger passage.³ Music education scholars, like Maynard, regularly discuss the importance of repetition in student learning, and music theorists have likewise begun to discuss pedagogical strategies that rely on repetition. Paula Telesco, for instance, argues that “unquestionably, learning is an iterative process.”⁴ Telesco’s comment stands out as uncharacteristically direct when compared to other music-theory-pedagogy scholarship where repetition is part of the suggested activity

² Maynard (2006, 61).

³ Ibid., 69.

⁴ Telesco (2013, 223).

but is not itself championed by the writer. Andrew Aziz, for example, uses a form of varied repetition in his “Sonata Theory Learning Laboratory” when his students compare recomposed portions of sonata expositions with the original to facilitate discussion and, in so doing, they are invited to re-hear portions of the sonata through new lenses.⁵ Similarly, Mark Richards indicates he “*builds up* to it [sonata form] over a number of classes.”⁶ This “building” notion suggests that topics are revisited, perhaps with new information added upon repetition. The strategy is similar to the “spiral learning” model employed by Jane Piper Clendinning and Elizabeth West Marvin in *The Musician’s Guide to Theory and Analysis*, which aims to increase student familiarity and comfort with different concepts by continually revisiting repertoire.⁷

While not aimed at pedagogy specifically, the music cognition community has been more explicitly engaged with studies of repetition as recent work by David Huron and Elizabeth Margulis demonstrates.⁸ Margulis even appears to suggest that repetition may assuage Brian Moseley’s understandable lament that as students listen to larger spans of music, they typically do not attend to more local events.⁹ To this end, Margulis suggests repetition can solve issues of this sort by allowing listeners to attend to multiple levels of music simultaneously. She notes that repetition “enables us to ‘look’ at a passage as a whole, even while it’s progressing moment by moment.”¹⁰ Repetition is also an intrinsic aspect of teaching music theory. As teachers, we train ourselves to hear and internalize the concepts we teach through the yearly process of grading and lesson preparation.

Despite tacit acknowledgement that repetition is essential to learning, music theory pedagogy articles rarely explicitly describe repetitive teaching strategies that span an entire course. Below, we describe how we employed a style of repetition inspired by the practice strategies Maynard finds that musicians employ: break a concept down into fragments, repeat those fragments, and put them into a larger context. Our strategy not only leverages repetition to increase content retention, but it also reinforces good practice habits, supporting a transfer between the practice room and the classroom.

5 Aziz (2015).

6 Richards (2012, 220).

7 Clendinning and Marvin (2016, xxi).

8 See Huron (2006) and Margulis (2014).

9 Moseley (2014, 1–4).

10 Margulis (2014, 7).

In addition to increasing retention, our Form and Analysis course also addressed student motivation, which other pedagogues have likewise explored through a variety of means. For instance, Anna Ferenc uses exercises that model the professional activities of music theorists (e.g., conference presentations), Philip Duker uses problem-based learning to link course content to real-world scenarios, Vicky Johnson engages with gamification in the context of a proficiency-based learning model, and Peter Schubert describes how he uses in-class performance to keep students engaged.¹¹ Outside the realm of music pedagogy, John Keller identifies four components to motivation in a model he calls ARCS: **A**ttention, **R**elevance, **C**onfidence, and **S**atisfaction.¹² His descriptions of those components are reproduced in Example 2. The scholars we cite above all address various components of Keller’s ARCS model. For instance, by asking students to respond—using analysis—to a hypothetical comment made by a fictitious friend at a party, Duker addresses how Attention and Relevance play a critical role in generating motivation.¹³ Johnson, on the other hand, engages the Satisfaction component by allowing students who have achieved proficiency for a topic to also earn

Major Categories & Definitions		Major Process Questions
Attention	Capturing the interest of learners; stimulating the curiosity to learn	<i>“How is this learning valuable and stimulating to my students?”</i>
Relevance	Meeting the personal needs/goals of the learner to effect a positive attitude	
Confidence	Helping the learners believe/feel that they will succeed and control their success	<i>“How can I (via instruction) help students succeed and allow them to control their outcomes?”</i>
Satisfaction	Reinforcing accomplishment with rewards (internal and external)	

Example 2
Components of the ARCS Model (John Keller).

¹¹ See Ferenc (2015), Duker (2014), Johnson (2015), and Schubert (2013).

¹² Keller (1987, 1–2).

¹³ Duker (2014).

attendance credit for any remaining classes on that topic.¹⁴ Students are rewarded, then, by earning time off for working hard up front. In our Form and Analysis course, we addressed attention and relevance via our final project, and confidence and satisfaction using the cyclic assessment strategy to which we now turn.

Using Cyclic Assessments to Foster Long-Term Retention

We consistently hear our students perform challenging works beautifully on their instruments—works that clearly require substantial commitment and effort to learn. We are often dismayed when these same students lack mastery of core musical concepts (aurally identifying a cadence, for example), skills that we believe require disproportionately less work than mastering, for example, Hindemith's Sonata for Tuba. On the one hand, we recognize that students typically approach these endeavors with disproportionate levels of motivation, but on the other, their successful performances demonstrate that they have the potential to achieve mastery of challenging material.

Our belief that many students possess the necessary skills to learn complex musical works motivated us to mimic the practice-room strategy Maynard observed in her study: select a passage, reduce it to small fragments, repeatedly focus on those fragments, then gradually rebuild the passage by placing the fragments back into context.¹⁵ Using a layered and repetitive approach to assessments, we asked students to engage with material in the theory classroom using a similar mindset. As we will show below, when we introduced a topic or concept we asked students to practice its component parts in isolation in written and aural formats, and then we contextualized the concept and its component parts by asking students to complete analysis on homework assignments. Our approach draws on the process of interleaving (rather than blocking) topics: the topics overlapped with each other such that while students were completing a cycle of assessments on "Topic A," they were also beginning a cycle of assessments on "Topic B," and every previous topic had the potential to be reviewed at the end of a cycle of assessments in our review quizzes.¹⁶

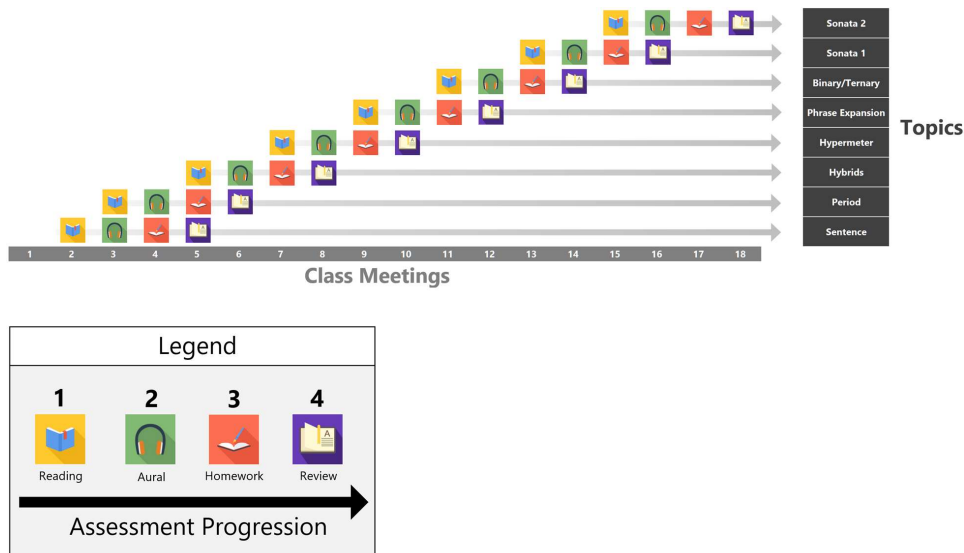
Example 3 demonstrates the cyclic manner in which we repeated topics using varied tasks during the first eighteen days of the course, culminating in the midterm exam. Each topic was initiated through a four-assessment progression: reading, aural,

¹⁴ Johnson (2015, 7).

¹⁵ Maynard (2006, 69).

¹⁶ We are grateful to an anonymous reviewer who pointed us toward the concept of interleaving. See, for example, Rohrer (2012, 357).

written homework, and review. Once introduced, retention was addressed by regularly repeating topics by recycling online listening and review assessments—indicated in Example 3 by the horizontal arrow following the initial block of assessment icons. The example also illustrates how we attempted to steadily build and reinforce knowledge while exposing the challenge of balancing attention between review and solidifying increasingly difficult, newer topics like phrase expansion and sonata form.



Example 3
Scaffolded assessment strategy.

Reading and Review Quizzes

Bookending students' interactions with a given topic are reading quizzes and review quizzes. Students are first exposed to a topic by completing a reading and an associated reading quiz through our institutions' learning management system (LMS).¹⁷ While we took most of the readings from William Caplin's *Analyzing Classical Form*, we also assigned selected readings from other sources such as James Mathes's *The Analysis of Musical Form* (concerto), Steven G. Laitz's *The Complete Musician*, 3rd edition (Binary and Ternary), James Hepokoski and Warren Darcy's *Elements of*

¹⁷ The learning-management systems we used were Blackboard and Canvas.

Sonata Theory (Sonata), Bryn Hughes and Kris Shaffer's OpenMusicTheory.com (Popular music), and video lectures we created ourselves (hypermeter and phrase expansion).¹⁸ As other instructors often lament, in past iterations of the course we were troubled by how little information students retained from readings, or by the way students focused on less significant information rather than the components we valued the most. We had previously attempted such techniques as in-class reading quizzes and detailed outlines of readings, but the online reading quizzes we designed in Fall 2016 have been so successful that we have since employed the same technique in many of our other courses. As students are reading, they are encouraged to fill out a "reading guide" we designed to focus their attention on the reading's essential components. A sample "Optional Reading Guide" is given in Appendix 1. To provide incentive, we often took questions from the reading guide and copied them verbatim into the reading quiz.

Reading quizzes include two categories of questions: vocabulary and analytical practice. Example 4 illustrates our typical approach to vocabulary. Often we introduce terms using fill-in-the-blank questions that take a sentence directly from the reading, leaving a blank for a key word. These questions simply require students to find the same sentence in the reading and fill in the missing word, an approach that does little to evaluate their understanding. To address understanding, we designed analytical practice questions that require them to apply their knowledge, often in multiple-answer format such as that concerning the features of a sentence in Example 5. The content was often taken from Caplin's "Let's Practice" and "Reviewing the Theory" questions in a given chapter. These quizzes could be repeated up to three times, and our LMSs retained the highest grade from the student's set of attempts. Students could view which questions they had answered incorrectly, but we prevented the quiz from displaying the correct answers after submission. We limited the number of repetitions to three to encourage students to take their repeated attempts more seriously: we worried that if students had unlimited attempts, they might simply take the quizzes multiple times until they began to recognize past questions and their associated correct answers by trial and error without doing any reading.

The success of these reading quizzes in comparison to past iterations of the course was immediately apparent to us. Not only did we have feedback about the degree to which students had understood the readings by reviewing both their responses and their number of attempts before class, but the quizzes also gave students immediate

18 See Caplin (2013), Mathes (2007), Laitz (2011), Hepokoski and Darcy (2006), and Hughes and Shaffer (2014).

Fill in the blank below (Caplin, Chapter 2)

1

The term refers to the merging of two formal functions within a single unit.

Example 4

Basic vocabulary question on a reading quiz.

Fill in the blank below (Caplin, Chapter 2)

1

What features of continuation are found in the continuation of Example 2.2 (p. 38)? (select all that apply)

- ☐ Fragmentation
- ☐ Acceleration of harmonic rhythm
- ☐ An increase in surface rhythmic activity
- ☐ Sequential harmonic progression(s)

Example 5

Analytical practice question on a reading quiz.

feedback on what they had learned. As a result, students consistently entered the classroom on the first day of a topic ready to delve into more complex details. On the first day we taught hybrid phrase-level forms, for example, we came prepared to review the basic terminology and characteristics of each hybrid using particularly clear examples. It quickly became obvious, however, that students did not need this review, gaining us precious class time to work on more nuanced examples.

At the end of each topic, students completed a review quiz. Review quizzes recycled nearly all questions from the reading quiz students had completed at their introduction to the topic. Occasionally, we omitted questions that required too much reproduction of exact textbook wording. In addition to reviewing the reading quiz from a given topic, review quizzes also included questions from all previous topics. To maintain focus on recent topics, we instructed our LMSs to draw a larger selection of questions from the most recent topic's reading quiz, and fewer questions from earlier

topics. Compared with our previous approaches, this manner of repetition resulted in students being noticeably more fluent with a topic's general principles and details throughout the entire semester.

Aural Quizzes

Like the reading and review quizzes, students could take their aural quizzes multiple times and our LMSs retained the highest score. Anecdotal feedback from students throughout the semester suggested that these aural quizzes were among the most challenging tasks in the course, but also the most rewarding because they began to readily hear the concepts from the quizzes in the music they heard and performed. Examples 6 through 9 represent our approach to aural quizzes.

The question in Example 6 is taken from a quiz on cadences. Though students learned about cadences in previous courses, we felt that regular practice with aurally identifying cadences was essential for internalizing the experience of formal analysis. As Seth Monahan notes, the first prerequisite to formal analysis is the ability to “identify and track cadential processes.”¹⁹ In this quiz students located the moment of cadence by entering its timestamp and its type. All questions contained only one cadence, and each excerpt ended a variable amount of time after the cadence had occurred to prevent students from targeting the recording's end. We also find that encouraging students to listen for a sense of a new beginning or a restatement is effective in helping them to target potential cadences. We usually allowed for a three-

The excerpt below contains ONE cadence.

▶
0:00 / 0:00🔊
⋮

(NOTE: The cadence might not come at the end of the excerpt)

1
Which type of cadence occurs? (HC, IAC, or PAC)

2
When did the cadence occur? Enter the cadence's timestamp:

(your answer should look like this: 0:08)

Example 6

Aural quiz on the identification of cadence types and hearing the moment of cadence.

¹⁹ Monahan (2011, 81).

second range of correct answers (one second before and one second after our ideal location) to account for timing variations related to technological differences.²⁰ We adapted our timestamp strategy for more advanced topics including hypermeter and larger forms. In our hypermeter quiz (Example 7), we specified that each recording began on hyperbeat 1 and we asked students to identify, for example, the next instance of hyperbeat 1, or the second occurrence of hyperbeat 4.

Fill in the blank below (Hypermeter)

1 This excerpt begins on hyperbeat 1. Enter the timestamp of the next hyperbeat 1:

(NOTE: Assume quadruple hypermeter) (your answer should look like this: 0:08)

Example 7

Aural quiz on perceiving the location of hypermetric counts.

Another strategy we employed is represented in Example 8. In this quiz, students listened to an excerpt and indicated which Caplinian theme type they heard. An important feature of these phrase-level aural quizzes was the “None of the above” option. While most excerpts were unambiguously one of Caplin’s theme types, several were unique forms to remind students of that framework’s limitations. We used similar

1 Listen to the following excerpt and select the best description of its theme type from the choices below.

☐ Sentence
 ☐ Compound Basic Idea + Continuation

☐ Period
 ☐ Compound Basic Idea + Consequent

☐ Antecedent + Cadential
 ☐ None of the above

☐ Antecedent + Continuation

Example 8

Aural quiz on identifying Caplin’s theme types.

20 In excerpts with particularly slow *tempi*, we tended to allow a greater range of time variability.

multiple-choice questions for larger forms. The last aural quiz students completed before the midterm, for example, requested that students identify the excerpt's overall formal type (Example 9). These kinds of quizzes have much potential; we could envision using them to ask students to do things such as identifying the location of a sonata form's EEC, the beginning of a song's post-chorus, or the first occurrence of a film score's "loss" gesture.²¹

1 Select the term that best describes the form of this excerpt.

☐ Simple Binary ☐ Sonata (two-part exposition)

☐ Rounded Binary ☐ Sonata (continuous exposition)

☐ Ternary

Example 9
Aural quiz on identifying formal type.

Homework Assignments

In addition to the online quizzes described above, students also completed weekly paper assignments. As the assessment strategy in Example 3 shows, these assignments represented the students' third encounter with a topic. A sample assignment is provided in Appendix 2. Assignments on phrase-level forms typically asked students to provide harmonic analysis, show multiple levels of formal function by annotating the score, and create phrase diagrams using symbols discussed in class. In longer assignments (e.g., sonata form and concerto), we only asked for selected passages of harmonic analysis and we limited phrase-level analysis to targeted areas. Though students did not provide complete phrase-level analyses on all assignments, the review-quiz element of our cyclic assessment strategy ensured they maintained proficiency with phrase-level forms throughout the course. Moreover, because students encountered regular review and practice online, we felt comfortable using shorter paper assignments than in the past.

²¹ Murphy (2014, 298).

Reflecting on our Approach

In previous versions of the course, the final-project quality (discussed below) was generally lower, and students demonstrated more difficulty retaining and applying information throughout the semester. We attribute much of the success in this new version of the course to our online, cyclic assessment strategy. Although our experience with the approach was overwhelmingly positive, and we would encourage readers to explore creating repeatable pools of questions within their own LMSs, we also encountered several challenges.

The technological limitations of our LMSs forced us to compromise in several ways. For instance, most LMSs do not feature an easy way for users to input special fonts, so symbols such as scale-degree carats, figured bass, and accidentals require alternatives when students are expected to enter them as text. More elaborate tasks such as creating phrase diagrams or providing detailed harmonic analyses require imaginative quiz questions, and rather than investing too much time into making such questions, we recommend pursuing questions that function as stepping stones toward paper assignments. For instance, rather than looking for a way to get students to draw a phrase diagram in an online quiz, ask instead about the components of the diagram, provide error-detection questions in which students identify a well-formed diagram from among several options, or ask students to apply the correct terminology to an example. After mastering those sorts of questions, students are better prepared to complete and submit phrase diagrams on paper.

Beyond the technological limitations, repeatedly practicing any skill online can quickly become sterile. This issue can become compounded for weaker students who may need more attempts to complete quizzes to reach adequate mastery of a concept. We attempted to combat some of this sterility by including real recordings and score excerpts in addition to questions that were solely text based. While this issue may be emphasized in an online environment, it may also appear to a lesser degree in any course that follows a pattern of events in which assignments are due on consistent days of the week throughout the semester. However, we feel the benefits gained from the online quizzes far outweigh the drawback of sterility.

Perhaps our biggest challenge was the considerable time commitment required to create satisfactory materials. Creating large pools of high-level questions was quite difficult. We recommend starting modestly with small pools and adding additional questions in future years. To justify the time required to create quality pools, consider ways the pool can be used for multiple quizzes and multiple courses to ensure a high

yield from your investment. For instance, we used the pool for the aural cadence quiz, discussed above, eight times throughout the semester. Because aurally identifying cadence locations and types is vital to many tasks in the undergraduate curriculum—to say nothing of its immense practical value—we now utilize that same pool in multiple courses covering phrase, form, and cadence. The online quizzes we made were self-grading and replaced traditional paper-and-pencil quizzes. This allowed us to assign the quizzes an appropriate amount of times to ensure proper internalization without having to worry if it would create an undue grading hardship. Additionally, because students were well prepared, we encountered better paper assignments, thus reducing grading time.

We transferred successful practice-room techniques to the theory classroom by dividing a topic into its component parts using online quizzes, recontextualizing those parts within a homework assignment, and then asking students to review them in online quizzes. In so doing, we helped our students make greater and more sustained progress toward mastery than in previous iterations of our Form and Analysis course. Not only were our students better prepared, but we were able to cover more topics because we removed the need for time-consuming, in-class drilling which we felt undervalued precious class time. We now turn to the final project to demonstrate its long-term structure and the specifics of its implementation.

The Inter-University Final Project

To address the issue of motivation, we took advantage of our collaboration by asking students from our respective institutions to work together. We designed a final project in which each student would be responsible for recording a detailed video analysis of a piece they chose that would be evaluated and critiqued by students from the other instructor's institution. In addition to demonstrating their ability to use the course content, we had three objectives for employing this inter-university approach: (1) to motivate the students to communicate advanced information clearly and effectively with educated strangers, (2) to enable the students to create and share instructional videos online, and (3) to introduce them to common teaching challenges. Not only does the project's peer-learning component create a type of motivation instructors alone cannot replicate, but representing one's institution with quality work stimulated an attitude of occupational pride that is desirable in professional environments.

The project spanned half the semester and included a total of thirteen steps. The

timeline in Example 10 shows a summary of these steps. Throughout the project, students assumed two roles: “teacher” and “evaluator.” As the teacher, they created an analytical video presentation and accompanying assignment. They attempted to assess the effectiveness of their video communication by grading that assignment. We paired each teacher with two evaluators from the other university and they corresponded through email. As evaluator, they initially served as students by watching the video presentations and completing the accompanying assignments. Then, they provided direct feedback to the student teacher regarding those materials. Below, we explain the tasks involved with each role in more detail following the steps outlined in Example 10.

Date	Step #	Description	Student Role
Week 9	1	Choose a piece in consultation with instructor	Teacher
	2	Analyze piece - create draft analysis	
Week 11	3	Bring in draft analysis, share results in class	
	4	Meet with instructor about draft 2	
	5	Make a video lecture using Power Point	
	6	Make assignment and grading key	
Week 14	7	Send video lecture & assignment to evaluators	Evaluator
Week 15	8	Watch 2 video lectures, complete assignments	
	9	Complete evaluation for each teacher	
	10	Return all materials to each teacher	Teacher
Finals Week	11	Grade assignments	
	12	Read & respond to evaluations	
	13	Turn in all materials on Blackboard	

Example 10
Final project timeline.

Student as Teacher

The teacher begins by submitting a score and recording of a piece or movement they would like to analyze for the project. We recommended that teachers choose pieces of modest length such that they would be able to discuss the whole work in a video lasting between five and thirty minutes. Though the course content centered around Classic-era instrumental music, we encouraged the students to seek music outside that realm, resulting in the inclusion of other genres including popular song,

musical theater, film music, band music, sacred music, and earlier and later classical music.

Once approved, teachers began analyzing their selections. Their analyses had to address four items: form, harmony, motive, theme, and any surprising or unexpected features. Teachers completed an analytical draft including three items: (1) a multi-level form diagram showing the work's complete phrase-level and large-scale form; (2) a notated catalogue of important motives and themes in the work; and (3) an annotated score including cadences, important key areas, points of hypermetrical interest, and indications of surprising or unexpected features. In class, teachers shared their draft materials with others in small discussion groups for feedback and guidance. Then, we scheduled required meetings with each teacher to set a firm deadline for completing the analysis and to help resolve challenges with any aspect of the project including technological issues. Although time consuming, this step was essential for keeping them on schedule and for restoring their confidence regarding successful project completion.²²

When teachers were satisfied with the quality of their analyses, they began to create their video lectures. We anticipated that this portion of the project would provide a significant learning opportunity for those who had not been exposed to creating video content. To limit the variety of technology-related issues, we required students to create their video lectures in PowerPoint. PowerPoint allows the presenter to record their voice through the computer's microphone while they progress through the slides. To further help lower the barrier of access for technologically inexperienced students, we created a sample video with solutions to challenges we encountered from completing the project ourselves, including a discussion of issues regarding quality and audio-video synchronization.

Example 11 shows how we required teachers to organize their videos to ensure they addressed the analytical points we wished to see. Part 1 of the video acted as an orientation and introduction to the work in which they discussed its form, along with important motives and themes. In Part 2, we asked students to begin with phrase-level form by choosing one essentially normative Caplin theme type and one essentially non-normative Caplin theme type to discuss. For the normal theme type, we asked them to describe how its constituent parts aligned with the idealized norm discussed and elaborated upon during the course. For the non-normative theme type, we asked

22 For many students, this was their first attempt at a substantial large-scale analysis. This meant many of them lacked confidence about the quality of their results and they were often unsure about when they were "finished" with the analytical process.

them to consider which phrase-level formal functions it most closely resembled and to address ways in which it deviated from expected norms. Next, teachers described how the composer manipulated and deployed the important motives and themes throughout the work. Finally, we asked teachers to discuss at least one remarkable, unusual, or surprising harmonic event in the work.

At the end of their video, we asked students to include a critical discussion of their work. The purpose of this portion was to encourage them to engage with the work by drawing on their analyses to answer any two of the four questions listed under “Part

Make a video lecture using PowerPoint

- I. Your lecture video must:
 - a. Use PowerPoint
 - b. Include legible annotated score excerpts
 - c. Include legible form diagrams
 - d. Include audio examples
 - i. You may play as many excerpts as necessary
 - ii. The entire recording may only be played once
 - e. Involve you narrating (with your voice) as you display your slides
 - f. Be more than five minutes and less than thirty, not including playing the entire recording of your piece once through
 - g. Be published to YouTube
- II. The video lecture should be organized according to the following format:
 - Part 1: Overview of the piece
 - i. Large-scale form
 - ii. Phrase-level form of each section
 - iii. Overview of the main motives in the piece
 - iv. Overall harmonic motion of each section
 - Part 2: Detailed analysis
 - i. Phrase-level form:
 1. Choose an essentially normative example of a Caplin theme type and explain how each of its constituent parts aligns with Caplin’s model
 2. Choose an essentially non-normative example of a Caplin theme type, explain how it doesn’t align with Caplin’s model, and discuss possible interpretations
 - ii. Themes and Motives
 1. Describe how the important themes and motives are deployed and manipulated throughout the piece
 - iii. Harmony
 1. Discuss at least one remarkable, unusual, or surprising harmonic event
 - Part 3: Critical assessment
 - i. Engage with at least two of the following:
 1. What performance recommendations would you make after concluding your analysis?
 2. What did you like or dislike about this piece? Why?
 3. What was the most striking feature of this piece? Why?
 4. Compare at least two recordings in relation to your analysis
- III. A sample video lecture is available on Blackboard. (see “Final Project Materials “)

Example 11
Required video organization.

3: Critical Assessment” in Example 11. We view Part 3 as a crucial element in helping students connect theory to practice, so we emphasized that these were essential questions to deter the tendency to neglect the critical-thinking aspect of the project.

Before submission, teachers created an accompanying assignment and grading key relating to the video’s content. These assignments had three main goals: (1) to encourage the teacher to reflect upon whether or not their content was presented effectively, (2) to provide the teacher with a tangible measure of what the evaluator understood, and (3) to expose them to the multitude of decisions required of making assignments and how to weigh the value of the questions they created.²³

Student as Evaluator

When their videos and assignments were completed, students uploaded the videos to YouTube and sent their evaluators and professors hyperlinks to the videos and copies of their assignments. Each teacher now became an evaluator. Evaluators were responsible for watching two videos, completing the associated assignments, and completing an evaluation form (Appendix 3) for each video. Once complete, they returned the assignments and evaluations to their teachers.

Student as Teacher Once More

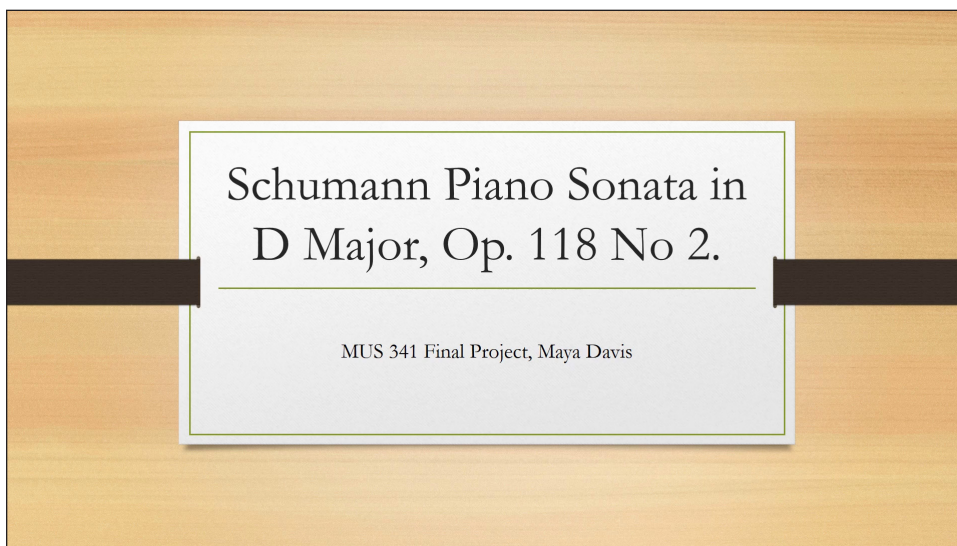
The final, and possibly most valuable, steps involved the teachers grading the assignments and responding to their evaluators’ feedback. In a 1–2 page essay, teachers reflected upon their successes and deficiencies by considering their evaluators’ comments, suggesting paths for future improvement, commenting on triumphs, and considering the relationship between their intended communication and what the graded assignments and peer evaluations indicated. To complete the project, teachers submitted all materials to the instructor for evaluation.

Sample Student Videos

Two teachers’ videos are given in Examples 12 and 13. Maya Davis (Example 12)—a junior Vocal Performance major in Fall 2016 at James Madison University—chose Robert Schumann’s Piano Sonata in D Major, Op. 118, No. 2 for her final project. Her video, though more detailed and lengthier than most others in our courses, exemplifies the kinds of analytical insights and engagement with terminology displayed by the

23 Maya’s sample assignment and key that accompany her video appear in Appendix 4.

majority of students. At the beginning of her talk (5:32), for instance, she identifies Schumann's primary theme as a sentence, but notes its continuation is longer than expected given the four-measure model established by the presentation. She identifies the technique Schumann employs to expand the continuation as "stretching," a term we use to describe units that are internally lengthened by a variety of procedures. After playing a recording of the primary theme (6:47), she describes her cadential expectations noting that the phrase ends with an IAC, which is perhaps a less-common option than a PAC—a bias resulting from Caplin's text focusing solely on earlier, Classic-era music. Finally, Maya's critical engagement with the piece is evident when she discusses performance recommendations for the pianist (27:53). For instance, she identifies an interpretational challenge in the secondary theme: it features a prevalent sixteenth-note motive associated with the primary theme, which makes it challenging to distinguish between the two themes. To help, she suggests de-emphasizing the primary-theme's motive so the new, legato melody will be perceived as prominent.

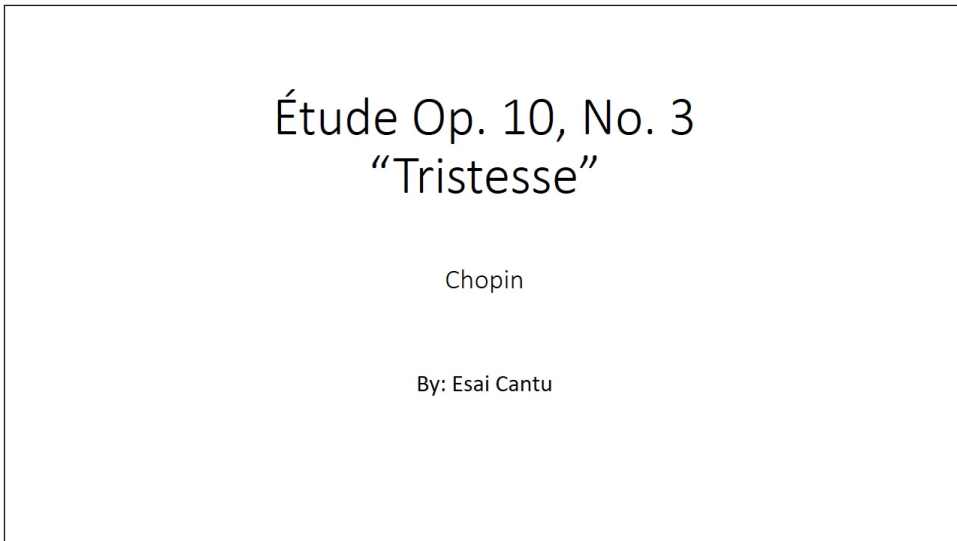


Example 12

Final project submitted by Maya Davis, a junior vocal performance major at James Madison University in Fall 2016 (click the image above to view video).

Esai Cantú (Example 13), a junior Music Composition major in Fall 2016 at the University of Texas at El Paso, chose Chopin's Etude in E Major, Op. 10, No. 3 for his project. He demonstrates fluency with vocabulary and stylistic convention

by describing the opening eight-measure theme as a “non-normative antecedent + continuation” due to its division into two unequal parts (five and three measures) instead of the more normative equal division (two four-measure parts) (9:20). Like Maya, Esai also decided to provide performance recommendations for the critical-assessment portion of the video. He encourages the performer to consider that the only cadence in the B section is the one that elides with the return of A. He recommends a subtle emphasis on this elision to highlight the long-awaited cadential resolution, but he warns that it should not overshadow the clear return of A material (15:46). He concludes by juxtaposing the A section’s calming affect with that of its entirely irregular phrase structure (16:33).



Example 13

Final project submitted by Esai Cantú, a music composition major at the University of Texas at El Paso in Fall 2016 (click the image above to view video).

Reflecting on the Final Project

A common strategy in upper-level undergraduate music theory courses is to assign a final project that involves a presentation, a paper, or both. Though the quality of such projects often varies—as it did with ours—we felt our approach yielded fewer poor-quality projects in general. We believe the higher quality emanated from the reiterative nature of the course and because students could rework their presentation

materials until satisfied, much as one would in a professional setting. Students also reported being nervous regarding strangers viewing their work, suggesting that their desire for the respect of their peers was a key motivator driving them to produce high-quality work. In addition to increased quality, the video format also allowed us to gain more instructional time during the semester than if we had planned for several days or even weeks of in-class final presentations. This also allowed students to control how much time they needed to present their material.

Only a few course evaluations mentioned the final project specifically. Of those that did, the most common remark was that the project and course were a lot of work. Several strategies might help address this comment. Spreading the work more consistently throughout the semester would make the project's looming deadline less daunting. Such a distribution poses its own set of challenges, however, because students tended to rely on content from later in the course to be able to complete their analyses. Another option is to create some early assignments that ask students to experiment with video creation in PowerPoint because many reported it involved a steep learning curve. We were surprised to learn that many of our students had rarely used PowerPoint in the past, if ever.²⁴

In general, students spent more time on their overview of the piece (Part 1) than on their critical assessment (Part 3), though we had intended the opposite balance. While we provided an example of the idealized proportions in a sample final project created at the beginning of the semester, we did not explicitly suggest how time should be distributed. In future iterations of the course, we would suggest percentages of time for each section of the required outline (Example 11).

We found it rewarding to pair students from different institutions and we highly recommend that approach. The expectation of communicating with students under a different instructor provided a notable degree of motivation for our students, which was one of the principle goals for designing this inter-university collaborative project. It is, however, easy to modify the project's design to avoid partnering with another institution. We have run the course in that manner and found we could approximate, but not duplicate, the "stranger effect" by carefully observing existing student relationships and attempting to make new connections among the students. We also suggest expanding the project to utilize evaluators from outside the class and perhaps from another department. We believe doing so will provide a similar form

24 If PowerPoint seems too complicated for your tastes, we suggest allowing students record a relatively polished presentation using the video camera on their phone. Though, this alternative option introduces new issues like microphone quality, displaying visuals, and playing audio examples.

of motivation, and using non-musicians as evaluators could provide a worthwhile challenge for students.

Additionally, the project's design can be easily adapted for shorter mid-semester assignments. For example, instructors might ask their students to select a short passage from their lesson repertoire that poses challenges for performance or interpretation. Students could be asked to create a video analysis of the passage that includes a discussion of ways to overcome the challenge and a performance of the passage. By inviting students to post these videos on social media, an instructor might instill a similar sense of motivation like the one we cultivated in our version of the project.

Conclusion

We noted that student engagement had been relatively consistent throughout the course—instead of decreasing like we were used to—and that students demonstrated superior retention. Our successes caused us to adapt these strategies for use in all of our core theory and aural-skills courses. The result has likewise been increased preparedness and retention, coupled with reduced in-class drilling and grading demands. This strategy has proven particularly effective for tasks or topics that rely on a student's ability to use or recall multiple pieces of information. A quiz that asks students, for example, to analyze specific tendency tones in a four-part chorale and indicate the typical resolution by specifying the location, voice part, and letter names involved, helps the student to prepare for more nuanced (and often more interesting) discussions of voice-leading during class time. These discussions are now more meaningful and efficient because students can answer and build upon foundational questions with less cognitive load.

Our experience with this course design has also resulted in an increase in exploring peer learning. We now devote in-class time for students to begin certain assignments in small groups, particularly when topics are first being introduced. This has resulted in some students developing tutoring and teaching skills while other, more hesitant students, begin to ask questions within their group that they may have been reluctant to ask in front of the entire class. We have also explored peer learning between different departments in our upper-level courses. For example, students in an undergraduate seminar completed a final project with visual art majors in a fibers course where the musicians collaborated with the artists to weave fabric designs that represented details of the music-students' analyses. This allowed students to develop

communication skills about their work but required them to engage with the public music-theory practice of speaking with non-specialists about intricate topics.

Although there currently exist several pre-packaged quiz resources that can be coordinated with common LMS environments, we find their rigidity frustrating, especially for more advanced concepts.²⁵ Developing a body of online quiz materials enables instructors to customize learning to their specifications while allowing them to still take advantage of the online space. We suggest readers explore ways to use their LMSs to solve problems that they are particularly concerned with where paper assignments have not yielded satisfactory results. For example, instead of growing more and more frustrated with students for making voice-leading errors like unresolved leading tones, focus on designing a repeatable quiz that targets that problem in particular and prevents students from proceeding until the concept has been internalized. We also recommend that readers attempt to create high-level materials that are not commercially available to enhance learning when covering more complex topics in upper-level theory courses.

We have only begun to explore the potential benefits of inter-university collaborations in music-theory courses. In our iteration, we were most inspired by watching students think more like adult musicians when preparing their videos for unknown peers from another university. They wanted to represent themselves and their institutions well and they worked harder to achieve that goal. Increasing student motivation is an ongoing but worthy mission, one whose success leads to increased student engagement and performance.

25 One particularly well-constructed example is Norton's InQuizitive program that is available with several popular theory textbooks. We have, and we continue, to use InQuizitive in our core theory classes, but we also find it useful to supplement their materials with our own quizzes. We tend not to employ InQuizitive in upper-level music theory courses whose topics are more specialized.

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FORM AND ANALYSIS	NAME _____
Optional Reading Guide: Hybrid Themes (Caplin, Chapter 4)	
Instructions: - Fill in the blanks below using the text from Chapter 4 of Caplin's book. Hint: Fill-in-the-blank questions are typically modified quotes from the text.	
1. Some themes are _____ and must be treated on a completely _____ basis. Many other [themes] resemble in some ways the two fundamental theme types: these are _____ themes.	
The Basics (pages 99-104):	
1. What does Caplin call the theme type represented by Example 4.1?	
2. Three hybrid types other than the one in Ex. 4.1 are built using combinations of _____, _____, _____, and _____ phrase functions.	
a. The initiating function of _____ is not used in hybrid themes. Instead, a new phrase function, the _____, finds a place at the beginning of two of the hybrid theme types.	
3. List the four main types of hybrids: - a. - b. - c. - d.	
4. How does Caplin differentiate between the Antecedent + Continuation hybrid and the Antecedent + Cadential hybrid?	
5. How does a compound basic idea differ from an antecedent?	
6. The hybrid type that most closely resembles a sentence is the: _____	
OPTIONAL READING GUIDE: HYBRID THEMES	

FORM AND ANALYSIS	NAME _____						
7. The hybrid type that most closely resembles a period is the: _____ 8. Which hybrid type occurs frequently in the repertory (p. 101–102)? 9. Which hybrid type occurs infrequently (p. 103)? 10. Which phrase functions belong to which temporal categories? List them in the chart below. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 20%; padding: 5px;">Initiating</td> <td style="height: 20px;"></td> </tr> <tr> <td style="padding: 5px;">Medial</td> <td style="height: 20px;"></td> </tr> <tr> <td style="padding: 5px;">Concluding</td> <td style="height: 20px;"></td> </tr> </table>		Initiating		Medial		Concluding	
Initiating							
Medial							
Concluding							
11. We can see that the conventional theme types (_____, _____, _____) bring a syntactically appropriate combination of functions; that is, the logical ordering of _____ of beginning, being-in-the-middle, and ending are _____ by all of these themes. 12. Provide an example of a nonsyntactical or illogical combination of phrase functions:							
Two Case Studies and Example 4.15 (p. 115): 1. Do the four main hybrid types cover all possible combinations of sentence and period elements? 2. Example 4.15 seems like a standard 8-m. _____, but if one looks closer, one finds that there are characteristics of a _____ phrase in the opening four measures. 3. Does Caplin's theory force one to make a choice between the two phrase-functions presented in question 2?							
Analytical complexity (p. 117): 1. What is the danger Caplin warns us about in this paragraph?							
OPTIONAL READING GUIDE: HYBRID THEMES							

FORM AND ANALYSIS	NAME _____
Analysis of Hybrid Forms	
For <i>each</i> excerpt below, please do the following: ☐ Listen to each excerpt before writing anything down (recordings are on Caplin's website) - Your analysis should be modeled upon Caplin's Exx. 4.1, 4.2, 4.3, or 4.4, depending on the hybrid you find (pp. 99–103) ☐ Label the key ☐ Label all cadences ☐ Use square brackets above the staff to indicate grouping units ☐ Label each grouping unit using appropriate terminology ☐ Provide a complete, two-level harmonic analysis ☐ Complete a form diagram using the graphing paper posted on our course website ○ Model yours on the completed example posted on the course website	
1. Example 4.17. Haydn, Symphony No. 98, iv, mm. 1–8. 	
HYBRID FORMS 1	
FORM AND ANALYSIS	NAME _____
2. Example 4.20. Beethoven, Violin Sonata Op. 12, No. 3, ii, mm. 1–8. 	
HYBRID FORMS 2	

FORM AND ANALYSIS		NAME _____
3. Example 4.21. Beethoven, Violin Sonata Op. 30, No. 2, iii, mm. 1–8.		
HYBRID FORMS		3

Appendix 2 (cont'd)
Sample Homework Assignment.

FORM AND ANALYSIS		NAME _____
Final Project Student Evaluation Form		
Lecturer's name: _____		
Lecturer's piece: _____		
Did you observe the following features in the lecturer's video:		
1. An overview of the large-scale form of the piece	Yes	No
2. A discussion of the phrase-level form of each section of the piece	Yes	No
3. A discussion of the main themes and motives in the piece	Yes	No
4. A discussion of an essentially normative Caplin theme type	Yes	No
5. A discussion of an essentially non-normative Caplin theme type	Yes	No
6. A discussion of at least one remarkable harmonic event	Yes	No
7. Performance recommendations based on the analysis	Yes	No
8. A comparison of at least two recordings in relation to the analysis	Yes	No
9. A discussion of what the lecturer found to be the most striking feature of the piece	Yes	No
10. A discussion of what the author likes and dislikes about the piece	Yes	No
FINAL PROJECT STUDENT EVALUATION FORM		1

Appendix 3
Student Evaluation Form.

FORM AND ANALYSIS	NAME _____	
Please rate the following characteristics of the video lecture on a scale from 1–10 where 10 is excellent and 1 is poor.		
1. The degree to which the lecturer integrated audio examples in the presentation		
Poor 1	Neutral 5	Excellent 10
2	3	4
2. The quality of the lecturer's examples (score excerpts, diagrams, etc.)		
Poor 1	Neutral 5	Excellent 10
2	3	4
3. The timing of the video lecture (consider: did it move too fast? Too slow? Just right?)		
Poor 1	Neutral 5	Excellent 10
2	3	4
4. The degree to which one could clearly hear the speaker's voice		
Poor 1	Neutral 5	Excellent 10
2	3	4
5. The level of detail covered during the analysis		
Poor 1	Neutral 5	Excellent 10
2	3	4
6. The clarity with which the lecturer presented their insights		
Poor 1	Neutral 5	Excellent 10
2	3	4
7. The quality of the lecturer's insights		
Poor 1	Neutral 5	Excellent 10
2	3	4

FINAL PROJECT STUDENT EVALUATION FORM 2

Appendix 3 (cont'd)
Student Evaluation Form.

FORM AND ANALYSIS	NAME _____
Please respond to the following questions or statements regarding the video lecture: 1. What did you like best about this video lecture? 2. What aspect of the video lecture could the lecturer improve if they were to produce another video? 3. Identify and discuss one thing you learned from the video lecture that you did not know before. 4. Were there any analytical points with which you disagreed or were there places where an alternative interpretation might exist? If so, please indicate in what way you disagree or what the alternative interpretation might be. 5. Were there any points you felt could have been expanded or contracted in the video? If so, please explain. 6. Do you have any additional comments/questions/suggestions for the lecturer? If so, please discuss.	
FINAL PROJECT STUDENT EVALUATION FORM	
3	

Form and Analysis
Final Project Assignment

Lecturer's name: _____

Lecturer's piece: _____

Total points: ____/60

1. What is the overall form of this piece? (2)
2. What theme type is used in the primary theme? (2)
3. To what key does the transition modulate? (2)
4. What two features of the medial caesura (MC) clarify that it is present? (4)
5. What two theme types are present in the secondary theme? (4)
6. What is the name of the short section that follows the EEC in the exposition? (2)
7. Does the development utilize pre-core/core technique? Why or why not? (4)
8. Which two development keys are present? (4)
9. Briefly describe each of the three main motives in this piece. (6)
10. Which two harmonies are stretched in the primary theme? (4)

Appendix 4

Sample Student Assignment and Grading Key.

Form and Analysis
Final Project Assignment

11. What is present in the first theme type of the secondary theme that makes it slightly unconventional? (4)

12. Name one possible interpretation of this unconventional element. (2)

13. In what major section of the piece does a similarly unconventional element occur? (2)

14. Fill in the blank: The second major motive in this piece is used most often in _____ and in _____ material as a means of _____ energy and using _____ harmonic motion to drive toward a _____. (4)

15. In what section of the piece is the third major motive found? (2)

16. What is surprising about the MC? (2)

17. What technique is used to evade a cadence in the second phrase of the secondary theme? (2)

18. List two performance recommendations discussed in the presentation. (4)

19. List two striking features of the piece discussed in the presentation. (4)

Form and Analysis
Final Project Assignment, Answer Key

Lecturer's name: _____

Lecturer's piece: _____ Total points: ____/60

1. What is the overall form of this piece? (2)

Sonata form

2. What theme type is used in the primary theme? (2)

Sentence

3. To what key does the transition modulate? (2)

A major (V)

4. What two features of the medial caesura (MC) clarify that it is present? (4)

The word *abnehmend* (decreasing) and the dominant lock in the bass.

5. What two theme types are present in the secondary theme? (4)

CBI + continuation and sentence.

6. What is the name of the short section that follows the EEC in the exposition? (2)

Codetta

7. Does the development utilize pre-core/core technique? Why or why not? (4)

No because there is no pre-core present, only a core that is repeated in sequence.

8. Which two development keys are present? (4)

E minor (ii) and a minor (v).

9. Briefly describe each of the three main motives in this piece. (6)

The first motive consists of a quarter/sixteenth tie followed by three sixteenths, which form a double neighbor figure. The second motive consists of a dotted quarter note followed by an ascending or descending eighth note scale. The third motive consists of a legato melody made up of quarter and half notes in varying contours.

10. Which two harmonies are stretched in the primary theme? (4)

Pre-dominant (V7/V) and dominant (V) harmonies.

Appendix 4 (cont'd)

Sample Student Assignment and Grading Key.

Form and Analysis
Final Project Assignment, Answer Key

11. What is present in the first theme type of the secondary theme that makes it slightly unconventional? (4)

A two-measure unit that seems to evoke the contrasting idea that does not use fragmentation, increased surface rhythm, or accelerated harmonic motion.

12. Name one possible interpretation of this unconventional element. (2)

Schumann sought to further enforce the presence of secondary theme material/He wanted to keep the legato texture of the secondary melody present in order to create juxtaposition with the rather frantic nature of the piece's main, sixteenth-note motive/The melody of this 2-measure unit leads into the melody of the cadential idea and serves to drive the phrase to its cadence.

13. In what major section of the piece does a similarly unconventional element occur? (2)

The development.

14. Fill in the blank: The second major motive in this piece is used most often in fragmentation and in transitional material as a means of increasing energy and using rapid harmonic motion to drive toward a cadence. (4)

15. In what section of the piece is the third major motive found? (2)

The secondary theme.

16. What is surprising about the MC? (2)

It contains harmonic shifts.

17. What technique is used to evade a cadence in the second phrase of the secondary theme? (2)

One more time.

18. List two performance recommendations discussed in the presentation. (4)

Use this awareness of the piece's three main motives to accentuate them when appropriate. Make a decision about your own interpretation of the surprising and unusual features of this piece.

19. List two striking features of the piece discussed in the presentation. (4)

The relentless use of the sixteenth-note motive. The evading of cadences.

Counterpoint is a Piece of Cake: Renaissance Improvisation in a Modern University Course

(In honorem Petri N. Sutoris)

FRAUKE JÜRGENSEN

Renaissance counterpoint was for a long time a mainstay of university and conservatoire music degrees, aimed primarily at the composer and musicologist: a time-intensive subject, it has recently fallen out of favor in increasingly broad curricula with a more diverse student body. Traditionally, counterpoint was taught using rule-based methods that were developed long after the musical style itself. Peter Schubert's textbook *Modal Counterpoint, Renaissance Style* (2005) was seminal in returning to the theoretical and pedagogical sources of the period, although the underlying approach was still modern, species-based. More recent research (including Schubert) has revealed pedagogical approaches of the Renaissance, which were based in improvisation techniques that were taught to children. These techniques are also time-intensive, limiting their wholesale applicability in a short course in the context of a modern university. This article demonstrates how selected exercises based on historical improvisation techniques can be blended with a species-based approach to address a fundamental problem encountered in a time-constrained course: familiarity with the stylistic treatment of consonance and dissonance.



Renaissance counterpoint is a skill originally taught to children and honed over years of daily exposure and practice. Today, taught in the context of a general undergraduate music program, it is frequently subject to the strict time limitations that are so often encountered in an increasingly broadened curriculum. At the University of Aberdeen, I incorporate recent research about historical improvisation practice to overcome this constraint: an understanding of such techniques helps students find short cuts in the mechanics of writing “correct” counterpoint, and allows them to focus more on larger-scale aspects of composing.

Peter Schubert's influence during my doctoral studies went far beyond his roles as supervisor and teacher of graduate seminars in the history of music theory. My formative years as a music lecturer were for the most part under his guidance, initially as a teaching assistant for the core theory curriculum at McGill University, and then, with increasing independence, as course instructor for upper-level courses in Renaissance and Baroque counterpoint. During this period, I served as beta-tester for his methodologically innovative counterpoint textbooks, which are infused with one of the most important lessons I learned from him: enormous respect for the

intellect and subtlety of the musicians of the past. “Always begin from the assumption that they knew what they were doing,” was the take-away message, which I have tried to take to heart in my own approach to teaching. This article is written in his honor.

In 2009, I introduced a fourth-year elective course in Renaissance Counterpoint to the music curriculum at the University of Aberdeen. Aberdeen offers undergraduate music degrees in Single Honors (a general degree that allows students to chart their own path amid options in performance, composition, and musicology), Education (graduates qualify as secondary school music teachers) and Community Music. Over the past decade, our core music theory and history curriculum has become whittled down from four semesters to two, as a perceived need to build a broader skill base and cater for a greater variety of backgrounds is balanced against a limited number of available contact hours. From their second year, students have an increasing amount of choice, where one-semester elective courses tend to be created around the academic staff’s areas of interest. The spread of electives is negotiated collectively: as long as there is a fairly broad range of choices, individual lecturers have considerable freedom in proposing new courses. When I first proposed the course, there was no particular idea that it would slot into a well-reasoned linear curriculum (the emphasis being on “options”): essentially, I wanted to teach counterpoint, and nobody stopped me.

Why teach Renaissance counterpoint today, and what is the point of revisiting 500-year-old techniques in order to do so? Counterpoint, in the larger sense of a systematization of the tensions between the horizontal and vertical, or melodic and harmonic aspects of music, is both fundamental and unique to the development of Western European music and its descendants. The problems faced by composers today are still largely the same: how to invent, develop, and structure material, how to create a hierarchy of relationships among different features and layers of the music, and how to be answerable to pre-compositional constraints. Counterpoint can teach awareness of these issues, and facilitates student experimentation through addressing them in a highly controlled environment. Beyond its relevance to composers, analysts, and musicologists, however, counterpoint is also an essential part of the picture for the historically informed performer of Renaissance music: recognizing it fundamentally as an improvised art allows her to understand the music differently and facilitates the process of adding or reconstructing voices.

The course has always been popular, but its application to other areas of the students’ studies had to be teased out over time. One semester is a very short time to teach counterpoint purely as historical compositional technique, let alone provide all the context that will allow students to recognize transferrable skills and concepts. I

will describe how my own search for effective ways to teach Renaissance counterpoint in this time-constrained environment has led me to incorporate improvisation techniques. Even though at first this might seem counter-intuitively time-consuming, this approach allows students with very different goals to emerge from my course with the tools to further their learning in whichever direction they desire—whether this is as a modern composer, a school music teacher wanting a deeper contextual understanding of how music has been taught in the past, or as a historically-informed performing musician aiming to reconstruct historical techniques. In this course, I integrate new and old approaches to teaching, where the “old” approaches are in fact the ones informed by modern scholarship.

Recent research, including that of Schubert and some of his students, has uncovered sixteenth-century improvisation techniques, and we are still re-evaluating both their role in Renaissance composition pedagogy and the relationship between improvisation and composition.¹ As Schubert argues, studying historical improvisation allows us to spot such techniques when they appear in notated repertoire, and understanding their scope leads us to re-evaluate our notion of “learnèd” (emphasis on the final syllable mine) counterpoint, a term sometimes used in later musical convention with a certain degree of contempt.² As an undergraduate, having learned that counterpoint improvisation was an essential skill in the past, I was enormously frustrated by what I perceived as a lack of systematic method for teaching this skill in the present. I thought that perhaps I was just incompetent, since I couldn’t quite manage to get myself to improvise using the enormous tangle of counterpoint rules with which I had been presented. How could I get to the point where, as Schubert promised, I understood counterpoint well enough that the subtler details would be “a piece of cake”?³

Thomas Christensen, arguing for greater self-awareness on the part of historians of music theory, sets up a false dichotomy (which he acknowledges himself) of “presentist” and “historicist” approaches.⁴ In a nutshell, he argues that the “presentist” approach of using contemporary tools and modes of classification for the music of the past is “myopic,” because our present concerns as theorists and analysis are “parochial,” that is, not really any more universal than those of any other

1 See, for example, Wegman (1996); Schubert (2002); Motuz (2017); Schubert (2014); and Wegman (2014).

2 Schubert (2014, 29).

3 Schubert (2014, 30).

4 Christensen (1993).

time or place.⁵ The “historicist” approach, on the other hand, he calls “naïve,” since the historicist ideal of telling history “as it really was” is unattainable.⁶ Christensen suggests using hermeneutics to overcome this problem, creating a “dialogue with the past,” and reconstructing the “cultural web” of the past while at the same time remembering that one is caught in one’s own cultural web.⁷ His exhortations that “historical understanding of theory requires present application” and that “empirical claims and the heuristic value of a theory” must be tested in practice are especially relevant here.⁸ Schubert himself was entangled in a similar discussion with Margaret Bent, precipitated by his article, “Authentic Analysis.”⁹ He argues that theorists may use contemporary tools and methods rather than restrict themselves to the tools available to a theorist of a particular period. Modern techniques can also lead to valid insights, and the claim of authenticity in analysis is just as naïve as the claim of authenticity in performance (which term the Historically Informed Performance community has long since ceased to use).¹⁰ Although this point of view would seem to align him more closely with Christensen’s “presentists” (indeed how it appears to have been read by Bent), in fact, his counterpoint textbooks are really that happy “dialogue with the past,” which Christensen encourages us to seek. It is a testament to Schubert’s deeply thoughtful approach that the continuation of that dialogue allows us to adjust our ways of using his textbooks in response to our evolving understanding of historical pedagogy.¹¹

Modal Counterpoint, Renaissance Style and Baroque Counterpoint (the latter co-authored with Christoph Neidhöfer) are still, well over a decade since their first publication, the most innovative English-language counterpoint textbooks on the market for general undergraduate teaching.¹² Both texts are grounded in theoretical treatises of their respective periods, translating them for a modern English-speaking

5 Ibid., 14.

6 Ibid., 22–23.

7 Ibid., 27–28.

8 Ibid., 32.

9 Schubert (1994). See also Bent (1998).

10 Schubert (1994, 17–18).

11 Wason (2018) offers a wide range of options for instructors who wish to integrate topics from the history of theory into undergraduate curricula.

12 Schubert (2008); Schubert and Neidhöfer (2006).

undergraduate audience. They use musical examples from the treatises and from a wide range of composers, going well beyond traditional “Palestrina”- and “Bach”-heavy models. The pedagogical methods espoused and extensive exercises provided are based on historical examples, with adaptations for the modern curriculum. *Modal Counterpoint* begins with a species approach. For each chapter, the first set of exercises in the series is concerned with pairs of successive notes and a method for working out all the possibilities for composing a counterpoint against them, given a starting interval between the two voices (see Example 1).¹³

All possible notes
within given range

Cantus firmus

Example 1

To explain his “A”-series exercises, Schubert shows how to work out all possible counterpoints above a *cantus firmus* ascending by third, categorized by starting interval (here, a fifth and a sixth). Counterpoints which contravene a voice-leading rule are to be discarded: these are marked with “X.”

This is, on the surface, similar to the catalogues of interval successions provided in period treatises, most famously in Tinctoris’s *Liber de arte contrapuncti*, as we shall see later. Unlike *Modal Counterpoint*, however, Tinctoris presents these interval pairs with the intention that a student should practice them orally and build up an unconscious vocabulary: his goal is improvising against a *cantus firmus*.¹⁴ In most modern music departments, it is not feasible for students to spend as much time

¹³ Excerpt from Schubert (2008, 29), Examples 3-1b and 3-1c.

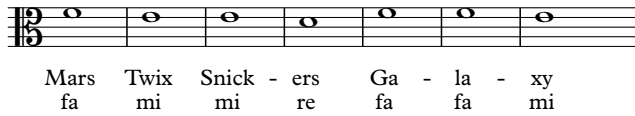
¹⁴ This point is made by many including Schubert, but Motuz (2017) works out the implications of Tinctoris’s method in light of modern insights into cognition (especially memory), and adapts the principles for modern practice, as discussed later in this article.

rigorously learning improvisation skills as did young boys in a choir school of the Renaissance. The modern way of teaching counterpoint relies heavily on the learning of rules, which students apply in a series of progressively more difficult written exercises. The historical approach is based more on the training of procedural memory through the accumulation of a vocabulary of stylistically correct musical gestures.¹⁵ Schubert's approach, fitting into a modern curriculum with time-limited courses, remains modern, rule-based and systematic, but he acknowledges that this is not really historical. Rather, it is historically informed, giving students a window into what would be possible, given the time to devote to immersion.

When I first began teaching using Schubert's textbooks as a Ph.D. student at McGill University, I followed the prescribed method closely. At the time, music students at McGill took a mandatory semester of two-voice modal counterpoint in their first year, which took them to Chapter 12 ("The Imitative Duo") of *Modal Counterpoint*. In the third year, an elective course was offered, divided into two semesters. The first semester took students to the end of Chapter 16, which is the "Benedictus Project" in three-voice imitative counterpoint. The second semester built on this with more advanced techniques, culminating in composition of a Mass movement or motet for four or five voices. I took the emphasis on recognizing the importance of improvisation as inspiration to create additional exercises. For example, Chapter 8 introduces the idea of counterpoint with the repetition of a motive.¹⁶ Banchieri's *Contrapunto bestiale alla mente* ("Improvised animal counterpoint") uses musically notated animal noises against a somewhat rude *cantus firmus* to demonstrate this principle. As an extension of the interval-pair exercises, I had the students determine which animal noises would work against each motion of the *cantus firmus*, and asked them to practice deploying these animal noises against a different *cantus firmus* (I will discuss this later in Example 4). Using one of Schubert's favorite tricks for demonstrating counterpoint improvisation techniques, the *soggetto cavato delle vocale*, we generated new *cantus firmi* from the vowels of Italian foods, chocolate bars, or lists of animal names (Example 2). On one memorable occasion, the third-year counterpoint class occupied the hallway outside Schubert's door in order to indulge in a spot of *cantare super librum*, using animal noises!

15 Busse Berger (2005) was the first to explore on a large scale the compatibility of Medieval and Renaissance techniques for memorization and improvisation, with modern insights from cognitive science into the workings of memory.

16 Schubert (2002, 511) refers to this type of counterpoint as *contraponto fugato*, pointing out that for Tinctoris, the term *fuga* referred to the repetition of an idea, and not specifically to the imitation of one voice by another in the modern sense.



Example 2

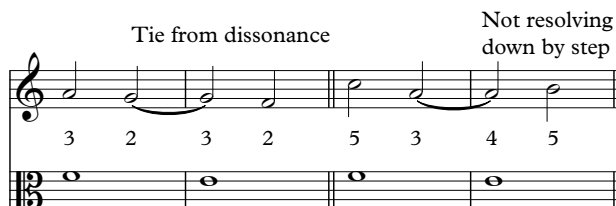
The vowels in a list of chocolate bars yield solmization syllables.

For the counterpoint elective at Aberdeen, I still use *Modal Counterpoint* as the textbook, but the time constraints (20 lectures) mean that we cannot work through all the exercises as they are presented in the book. Instead, we gallop through the species at the rate of two each week, and the students receive a somewhat simplified summary of the “rules.” They are encouraged to go to the textbook for more detailed reading and extra exercises, but they hand in only one written exercise each week, in which they write one line above and one line below a given *cantus firmus* (based on Schubert’s “D” series). Later in the course, written exercises include writing a first-species canon, then elaborating it with divisions *à la* Montanos, and writing a canon against a *cantus firmus*.¹⁷ The writing skills portion of the course is supported by the analysis of Renaissance compositions, where I draw on a wide range of composers. Each week, one piece is chosen to showcase a particular compositional technique or feature. For example, the Sanctus and Agnus Dei of Josquin’s *Missa Hercules Dux Ferrarie* (the *soggetto cavato* composition *par excellence*) are analyzed with respect to motivic repetition and canon, and Palestrina’s *Sicut cervus* (familiar to many of my students from their choir experience) is used to study the distribution of rhythm in a polyphonic context. I collect and correct weekly assignments, and we go over the most common mistakes during the next lecture. To prepare students for the final assignment of a motet composition, I offer individual tutorial sessions where students bring drafts of their work for discussion, and I identify egregious errors and help them find a path to solve them through guiding questions.

Thus far, the approach described is modern in essence. The speed at which we have to cover the material poses particular challenges, however: the students simply do not have enough time to become sufficiently immersed in Renaissance style to develop a reliable ear (i.e., familiarity) for acceptable and unacceptable sounds. From their own musical practice, they tend to accept a far greater range of intervals as consonant. They do not have an inner feel for the inevitable pull to a downward

¹⁷ The idea of elaborating a first-species canon to become a florid canon can be found in Montanos (1592), and is illustrated in Schubert (2002, 518).

resolution of a suspension, and arrival on unprepared dissonances does not tend to bother them overmuch. As a result, written exercises in previous years of this course were full of mistakes such as “backwards” suspensions (see Example 3). Accented dissonant passing notes and other unprepared dissonances also abounded, and I found myself having to loosen the marking criteria substantially, shifting the emphasis from evaluating ‘hard’ (contrapuntal) and ‘soft’ (stylistic) errors to other compositional parameters, such as sensitive text setting or effective use of structure.



Example 3

Two very common student errors in fourth-species counterpoint.

Elsewhere, I explore the possibility that it might not take as long as one might think to build students’ familiarity with, and thus unconscious desire to conform to, a particular compositional style.¹⁸ This familiarity can be built through passive exposure, much in the way that a person exposed to many movies with a certain type of neo-Romantic film score might be primed to respond similarly to such scores in other movies. In order to create this passive exposure to Renaissance music, I suggested that the students assemble playlists of ca. 30 minutes, to which they could listen while doing other things (for example, while walking to the university), but preferably shortly before working on a written counterpoint exercise. I also turned to historical-improvisation-based methods, encouraging students to sing and/or play. Both of these complementary methods offer the extra benefits of training procedural memory in addition to the conventional rules- and analysis-based training of declarative memory, the idea being that internalizing counterpoint to the point of unconscious competence would surely lead to fewer errors than laboriously working out solutions by trying to conform to rules.¹⁹

¹⁸ Jürgensen, Pearson, and Knopke (2014–2016).

¹⁹ Motuz (2017, 79–85) discusses the functions of procedural and declarative memory in relation to improvisation and composition, as well as the notion that learning by trial and error, e.g. “does this thing I have written conform to the rules I have been taught?”, will lead to the practicing and embedding of errors.

I experimented with various ways of incorporating improvisation for several years. I revisited the Banchieri animal counterpoint, and tried to get students to improvise canons according to the *stretto fuga* method described by John Milsom.²⁰ Another problem, however, soon surfaced: many students are very reluctant to sing in class, and especially to make mistakes in front of others. I asked Schubert how he addressed this in his attempts to incorporate a degree of improvisation into classes, and he advised that singing needs to be established as a habit from the very beginning of the course.²¹ I now designate the first session of the course as an “improv session,” and use three specific exercises in first-species, note-against-note counterpoint to start things off on a “good note.”

First, we analyze Banchieri’s animal counterpoint, and recognize several important features: each animal has a motive of only one or two notes, which is never transposed. Given the number of consonances available, each motive can only be deployed against a very limited number of *cantus firmus* notes, as shown in Example 4. The cat (as befits this particular species) breaks this pattern, adjusting its motive freely to fit with whatever the *cantus firmus* is doing: with an “If I fits, I sits” cat joke, I have introduced the topic of motivic variation in the first half hour of the course. We recognize the identity of the cat motive by the emphasis on specific features within a context (jagged meowing contour against an otherwise static background), which can lead to an aside about the question of similarity, approximate pattern matching, and edit distance, for those interested in music information retrieval. Veering away from wandering too far into the realm of machine learning, we try out the motives against the existing *cantus firmus*, looking for alternative placements to those used by Banchieri. Then, we apply them to new *cantus firmi* generated by the *soggetto cavato delle vocale* method. I encourage—by example—the students to make the animal sounds very silly, and after a few embarrassed minutes, this usually leads to enthusiastic

20 Milsom (2005). By *stretto fuga*, Milsom means a canon after one time unit. For such canons, a simple rule can be described such that if the leader keeps this one rule in mind, then the follower will be correct. In Example 6, we will see that for a canon at the unison, the leader may move by odd-numbered intervals up or down (unison, third, fifth). Schubert (2014, 14) mentions learning this technique from Milsom in an Indian restaurant in Montréal, and I learned it at the very same occasion (I probably ate *muttar paneer*). Milsom and Schubert have found the same technique described in several contemporaneous treatises.

21 Schubert has made video lessons for YouTube, in which he demonstrates various techniques with the help of a student. The first can be accessed at “Improvising a canon #1: at the 5th above,” YouTube Video, 4:22, 13.3.2012, <https://www.youtube.com/watch?v=no1J393WpKk> [accessed 6 December 2019].

participation (I reserve the technically more complex cat motive for myself, which generally causes amusement). Then, it is suddenly not a far stretch to make up new animals—a donkey is especially fun—and try to deploy these as well. If there is no strong bass voice in the group, it is easy enough to play the *cantus firmus* on the piano, while simultaneously meowing like a cat.

The image shows musical notation for five animal motives. Each motive consists of a melody in the treble clef and a harmonic accompaniment in the bass clef. The lyrics are written below the treble clef.

- Dog:** Melody: quarter note G4, quarter note A4, quarter note B4, quarter note A4. Lyrics: ba-bau.
- Owl:** Melody: half note G4, half note A4. Lyrics: chiù chiù.
- Cuckoo:** Melody: quarter note G4, quarter note A4, quarter note B4, quarter note A4. Lyrics: cu-cù cu - cù.
- Cat:** Melody: quarter note G4, quarter note A4, quarter note B4, quarter note A4, quarter note G4, quarter note F4, quarter note E4, quarter note D4. Lyrics: gna-gna-ra-gna-u.
- Donkey:** Melody: quarter note G4, quarter note A4, quarter note B4, quarter note A4, quarter note G4, quarter note F4, quarter note E4, quarter note D4. Lyrics: gna-gna-ra-gna-u.

Example 4

Animal motives against all possible *cantus-firmus* notes. The dog has only four possibilities for barking. The owl also has four possibilities, but is willing to transpose its hoot from G to A, so can sing over any *cantus firmus* note: it just has to work out which of its two notes is correct. The cuckoo can sing over one note (three possibilities) or over two notes (four each): it requires more cognitive effort, but can still work it out in real time, even without having practiced the exercises described later. The cat...can do anything!

The second exercise is a type of *gymel* described by Guilielmus Monachus in the late fifteenth century.²² I preface this by having the students sing a short *cantus firmus* segment in *fauxbourdon* (parallel $\frac{6}{3}$ sonorities), which they find quite simple (see Example 5). Then, we take the same tenor, again in parallel 6ths with the soprano, add a bass that alternates thirds and fifths below the tenor, and finally add an alto that alternates thirds and fourths above the tenor. To make this exercise work for beginners, it is essential that the *cantus firmus* is quite short and works without any advanced adjustments in order to land on a cadence. It is also essential that the lecturer has practiced it well beforehand, to be able to support especially the bass and the alto as needed (I make sure I can play the bass while singing the alto before the

22 For a more detailed exposition of this method, from *De preceptis artis musicae*, see Motuz (2017, 78).

lecture). The object here is not to train students to be experts in *gymel* in the space of 20 minutes, but to lead them to the realization that, with only a few minutes' practice daily, they *could* be experts at it in a surprisingly short period of time—and later in the course, analysis of motets will show this technique deployed in many places.

Tenor: Christ lag in Todesbanden

The image displays two systems of musical notation for the tenor part of the hymn 'Christ lag in Todesbanden'. Each system consists of a tenor staff (treble clef) and a bass staff (bass clef). Below the bass staff, figured bass notation is provided for each measure. The first system has eight measures, and the second system has seven measures. The figures are as follows:

Measure	Figured Bass
1	6/3
2	6/3
3	6/3
4	6/3
5	6/3
6	6/3
7	#6/3
8	8/5
9	4/3
10	4/3
11	4/3
12	4/3
13	4/3
14	4/3
15	4/3
16	5/3
17	5/3
18	5/3
19	5/3
20	5/3
21	5/3
22	5/3

Example 5

First, *fauxbourdon*, where the cadence offers an opportunity to speak about double leading tones in the 15th century (we add a D#). Second, *gymel*, where this *cantus firmus* segment is constructed so that the bass arrives on a fifth below the tenor on the penultimate note, making a cadence easy to achieve.

The third exercise is John Milsom's *stretto fuga*. I begin with a first-species canon at the unison, where the rule is that the leader may move by melodic unison, third, or fifth (basically noodling around triads). This is again not very difficult for the students, since they, as a group, simply have to follow one note later (see Example 6). We then repeat the same canon (I keep it short, so that I can remember what I sang) with some simple divisions on a few of the notes. This effectively introduces the "species" concept (second and third species), and how species can be combined to yield florid counterpoint. Then, based on the vocal ranges available within the class, I introduce either a canon at the fifth above, or at the fifth below, and explain the rules for these.²³ The take-home assignment is for students to get together in pairs to try out the canon exercise (they are provided a chart of different intervals of imitation to try). We re-visit this assignment later in the course, at which point the students realize

23 Cumming (2013) provides a chart showing the rules for canons at various intervals; see her Table 1.

that it would have been useful to have practiced more. But this is the point: they now understand a little of what it might have been like to learn these skills as a child, and consequently, to lose a little of the awe of that “learnèd,” “difficult” counterpoint. The step to “invertible canon at the twelfth” suddenly seems much smaller.

Stretto canon at the unison

Stretto canon at the unison with simple division

Example 6

A short stretto canon, without a cadence, and the same canon, elaborated. The (x) indicates a diminished 2–1 suspension, which is questionable in the strictest counterpoint rules framework, but which can be used to talk about the slightly greater license accorded to improvisations.

The course tends to enroll between ten and twenty students. Like many music programs, ours contains a wide spread of voices and student interests, from performance to composition to musicology. Thus there is no guarantee that any given cohort will contain a good number of confident singers, let alone tenors and basses. This challenge of accommodating a class that lacks confident singers has led to a few practical solutions. The first was already mentioned: silly animal sounds to help to lighten the mood, and to use Banchieri’s animals, which are in useful ranges but may also be transposed with no ill effect (the treble owl can easily become a Great Horned Owl by going down an octave, and the tenor dog becomes a chihuahua by going up an octave). Second, the lecturer can prepare *cantus firmi* for the *gymel* exercise to work in a variety of ranges, through judicious transposition (and by being prepared to play/sing). Third, a plant or two—a more experienced student or helpful staff member that has prepared the exercise but is willing to pretend that they have never seen it

before—is a useful addition to the first class.

After establishing the importance of improvisation in this first session, how do we then incorporate it into the rest of the course? Again, the lack of time is the principal difficulty: putting in “ten thousand hours” is not feasible in one semester!

At a workshop, Catherine Motuz (another student of Peter Schubert) introduced me to her exercises intended for the practice of interval successions such as those catalogued by Tinctoris.²⁴ In short, she devised *cantus firmi* such that pairs of “consonant intervals and the voice-leading pattern that connects them” could be practiced, pair by pair, gradually increasing the vocabulary of interval pairs to about 60.²⁵ Example 7 illustrates a *cantus-firmus* segment that I designed to drill one such pair (fifths and sixths), connected by one such voice-leading pattern (oblique motion by step). Motuz’s method allows students to practice against *cantus firmi* much sooner than allowed by simply drilling interval pairs by repetition—the method implied by Tinctoris. Since the timeframe of workshops generally does not allow the introduction of Guidonian solmization as well, which would be a period-appropriate way to give extra feedback, Motuz has her students sing the numbers of the intervals instead, which she argues helps students to know when they have gone astray, especially when singing in a group.²⁶ I found this approach far less painful and far more intuitive than the traditional modern methods by which I was taught, and discovered to my delight that it was, indeed, a “piece of cake.” Motuz uses her exercises in the context of extra-curricular workshops and summer courses, rather than as part of a regular undergraduate course. She had found the historical approach of training procedural memory through repetition of improvisation exercises to be more time-consuming than modern degree programs allow: rather than the single course generally allotted to the subject, she thought that it would take about two years of regular practice to reach the same level of skill in written counterpoint (although the traditional modern approach yields no improvisatory skill at all).²⁷

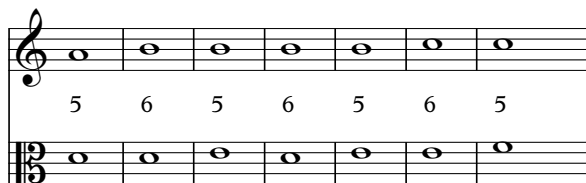
The oft-mentioned time constraints thus prevented me from whole-sale implementation of these methods. The students do not emerge from my course as accomplished historical improvisers (although they will be fairly good at first species).

24 Motuz (2017, 87ff).

25 Ibid., 87–88.

26 Ibid., 96. Smith, Keller, and Haun (2019) investigate the notion of using solmization syllables to receive physical feedback when learning to sing semitones of various sizes.

27 Motuz (2017, 89ff.)



Example 7

A *cantus-firmus* segment designed so that one voice moves by step, whereas the other is stationary (oblique motion). Fifths and sixths are the only consonant interval pair that allow oblique motion by step.

However, they will have been sign-posted to the resources they can access to increase their theoretical and analytical knowledge, and if students wish to continue to learn to improvise in this style, they have the tools to do it by themselves. Instead, these methods are used selectively and effectively to address the key problem discussed earlier, of familiarity (in the psychological sense) with the Renaissance idea of consonance and dissonance. Based on Motuz's models, I devised a series of *cantus firmi* for the practice of consonant interval pairs, allowing the students to focus on the idea of "consonance" for about ten minutes of every lecture, just by singing these simple exercises. Example 7 shows a snippet of the first, in which students practice alternating between fifths and sixths using oblique motion. This has had an immediate effect on the formative written assignments which I collect every week: compared to every previous group, the past two cohorts of students have struggled far less in writing grammatically correct sounds. This in turn allowed me to focus the rest of my lecture time on much more interesting stylistic and analytical points, since I need far less time to go over basic errors from the written exercises. The end-of term "Counterpoint Clinics" were spent less on basic technical aspects, and more on talking about how to create a good compositional structure.²⁸

Thus far, the teaching of counterpoint improvisation tends to be limited to conservatoires and departments with a strong historical performance division. However, counterpoint in the modern curriculum can serve as a means to many ends.

²⁸ This is another field where Schubert is at the forefront: period treatises tend to focus more on moment-by-moment writing of good counterpoint, with few clues on what makes an effective piece, in the sense of structure and form. Schubert (often with Julie Cumming) has published a series of analytical works that address structure, and his early findings on the types of points of imitation that are found at various points in Renaissance compositions ("presentation types") are already incorporated into *Modal Counterpoint*. See Schubert (1995, 2010); Cumming (2013); and Cumming and Schubert (2015).

A traditional rule-based approach, leading realistically perhaps to the meticulous filing of an imitative duo by the end of one term, is limited in this respect. Simplifying the mechanics through improvisation techniques allows students to see the bigger picture, to concentrate on aspects of structuring and layering that are just as relevant to an electroacoustic composer or a sound engineer as they are to someone composing within a conventional tonal idiom. The theoretical framework underlying the techniques can be used to introduce basic concepts in music cognition and fundamental problems in computational musicology. The exercises shown above do not require much in the way of pre-existing knowledge or skill: essentially, a basic knowledge of the staff and of note names and clefs suffices. They serve to reinforce fundamental concepts of consonance and dissonance through ear training. Thus, these techniques can be taught even in a very introductory-level course. In addition, their playful nature (which reflects Schubert's own style in *Modal Counterpoint*—and his tendency to quote the particularly playful theorist Morley) helps engage students' interest, and helps to demystify the “learned” art of counterpoint: students can see that it really is just “a piece of cake.”

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We Know It's Important, But How Do We Do It? Engaging Beginning Aural Skills Students Through Meaningful Improvisation Activities

JEFFREY LOVELL

Improvisation as a core component of music curricula has been a topic of great interest in higher education in recent years. Articles on the subject are numerous and music theory and musicianship textbooks increasingly incorporate improvisation activities within their pages. The immediacy of improvisation tells us something about the way in which the inexperienced student assimilates essential bits of musical vocabulary in real time, and in the service of aural skills training is an effective tool for evaluating musicianship development. Recognizing that this learning tool was only a peripheral aspect of my own first-year aural skills curriculum, I retooled my courses to include more meaningful, graded improvisational exercises. This paper details my structured approach to introductory improvisations in beginning aural skills, how I assess them, and what I've learned by placing emphasis on improvisation as an integral learning activity.

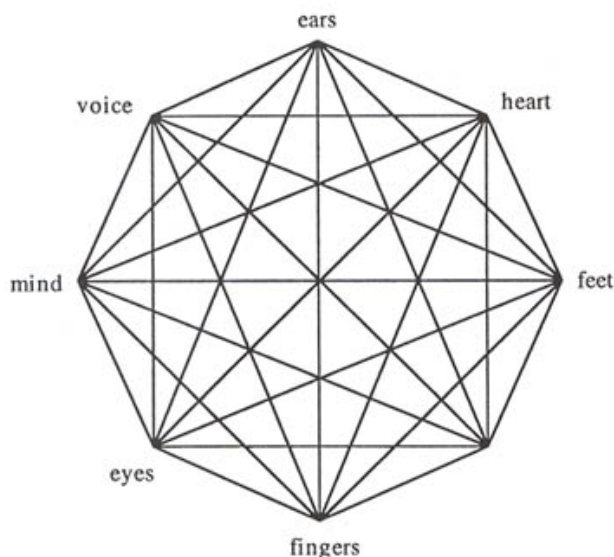


In a 1995 article in *College Music Symposium*, renowned theorist and pedagogue Steve Larson, referring specifically to music theory teaching, reminded us that “*learning should be fun*” (emphasis added). He correlates “fun” with “a sense of play,” and suggests that one meaningful way in which a sense of play is achieved is through improvisation.¹ While some students may not equate improvisation with “fun,” or feel inclined to “play” in this way, there is compelling research that supports the incorporation of improvisation into the curriculum. The integration of improvisation in music theory curricula, in particular its integration into musicianship or aural skills curricula, has been a topic of great interest in higher education research for quite some time.² Larson further indicates that improvisation “foster[s] integrated music learning,” by requiring students to access, in real-time, multiple ways of knowing, both to enrich their learning and also to embed concepts more firmly in their minds. Larson’s diagram is reproduced as Example 1.

Like Larson, Kate Covington has also argued that improvisation should be a focal point because of its effectiveness as a “catalyst for aural synthesis” by creating an “active environment” that aids in the encoding of musical data and essential schemata

1 Larson (1995, 80).

2 See, for instance, Azzara (1999), and Larson (1993).

**Example 1**

Larson's Diagram Depicting Multiple Ways of Knowing. From Larson (1995, 77); reproduced by permission.

in the minds of students.³ Both Larson and Covington, drawing on research from the fields of perception and cognition, recognize that improvisation is well-suited for this purpose since its focus is on core music skill development.

Recent music theory and musicianship textbooks have also responded by incorporating improvisation-based activities. Representative texts that feature a wide range of improvisation exercises coinciding with chapter topics include *The Musician's Guide to Aural Skills*, *Aural Skills in Context*, *The Complete Musician*, and, since the seventh edition, *Music for Sight Singing*.⁴

Alongside the research that supports providing a robust improvisation curriculum, a recent document generated by a College Music Society task force calls for a more deliberate infusion of improvisation into music training.⁵ A follow-up response to

3 Covington (1997, 49).

4 Clendinning, Marvin, Murphy, and Philips (2016); Jones, Shaftel, and Chattah (2013); Laitz (2016); and Rogers and Ottman (2019 [2007]).

5 Shehan Campbell et al. (2016). It should be noted that the report generated by the task force (which was appointed by the past CMS president) was not peer-reviewed.

this report by a panel of music theorists entitled, “Current Status of Music Theory Teaching,” noted that “more can be done in regards to instruction in improvisation.” An accompanying table illustrated that only 10% of instructors polled integrated improvisation into their curriculum frequently, while 20% polled indicated that they never did. 30% responded that there was a “fair amount” of improvisation integration in their curriculum.⁶

Why do some instructors struggle with the implementation of improvisation, especially since the materials and resources are available in abundance? Do some doubt the efficacy of improvisation’s role as a foundational element of musical training and its potential to create a special synergy between concepts and skills? Does it really make a meaningful impact on student development? If instructors are going to make improvisation an integral part of our aural skills curriculum, they must first buy into the idea that it is worth the time and energy to give it a prominent position—maybe even replacing other learning activities that they are accustomed to using.

Confronted by the research and the gnawing curiosity arising from these questions, I resolved to include more deliberate improvisation activities into my curriculum in the Fall of 2016. I recognized that improvisation was only a peripheral component of my first-year aural skills courses, usually as part of supplemental warm-up activities. My motivation was also connected to departmental objectives. It was a stated learning objective in our program goals that all students be introduced to improvisation, yet we had never determined where in our curriculum it was occurring, or how we might measure it.

This article presents a reflective look at my own curriculum, as I attempted to move improvisational activities from their location on the sidelines, to occupy a more central, structural role. I offer ideas for incorporating and assessing improvisation in the first-year, first-semester aural skills classroom by sharing the learning activities that I use, the specific objectives for them, and how I evaluate student progress. Finally, I will provide anecdotal evidence that the systematic implementation of improvisational activities does in fact stimulate meaningful student development in a creative, immediate way.

6 For a response to some of the assertions of made by the CMS “task force report,” see Snodgrass (2016).

Description of Improvisation Checkpoints

For my first-semester aural skills course, I chose four fundamental topics to evaluate via improvisation that typically need additional reinforcement, are integral to student development early on, and that represent essential learning objectives in my curriculum. Each of these topics form the basis of my approach to aural skills, which relies considerably on Gary Karpinski's aural skills text.⁷ Here are the four topics for which I chose to create improvisation assessments (called "improvisation checkpoints"):

- 1) tonal pitch patterns in the major mode,
- 2) tonic triad leaps in the major mode,
- 3) leaps to "ti" and "re," and
- 4) tonal pitch patterns in the minor mode.

All of these improvisation exercises are to be performed vocally, without the aid of an instrument, and using a solmization system—in my case, moveable-do solfège syllables. The purpose of the improvisation exercises is to help students map the solfège syllables onto scale steps so they become one and the same in their mind. Students' application of solfège is paramount, serving as an indicator for accurate recognition of scale degrees. I want them to know what scale degree they are singing relative to the key, so as to heighten their awareness of function. Solfège acts as the synthesizing tool. At first, students may struggle with the mechanics of applying solfège in real time, but solfège externalizes their thinking, and allows me to measure their musical understanding instantaneously. Therefore, I insist that students improvise using solfège. When I evaluate these activities, solfège accuracy is a principal factor. It is not enough for students to *hear* and *sing* the right pitch while incorrectly applying the solfège. Students *hear* and *sing* a pitch and they instantly demonstrate that they *know* and understand its function by singing the correct syllable. Students may already have an implicit sense for scale degrees and rely on their ear for the correctness of a pitch, but immediate musical understanding is the objective.

Improvisation Checkpoint no. 1

Description: To improvise using only pitch patterns in the major mode

Perhaps the most important first task for my students is the assimilation of common pitch patterns of tonal music, specifically those patterns introduced in

⁷ Karpinski (2017).

Karpinski's *Manual*, which are similar to those that Larson identifies as fundamental to all types of tonal music [Example 2].⁸

1		<i>Mi</i>				
		<i>Re</i>				
	<i>Do</i>		<i>Do</i>			

2				<i>Sol</i>		
			<i>Fa</i>			
		<i>Mi</i>				
	<i>Re</i>					
	<i>Do</i>			<i>Do</i>		

3	<i>Do</i>			<i>Do</i>		
		<i>Ti</i>				
			<i>La</i>			
			<i>Sol</i>			

4	<i>Mi</i>		<i>Mi</i>			
		<i>Re</i>				
		<i>Do</i>				

5	<i>Sol</i>					<i>Sol</i>
		<i>Fa</i>				
			<i>Mi</i>			
			<i>Re</i>			
		<i>Do</i>				

6	<i>Sol</i>		<i>Sol</i>			
		<i>Fa</i>				
		<i>Mi</i>				

7		<i>Sol</i>				
		<i>Fa</i>				
	<i>Mi</i>		<i>Mi</i>			

8			<i>Do</i>			
		<i>Ti</i>				
		<i>La</i>				
	<i>Sol</i>		<i>Sol</i>			

Example 2
Pitch Pattern Chart Adapted from Karpinski (2017, 10).

8 Larson (1992).

Not only do Karpinski's patterns represent common melodic pathways through the major scale found in all styles of tonal music, but they are also the basis of melodic dictation exercises and sight-singing melodies that I assign. Learning to quickly recognize these patterns takes time for students, so I ask them to memorize the patterns over the summer prior to the start of their first term of study.⁹ We sing and play the patterns at the piano in various keys at the beginning of most classes. In week two, we begin improvising with pitch patterns. Then, after we have practiced for three or four weeks through recognition drills and in-class improvisation activities, and they have been tested on their aural recognition of the patterns on the first dictation quiz, I evaluate how well they've encoded these patterns in their first improvisation checkpoint.

Improvisation Checkpoint no. 2

Description: To improvise using leaps in the major-mode tonic triad

The second improvisation checkpoint evaluates how well students differentiate between leaps and steps, specifically training their ear to better audiate the distinctive leaps of the tonic triad. Students are expected to continue using pitch patterns as basic stepwise melodic pathways, but they must also demonstrate that they can comfortably improvise leaps through the tonic triad, in any direction, between any two members of the chord. Preparatory activities for this checkpoint include familiar melody memorization; melodic dictation and sight-singing exercises; and point and sing exercises, where the solfège chart is displayed while they hold down the tonic triad at the keyboard.

Improvisation Checkpoint no. 3

Description: To improvise using leaps to "ti" and "re"

In addition to basing their improvisations around pitch patterns and leaps within the tonic triad, the third checkpoint also introduces the first non-tonic leaps that students encounter in this system as prefix neighbors, and helps them recognize *ti-do* and *re-do* resolutions. I find this is a useful next step in the process of vocabulary building, as students must show that they can improvise leaps from any scale degree,

9 At the institution where I teach, new students meet with their advisors in the spring prior to the start of the first semester to set up their schedule. During this meeting, I give students a handout with the pitch patterns (See Example 2 above) and a solfège guide with instructions for practicing over the summer. Later in the summer, I send them a link to video demonstrations of how to practice that I created.

ascending or descending, to either of the prefixes before resolving to tonic. It also serves as a precursor to improvising leaps in the dominant triad, a topic that I reserve until the second semester of the sequence. Sequential exercises found in the corresponding chapter of Karpinski’s *Manual* and memorizing familiar melodies help prepare students for this checkpoint.¹⁰

Improvisation Checkpoint no. 4

Description: *To improvise using tonal pitch patterns in the minor mode*

In Karpinski’s system, the minor mode and its variations are treated separately as topics apart from the major mode.¹¹ Consequently, it is not addressed in my curriculum until close to the end of the first term. This final checkpoint builds on the previous three. Students must transfer what they have learned about pitch patterns, the tonic triad, and leaps to *ti* and *re* from the major-mode improvisations to the minor mode using the corresponding minor-mode solfège. I allow them to use either the natural or melodic forms of the scale while improvising. This checkpoint also requires students to improvise in compound meter.

Testing Format and Evaluation

Students meet with me individually about every two weeks for a five-minute singing test, which typically includes a prepared melody, a sight-singing melody, and one additional exercise. It is in some of these tests that the additional exercise is one of the four improvisation checkpoints. For each checkpoint, I have created accompaniment tracks using GarageBand to which students sing along.¹² These tracks are similar to the accompaniments we perform for in-class “jam sessions” (described below) and are made available for students to practice with one to two weeks prior to the test on our online course management system.



Improvisation 1

¹⁰ Karpinski (2017, chapter 14).

¹¹ Ibid., chapters 17-19.

¹² I make no claims of being an expert when it comes to GarageBand. For these tracks, I relied almost exclusively on the preset sounds and loops available in the program. I simply composed an ostinato and accompaniment.



Improvisation 2



Improvisation 3



Improvisation 4

Students receive general procedures and expectations for the improvisations in their syllabus. The procedures are as follows (reproduced from my syllabus):

For each improvisation exercise, you will be performing along with an accompaniment track. These tracks will be available on Canvas for you to practice with at least one week prior to a given assignment.

At your singing test, I will provide you with the scale degree on which you will need to begin your improvisation (either 1, 3, or 5). This will help you avoid getting locked into using the same patterns in the same way each time you improvise.

You will be given approximately a 5-10 second window at the start to orient yourself in the key.

Improvised melodies must be performed continuously (with minimal rests) for approximately 30-45 seconds.

I purposely do not make the instructions for these improvisation activities overly prescriptive. My intention is to have students freely use the bits of vocabulary that they are assimilating into their improvisations without being hampered by additional tasks that they have to navigate. Mapping solfège onto the scale degrees is challenging enough. Keeping the structure of these improvisations less complicated allows students to focus on the primary objective of the exercise, so I have chosen to keep directions to a minimum.¹³ I do not restrict students to a limited set of rhythmic patterns, require that they adhere to pre-defined melodic templates to prohibit extreme ranges, or have

¹³ Pressing (1988, 141) asserts that structure is important when applying new vocabulary to improvisation, but that the structure shouldn't be too complicated, and that action sequences "get muddled when burdened with too much intellectual detail."

them alternate between pre-composed segments within their improvisations.¹⁴

Although pitch and solfège accuracy constitute the core of my improvisation exercises, students are also evaluated on rhythmic consistency and maintaining the established meter. While I avoid trying to evaluate creativity in their improvisations, I do include a category called “Variation/Mobility,” which allows me to judge the extent to which students are able to utilize the vocabulary into their performances in a variety of ways while at the same time helping them be mindful of excessive repetition. I use a simple point-scale rubric to assess these categories.

Improvisation:														Total	Weight (10%)
Pitch Accuracy	0	1	2	3	4	5	Time feel/ Rhythm	0	1	2	3	4			
Variation/ Mobility	0	1	2	3											
Combined Score:															

Example 3 Improvisation Checkpoint Rubric.

Specifically, students are evaluated on the following criteria:

- ***Accurately executing the specific bits of musical vocabulary***

Students must demonstrate that they can incorporate vocabulary in both pitch and solfège. Since precise mapping of solfège onto scale degrees is the primary objective, hearing and singing these patterns receives the most weight.

- ***Maintain Meter***

It is evident in some student performances that the pitch relations have not been internalized adequately, leading to excessive focus on the pitch domain to the detriment of the rhythmic flow. In these instances, performances are choppy and are not congruent with the established meter.

- ***Variation***

Repetition is a vital aspect of musical creation, but repeating the same patterns in the same way too frequently in 30–45 seconds suggests that the student has not yet assimilated other vocabulary bits at a level necessary for instant recall. This particular instruction accounts for this lack of flexibility, and compels students to access the many pathways available in their improvisations. I encourage each student to strive for balance and fluency in his or her melodic and rhythmic ideas by keeping the improvisations simple, refraining from jerky or complicated rhythms,

¹⁴ Some sources are more prescribed in their improvisation exercises. For an example of improvisation activities that include pre-determined rhythmic patterns and/or alternations between pre-composed and improvised passages, see the “structured improvisation” exercises found at the end of each chapter of Rogers and Ottman (2019).

and/or sudden leaps. Rather than giving them specific rhythmic patterns to use, I remind students that they can use the prepared melodies from our song packet or other melodies that they know as a guide, and the implicit understanding they already have about how tonal melodies should go from listening to music.

As detailed on the rubric, improvisation amounts to only 10% of the overall singing-test grade. My intention is to treat improvisation as a low-stakes assessment in order to alleviate pressure on the students, who must improvise in front of me for up to 45 seconds, which can seem like an eternity for some. Rarely does anyone perform flawlessly in that amount of time, given the room for error in misappropriating pitch and solfège in their improvisations. It requires a significant amount of concentration in the early stages and takes time for assimilation to occur. Therefore, I do not grade each criterion too harshly.

Preparing Students for Checkpoints

Leading up to each assessment, I devote 10–15 minutes per class over two or three class periods before the assessment to practice improvisation in what I call “jam sessions.” For this activity, I arrange the class in a large circle and begin by singing a simple, rhythmically catchy, tonic-emphasized “vamp” that students imitate and repeat for the duration of the jam.¹⁵ Using an idea suggested by Steve Larson, for the vamp I will usually have students sing either a P5 drone or a two-bar repeated ostinato that alternates between *do* and *sol* in simple triple or quadruple meter.¹⁶ This vamp is the backdrop over which students will improvise individually for roughly a minute or so when randomly called upon.¹⁷ To break up the monotony of singing the same thing over and over again, I will periodically give cues to have students vary some aspect of the rhythmic ostinato pattern in between or during solos. Example 4a-d illustrates the kinds of vamps that I use for improvisation activities. I make these vamps similar (both in content and key) to the accompaniment tracks over which

15 I typically have between 8–15 students in each section of my aural skills classes. We intentionally keep class sizes small to facilitate more interaction.

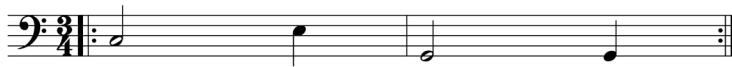
16 This is one of two-dozen suggested exercises provided in Example 14, page 17, of Larson’s report for the Center for Research on Concepts and Cognition, “Scale-Degree Function: Cognition Research and its Application to Aural-Skills Pedagogy” (CRCC Technical Report no. 67).

17 If a student is struggling with their improvisation, I will often give them more time so that I can provide real-time instruction and get them on track. Most of the time, my coaching involves reorienting them to tonic, or singing back the correct pitch that coincides with the solfège syllable they are on.

they will improvise for the checkpoints. They have all been notated in the key of C for purposes of comparison. Notice that all are simple and are flexible enough for variation.



Example 4a
Vamp Pattern for Checkpoint no. 1.



Example 4b
Vamp Pattern for Checkpoint no. 2.



Example 4b
Vamp Pattern for Checkpoint no. 3.



Example 4b
Vamp Pattern for Checkpoint no. 4 (minor mode).

The following video clips recreate how the in-class “jam sessions” work. The students are first-semester freshmen aural-skills students, three of whom are vocal majors and three who are instrumental majors.

The [first video clip](#) shows students improvising using only pitch patterns (shown in Example 2 above) in the major mode, which is the primary purpose of Improvisation Checkpoint no. 1. For jam sessions, there is no requirement for solos to start on any tonic chord member, no requirement to employ specific rhythmic patterns, just react to the ostinato. The video reveals that students instinctively do this *on their own*. Normally for these jam sessions, I let each student perform until I am satisfied that they can accurately demonstrate pitch pattern usage or other key skill for that particular checkpoint in their improvisations, in the established meter, before selecting another student to improvise.

The videos show that a fair amount of imitation occurs among student performances, which is why I use individual testing. I think that there are two reasons for this imitation: 1) students pick up on the pathways already sung by other students,

and 2) students naturally gravitate toward the same simple rhythmic patterns (often non-syncopated beat divisions) that easily lock into the pulse, anchored on strong beats. Recall that there are no instructions related to rhythms other than to maintain the meter. Certain pitch patterns seem to invite certain rhythmic patterns, like the descending tetrachord: *do ti la sol* with the rhythmic pattern, “long-short-short-long.” Initiated by Student “A,” every student used this strategy, and with the exception of Student “B,” Students “C,” “D,” and, “F,” all began their improvisations with it. Even though not a requirement for the first improvisation checkpoint, as evidenced by this clip, many students are comfortable singing leaps within the tonic triad, since the beginnings and endings of the patterns articulate the stable arrival points of this chord.

The [second video clip](#) demonstrates the jam session I use to prepare students for Improvisation Checkpoint no. 3. For this exercise, students are instructed to improvise leaps to *ti* and *re* from any scale degree as prefix neighbor notes to the closest tonic triad member, and are told to base their improvisations on major-mode pitch patterns (Checkpoint no. 1), and leaps within the tonic triad (Checkpoint no. 2). Student “F” begins this demonstration and, within the first few seconds, mislabels the pitch she sings, *ti*, with the syllable, *re*, but almost instantly recognizes this mistake (her facial expression betrays her error) and quickly adjusts. Student “E” similarly attempts to leap to *re*, but overshoots it, and sings *do* briefly before coyly sliding up to *re*. Student “C,” midway through his improvisation, sings *mi re do*, but misappropriates the syllables *sol fa mi*. This type of self-correction happens frequently in improvisation activities, as students recognize, in real time, when they get off track and temporarily become lost in tonal pitch space. Again, the immediacy of the learning that takes place within this kind of active environment cannot be overemphasized. In those instances when students get completely lost, and can’t reorient themselves to tonic, I guide them back to one of the tonic chord members with my own voice and allow them to continue.

Outcomes

At the beginning of this article, I indicated that the improvisation activities that I incorporated in my classroom prior to 2016 were purely supplemental, and were not something that students were expected to work on and develop. They were in-class activities used to create another pathway of knowing—and that certainly wasn’t a bad thing. However, with this new scaffolded approach to improvisation, I have seen

some fruitful results in student development. My conclusions are drawn anecdotally from observations both in the classroom and improved performance on assessments. I feel that this type of engagement has had an impact on assimilating important bits of musical vocabulary. Here are three ways in which I have observed that emphasis on improvisation has made a difference with my students:

1) **Solfège fluency.** Students are much quicker at recognizing scale degrees in context of melodic dictation, or audiating them when attempting to sight sing melodies. Musical understanding is more certain, represented by a precise application of the solfège system. Students on the whole have seemed to assimilate this system more fluidly than in years past.

2) **Test score improvement.** Preliminary data suggests that an emphasis on improvisation has made an impact on assessment performance in the areas of dictation and sight singing. When comparing a three-year span of overall testing results of first semester aural skills students, a significant leap in scores emerges. A simple averaging of approximately 45 combined dictation test scores reveal a jump from the 80% range in 2014 and 2015, to an average of 87% in 2016 and 2017. Singing test performances also improved, rising from an 83% average in 2015 over 10 tests, to an 87% average in 2016 and 2017. I realize that this may seem like armchair numbers analysis, and that there are other variables in play here, such as the background and experience of the student population from year to year, micro changes to the curriculum, the mental or emotional state of a student on any given testing day, and so forth. However, since this has been the only real change to my curriculum, there appears to be at least an indirect relationship between increased focus on improvisational activities and improved performance on test scores. For instance, in the past I included one or two in-class jam sessions at most throughout the term. Now I have approximately eight jam sessions, averaging one about every other week. This has been no small task, since it takes up a significant amount of class time to run, but the payoff has been worth it. Not only has this consistent approach confirmed the view that improvisation is an important part of the curriculum, it has also benefitted students by facilitating more supervised practice, and has consequently infused many with the confidence that they can in fact improvise.

3) **Engagement.** These activities provide an active mode of learning to which most students respond positively. Although some are apprehensive about performing in front of each other, and only reluctantly participate, most students engage in the activity and have fun with it. Often, students will move to the groove and flow, or engage intently by synchronizing simple dance moves with each other while singing

the accompaniment. Several students have indicated to me both inside and outside of class that the jam sessions were their favorite activity, and found it valuable to their skill development.

Conclusion

Meaningful improvisation exercises in the aural skills classroom, coupled with thoughtful assessment, yield positive results in student learning. Making improvisation a central part of the curriculum has helped me to determine more immediately the extent to which students have internalized important fundamental concepts, and has thus become an effective tool for evaluating musicianship development. Grappling with these musical elements encourages students to react without conscious thinking, resulting in what Covington calls an “active environment,” where real synthesis takes place.

The types of improvisation exercises that I have shared in this article are not novel in and of themselves: as noted in the aforementioned aural-skills sources, similar exercises can be found elsewhere. What is perhaps new is the way in which I’ve tried to integrate them as learning exercises that support essential skill development in a progressive manner, each building on the previous improvisation exercise. In the aural skills classroom, improvisation is a means to an end, and not just an outlet for or manifestation of a student’s creative impulse. For most of the students with whom I’ve worked, improvisation activities are enjoyable and engaging—or, as Larson put it, make learning FUN.

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Schenkerian Analysis of Fugue: A Practical Demonstration

SARAH MARLOWE

Schenkerian pedagogy has received increased attention in recent years, with studies ranging from introductory level topics to those geared toward advanced graduate students. The fugal genre is noticeably absent from these studies, but I suggest that fugal analysis proves beneficial for both introductory and advanced courses in Schenkerian analysis. After introducing a step-by-step method for graphing fugues, I demonstrate the method through detailed discussions of J. S. Bach's Fugues in D major and F major from the *Well-Tempered Clavier* Book I.



Schenkerian pedagogy has received increased attention in recent years, with studies ranging from introductory level topics to those geared toward advanced graduate students.¹ Of all the material covered, however, the fugal genre is noticeably absent. Excerpts from fugues are cited, of course, along with tangential discussions of polyphonic melody and baroque textures, but no direct demonstration for how to approach the task of analyzing a complete fugue, or any imitative work, is provided.² Indeed, the decision

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1 A growing number of textbooks and articles are dedicated to Schenkerian pedagogy. See Beach (2012, [1989] 2014); Cadwallader, Gagné, and Samarotto (2020); Damschroder (2017); Forte and Gilbert (1982); Pearsall (2017); Schachter (2016); Slottow (2005); Wadsworth (2016); and Wen (2020).

2 To date, the most detailed and widely-known Schenkerian analyses of fugue are provided by Schenker (1984, 2005, 2014); Schachter (1999), and Renwick (1987, 1991, 1995a, 1995b, 2006), but there are introductory stages of the analytical process that remain unmentioned in these sources. David Beach's *Advanced Schenkerian Analysis* offers a chapter on baroque textures, and polyphonic melodies appear frequently throughout the text; but as close as his text comes, it still does not explicitly address the fugal genre. In the Epilogue of his recent textbook, Eric Wen includes a substantive discussion of polyphonic melody and implied harmony in the fugue subject from J. S. Bach's Fugue in B minor from the *Well-tempered Clavier* Book I (2020, 355–58). While other recent studies on fugue, including Franck (2007, 2010, 2011), Marlowe (2014), Reef (2019), Renwick (1991, 1995a, 1995b, 2006), and Väisälä (2011), focus on broader theoretical concepts aimed at an audience of experts, one cannot (and indeed should not) expect to find a complete demonstration of, or explanation for, every decision made to produce the final analysis. What remains is a considerable gap between these excellent studies on fugue and the instructional resources that are currently available to support students interested in pursuing research in this area.

to omit fugue in the pedagogical literature is a sensible one. Many music programs in North America do not offer a dedicated elective in Schenkerian analysis; instead, it is often presented as one of several approaches in tonal analysis survey courses. Where full-semester courses in Schenkerian analysis are included in the curriculum, these courses are typically introductory in nature. In my personal experience teaching the latter type of course, the majority of the semester is spent examining short excerpts and phrases for the purpose of learning the mechanics of Schenkerian graphic notation; analyses of short, full-length works can be completed by the end of the semester, but course structure leaves room for nothing so advanced as an imitative texture. Since this is typically the intended audience for most of the available Schenkerian analysis textbooks, and there is already so much information to include at the introductory level, it makes little sense to include more advanced topics there.

There are many reasons why studying fugues is beneficial, however. For one thing, advanced students should consider studying complete fugues as a way of honing their analytical skills, since fugal textures expose theoretical problems that are not always present or fully realized in more straightforward works. For instance: How does one identify the *fundamental line* and *bass arpeggiation* when every voice has the “melody” (subject) and when the stylistic aim is total independence of line? What is the process for analyzing a polyphonic melody (a frequent feature of Bach’s fugue subjects) and how does one determine the number of voices it implies? How does one extract an imaginary continuo from a texture defined by linear motion?

For the seasoned Schenkerian, these questions may seem naïve or unsophisticated. After all, none of these issues are unique to the fugal genre, and all should be considered when analyzing any tonal work. But fugal textures do exacerbate these issues. Carl Schachter writes:

In principle the analysis of a fugue should present no problems essentially different from those encountered in other types of music. Fugal procedures, after all, grow out of the contrapuntal and harmonic elements fundamental to tonality. ... Unfortunately, what we might expect in principle does not always coincide with what we find. As it happens, the analysis of fugues involves difficulties which, if not fundamentally new, are often unusually intractable.³

I similarly take the position that these problems, while not new, are not immediately obvious either. Failure to discuss strategies for approaching these works explicitly makes fugal analysis seem much more intimidating than it really needs to be. An added benefit to working through these textures is that it encourages greater

3 Schachter (1999, 239).

precision in our application of the theory itself. Through detailed exploration of fugal textures over the past several years, I have discovered ways to simplify not only the task of fugue analysis, but have found more concrete ways to explain certain topics that always seem challenging for students to master.

Imitative textures also emerge in many works that are not necessarily assigned the designation of “fugue.” While this essay focuses on works that are strict “fugues” by J. S. Bach, fugal passages and imitative textures can be found in numerous works from the common-practice period.⁴ To that end, we can think of fugues as test cases for how to solve complex textural problems, and students can later apply what they learn in new and varied contexts. According to Stephen Slottow, “It is crucial to have model pieces or passages ... that illustrate common procedures or patterns (such as the I-II₂⁴-V₅⁶-I opening or elided cadences). ... It is equally important to highlight certain common techniques (such as voice exchanges or sequences) and their properties.”⁵ The same is true for imitative textures. Although we cannot predict which specific issues will arise in every composition, fugues frequently exhibit a finite number of recurring analytic problems. Engaging with fugal textures ultimately encourages students to use the theory as a problem-solving tool when they encounter tricky passages in analysis.

In the sections to follow, I introduce a step-by-step method for graphing fugues and then demonstrate the method through detailed discussions of J. S. Bach’s Fugues in D major and F major from the *Well-Tempered Clavier* Book I. Since each composition is unique, it is impossible to offer precise methods that will work universally, but in working through problematic passages that arise in these two fugues specifically, I provide helpful strategies for approaching similar issues when they arise in other contexts. This approach is not new, and in fact follows the models of many Schenkerian textbooks, in addition to two highly informative articles by Stephen Slottow and David Beach.⁶ David Beach writes about his reasons for offering a descriptive analysis such as this:

It happens all too frequently, I think, that individuals perceive there is something mystical, perhaps even magical, about Schenkerian analysis, or, even worse, that it is arbitrary. I’m afraid we have ourselves to blame, at least in part, for this perspective, in that we are not careful under appropriate circumstances to explain the reasons for

4 Many classical works feature fugal passages. For an example of Schenkerian analysis of fugal textures within larger tonal forms, see Tepping (1986, 1987, 1988).

5 Slottow (2005, 65).

6 Cadwallader, Gagné, and Samarotto (2020, xii); Slottow (2005); Beach (2014).

the choices we make, though, quite honestly, it would be a burden on us all if we were always to do so. Clearly there are times when a lengthy justification of choices is not appropriate. ... I hope to dispel any notion that all this is in any way arbitrary or the result of some magical incantation known only to the select few.⁷

It is true that it should not be the task for every analytical essay to explain the minutiae considered during the analytic process itself; this would leave no room for more important observations or broader theoretical discussions. Nevertheless, I agree with the sentiment that it should be the task for *some* theorists to take on from time to time. Stephen Slottow suggests other reasons for why these discussions are largely absent from the literature: “as theorists become more experienced and skilled, they perhaps also become less aware of their analytical procedures and processes, which become to some extent automatic and unconscious. ... Another [reason] is that analytic process may well be idiosyncratic to the analyst (or, for that matter, to the piece or composer) and thus difficult to generalize.”⁸ Both authors present valid points. My article is not the first to present a detailed analysis of a fugue; Schenker provided one himself, Carl Schachter’s article on Bach’s Fugue in B-flat major from the *Well-Tempered Clavier* Book I has a clear pedagogical undertone, and William Renwick has written several articles and a book dedicated to the topic.⁹ There are certain details of their analyses that are left unmentioned, however, since they are writing for an audience more concerned with their conclusions rather than the steps taken to derive them. This study gives attention to the earliest stages of analysis in an effort to clarify the decisions one needs to make during the analytical process.

My descriptive analyses can be utilized by instructors in different ways. For introductory courses where time does not allow for discussion of complete fugues, it may prove most useful to examine isolated concepts—such as polyphonic melody and sequences—and to repurpose my analyses as brief excerpts for study. With this in mind, Appendix A lists additional excerpts appropriate for classroom use. For more advanced courses or independent study, I recommend working through one of the analyses with the students first, and then ask them to analyze the other fugue on their own before reading the rest of the article. For this purpose, Appendix B provides blank worksheets for both of the fugues discussed here.¹⁰

7 Beach (2014, 11).

8 Slottow (2005, 44). Several excellent pedagogical resources have appeared since Slottow authored this article, but the general sentiment is still quite relevant to the current essay.

9 See footnote 2.

10 I often provide worksheets like these in my introductory Schenker course as I find it helps the

While my approach is admittedly idiosyncratic, and undoubtedly others would graph these pieces differently in some ways, my goal is to provide a concrete list of actions to take at the earliest stages of analysis, especially when one might feel “stuck.” As Slottow writes, “It is important to have an order of possible activities. Students need concrete steps, especially when temporarily stymied ... ‘don’t just stare at the piece, *do something*.’”¹¹

Process for Graphing a Fugue: Some Preliminaries

Example 1 outlines my process for graphing a fugue.¹² Understanding the work’s formal design is an essential first step in the process, for as Beach notes, “you must always know where you are in the piece.”¹³

- 1. Analyze the formal design and tonal structure**
 - a. Identify tonal segments
 - b. Identify subject entries and episodes
- 2. Sketch and compare all parallel combinations**
 - a. Compare/contrast subject entries
 - b. Compare/contrast episodes
- 3. Examine the fugue’s contrapuntal structure**
 - a. Consider and test potential middleground structures
 - b. Reconnect individual segments to generate a complete sketch of the entire fugue

Example 1

Process for Graphing Fugue.

By the time they take a course in Schenkerian analysis, most students will be familiar with the tasks typically associated with analyzing a fugue: identifying and labeling

students to have the score arranged horizontally below their multi-level analysis.

¹¹ Slottow (2005, 64-65).

¹² This process is similarly implied, yet not explicitly articulated, by Schenker (2014) and Schachter (1999). Helpful summaries of the order of tasks suggested in Schenkerian approaches to tonal analysis can be found in Slottow (2005) and Wadsworth (2016). Neither author presents a complete chart for comparison, but their summaries and bibliographies will prove useful for those interested in the pedagogy of developing a Schenkerian analytic reading.

¹³ Beach (2014, 8).

subject entries, episodes, and other notable contrapuntal devices.¹⁴ Before completing this task, however, I recommend identifying the fugue's tonal segments (step 1a). By tonal segments, I mean the sections of the fugue articulated by cadences, which are typically few and far between. Emphasis on tonal rather than motivic segmentation is perhaps the biggest distinction between Schenker's theory and traditional formal approaches.¹⁵ Since cadential markers can be less obvious in fugal textures, I suggest that tonal segments will be identified most successfully through listening several times without looking at the score. If we encourage students to identify tonal segments in a fugue first, they will less likely be swayed by surface motivic features in their analysis.¹⁶ Once tonal segments have been identified, surface contrapuntal features can also be added to the form chart. As I will demonstrate below, I combine my analysis of tonal segments (shown with bolder lines) with more usual contrapuntal observations (subjects, episodes, etc.) on the same form chart to make these two approaches easy to reference while keeping them visually distinct.

Step 2 of the process requires detailed sketching and comparison of all passages containing the same contrapuntal materials; in fugues these are typically subject entries and episodes. Many textbooks recommend extracting a voice-leading reduction (imaginary continuo) early in the analytic process in order to simplify the voice leading of a passage.¹⁷ The detailed foreground analyses that students complete during stage 2 will ultimately clarify these underlying voice-leading structures, but as William Renwick describes, progressing from a predominantly linear surface texture toward a chordal framework is not an easy task:

Discovering or recognizing the path of the fundamental line in a fugue often constitutes a major difficulty for the analyst. The very nature of fugal style includes copious voice-exchanges, voice crossings, register shifts, subsidiary motions to and from inner voices, superposition of inner voices above the main voice, rests in both outer voices, and the unique demands which the various imitative techniques place on the voice leading.

¹⁴ Gauldin (2013) is a useful resource for students learning how to analyze a fugue's formal design. Steps 1a and 1b would also be appropriate to introduce to advanced undergraduates or graduates in an 18th-century counterpoint course.

¹⁵ This distinction is one of the central points of Schenker's article on "organicism in fugue" (2014); it is also demonstrated in Schachter (1999) and Marlowe (2014), although my 2014 study does not discuss complete compositions.

¹⁶ See Schachter (1999); this is also implicit in Schenker (2014).

¹⁷ See Rothstein (1990) where the term *imaginary continuo* was first used. In pedagogical resources, see Cadwallader, Gagné, and Samarotto (2020, 68); Schachter (2001); Slottow (2005); and Beach (2012).

Further, the through-composed form of many fugues gives little in the way of definite structural indicators for the analyst.¹⁸

Overcoming these analytical challenges is not impossible, but there are two specific concepts that need to be clarified in order to successfully extract an imaginary continuo from fugal textures: students must understand how to analyze polyphonic melodies (a frequent feature of Bach's fugue subjects), and they must be able to identify the contrapuntal framework of a harmonic sequence (a common attribute found in many fugal episodes).¹⁹

William Rothstein's rules for rhythmic displacement and rhythmic normalization prove most useful when analyzing polyphonic melodies: his rules provide concrete ways to approach and interpret ambiguous passages, and this clarity of thought will lead to greater consistency in analysis.²⁰ In fact, Rothstein references polyphonic melodies specifically when he introduces the process of extracting an imaginary continuo:

A polyphonic melody will reduce to a chordal texture when its non-chord tones are reduced out, its constituent voices are verticalized, and the rule of arpeggiation is applied. I like to think of this latent chordal texture as a sort of imaginary continuo accompaniment that underlies every piece of tonal music—regardless of scoring, texture, or date of composition.²¹

Although Rothstein introduces these terms separately, his *Rule of Simultaneity* and *Rule of Arpeggiation* are essentially one concept.²² The rule of simultaneity refers to a harmonic interval (two notes) and the rule of arpeggiation refers to an entire harmony (three or more notes that belong to a triad or seventh chord), but in essence all melodic tones belonging to the same harmony should be grouped together. (At deeper levels of structure, these tones will be represented as a single, verticalized chord.) He adds to this later, explaining that linear progressions fill in these arpeggiations with passing tones.²³ In order to determine chord membership, however, we must also

18 Renwick (1995, 205).

19 This is an oversimplification, of course. Polyphonic melodies and sequences can and do occur elsewhere in some fugues.

20 Rothstein (1990).

21 Ibid., 94.

22 Ibid., 92–93.

23 Ibid., 98.

consider the implied harmonic rhythm of a passage.²⁴ From a pedagogical perspective we can apply these ideas in the following order:

- Determine the harmonic rhythm and implied harmonies of a musical excerpt.
- Distinguish between chord tones and non-chord tones.
- Group pitches that belong to the same harmonies together.

As will be shown below, applying this concept in analysis is more nuanced than my simplistic summary suggests since the implied harmonies and number of voices are often ambiguous in fugal textures.

The second problematic feature commonly encountered in fugal textures involves sequential passages. Sequences often, though not always, occur within fugal episodes and will also appear as a central concept in my analyses below. The concept of harmonic sequences and their voice leading is relatively straightforward, but the frequent registral shifts associated with fugal texture complicates what is often a very simple contrapuntal framework. In my experience teaching an introductory course in Schenkerian analysis, I find that students often struggle with graphing sequences. Like many Schenkerian topics, students tend to understand the broader concepts quite easily, but then are unsure how to apply these concepts independently in their own graphs.

Of the various Schenkerian textbook approaches to analyzing sequences, all observe that they can serve one of two functions: either they are prolongational—that is, they start and end on the same harmony—or they can connect two different harmonies. Either way, sequences play a secondary role within the broader tonal context in which they appear.²⁵ However, their approaches otherwise differ significantly in the use of terminology and in analytical detail. Cadwallader, Gagné, and Samarotto adopt Forte and Gilbert’s concept of the Linear Intervallic Pattern (LIP), a recurring intervallic pattern that occurs between two voices in a sequence.²⁶ David Damschroder categorizes

²⁴ Ibid., 93.

²⁵ See for comparison, Cadwallader, Gagné, and Samarotto (2020); Damschroder (2017); Forte and Gilbert (1982); and Wen (2020).

²⁶ Cadwallader, Gagné, and Samarotto (2020, 88–101; 103–106); Forte and Gilbert (1982, 83–102). Forte and Gilbert are adamant that LIPs do not necessarily need to occur within a sequence, but it seems that this view stems from differing definition of what a “sequence” is. They define sequences as recurring melodic patterns (85), whereas contemporary theorists define sequences as recurring harmonic patterns. Cadwallader, Gagné, and Samarotto likewise soften the definition in terms of which pair of voices will participate in the recurring intervallic pattern; Forte and Gilbert limit this event exclusively to the outer voices (83), but later studies have shown that this is not always the case.

sequences as parallel (e.g. parallel six-three sonorities), circular, (e.g., a progression that follows a consistent pattern of root motion, such as the descending fifths sequence which travels through the circle of fifths), or sequential (e.g. progressions with models containing two or more harmonies that are subsequently transposed to create either an ascending or descending pattern).²⁷ He does not reference LIPs specifically, but they are clearly labeled in his sketches. Eric Wen's discussion of sequences focuses exclusively on harmonic reduction (imaginary continuo), and in his characteristic fashion each analysis consists of a series of examples that gradually increase in voice-leading detail as they approach the foreground.²⁸ All of the above approaches require students to infer a substantial amount of detail from the start, particularly in terms of extracting an imaginary continuo. For many textures, this is simple to achieve. In fugal textures, it is not always immediately obvious what the underlying voice leading of a passage is.

Consideration of species counterpoint frameworks, as suggested by Matthew Brown, provides a more systematic method for approaching sequential passages in analysis, particularly when the voice leading is heavily masked by countless registral exchanges between the voices.²⁹ To demonstrate this process, Brown's example for how to derive a descending-fifths sequence from species counterpoint is reproduced in Example 2. This example is most relevant to the present study, since both of the fugues I analyze later will feature descending-fifths sequences in their episodes. As Brown demonstrates, given a simple tonal progression (Example 2a), the descending fifth-progression in the melody ($\hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1}$) can be embellished with upper neighbor tones (Example 2b); a supporting line follows the melody either in parallel thirds or sixths (Example 2c); finally, only one viable option exists for harmonizing the upper lines while adhering to the rules of strict species counterpoint, where no parallel perfect intervals are permitted (Example 2d). Through a series of examples like this, Brown shows how in each sequence type, the voice leading is controlled entirely by parallel motion between the upper voices. At a deeper structural level the bass may even be represented by a pedal tone similar to the one shown in Example 2c.³⁰ When

27 Damschroder (2018, 163–190).

28 Wen (2020, 157–64).

29 Brown (2005, 99–139).

30 Ibid., 107–10. It is important to note that these contrapuntal frameworks represent deeper levels of structure than concepts like the LIP. Parallel motion can, and often does, appear between any two voices at the musical foreground; later these voices can be repositioned above a stationary bass in the voice-leading framework. An example of this process in Schenker's work is discussed in Marlowe (2020; forthcoming).

a

$\hat{5}$ $\hat{4}$ $\hat{3}$ $\hat{2}$ $\hat{1}$

b

I $\hat{5}$ $\hat{6}$ $\hat{4}$ $\hat{5}$ $\hat{3}$ $\hat{4}$ $\hat{2}$ $\hat{1}$

c

I $\hat{5}$ $\hat{6}$ $\hat{4}$ $\hat{5}$ $\hat{3}$ $\hat{4}$ $\hat{2}$ $\hat{1}$

d

I $\hat{5}$ $\hat{6}$ $\hat{4}$ $\hat{5}$ $\hat{3}$ $\hat{4}$ $\hat{2}$ $\hat{1}$

Example 2

Deriving a descending fifths sequence, after Brown (2005, 109).

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viewed through this lens it is also easier to see how passages like these, while often containing a substantial amount of surface activity, should be viewed as transitory material within larger parts of the structure. In theory, we should be able to identify these parallel sixths or thirds (and thus the underlying contrapuntal framework) within the musical texture, regardless of how complex it may appear to be at the surface.

Brown's contrapuntal frameworks represent deeper levels of structure, and are quite complementary to the textbook approaches summarized above. For instance, students might first identify an LIP, and then consider Brown's frameworks when representing the excerpt at a higher level. Conversely, and especially in more complicated fugal textures, Brown's contrapuntal frameworks can be considered as a preliminary step to conceptualize and untangle the voice-leading. Generally we can summarize the process as follows:

- Identify the tonal trajectory of the sequence (its beginning and ending points).
- Determine the harmonic pattern; this is typically observed most easily through analyzing the bass line.
- Next, depending on the complexity of the excerpt, follow one of these two processes:
 - Option 1: Foreground → Background
 - Identify the LIP.
 - Reposition the parallel voices as upper voices above a stationary bass (deep middleground).
 - Option 2: Background → Foreground
 - If the texture complicates the task of identifying the LIP at first, start by searching for parallel voices (thirds or sixths).
 - Use these parallel voices to determine what the voice leading must be in the surrounding passage.
 - Observe contrapuntal embellishments of this framework at the foreground.

Application of these ideas will ultimately aid in the process of extracting an imaginary continuo. From there, students can then proceed to compare and contrast parallel passages as they occur throughout the fugue. Students will of course need to consider and observe how similar (often identical) material functions differently when it appears in different contexts throughout the fugue, but I suggest that solving the problems of analyzing polyphonic melody and sequential passages is the key to understanding a fugue's inner form. Once these obstacles are overcome, the remaining stages of analysis will prove to be as straightforward as any tonal work. In fact, since fugues are primarily composed of subject entries and episodes, students will find that after completing step 2 they have sketched the majority of the composition.

In step 3a, students should examine the fugue's harmonic trajectory (this was first identified in step 1a) and consider plausible middleground structures that align with this progression. Consideration of deeper structural levels should only come after careful examination of the surface details since the information observed in step

2 will inform decisions about which of these structures are possible representations of the fugue.³¹ Finally, step 3b rejoins the tonal segments from earlier and observes how they align with the fugue's fundamental structure.

Of course, this process does not always need to be followed to the letter for every fugue. In any analysis, a certain amount of flexibility is always required, as is an openness toward alternate interpretations along the way. Most importantly, however, is what Slottow calls "active attention" in analysis.³² Simply staring at a score and/or passive listening will never lead to a profound understanding of the inner workings of a musical composition; analysts arrive at their final conclusions only through hours of active listening, careful contemplation, and a lot of trial and error. Many of the tasks I outline in Example 1 are meant simply to serve as a springboard for deeper stages of inquiry.

Analytic Demonstration: Two Fugues by J. S. Bach

Getting started:

J.S. Bach, Fugue in D Major from the Well-Tempered Clavier Book I

Bach's Fugue in D Major from the *Well-Tempered Clavier* Book I serves as an ideal introduction to fugal analysis: it is short, allowing for in-depth study of many important details without losing sight of the complete work; the formal design of the fugue is quite tidy, reusing the same elements in only slightly altered ways; and it is strikingly homophonic, which allows for a gradual move away from textures that are primarily chordal and toward those that are predominantly linear in construct.³³ The simple texture enables students to extract an imaginary continuo more confidently in spite of the imitation and linear motion in the fugue's subject.

1. Analyze the formal design and tonal structure.

Step 1 is completed relatively quickly within the process, but it is very important. In the form chart, shown in Example 3, bold lines emphasize four tonal segments,

³¹ In her account of a lesson with Felix-Eberhard von Cube, a student of Heinrich Schenker, Susan Tepping (1988, 66) mentioned his refusal to assign deeper structural function to any notes in their graph until the entire foreground-level analysis was completed.

³² Slottow (2005, 64).

³³ In his discussion of formal design and tonal structure, Felix Salzer presents a full sketch of this fugue as an example of a one-part structure (1982, 240–243).

in contrast to seven sections articulated by motivic segmentation.³⁴ Students should consider the implications of these differences carefully, and they should also focus on how a Schenkerian approach informs their understanding of the concepts of formal design and tonal structure. Consider the fugue’s exposition, for example. Traditionally, we mark the end of the fugue exposition at the point where all of the voices have stated the subject.³⁵ Form analysis would therefore dictate that the exposition ends on the arrival of V in m. 6. But the first tonal segment marked in Example 3 continues until a return to I in m. 7. It will also be possible, and sometimes necessary, to extract smaller units when examining the voice leading in step 2—Schachter does this as well—but only where clear tonal boundaries are apparent. For instance, while the first tonal segment extends from mm. 1–7 as described above, a smaller tonic expansion occurs in mm. 1–4. Depending on the context, and details under consideration, one might find smaller segments more manageable at times.

	Exposition					Episode		Episode										Episode		Codetta					
mm#	1	2	3	4	5	6	7	8	9	11		12		13	14	15		17	21	23	25-end				
Treble	ans						sub		y	sub								x (desc. 5ths)		y (desc. 5ths)		x (desc. 5ths)			
Inner Voice 1	sub								(desc. 5ths)	ans								IC8							
Inner Voice 2	ans (desc. 5ths)									sub															
Bass	sub					x	sub		x	frg. frg. sub								y x							
D maj:	I V						I VI		IV									II V I V		I I					
Tonal Segments	Segment 1 (mm. 1–7)							Segment 2 (mm. 7–17)								Segment 3 (mm. 17–23)								Segment 4 (mm. 23–end)	

Example 3

Form Chart, J. S. Bach Fugue in D major from the *Well-Tempered Clavier* Book I

34 This approach is modeled closely after Carl Schachter’s analysis of Bach’s Fugue in B-flat major; he provides a more traditional form chart of the fugue, but he organizes his analytic discussion by tonal segments (1990). My step 1 aims to combine these two views more explicitly. The D-major fugue contains only two large passages of subject entries (mm. 1–6 and mm. 11–17; a briefer passage of entries in mm. 7–9 will be shown in the full graph of the piece). The fugue’s subject never returns in its entirety after m. 17. Bach’s extensive use of the first half of the subject in the later episodes ensures that the subject continues to dominate the fugue as a whole.

35 Schenker ([1926] 2014, 33) was vehemently opposed to the practice of associating the “voices” in fugal texture with voice parts (Soprano, Alto, Tenor, Bass). He argued that the voices in fugues should be understood only as instrumental parts. Carl Schachter (2016, 30) similarly objects to the current practice of referring to pitches via the system created by the Acoustical Society of America (ASA), suggesting that the traditional system used by J. S. Bach and others is more “rooted in the human body and the human voice.” In keeping with these views, I will refer to voice parts as Treble, Inner Voice, and Bass in my form charts and elsewhere.

2a. Identify and compare all parallel passages: subject and subject entries.

Step 2 requires sketching and comparing all parallel passages. Step 2a involves graphing the subject and all subsequent passages containing subject entries. Because subject entries recur frequently throughout a fugue, and because similar passages need be graphed consistently, it is important to justify all analytical choices made at this stage. Example 4 presents the score and voice-leading sketch for the D-major fugue subject.

Example 4

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, subject.

The dotted vertical line in Example 4 divides the subject into two parts for study. According to Rothstein, linear progressions are the composing-out of a chord or chordal interval: “Despite its stepwise appearance, therefore, a linear progression is in essence an arpeggiation filled in by passing tones.”³⁶ The rising stepwise motion in the first half of the subject outlines a third D/F#, and F# is further embellished by upper and lower neighbor tones. The second half of the subject features a leap to B ($\hat{6}$) followed by descending third-progression ($\hat{5}-\hat{4}-\hat{3}$). The final consideration is how the first and second halves of the subject are connected. Rothstein’s *rule of arpeggiation* states that tones of an arpeggiated harmony will belong to a vertical chord.³⁷ When D and F# from the first half of the subject are grouped with the B that starts the second half of the subject, they do form a triad. But it makes little sense to outline a B-minor triad at the start of a composition in D major. Furthermore, grouping these pitches together ignores the harmonic rhythm, which changes regularly on every quarter-note beat. The harmonic rhythm also precludes grouping D, F#, and A (beats 2 and 4) together as a single tonic arpeggiation, because it would also bypass a harmonic

³⁶ Rothstein (1990, 98).

³⁷ Ibid., 92.

change on beat 3.³⁸ Thus, according to Rothstein's rule, neither group of pitches can be viewed as an arpeggiation—at least not at the foreground—because they do not form a triad. With these details in mind, it makes the most sense to interpret B as an upper-neighbor to A ($\hat{5}$), which initiates a descending third-progression ($\hat{5}-\hat{4}-\hat{3}$). Because this fugue subject places so much emphasis on F $\sharp$, my sketch in Example 4 (and in the middleground sketch in Example 11) treats the $\hat{5}-\hat{4}-\hat{3}$ progression as a melodic embellishment to F $\sharp$.

Several of these observations might seem immediately obvious, but it is important to be as precise as possible since how the subject is graphed impacts a substantial portion of the analysis. Many students have strong musical intuitions and will want to jump more quickly to the graphing stage, but I caution them against relying too heavily on musical intuition alone, as this can sometimes lead to inconsistent readings.³⁹ It is best to ground our decisions in the rules of counterpoint. In the remaining part of step 2a, students should compare all of the subject entries in the fugue and observe how they function within various contexts.⁴⁰ The first tonal segment, mm. 1–7, is analyzed in Example 5.⁴¹ (In all of my examples, the score is provided at the lowest level for ease of comparison with my analyses; a foreground sketch containing most of the pitches from the score is immediately above, followed by a middleground sketch at the highest level.)

In examining Examples 5a and 5b, it is clear that the subject and answer are not graphed identically. Where the upper-neighbor B ($\hat{6}$) in the subject is graphed consistently with the analysis shown in Example 4, this same upper neighbor in the answer (F $\sharp$ in m. 2) holds more structural weight; it keeps $\hat{3}$ active within a large-scale descending third-progression that spans across mm. 1–4 (and again in mm. 4–7 with the second pair of entries). Because the answer ends on the dominant, the linear progression is incomplete until the arrival of the third voice entry in m. 4 (beat 2).

38 Rothstein (1990, 91) also notes the importance of observing harmonic rhythm.

39 I discuss this issue in greater detail in Marlowe (2020; forthcoming).

40 Blank worksheets of these tonal segments are provided in Appendix B for individual study.

41 I demonstrated earlier how a shorter tonal segment from mm. 1–4 could also be extracted, but because the third and fourth voice entries follow an identical voice-leading model as the one shown in the first and second voice entries, it seems more appropriate to include the entire exposition here instead (i.e., further insights would not be gained through examining the later pair of voice entries in isolation). Students should also notice that these initial sketches do not contain any open noteheads. It is crucial to examine the voice-leading motions within each tonal segment, without committing to a specific middleground reading too early in the analytic process.

a.

b.

c.

D: I — V — I — V — I — V — I

Example 5

Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, subject entries in mm. 1–7 (exposition).

For this reason, it is essential to include the *link* in m. 3 to represent a complete tonal segment.⁴² The complete sketch in Example 11 reveals two descending linear progressions ($\hat{3}-\hat{2}-\hat{1}$) that, when combined together, expand the tonic *Stufe* over the entire span of mm. 1–7.

The next large group of subject entries (mm. 11–17) is presented in Example 6. A similar large-scale descending third-progression (B–A–G) is projected here, except this passage features a modulation from G major (m. 11) to E minor (m. 17). By the time the linear progression descends to G in m. 14, we have firmly arrived in E minor via 5–6 contrapuntal motion. The excerpt concludes with a key-confirming cadence in E minor (m. 17) that continues to support G in the upper line.

2b. Identify and compare all episodes.

Step 2b examines fugal episodes. As the form chart illustrates (Example 3), most of the episodes in this fugue feature descending-fifths sequences, and three (those beginning in measures 9, 17, and 21) contain nearly identical material. Schenker generally did not acknowledge sequences in his writing, referring to them as “fallacious concepts.”⁴³ Contemporary Schenkerians are of course far more willing to recognize the existence of sequences. Nevertheless Slottow suggests that, while we might be inclined to tone down Schenker’s harsh rhetoric, we should still heed his point about how sequences function within the larger tonal context: “That is, they do not exist apart from their larger context and function but they do not ‘not exist’ either.”⁴⁴ Slottow recommends viewing sequences as verbs (progressions that perform a specific action, leading from one point to another within the large-scale tonal trajectory) rather than nouns (inert objects, like “stones plopped here and there into the musical stream ... [if viewed this way] their role in the larger structure [is] eclipsed”).⁴⁵ I find this to be a particularly useful analogy in the classroom.

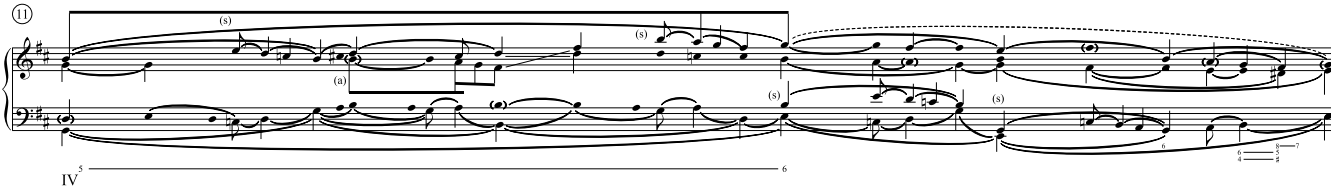
As we all know, not all fugal episodes contain sequences, but Renwick discusses how the two topics are interrelated:

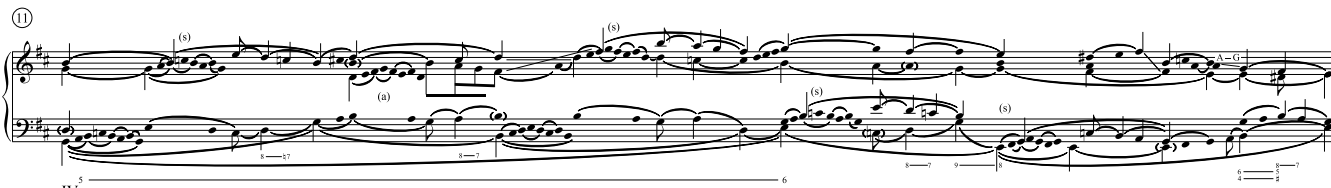
⁴² The descending-fifths sequences in mm. 3 and 6 serve to return to tonic in this context; I will discuss sequences when I analyze fugal episodes in the next section.

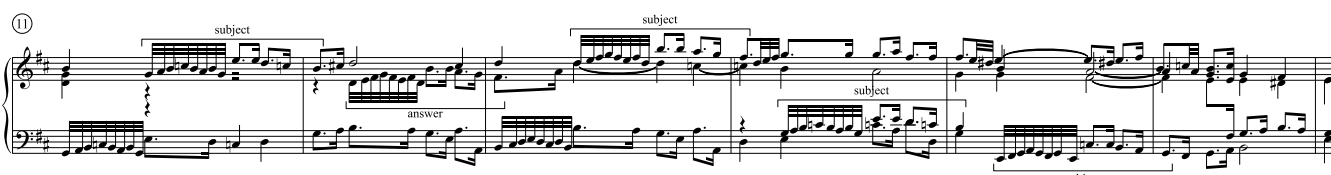
⁴³ Two helpful summaries of Schenker’s opinion on sequences, along with proposed solutions for addressing them in analysis can be found in Brown (2005, 99–103) and Slottow (2018).

⁴⁴ Slottow (2018, 73).

⁴⁵ *Ibid.*, 76 and 74.

a. 

b. 

c. 

Example 6

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, subject entries, mm. 11–17.

Despite their different significations, sequence and episode are intimately linked in that episodes are commonly but not always based on a sequential structure, and sequences are most conspicuous in fugues when they are used as the structural basis of episodes. Indeed sequence is the typical means by which episodes project a sense of unity and directed motion.⁴⁶

When completing step 2b, it is completely appropriate to examine the voice-leading of each episode and to consider the sequence's contrapuntal framework; but it is equally important for students to consider each episode's tonal trajectory as well. As stated earlier, we know that a sequence can either be prolongational, composing out its local tonic, or it can be transitional, moving from one key to another at the musical surface. But the tonal segments we extract for study may not necessarily start and end precisely where the sequences do. Rather, we must examine these passages within the confines of their local tonal boundaries. In Example 7 for instance, there is a clear arrival on B minor at the conclusion of the subject entry on the downbeat of m. 9; this arrival coincides with the start of the sequential passage, and so I am able to isolate the sequence for study. Other instances may require inclusion of non-sequential material if tonal boundaries are articulated separately from the beginning and ending of the sequence itself. Of course, in all of these instances, we will later take a further step back to consider how these segments function within the larger tonal context.

A general process for analyzing sequences in fugal texture was described above; of course, this process can be applied to any complex texture. In Example 7, the underlying harmonic pattern is clear (it is a descending-fifths progression embellished with secondary dominants in the ancillary chords).⁴⁷ Students will likely be able to identify the LIP here as well: at the onset of each new harmony, we can identify a 10–6 intervallic pattern in the outer voices. But, in my experience, students will need more instructional guidance to determine how to graph this passage. Using Rothstein's rule of arpeggiation, Example 7d first groups the tones in beats 2–4 as a vertical harmony: in the right-hand part, each sixteenth-note group features a lower neighbor followed by an anticipation of the following pitch; and the left-hand part has been simplified to highlight only the bass tones of the implied harmonies (the thirty-second-note pattern was already analyzed when it first occurred in the fugue's subject). I then normalize the register of the right-hand part and omit octave doublings with the bass pitches (Example 7c). The arrows indicate voice-leading motions in the upper voice.

⁴⁶ Renwick (1995a, 139).

⁴⁷ For more in-depth discussion of ancillary chords, see Slottow (2018) and Willner (2005, 2016).

⑨

a.

b.

c.

d.

e.

Example 7

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, mm. 9–11.

a.

b.

c.

motive x

motive y

descending 5^{ths}

descending 5^{ths}

Example 8

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, mm. 17–21.

From here, I rely on Brown's contrapuntal frameworks to help clarify the deeper-level function of the passage. In Example 7b, I omit additional doublings and normalize the upper voice to isolate a two-voice framework. The neighbor-note embellishments that were featured in Example 2b start to emerge here as well. As Brown points out, and as is now clear here, the surface "chords" are contrapuntal elaborations of the underlying parallel motion between two voices (Example 7a).

The same procedure is applied to the later fugal episodes as shown in Example 8 and Example 9. In Example 8, motives *x* and *y* have been inverted (this is also noted on the form chart in Example 3) resulting in invertible counterpoint at the octave. The sequential pattern changes in m. 20 and a faster harmonic rhythm drives toward the cadence in tonic (m. 21). An abbreviated form of the same sequential pattern returns in m. 21 (Example 9). The arrival of a $V\frac{1}{2}$ sonority signals a break in the sequence in

Example 9 consists of three parts, a, b, and c, each showing a musical passage in D major (one sharp) for measures 21, 22, and 23. Part a shows a two-voice framework with parallel motion between the upper and lower voices. The upper voice starts on D4 and moves up stepwise, while the lower voice starts on D3 and moves up stepwise. The passage ends with a cadence in tonic (D major). Part b shows a similar two-voice framework, but with a different harmonic rhythm and a different ending. Part c shows a more complex texture with motives x and y. Motive x is a descending eighth-note scale, and motive y is a descending eighth-note scale with a final quarter note. The passage ends with a cadence in tonic (D major).

Example 9

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, mm. 21–23.

m. 22, and the passage concludes with a second emphatic arrival on the tonic in m. 23. Simplified voice leading in Example 9a reveals a descending third-progression ($F\sharp-E-D$) that spans this entire segment.

3. Examine the fugue's contrapuntal structure.

Completing step 2 results in detailed foreground sketches of nearly the entire fugue; the remaining tasks (steps 3a and 3b) reconnect these segments to fit within the large-scale structure. At the earliest stages of analysis, it is important to proceed from foreground to background. It is often tempting to jump ahead to the deeper structural levels—and sometimes they are immediately recognizable—but clarifying the precise voice-leading paths at the musical surface is essential before making any final determinations about the fugue's tonal structure. Taking the harmonic trajectory outlined in Example 3 as a starting point, I present two plausible middleground structures for the fugue in Example 10. Both readings seem equally sound, but the final decision rests on whether the *Kopfton* is $\hat{3}$ or $\hat{5}$.

Example 10 displays two plausible middleground structures for J.S. Bach's Fugue in D major. Structure a shows a sequence of measures 11, 21, 23, 11, 14, 17, 21, 23. Structure b shows a similar sequence with different voice leading. Both structures are set in D major (one sharp) and show the progression of the fugue's subject and answer.

Example 10

J. S. Bach, Fugue in D major from the *Well-Tempered Clavier* Book I,
plausible middleground structures.

The middleground sketch in Example 11 (step 3b) considers the fugue's large-scale structure while keeping the voice leading from step 2 intact. After reconnecting the individual tonal segments, I decided that $\hat{3}$ was the primary tone for two main reasons. In my discussion of the fugue's subject (Example 4), I noted the strong emphasis on $F\sharp$ ($\hat{3}$). I also noticed that an inner voice reaches over the answer (m. 6) and leads to $F\sharp$ ($\hat{3}$) in the upper register. This $F\sharp$ (m. 7) remains active until the supporting harmony modulates to B minor (m. 9), giving it added emphasis. This reading (consistent with the structure represented in Example 10a) also reveals some interesting motivic parallelisms: the upper-third patterns that decorate pitches in the fundamental line

The image displays a Schenkerian analysis of the middleground sketch of the Fugue in D major from the *Well-Tempered Clavier* Book I. It consists of two staves of musical notation. Above the staves, circled numbers 2, 5, 7, 9, 11, 12, 14, 15, 17, 21, 22, and 23 are placed above specific measures. The notation includes notes, rests, and accidentals. Below the staves, Roman numerals (I, V, I, IV, V, I, II V I) and other symbols (like 'D:', 'N 4', and '10-10-10') indicate harmonic and structural analysis. A large bracket spans from measure 7 to measure 23, and another bracket spans from measure 1 to measure 23.

Example 11

Bach, Fugue in D major from the *Well-Tempered Clavier* Book I, middleground sketch.

($\hat{6}-\hat{5}-\hat{4}$ leading to G in m. 14; and $\hat{5}-\hat{4}-\hat{3}$ leading to F# in m. 21) are similar to the melodic embellishment ($\hat{5}-\hat{4}-\hat{3}$) leading to F# ($\hat{3}$) in the fugue's subject (see Example 4). The misalignment with the upper line and its harmonic support also highlights an anticipatory quality, similar to the anticipation figures featured in the episodes.

Advanced Practice:

J. S. Bach, Fugue in F major from the Well-Tempered Clavier Book I

Having demonstrated my process through discussion of the D-major fugue, I will now discuss Bach's Fugue in F major from the *Well-Tempered Clavier* Book I to explore how the process can be adapted to a new composition. This fugue poses greater challenges than the D-major fugue: the voice leading in the subject is more ambiguous, and there are many register transfers (particularly in the episodes) that complicate the voice-leading analysis. Nevertheless, I will show that application of the same procedures described earlier will result in a successful analysis of the fugue.

1. Analyze the formal design and tonal structure.

A form chart for the F-major fugue is presented in Example 12. Step 1a identifies four tonal segments, and step 1b reveals a double exposition and middle entries in stretto at the octave.⁴⁸ The order of voice entries reverses in both of these passages: in the counter-exposition (starting in m. 18), the upper voices appear in reverse order, and the voice order in the second set of stretto entries (mm. 46–56) is a mirror image of the first stretto passage (mm. 36–46).

mm. S A B FM:																																													
	Exposition mm. 1–13						Episode mm. 13–17			Counter-Exposition mm. 18–29						Episode mm. 29–36			Stretto Entries mm. 36–46						Stretto Entries mm. 46–56						Episode mm. 56–64			Final subject entry, mm. 65–68			Closing mm. 68–end								
	1	5	10							18	22	26				desc. 5ths			36	38	40				46	48	50				desc. 5ths			65			68	71	72						
	sub	ans								sub	ans								sub	sub		sub					sub	sub																	
	I	V	I							I	V	I							V	→	I				sub	V	→	I																	
	Segment (mm. 1–29)																		Segment 2 (mm. 29–46)									Segment 3 (mm. 46–56)									Segment 4 (mm. 56–end)								

Example 12

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, form chart.

48 Only four fugues from the *Well-Tempered Clavier* contain double expositions: Book I: Nos. 1 and 11; and Book II: Nos. 2 and 9 (Prout 1891, 90). For the stretto entries, imitation at the octave (rather than the fourth or fifth) is more akin to canonic writing than to fugue.

2a. Identify and compare all subject entries.

The subject is presented in Example 13 with two possible voice-leading interpretations. I should note here that the subject itself ends on the downbeat of m. 4 (A); I include two additional sixteenth notes in m. 4 to show the resolution of the bass tone F (compare with the implied bass tones in both voice-leading sketches in Examples 13a and 13b). The subject's descending third-progression ($\hat{5}-\hat{4}-\hat{3}$) is readily apparent, but the sketches reveal slight differences in how the pitches in m. 2 are interpreted: is D ($\hat{6}$) an incomplete neighbor leading to $\hat{4}$ (Example 13a) or does it participate in a complete neighbor progression to $\hat{5}$ (m. 2) before descending to $\hat{4}$ (Example 13b)? It seems like a small detail, but since graphing the subject has such significant implications for the remainder of the analysis, students should be encouraged to provide clear and precise explanations for the analytic interpretation they choose.

To start, it seems reasonable to imply a tonic bass pitch to support $\hat{5}$ at the beginning of the fugue.⁴⁹ Example 13a relies primarily on pitches that occur in the score: the descending thirds in mm. 1 and 4 are grouped to show dyads D/B $\flat$ and A/F, and m. 3 reveals yet another outlined third B $\flat$ /G when the melodic embellishments are omitted. When taken at face value, the surrounding context suggests that m. 2

Example 13 consists of two musical sketches, labeled 'a.' and 'b.', showing voice-leading interpretations of a subject in bass clef with a key signature of one flat. Both sketches show a descending third progression from $\hat{5}$ to $\hat{4}$ to $\hat{3}$. Sketch (a) shows a tonic bass pitch F implied, with a final resolution to F. Sketch (b) shows a tonic bass pitch F implied, with a final resolution to F. Both sketches include melodic embellishments and a final resolution to F.

Example 13

J. S. Bach, Fugue in F major from the Well-Tempered Clavier Book I, subject.

49 To read more about the implied inner voices of Schenker's *Stufen* see Brown (unpublished), Lubben (1993), Neumeyer (1981, 1987); and Willner (2007).

should also highlight a third (C/A). This interpretation treats E and G as accented embellishments to an implied F-major sonority. But this reading does not provide an explanation for the F in m. 2. If an F-major sonority is implied, and we omit the embellishing tones, then we would be left with F–A–C, not merely a dyad (C/A) like in the surrounding measures. Perhaps the F is a continuation of the implied bass tone at the start of the fugue and through to m. 4, but where does this line go in mm. 1 and 3?

As an alternative, the linear progression $\hat{5}-\hat{4}-\hat{3}$ and its lower-third embellishments are still represented in Example 13b, but this reading considers the possibility of an implied third voice. In contrast to Example 13a, where E and G were interpreted as accented embellishments in m. 2, Example 13b treats F and A as the embellishing tones and the linear motion from E to B $\flat$ is then grouped together as a single sonority in m. 3. Students may find this interpretation less convincing at first: the harmonic rhythm is one chord per measure, and so it may seem strange to treat the pitches in m. 2 as an anticipation of the harmony in m. 3. This interpretation is valid, however, as it follows the principles outlined in Rothstein’s “Rules of Arpeggiation and of the Primary Tone.” According to Rothstein, if the harmonic rhythm remains steady throughout a musical composition, we can use the surrounding context to resolve any ambiguities.⁵⁰ Additionally, he explains:

Harmonies tend to begin on relatively strong beats rather than on relatively weak ones. When a harmony begins on a weak beat and is continued into the next stronger beat, a harmonic syncopation occurs. ... When a harmonic syncopation is normalized, the underlying initiation point of the harmony will not be the same as the surface initiation point. ... If the goal harmony arrives only at the end of the linear progression, the melodic line must be considered an anticipation of that harmony. ... The underlying initiation point of each tone in an arpeggiation is the same as that of the harmony being arpeggiated. Hence any chord tones appearing *before* that point are to be understood as anticipations of the harmony (unless they are held in common with the preceding harmony). Any chord tones appearing *after* that point are to be understood as having been delayed from the underlying initiation point.”⁵¹

In the F-major fugue, the harmony changes approximately once per measure. The linear ascent from E to B $\flat$ outlines the tritone within a V 7 sonority, but V 7 chord does not actually emerge until the downbeat of m. 3. As a result, we can view this melodic outline from E to B $\flat$ as an anticipation of the V 7 sonority in m. 3.⁵² In the

⁵⁰ Rothstein (1990, 93).

⁵¹ Ibid., 93 and 99.

⁵² The analysis in Example 13b is consistent with how Cadwallader, Gagné, and Samarotto analyze this fugue subject in their textbook (2020, 21).

subject

Example 14

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 1–13.

end, Example 13b suggests that there are three active lines of voice leading implicit in the fugal subject. The added bass line clarifies the voice leading of the passage and demonstrates how $\hat{6}$ in m. 1 functions as a complete neighbor to $\hat{5}$ in m. 2. When additional contrapuntal lines accompany the subject later in the fugue, any octave doublings that occur with this three-voice framework can be omitted from the voice-leading sketch.

The next part of step 2a explores how the subject functions within larger tonal contexts. There are two pairs of subject entries to compare in this fugue: the exposition (mm. 1–13) with the counter-exposition (mm. 18–29), and the two passages containing stretto entries (mm. 36–46 and mm. 46–56). In Example 14, students should observe how the subject's voice-leading framework is modified as additional contrapuntal lines are added to the texture. In other words, since the number of contrapuntal lines increases with each subject entry, and because some of the same linear motions are present in the added voices (such as the $\hat{1}-\hat{7}-\hat{1}$ motion in m. 3), they no longer need to be included specifically with the subject.

As in the D-major fugue, the analysis of mm. 1–13 shows how the answer (beginning in m. 5) plays a supportive role across the entire exposition. When combined with the opening subject entry, these two voices combine to project a large-scale descending fifth-progression ($\hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1}$) that is not completed until the return of tonic in m. 13. (Although the third entry appears sooner, it begins on $\hat{5}$ in the bass voice so it cannot support a tonic *Stufe* until it descends to $\hat{3}$.) The counter-exposition in Example 15 projects the same descending fifth-progression but with reversed voice entries.

The stretto entries (Examples 16 and 17) work a bit differently. By nature of stretto technique, the spacing between entries is more compressed than in the previous two excerpts. Bach repositions the entries to combine the subject's upper neighbor figure ($\hat{5}-\hat{6}-\hat{5}$) with its implied lower neighbor motion in the bass ($\hat{1}-\hat{7}-\hat{1}$). As a result, these entries no longer support a descending fifth-progression, but continue to project descending third-progressions ($\hat{5}-\hat{4}-\hat{3}$) in their respective key areas. The construction of the subject lends itself well to tonal manipulation, and Bach clearly exploits these features throughout the fugue: beginning on $\hat{5}$ creates a sense of harmonic instability when the subject appears in the lowest voice (it projects an implied six-four sonority); the descending linear progression $\hat{5}-\hat{4}-\hat{3}$ predictably appears as 8–7 motion over the dominant, creating a strong drive toward its resolution to tonic ($V^{8-7} \rightarrow I$); and in the stretto passages, the upper and lower neighbor patterns are aligned to imply *vii*⁷ sonorities which, in addition to the compressed timing of entries, increases harmonic tension and drive toward resolution.

a.

b.

c.

subject

answer

subject

Example 15

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 18–29.

a. (36) (38) (40) (44)

VI: V# ————— I —————

b. (s) (s) (s) (s)

VI: V# ————— I —————

c. subject subject subject subject

VI: V# ————— I —————

Example 16

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 36–46.

a.

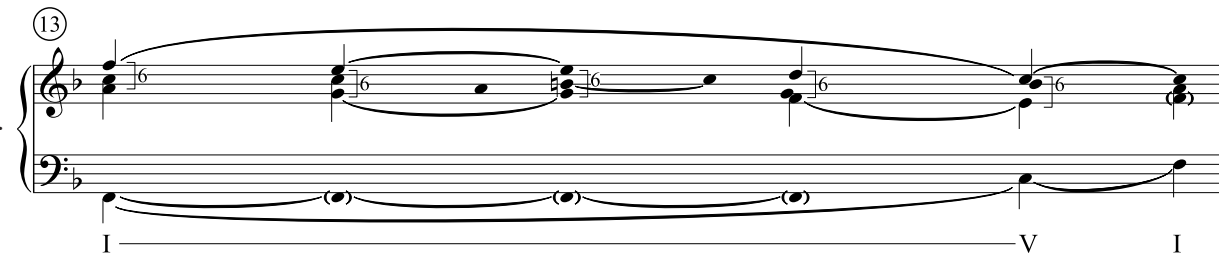
J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 46–56.

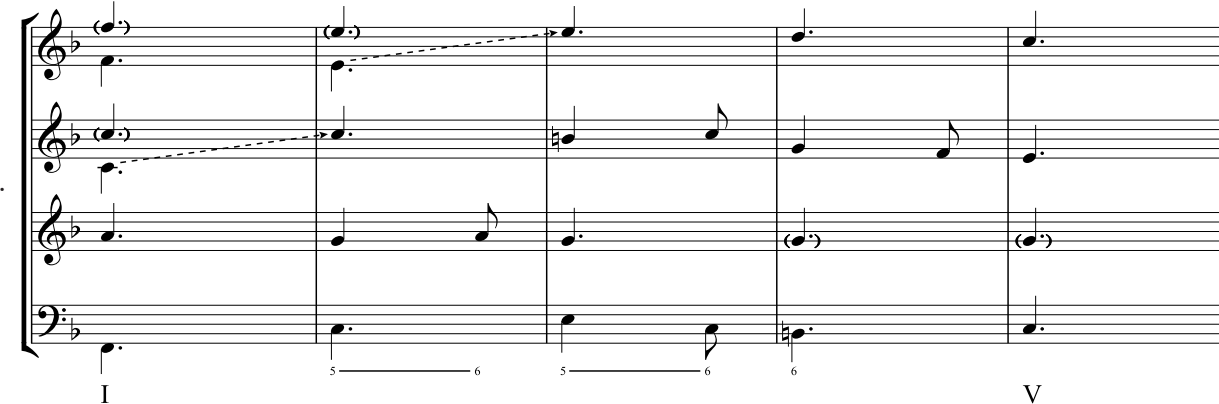
2b. Identify and compare all episodes.

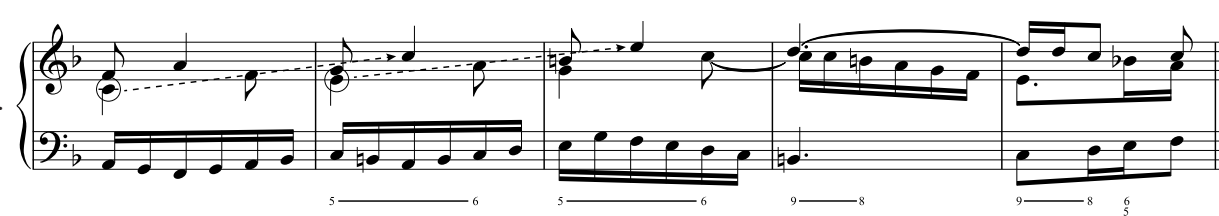
The next step (2b) identifies and compares voice-leading frameworks in the episodes. The excerpt in Example 18 does not exhibit parallel material with the later episodes in this fugue, but I include it here to demonstrate an effective strategy students can use to simplify more complex textures. The implied harmonies of this passage are not difficult to decipher, but the voice leading is masked by a series of reaching-over patterns in the upper voices (highlighted with dotted arrows in Example 18c). It is unclear what the LIP is, and it is similarly challenging to identify any parallel thirds or sixths that might help us construct a deep-level contrapuntal framework. In mm. 13–14, two separate voice-leading motions occur: A descends to G, and F descends to E. To carefully trace the voice leading motions, Example 18b normalizes the registers and provides separate staves for each line.⁵³ The top line descends F–E–D–C, and voice-leading motions in the inner parts highlight 5–6 motion over the bass. Example 18b clarifies how the series of reaching-over patterns reactivates the upper register and prepares us for the beginning of the counter-exposition. Further simplification in Example 18a reveals a series of descending parallel sixths over a sustained F in the bass.

The remaining two episodes feature descending-fifths sequences and use similar motivic material, but their voice leading becomes increasingly more complex. The episode in mm. 29–36 is analyzed in Example 19. Example 19b simplifies the texture into a chordal framework, which features a series of 9–8 suspensions. The voice exchange between the lower two parts in m. 29 highlights the same E/B $\flat$ dyad that much of the expositional content has highlighted. E is clearly the bass pitch in m. 30, so B $\flat$ becomes the active tone in the inner voice. From here, the remainder of the passage is quite straightforward. Following the pattern until the sequence breaks in m. 35, Example 19b highlights a modulation from tonic to D minor via 5–6 contrapuntal motion. Example 19a follows Brown's contrapuntal frameworks as a model, revealing a series of descending six-three sonorities (and ultimately a series of descending sixths) above a pedal tone in the bass.

53 Susan Tepping uses this approach in her dissertation (1987). When students encounter more complex textures, they should consider the multi-stave approach as an intermediary step.

a. 

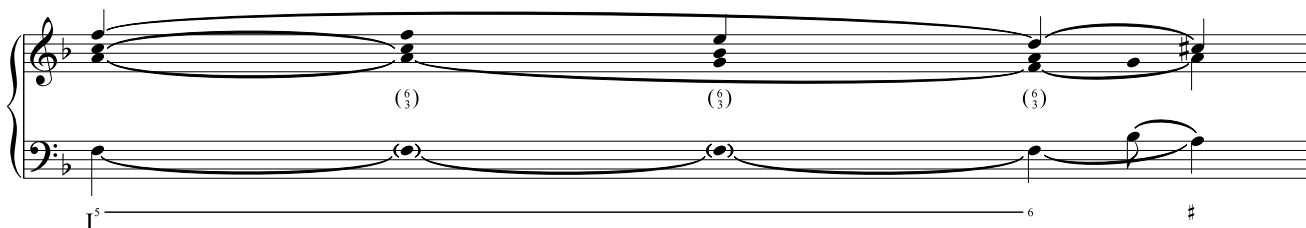
b. 

c. 

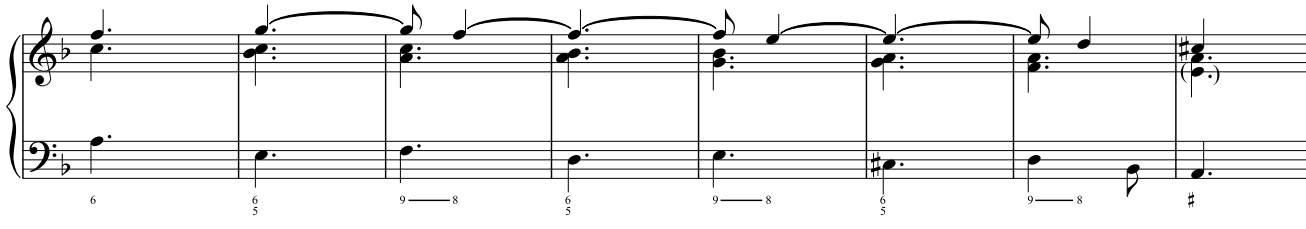
Example 18

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 13–17.

a.



b.



c.



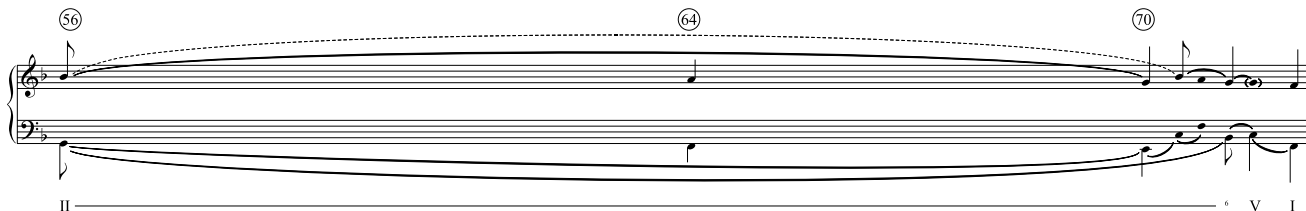
Example 19

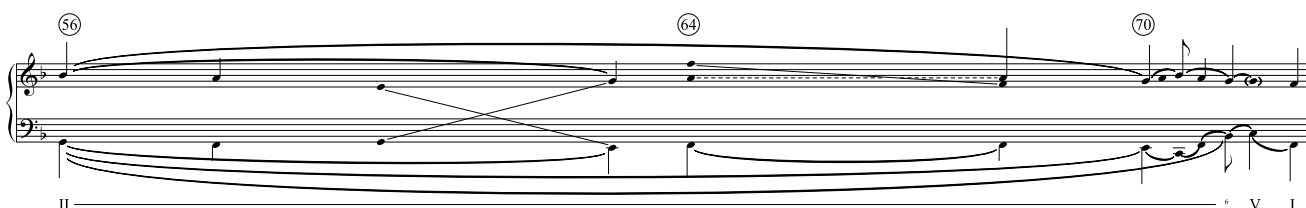
J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 29–36.

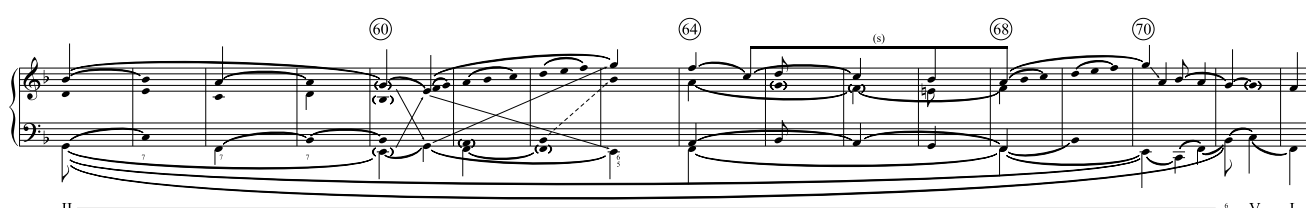
The final episode, mm. 56–64, is the most difficult to analyze. Students should first note that Example 20 includes two tonal segments instead of just one. The episode technically concludes with the tonic sonority in m. 64, and this tonic arrival is immediately followed by a final, embellished subject entry (mm. 65–68). I examined each of these segments separately at first, but later realized that they participate in a larger, more significant part of the tonal structure. For this reason I decided that they should be presented together, but will explain each segment separately below.

The episode (mm. 56–64) clearly projects root motion by descending fifths, but the stepwise ascent (first in the left-hand part, then in the right-hand part starting in m. 60) poses some initial voice-leading complications. To simplify, Example 20c retains only the roots of these harmonies (the implied inner voices are active in the upper lines as well) revealing a series of root-position seventh chords in mm. 56–59. The descending third-progression ($B\flat$ –A–G) in the upper voice is supported by parallel tenths in the bass voice (G–F–E). Implied tones, G and E, are notated on the downbeat of m. 60 to show a continuation of the voice leading; these implied tones are absent in the score, replaced by their exchanged substitutions. The tonal function of the ascending eighth-note pattern also changes when it is transferred to the upper voice in m. 60. Where the pattern initially emphasized chordal roots (mm. 56–59), it now highlights chordal thirds (mm. 60–62). Because of the change in context, this line projects an ascending third (E–F–G), which is counterpointed with a descending third-progression (G–F–E) in the bass to reveal a large-scale voice exchange. In sum, mm. 56–64 feature a series of parallel tenths followed by a voice exchange, which combine to prolong G minor (Example 20b).

The second tonal segment (mm. 64–end) features one final entrance of the ascending eighth-note pattern (m. 68). Applying the process from mm. 56–59 highlights bass tones F– $B\flat$ –E, and then the pattern breaks in m. 70. The simplified texture in Example 20b shows a descent from F to E in the bass (and A to G in the upper line); this is reduced even further in Example 20a, to reveal a series of parallel tenths governing the entire passage from mm. 56–70 (the middle dyad A/F represents the last subject entry). Considering Example 20a even further, we can view $B\flat$ as active until m. 70, where a second descending third-progression ($B\flat$ –A–G) leads to G on the downbeat of m. 71. Detailed examination of the voice leading therefore suggests that the rhetorical return of the final subject entry in tonic (mm. 65–68) is, in fact, functioning as a passing motion within a large-scale prolongation of the pre-dominant (mm. 56–71).

a. 

b. 

c. 

d. 

Invertible c.p. at octave

subject (embellished)

Example 20

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, mm. 56–end.

3. *Examine the fugue's contrapuntal structure.*

With the most difficult work now completed, students can move on to the final stages of analysis and consider how these tonal segments fit into a large-scale middleground structure. Example 21 offers two possibilities. The structures represent either a double bass arpeggiation (Example 21b) or treat the later arrival of $\hat{3}$ in m. 68 as a consonant passing tone (Example 21a). This fugue does not contain convincing structural support $\hat{3}$ in m. 68, however. There are two tonic returns in mm. 64 and 68, but in both instances, tonic is approached by an inversion of the dominant, and thus weakens its arrival. This view is reinforced by the detailed voice-leading analysis discussed in Example 20. The final subject entry, although it clearly articulates a tonic harmony at the musical surface, in fact functions as a passing progression within a large-scale pre-dominant prolongation. This function is reiterated on the musical surface in mm. 70–71, where there is a premature return to tonic (m. 70, beat 3) followed by the structural close in m. 72.

Example 21

J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I,
plausible middleground structures.

The previous examples provide convincing support for a $\hat{3}$ -line reading of this fugue, and close examination of the middleground sketch in Example 22 will demonstrate how the *Kopfton* ($\hat{3}$) is established. Although there are two earlier arrivals of $\hat{3}$ in mm. 4 and 13, neither is introduced in the proper register. One might consider the A ($\hat{3}$) in the tonal answer (m. 5) as the *Kopfton*, but this A appears within the middle of a descending fifth-progression ($\hat{5}-\hat{4}-\hat{3}-\hat{2}-\hat{1}$). My sketch suggests that the *Kopfton* does not occur until after the subject returns in m. 18. The answer continues to descend as expected, leaving the upper voice free to place added emphasis on A and keeping it active in the highest register. This reading provides a strong argument for the counter-exposition as a structurally significant element in the F-major fugue: it allows for the stable presentation of the *Kopfton*, and also explains why the voice entries are reversed here.

Example 22
J. S. Bach, Fugue in F major from the *Well-Tempered Clavier* Book I, middleground sketch.

Conclusion

This essay attempts to clarify the process for graphing tonal fugues in Schenkerian analysis. I provide a concrete list of steps to follow at the beginning stages of the analytic process, followed by two descriptive analyses to demonstrate how the process can be applied. Fugues are notably absent from the Schenkerian pedagogical literature, but I suggest that analyzing fugal textures is beneficial even in introductory lessons. In my experience working with graduate students in an introductory-level Schenkerian analysis course, I find that, more often than not, they rely heavily on their musical intuitions in analysis. They quickly grasp the bigger picture of Schenker's theory, and are often able to immediately identify the majority of the structural melody and bass within a short musical excerpt. While their intuitions are very sophisticated and will frequently lead to correct interpretations, the finer details are often unclear and under-defined in their early attempts to use Schenkerian graphic notation. As an instructor, this lack of clarity reflects areas where students have not yet fully learned parts of the theory (and are subsequently areas we work on together as a class). Because fugal textures exacerbate these problems, relying on one's musical intuition will not likely yield a correct reading of a passage. When we take the security of our musical intuition out of the equation completely, it forces us to be more focused and intentional in analysis. In the end, this will lead to a better understanding of the theory.

Through the process I have outlined here, students will not only learn how to analyze fugues specifically, but they more generally can learn how to use the theory to problem-solve when they encounter complex passages. My analyses demonstrate that even the simplest, seemingly straightforward passages require careful consideration in order to accurately and consistently apply Schenker's theory in analysis. In so doing, we can begin to overcome the view that any analysis happens by "magic" or merely through instinct.

Appendix A: Additional Examples for Study

For instructors or students looking to explore isolated excerpts rather than full-length fugues, I suggest a few options by topic below:

Polyphonic Melody

It is not difficult to find examples of polyphonic melody in Bach's fugues since nearly every one of his fugue subjects exhibits this feature. For students still gaining familiarity with this concept, however, I recommend beginning with examples of accompanied melodies. Start by showing them the melody alone, decide on the implied harmonic rhythm, number of voices, and linear motions, and then look at the complete score to provide confirmation of the reading. Here are a few excerpts that are appropriate for discussion toward the end of the semester in introductory-level Schenkerian analysis courses.

J. S. Bach, Sinfonia no. 3 in D major, mm. 1–3.

J. S. Bach, Sinfonia no. 4 in D minor, mm. 1–3.

J. S. Bach, Sinfonia no. 10 in G major, mm. 1–3.

J. S. Bach, Sinfonia no. 15 in B minor, mm. 1–3.

Sequential Passages

Sequential passages are discussed at length in the current textbooks on Schenkerian analysis. Here are a few simple passages where students can practice tracing voice leading in baroque textures:

J. S. Bach, Invention no. 6 in E major, mm. 9–15.

J. S. Bach, Invention no. 13 in A minor, mm. 3–6.

J. S. Bach, Invention no. 14 in B-flat major, mm. 3–4.

J. S. Bach, Fugue in D minor from the *h* Book I mm. 9–13 and mm. 15–17.⁵⁴

54 Compare with Schenker's sketch of the fugue ([1935] 1977, Fig. 156/1).

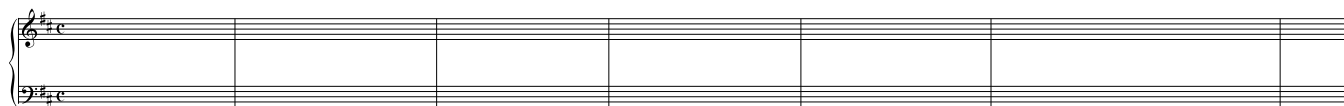
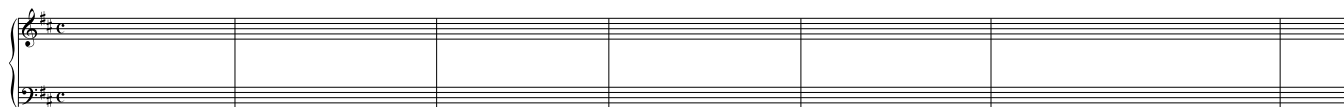
Complete Imitative Works

Although never “easy”, the following is a list of some fugues that are similarly approachable (as compared to Bach’s Fugue in D major discussed in the article):

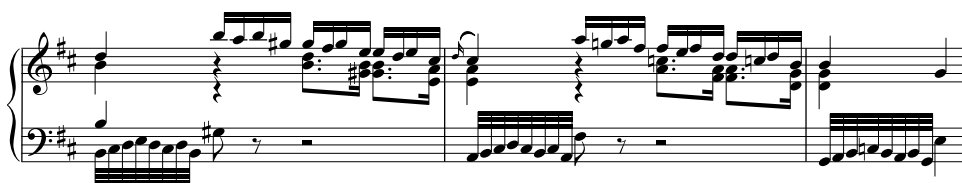
- J. S. Bach, Fugue no. 7 in E-flat major from the Well-Tempered Clavier Book I.
- J. S. Bach, Fugue no. 1 in C major from the Well-Tempered Clavier Book II.
- J. S. Bach, Fugue no. 7 in E-flat major from the Well-Tempered Clavier Book II.
- J. S. Bach, Fugue no. 9 in E major from the Well-Tempered Clavier Book II.

Appendix B: Worksheets for Independent Study

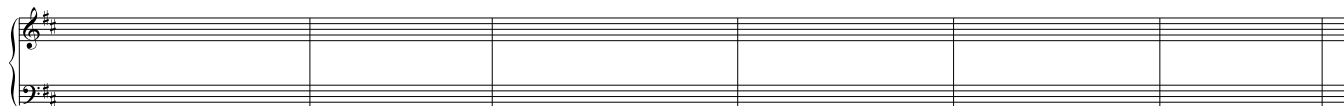
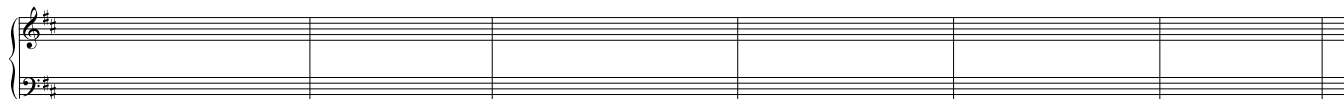
These worksheets are similar to worksheets I create for students in my introductory-level Schenkerian analysis course. Students seem to find the task of creating a Schenker graph much more manageable when they can see everything all on a single page, and these worksheets additionally ensure that their finished product is formatted accurately. The worksheets provided here are organized by tonal segments as described earlier in the paper. When analyzing a new fugue, students minimally will need to complete step 1a before they can decide which segments they will need to extract for further study.



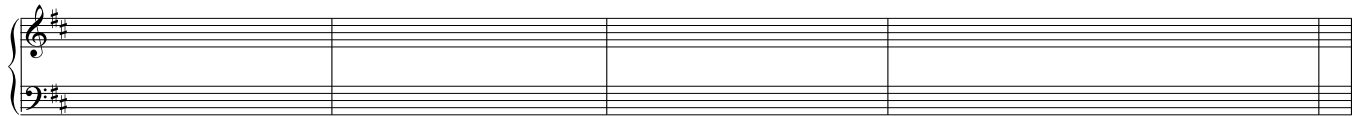
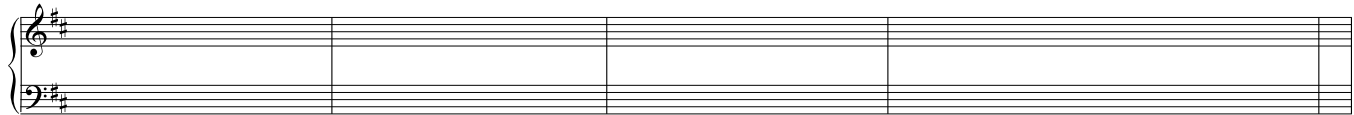
Worksheet B1-a
J. S. Bach, Fugue in D major, mm. 1-7.



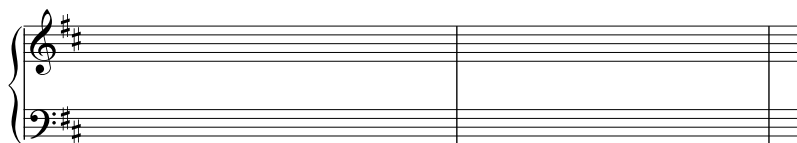
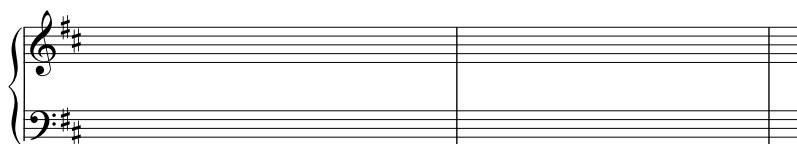
Worksheet B1-b
J. S. Bach, Fugue in D major, mm. 9-11.



Worksheet B1-c
J. S. Bach, Fugue in D major, mm. 11-17.

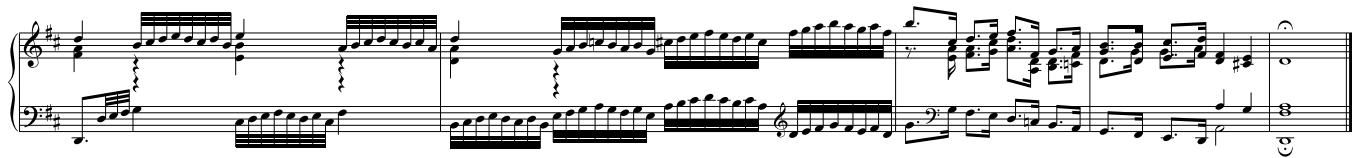
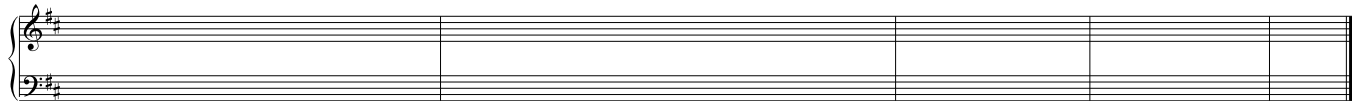
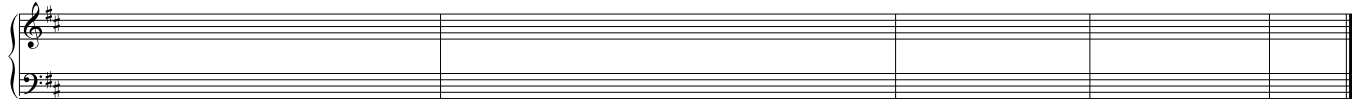


Worksheet B1-d
J. S. Bach, Fugue in D major, mm. 17-21.



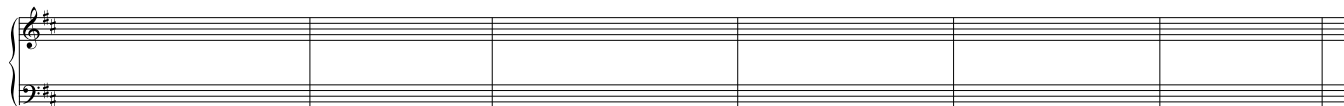
Worksheet B1-e

J. S. Bach, Fugue in D major, mm. 21-23.

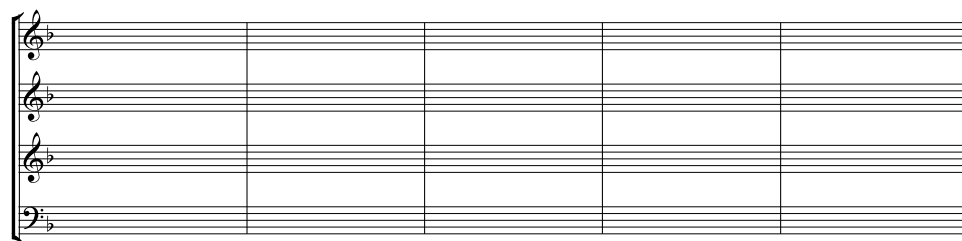
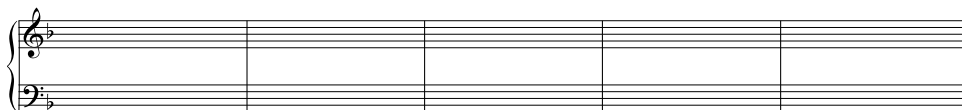


Worksheet B1-f

J. S. Bach, Fugue in D major, mm. 23-end.

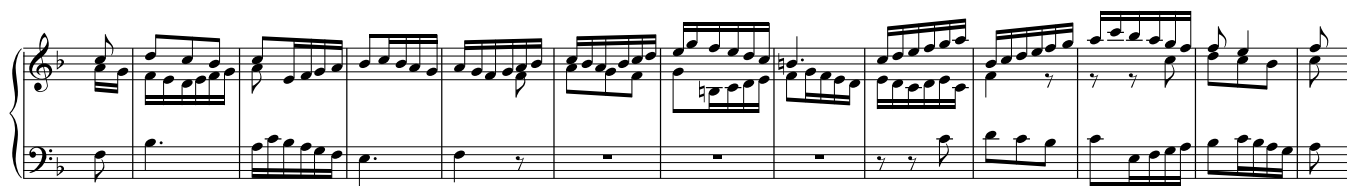
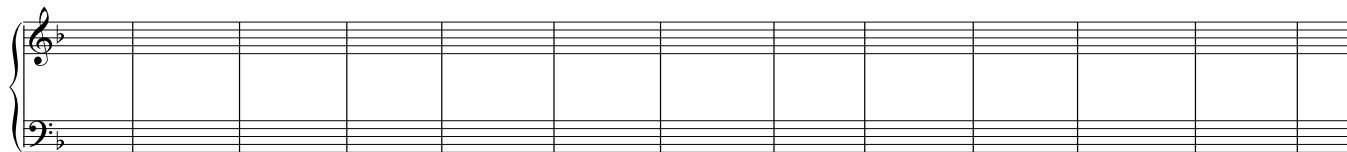
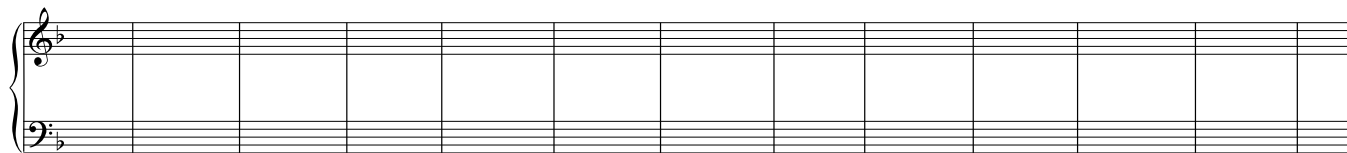


Worksheet B2-a
J.S. Bach, Fugue in F major, mm. 1-13.

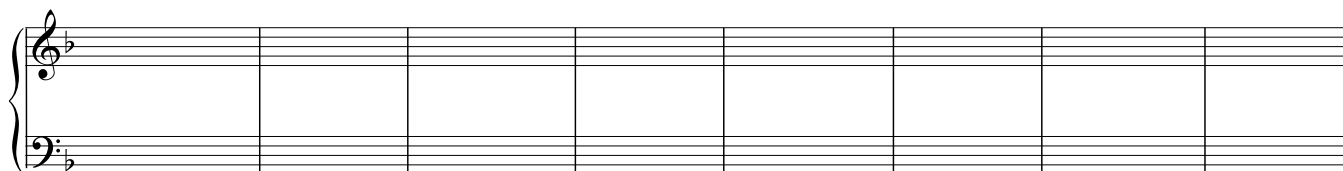
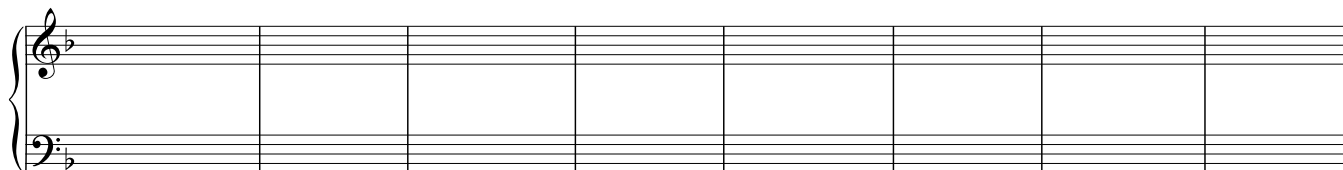


Worksheet B2-b

J.S. Bach, Fugue in F major, mm. 13-17.



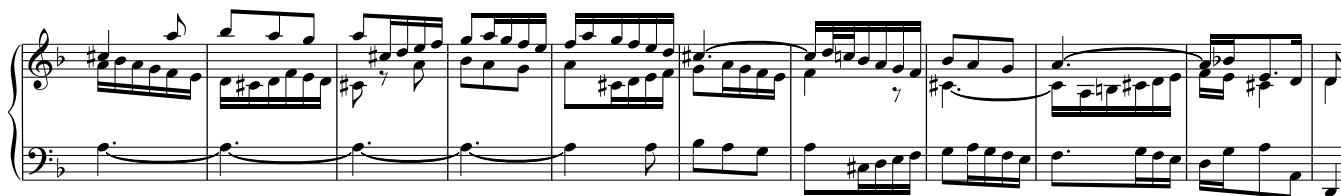
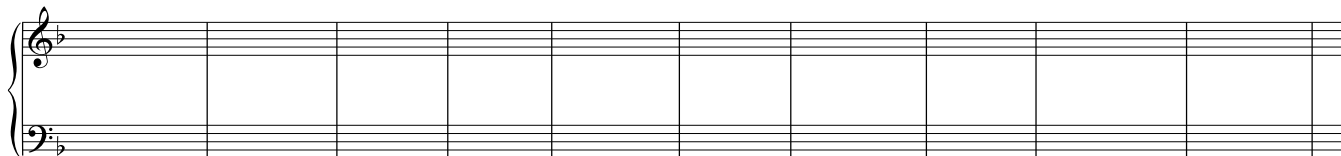
Worksheet B2-c
J.S. Bach, Fugue in F major, mm. 18-29.



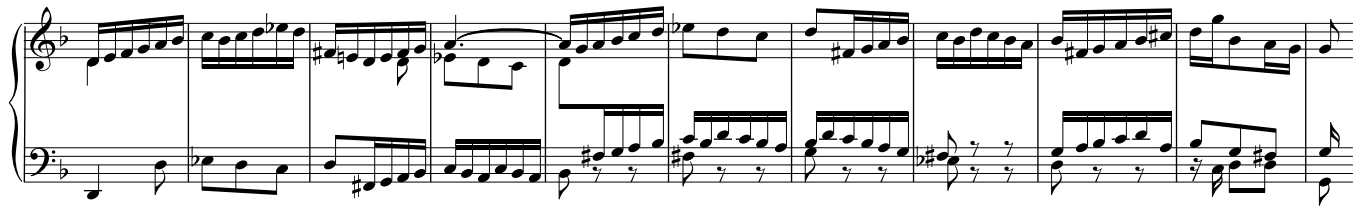
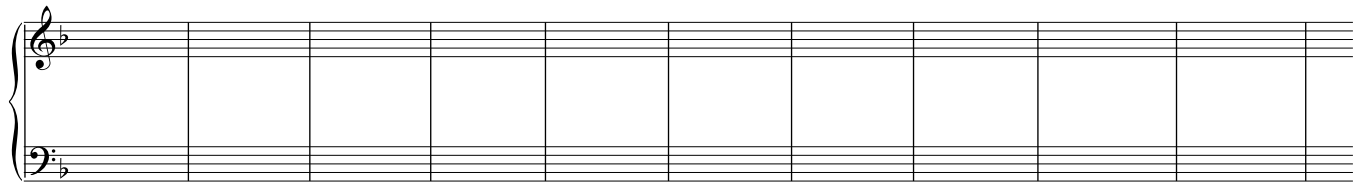
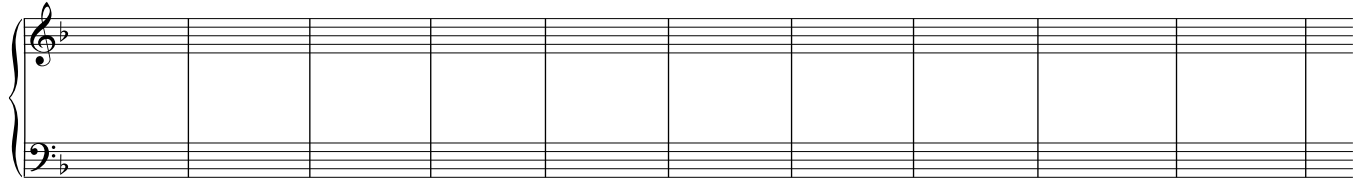
A musical score for J.S. Bach's Fugue in F major, measures 29-36. The score is written for piano (p) and features a complex texture with multiple voices. The key signature is one flat (B-flat). The score includes various musical notations such as notes, rests, and accidentals. Below the staff, there are Roman numerals (I, 6, 5, 9, 8, 6, 5, 9, 8, 6, #) indicating the harmonic structure. The score is divided into eight measures, each with five lines and a single bar line.

Worksheet B2-d

J.S. Bach, Fugue in F major, mm. 29-36.



Worksheet B2-e
J.S. Bach, Fugue in F major, mm. 36-46.



Worksheet B2-f

J.S. Bach, Fugue in F major, mm. 46-56.



Worksheet B2-g
J.S. Bach, Fugue in F major, mm. 56-end.

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Engaging Chopin's Nocturnes: Model Composition and Nineteenth-Century Diminutions

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This tribute to Prof. Peter Schubert reflects my experience teaching a model composition unit on Chopin's nocturnes, as part of a master's-level course for "classical" performance majors that was dedicated entirely to hands-on model composition. I discuss Chopin's rhythmic contours and their significance to this stylistic modeling, which is abstractly inspired by Schubert's (2008) discussion of rhythms in Renaissance counterpoint. I reflect on post-classical echoes, both in terms of Caplin's formal types as well as in terms related to Gjerdingen's harmonic-melodic schemata, as they inform teaching model composition in Chopin's style. I also discuss possible ways of adapting Kalkbrenner's (1849) treatise on keyboard improvisation to this context. The article highlights the tension between "thinking in music" and "thinking *about* music" (Schubert 2011) and some challenges and scaffoldings for teaching model composition.



Introduction

Prof. Peter Schubert has achieved an inspiring synthesis of scholarship, teaching, and practical musicianship. His ability to reconstruct and teach historical improvisation is a vivid demonstration of the sounds of historical European music. We live in exciting times in which Renaissance improvisation practices are brought back to life and the surge in partimenti scholarship and practice gives us a more vivid view of later styles of historical European musicianship.¹ Prof. Schubert's work as a scholar-teacher-practitioner also poses considerable challenges to us as instructors. Can we impart on our students the ability to "think in music," whether it precedes "thinking about music" (as Schubert would have it) or follows it?² I was privileged to study in Prof. Schubert's guest seminar on the history of theory at the Eastman School of Music in Fall 2009, and also in a graduate-student workshop on the analysis of Renaissance instrumental music at the Society for Music Theory's annual meeting in Milwaukee (2014). In both learning experiences, inspiring connections emerged between listening to music, reading historical treatises, analyzing, music-making, and teaching. The present article reflects briefly on some of the open threads, especially ones that I have not yet been able to resolve for myself as a teacher.

1 Sanguinetti (2012), Guido (2017).

2 Schubert (2011).

The dilemma of “thinking *in* music” vs. “thinking *about* music” has been on my mind as a scholar and instructor with an interest in galant schemata, partimenti, as well as model composition and improvisation. Do students need explicit step-by-step instructions in order to compose or improvise according to given models? One of the main difficulties in teaching model composition and improvisation is that many of the theoretical tools that we teach focus on generalities of tonal musics (or common-practice music), not on a rich description of an idiom. Schubert thinks that creative activities should precede the introduction of theoretical concepts.³ While I am appreciative of his ultra-integrated approach, I have found it challenging to incorporate significant amounts of work in model composition and improvisation into the core curriculum, with its required knowledge *about* music as students move between levels and instructors.⁴ I have also found it necessary to create various explicit scaffoldings for more complex creative tasks, some of which are described in the present article.

We also live in a time of considerable soul-searching for music theory as a speculative and pedagogical discipline. Melissa Hoag’s survey of “Integration, Diversity, and Creativity” highlights, among other things, the increased role of creative assignments in recent curricula.⁵ My goal here is not to provide a comprehensive survey of recent literature like hers, but rather to engage briefly the diversity of approaches and underlying assumptions. In an early textbook incorporating model composition, Nicholas Cook writes: “[This] book is not intended to teach composition; as the title indicates, it is intended to teach analysis *through* composition.”⁶ Cook articulates what I suspect is a common assumption—that model composition serves to acquire or reinforce theoretical concepts. However, one might also view core theory learning as a background for a lifetime of musicianship, creative work, and hands-on repertoire study and engagement. More recent pedagogical reflections present a great variety of methods and underlying assumptions. Derek Remeš proposes an integrated, hands-on approach to part-writing, analysis, and model composition, combining historically-informed knowledge with skills transferrable to other tonal

3 Ibid.

4 In Rabinovitch and Norgaard (2018), we reported on some of the benefits and challenges of implementing an intensive model composition and improvisation track within the undergraduate curriculum.

5 Hoag (2016).

6 Cook (1996, vii).

idioms.⁷ Hoag makes a compelling case for recomposition in the theory classroom as a way to engage compositional choices, illuminating aspects such as melody, harmonic progression, and phrase structure.⁸ Shersten Johnson shows how Mozart’s *Musical Joke* K. 522 can be used for a low-stakes analysis-through-recomposition project through students’ corrections of Mozart’s intentional errors.⁹ Nancy Rogers uses college fight songs as a basis for model composition, since this repertoire is more familiar to students yet follows some common-practice “grammatical” conventions.¹⁰ Of course, current textbooks such as those by Clendinning and Marvin and Laitz contain model composition activities related to the theoretical concepts under study.¹¹

In teaching the Rule of the Octave harmonic model, Sánchez-Kisielewska proposes putting experience before conceptualization: students immerse in an idiomatic harmonic template whose component chords they cannot yet label.¹² My experience teaching basic model composition within the core curriculum at my prior institution, Georgia State University (GSU), resonates, though only partially, with her rather Peter-Schubertian observations: I have found that teaching a Boccherini-based model composition project was feasible even though the students had not formally acquired all of the necessary harmonic vocabulary.¹³ A brief modulation to the key of V in the assignment—though such modulations are not introduced in the theory curriculum until almost two semesters later—was not a complicating factor for my students in completing the assignment. Switching “moveable do” syllables conceptually and thinking in V for four measures was easy enough to grasp, while focusing on the principal task of creating a musically satisfactory and idiomatic melody. This was assigned in conjunction with a 12-bar blues composition project, which reverse-engineered aspects of Nicholas Stoa’s blues schemata for practical teaching purposes.¹⁴

7 Remeš (2017).

8 Hoag (2013).

9 Johnson (2014).

10 Rogers (2013).

11 Clendinning and Marvin (2016), Laitz (2015).

12 Sánchez-Kisielewska (2017, esp. 118 and 121).

13 For the Boccherini model see Rabinovitch and Slominski (2015), Example 8. In the context of that article, we used it for historical improvisation. In the present brief account of my experiences with GSU students, I had repurposed it for model composition.

14 Stoa (2013).

Here, too, students were given little explicit knowledge of blues musical organization but were able to experience this style as well through a creative exercise. In more ambitious model composition projects, I have found it necessary to do quite a bit of thinking *about* music before (or during) the creative work, as I will describe in the present article.

Juxtaposing Boccherini and the blues seemed appropriate given the multiple diversities of my undergraduate students at GSU, who were roughly evenly split into three groups of classical performance and composition majors, music education majors, and music industry majors.¹⁵ From the point of view of students born around the year 2000, creatively exploring the works of Ma Rainey or Robert Johnson may seem almost as “antiquarian” as learning about Boccherini or Haydn, for all of the influence that both blues and common-practice music still exert on present-day genres.

My brief engagement of recent approaches to creativity in theory teaching highlights some tensions: between explicit knowledge and implicit stylistic understanding, “paper theory” and musicianship skills, analytical recompositions vs. fully-fledged creative exercises, as well as between traditional and diverse repertoires. I have found it rewarding to challenge myself to include creative work in the theory curriculum, which lies in my personal comfort zone but outside of the students’ comfort zone; I have also enjoyed the challenge (for me) of diversifying teaching repertoires in theory and analysis and relating to the varied musical interests of my students.

The present article focuses on a master’s course in Model Composition taught in Spring 2019 at GSU. I have also incorporated here some retroactive reflections and additions based on this experience. This course was entirely dedicated to model composition based on four small groups of pieces. Students came to this course with quite a bit of explicit knowledge of theory and analysis—at least through the core curriculum at their undergraduate institutions, if not from Advanced Tonal Analysis and Post-Tonal Analysis at GSU. However, I did not endeavor to assess how fresh the materials were in their memory and I suspect that some remained more fluent in harmonic and formal analysis than others. By focusing on model composition from a creative, theory-informed lens, my hope was to facilitate a meaningful musical experience for the students. My hope was to use an exploration of stylistic immersion and model composition as part of life-long curiosity about repertoires and musicianship.

In the context of my course, model composition was the goal: students were not

15 Cf. Palfy and Gilson (2018) for a discussion of the “hidden curriculum” in music theory and possible ways to address or, at least, acknowledge it.

expected to annotate their creative work with Roman numerals or formal labels. When a successful and idiomatic model composition is the desired output, the dilemma of thinking in and about music takes a slightly different twist: How much explicit theory and analysis is necessary in order to create in historical styles? At best, explicit theoretical knowledge is a necessary yet insufficient condition for this type of creativity. Unlike Cook’s “analysis through composition” approach, “composition *through* analysis” is inextricably linked with immersion in a genre. The musical surface becomes something to admire, analyze, and model closely in composition.¹⁶ Analysis in this case might mean something quite different from analysis for its own sake, since the purpose is creative.

The Model Composition course in Spring 2019 contained four units, based on the following models:

1. J. S. Bach figuration preludes;
2. J. S. Bach chorale variations (hymn in the soprano against a florid added bass);¹⁷
3. Debussy preludes;
4. Chopin nocturnes (A section only).

Each unit presented an opportunity for the students to explore a somewhat limited corpus through online resources (IMSLP, YouTube, Naxos) both in and outside of class. Though music students are known to be particularly busy, the corpora involved needed to be somewhat manageable for immersion within a 3-4-week period: there is really no way of overdoing the amount of intensive exposure. My choice of these four models was not intended to put the canon on a pedestal but rather was aligned with the interests of GSU master’s students, who are almost exclusively “classical” performance majors actively involved in playing these repertoires.

A Bach figuration prelude is a good place to start committing ideas to the page, since it is so constrained. A chorale variation project involves working with an existing model that receives substantial modifications on the surface. The Debussy unit was an opportunity to move away from the “grammatical” constraints of common-practice tonality into the difficult-to-articulate stylistic constraints of Debussy, giving us respite from common-practice “grammar” while challenging us in new ways. Finally, the Chopin-nocturne unit brought into play further issues of melodic and harmonic

¹⁶ Cf., again, Schubert (2011).

¹⁷ In the case of the Bach chorale variation, I curated a small anthology of relevant two-voice models such as two-voice variations from BWV 767 and 768, chorale prelude BWV 711, and “Kein Frucht...” from Cantata BWV 114.

writing and required coming up with quite a few pedagogical scaffoldings. I have decided to focus the article on this unit and share some of these scaffoldings.

Classroom activities included the following:

1. Study and analysis of models: analysis for stylistic modeling, playing, singing, and engaging the models;
2. Focused composition tasks, such as composing a phrase or a melodic fragment;
3. Presentation, discussion, and workshopping of students' pieces in progress (and excerpts composed at home), with feedback.¹⁸

Activities #1 and #3 are in line with Schubert's reliance on real music in the classroom, whether by well-known composers or by the students.¹⁹ The classroom activities mirrored the types of engagement that I hoped that students would continue outside of class. In other words, I wanted to "show, not tell" that it is extremely important to spend time with the models, rather than just preach to students that they must listen attentively. In addition to group feedback, I also used alternative-format individual meetings towards the end of each unit, in order to provide closer individual feedback to my eight students. The following sections discuss three of the technical threads that emerged from our discussion of Chopin's nocturnes: emulating his rhythmic practice, creating an idiomatic formal mold, and relying on post-classical harmonic-melodic schemata. Following these technical concerns, the final section focuses on the types of knowledge that can be gleaned from nineteenth-century treatises, with Kalkbrenner's treatise on improvising preludes as an example for both reconstructing historical diminutions and transforming them for a given creative task.

Chopin's Rhythmic Usage

I would like to start the technical discussion at a point that intersects in a curious way with the teaching of Renaissance counterpoint. This is appropriate in a tribute to Prof. Schubert's pedagogy in general and counterpoint (or model composition) teaching in particular.²⁰ It is also an opportunity to ponder the relations between

¹⁸ Feedback from me was often in the form of improvised suggestions. Transferring this particular skill to the students would have required starting with much more basic improvisation. This relates to the obvious "trade-off" between the sophistication of the creative output and the benefits of the immediacy of improvisation.

¹⁹ Schubert (2011).

²⁰ Schubert (2008).

a theoretical topic (rhythm and meter) and modeling a style. The discussion of the rhythmic shaping with the students can be quite intuitive, but from an instructor’s perspective it draws on relations between meter and melodic groupings.²¹ Renaissance rhythmic usage disguises the metric frame (to use some anachronistic terms): vocal entries are often “off the beat,” and there is a tendency to avoid the start of a new rhythmic value or motive on a “strong position,” creating the magic flow. Aspects of the received pedagogical wisdom on shaping rhythmic profiles can even be the basis for computational modeling, articulating intuitions with greater precision.²² In the present type of model composition, of course, a deep intuitive understanding is necessary. Naturally, some students have more pre-existing intuitions about the style and more experience with it.²³

Without diverting too much time from immersion in Chopin’s nocturnes, it is useful to start with a comparison of rhythmic designs that would sensitize the students to Chopin’s practice. The first “Qui Tollis” from the Gloria of Jacob Obrecht’s *Missa Maria Zart* (Example 1) typifies Renaissance rhythmic usage: downbeats are disguised, abundant ties are necessary in modern notation, and a string of eighth notes starts “off the beat” in our terms (the top, *discantus* part, mm. 9–14 is particularly illustrative through its many ties across bar lines).

The opening of Vivaldi’s Concerto op. 3, no. 8 (RV 522, Example 2) represents an opposite pole: meter, melodic groupings, and harmonic surface are in congruence, marking downbeats and individual beats for our attention with clarity: every downbeat and beat are articulated through rhythmic values and melodic shapes (see esp. mm. 2–3).

21 Lerdahl and Jackendoff (1983).

22 For a pedagogical prescription on shaping rhythmic profiles, see Schubert (2008). For a computational model, see Mavromatis (2012).

23 As one of the anonymous reviewers of this article points out, this creates an unequal starting point for students in the class: a pianist might be able to read through some of the nocturnes, while a trombonist with a lot of experience playing the likes of Maslanka in wind ensemble might be less familiar with the corpus a priori and might have a harder time immersing in it. This is a real challenge for which I do not have a definite answer. As previously mentioned, the students in this group were all “classical” performance majors with an active interest in the repertoires modeled. In addition, even for students who are more experienced in the styles modeled, this task provides an opportunity for close study and emulation that is hopefully transferrable to other tonal styles. The anonymous reviewer also proposed mixing instructor-defined styles and styles suggested by the students—an excellent suggestion that can create a more student-driven, “bottom-up” model. This productive suggestion would be highly appropriate, for instance, for an undergraduate student population with more diverse musical interests, as discussed above in connection with emulating Boccherini and the blues.

Qui tol - lis pec -

ca - ta pec - ca -

ta pec - ca - ta

Example 1

Jacob Obrecht, excerpt from *Missa Maria Zart*, "Gloria."

In contrast with these other styles, Chopin's left-hand parts establish regularity and set the right hand's incongruent groupings, improvisatory diminutions, and rubato in relief.²⁴ The opening of Chopin's Op. 48, No. 1 (Example 3) showcases an elegant combination of obscured downbeats and stressed ones in the right-hand melody. For instance, mm. 1-2 are syncopated: the melody emphasizes weak quarter notes, then weak eighth notes (beginning of m. 2). This is followed by a sixteenth-note flourish that disguises beat 3 of m. 2 through a tie. In contrast, mm. 3-4 have higher congruence between onsets, melodic groupings and motives, and the underlying meter, making them more "square-headed."

²⁴ Underlying regularity in the accompaniment facilitates an improvisatory flow in the right-hand part. The improvisatory quality of Chopin's nocturnes suggests an interesting class digression: is he "trading fours" with himself with highly regular hypermeter? What features of the score make the music seem improvisatory? How does this compare to living improvisatory genres with which we are familiar?

The musical score for Example 2 shows two systems of three measures each. The first system begins with a forte (f) dynamic. Fingerings are indicated by numbers 1-6 and sharps (#) for accidentals. The second system starts with a measure number 4. The bass line in the second system has measure numbers 6 and 7 below it.

Example 2

Antonio Vivaldi, Concerto op. 3, no. 8, mm. 1–6.

The rhythmic flow at the opening of the Nocturne Op. 37, No. 1 (Example 4) shares some similarities with the preceding example: the downbeats of measures 1 and 2 are particularly disguised. The third measure exhibits high congruence between the melodic groupings and the metric grid, with two symmetric quarter-eighth-eighth patterns. The downbeat of m. 4, with its lengthy tied half note, receives emphasis on the musical surface despite the fact that the measure is hypermetrically weak.

In order to create a Chopinesque rhythmic profile, is it necessary to teach students explicitly about meter and groupings or to assume prior knowledge of these concepts? When the goal is creative rather than analytical, it seems possible to be sensitized to style without gaining explicit knowledge using explanatory theoretical tools. Of course, this type of experiential learning can support and enrich a purely theoretical discussion, whether such a discussion precedes or follows creative learning.

A classroom activity on this topic begins by comparing Obrecht and Vivaldi, leading into a discussion of Chopin’s rhythmic practice. Some useful guiding questions include:

1. What is the difference between the rhythmic flow of Obrecht and Vivaldi? What kind of “feel” do they have?
2. How is this “feel” created by the use of rhythmic values within a measure?
3. How does Chopin’s rhythmic usage compare to the excerpts by Obrecht and Vivaldi? Is Chopin closer to either of the other composers (and in what ways?)

mezza voce

5

9

13

p

Example 3

Chopin, Nocturne Op. 48, No. 1, mm. 1–16.

Through in-class discussion, the students can discover a checklist for a Chopinesque rhythmic profile:

1. Disguise downbeats through rests and ties, at least initially;
2. Use strings of identical rhythmic values (e.g., sixteenth notes) asymmetrically, while avoiding the start of a new rhythmic value on the beat, creating syncopation through ties;



Example 4

Chopin, Nocturne Op. 37, No. 1, mm. 1–8.

3. Balance disguised strong beats with a clearer reflection of the meter in the right hand: as we have seen in both Op. 48, No. 1 and Op. 37, No.1, the right-hand part moves from de-emphasized strong metric positions to melodic groupings that are more congruent with the meter.

After immersing in these and additional models, the students can form an intuitive understanding of Chopin’s rhythmic usage. It is useful to have an in-class workshop in which the students produce a four-measure draft for the beginning of a melody. This is an opportunity for group feedback: by workshopping the pieces and asking for peer feedback about “what they liked” in a student’s melodic line and “points for improvement,” students have a chance to think explicitly about an aspect of the stylistic modeling and articulate some features of Chopin’s musical usage. A hypothetical student line might look like Example 5. This example shows a gradual transition from “obscured downbeats,” most prominently in measure 1, to clearly supported downbeats in measure 4. While the F# on beat 3 of m. 2 may still have an “in-between” quality, the second half of m. 3 supports the metric grid through four eighth notes, which pave the way for the metric congruence of m. 4.



Example 5

This activity also demonstrates how elements of an idiom can serve as a basis for students' discovery of a stylistic tendency. This is done intuitively and connects a type of musical analysis with creative work: through two examples of Chopin's rhythmic profiles, with contrasting examples by Obrecht and Vivaldi, students develop stronger intuitions about an aspect of Chopin's nocturnes. While the current goal is "analysis for composition," discovering rhythm and meter in different styles can also serve to introduce (or revisit) abstract theoretical models in a style-specific context. I have found that my students were receptive to the discussion of rhythmic usage in this style and others, even though they were generally not conversant in theories of rhythm and meter. This issue ties back to the larger dilemma of thinking *in* and *about* music, which I have certainly not resolved for myself yet.

Post-Classical Echoes (1): Caplin's Formal Types

The model composition project focused on creating an A section (only) of a Chopin nocturne, a complex task in terms of harmonic and melodic writing. Given this difficulty, generic and schematic elements on any level can serve as a productive creative constraint. The present section focuses on the large formal framework for an A section, whereas the following section will examine local harmonic and melodic schemata. Examples 3 and 4 above are excerpts of A sections equivalent to a classical small ternary (or rounded binary) without the repeats (in the latter case, there is in effect a written-out repeat of the second reprise). The opening of the Nocturne Op. 15, No. 2 (Example 6) is a sentential antecedent phrase.²⁶ These examples also demonstrate Chopin's general tendency to rely on a highly regular hypermeter—

25 Since I did not run a formal, IRB-approved trial in this course, I cannot provide examples of actual student work, as much as I think that it is productive for us to discuss pedagogy with concrete student outputs in mind, both strong and weak. I have done so in the past with collaborators Johnandrew Slominski and Martin Norgaard—see Rabinovitch and Slominski (2015), and Rabinovitch and Norgaard (2018).

26 After Caplin (1998).

something to be mindful of in this type of creative activity.²⁷



Example 6

Example 6. Chopin, Nocturne Op. 15, No. 2, mm. 1–8: A sentential antecedent phrase.

The A section of op. 48, no. 1 provides a possible outline for the students’ section, in essence a small ternary (or rounded boundary) without notated repeats, as shown in Example 7:

- MM. 1–4: Opening phrase (ends on i: PAC)
- MM. 5–8: Second phrase (ends on v: PAC)
- (MM. 1-8 equivalent to first reprise)
- MM. 9–12: bII-to-i Fonte (sequential fragmentation)
- MM. 13–16: ... → III: HC
- MM. 17–24: Expanded reprise of mm. 1-4, with cadential delays leading to i: PAC.
- (MM. 9-24 equivalent to second reprise)

Example 7

Formal Outline of Op. 48, No. 1.²⁸

²⁷ The first section of the Nocturne op. 15, No. 3 is a notable exception to the high degree of hypermetric regularity of Chopin’s nocturnes. For background and an interpretation, see Kallberg (1988).

²⁸ Whether or not mm. 1–4 and mm. 5–8 may be considered an antecedent-consequent with a

Students can discover Chopin's formal molds and sentential tendencies through in-class study of exemplars such as the beginnings of Op. 15, No. 2 (Example 6, mm. 1–8, a sentential antecedent phrase), Op. 9, No. 1 (a sentential antecedent with an expanded consequent with cadential delays), Op. 55, No. 1 (opens with a sentence), or Op. 32, No. 1 (opens with a sentence). Discovering or rediscovering Chopin's sentences and additional formal molds gives the students a sense of the framework for his melodic, improvisatory freedom. An informal query to my students in Spring 2019 indicated that fewer than half of them had retained the concept of a sentence from their previous studies. However, when asked to compare several openings, students were able to formulate a working definition of Chopin's usage of the prototype. As mentioned, it was useful to provide the formal scheme of Op. 48, No. 1 as a suggested outline for the students' A section (Example 7): the purpose was not to impose on them a specific outline (some of them chose a different path), but rather to find a productive framework. The students also appreciated the sentence-like qualities of this outline, though it technically fits into a different mold. Example 8 provides a possible roadmap based on the A section of Op. 48, No. 1.²⁹

MM. 1–4 Antecedent

MM. 5–8 Consequent

MM. 9–12: Middle section with fragmentation and sequencing

MM. 13–16: Drive towards cadence (non-home key)

MM. 17–24 (or so): Reprise of opening idea with cadential delays (see below) and I: PAC

Example 8

Proposed Roadmap for Students' A section.

Knowing *about* the sentence or the rounded binary is useful, and many of us want our students to emerge from their music degrees with vivid musical experiences of these concepts. When the goal at hand is creative, there is a need to “zoom into” the musical surface in greater detail, as I will do in the following section.

modulating consequent depends on one's fine-grained definitions and terminology.

29 Alegant (2013) outlines the pedagogical utility of road maps.

Post-Classical Echoes (2): Harmonic-Melodic Schemata

The previous section has focused on the well-defined formal models of the high-classical style, on which Chopin’s post-classical usage relies. The present section turns to an under-articulated aspect of early nineteenth-century music: idiomatic harmonic and melodic frameworks. Considerable workshopping, peer feedback and instructor feedback are necessary in order to help students experience different melodic and harmonic possibilities, such as different harmonizations of the same melodic idea. It is difficult to articulate intuitions about Chopin’s surface melodies and harmonies, and some pedagogical scaffoldings are clearly necessary.

The persistence, transformation, or “deformation” of galant schemata in the nineteenth century merits further attention from a purely theoretical standpoint.³⁰ Galant schemata include not only harmonic paradigms, but also associated soprano skeletons. Therefore, they have the potential to lead to a richer, style-specific description of musical practice than a generalized tool like harmonic or formal analysis.

One formulaic tendency that Chopin’s melodic writing shows is a drive towards higher and higher melodic peaks before reaching a cadence. This is a type of gesture that Yosef Goldenberg described as a “gesture of growing obstinacy.”³¹ Chopin’s tendency to ascend to a high $\hat{1}$ before a cadence can also be viewed as an echo of the eighteenth-century Cudworth Cadence (see Example 9).³² In Op. 15, No. 2 (refer back to Example 6), we can observe that Chopin’s way of descending from the high $\hat{1}$ ($F\sharp_5$) in measure 6 already diverges from the stereotyped eighteenth-century Cudworth Cadence. However, the eighteenth-century listening horizon still seems relevant to me, as a high $\hat{1}$ cues impending closure.³³ How can we sensitize students to such harmonic and melodic tendencies in an area that can still use more basic theoretical mapping? In the following subsections, I will provide a few models.

30 See Gjerdingen (1988), Byros (2009), Ijzerman (2017) for scholarly efforts in this area.

31 Goldenberg (2006). Goldenberg’s Examples 9, 19, and 20 are by Chopin (the latter is from the Nocturne Op. 9, No. 1).

32 After Gjerdingen (2007).

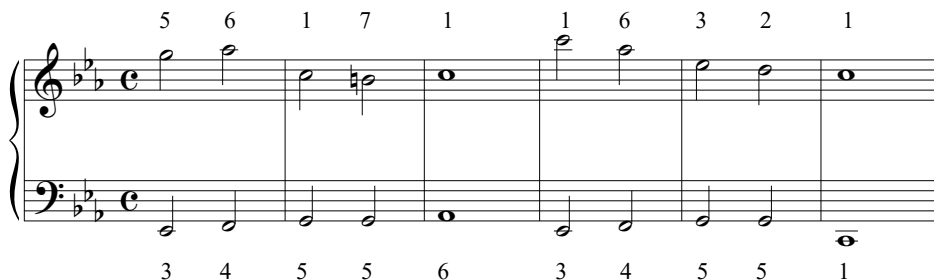
33 Cf. the discussion in Rabinovitch (forthcoming) after Larson (2012) of an analogy between two phrases by Mozart and Chopin.



Example 9
Cudworth Cadence (after Gjerdingen 2007).

A) Cadential delays and pre-cadential melodic peaks

The concluding phrase of the A section of Op. 48, No. 1 represents eighteenth-century listening horizons surrounding cadential delays.³⁴ It also shows Chopin's tendency to strive towards higher and higher melodic peaks.³⁵ Example 10 provides a model for attaining higher peaks towards the ending of a section, loosely inspired by Op. 48, No. 1, mm. 17–24.



Example 10
“Deceptive→Complete Cadence” Harmonic-Melodic Skeleton.

One might object that this scaffolding is too specific and verges on spoon-feeding, and perhaps this objection has merit. There is a fine line between encouraging immersion and providing the students models that are already idiomatic. It seems to me that providing a stylistically appropriate outline and requiring students to fill it with diminutions is a realistic compromise: the successive peaks on $\hat{6}$ (m. 1) and $\hat{1}$

³⁴ Schmalfeldt (1992), Gjerdingen (2007).

³⁵ Goldenberg (2006).

(m. 4) provide an opportunity for students to experiment with Chopinesque flourishes, which is quite challenging in itself and requires a close study of the models. Much like the discussion of rhythm above, creating idiomatic melodic activity requires close attention to the musical surface.

B) Major/minor reinterpretation schema

The opening phrases of both Op. 37, No. 1 and Op. 48, No. 1 can guide an in-class discussion of reharmonization and harmonic paths not taken. For instance, for Op. 37, No. 1 (Example 4 above), one might ask:

1. What chord would you anticipate on the downbeat of measure 4?
2. How might you alter measure 4 in order to remain in the home key?
3. How might you alter mm. 5–8 in order to remain throughout in the relative major?

This analysis and re-composition activity relies on abstract thinking about harmony, which seems necessary here. (Indeed, we have collectively spent more class time Roman-numeralizing passages in the Chopin-nocturne unit in comparison with the Bach units of the course). It is also possible to propose a more schema- or paradigm-based approach to modeling, such as the following outlines (Example 11), inspired by Chopin’s phrases reproduced in Examples 3 and 4.

Example 11 shows two systems of piano music in G major (one sharp). Each system consists of a treble and bass staff. The first system has measures 1-4, a double bar line, and measures 5-8. The second system has measures 1-4, a double bar line, and measures 5-8. Roman numerals are placed above and below the notes to indicate the underlying harmony. In the first system, the first system of measures has numerals 5, 4, 3, = 3, 2, 1 above and 1, 4, 5, 1, 6, 4, 5, 1 below. The second system has numerals 1, 4, 2, = 6, 2, 7 above and 6, 4, 5, 4, 2, 5 below. The second system of measures in both systems shows a reinterpretation of the harmonic path.

Example 11
Relative Key Reinterpretation Patterns.

C) Sequential Models

Finally, antiquated sequential models with bass lines alternating fourths and seconds and an underlying stepwise melody, as well as eighteenth-century influenced Monte and Fonte sequences, are idiomatic in the present context.³⁶ These models can fit into the sequential fragmentation of a sentence or into a middle part of a rounded binary. Example 12 offers pedagogical templates that attempt to model Chopin's usage: this can serve as a handout with exemplars for the students.

Example 12
Chopin-Inspired Sequential Outlines.

Pattern A (Example 12) represents a descending-thirds sequence with bass moving down by a fourth and up by a second in each link in the sequential chain—this is chromaticized in a Chopin-inspired way through the raised $\hat{3}$. Pattern B takes an ascending thirds sequences (bass rising by a fourth and descending by a second in each unit), also implying a tonicization of IV at its end. Patterns C and D are based on the eighteenth-century Monte and Fonte sequences, respectively.³⁷ The soprano part is now slightly embellished in surface diminutions, creating a connection to Chopin's

³⁶ Cf. Gjerdingen (2007), Froebe (2007).

³⁷ Cf. Gjerdingen (2007).

surface writing, while also providing opportunities for further embellishing. Pattern E deviates from the eighteenth-century Fonte, reinterpreting what should have been a final G $\flat$ as an F $\sharp$, which becomes a leading tone in the key of V rather than a minor third over a iii chord.

Harmonic-melodic paradigms and ways of embellishing them on the surface represent two types of requisite knowledge for this type of creative project. One could endeavor to create a complete lexicon of Chopin’s phrase types: this might prove unwieldy in comparison with the more stereotyped melodic behaviors of eighteenth-century music.³⁸ Without underplaying the crucial role of stylistic immersion for the students, we can provide scaffoldings to guide their creative work. Patterns C, D, and E in Example 12 also bring us closer to historical practices of keyboard diminution, to be explored in the following section.

Learning from a Romantic Improvisation Treatise: A Sample of Kalkbrenner (1849)

Though I have not incorporated a discussion of this with my students in the first run of the nocturne composition unit, I would be remiss in an essay in honor of Prof. Schubert to omit discussion of at least one nineteenth-century treatise. Frédéric Kalkbrenner is not only the dedicatee of Chopin’s E-minor concerto, but also the author of the *Traité d’harmonie du pianiste* (“A Pianist’s Treatise on Harmony.”)³⁹ This is a modest yet valuable source for the study of romantic preluding, that is, the extempore performance of preludes or introductions to other pieces. Kalkbrenner’s treatise was published at a time of decline in keyboard improvisation, which, ironically and unfortunately, predated the age of recording.⁴⁰ Kalkbrenner’s pedagogical approach to keyboard improvisation shows the importance of varied diminutions upon conventional bass sequences: internalizing (perhaps memorizing) harmonic models and idiomatic embellishments through the fingers is an activity that is de-emphasized in our modern-day curricula from K-to-12 (and on to DMA). Examples for this practice across three centuries include the 17th-century diminutions of Spiridionis, the eighteenth-century

³⁸ Ibid.

³⁹ Kalkbrenner (1849).

⁴⁰ Gooley (2018) provides an impressive survey of nineteenth-century improvisation practices.

partimento patterns of Durante, as well as Kalkbrenner's treatise.⁴¹ Kalkbrenner's sequential harmonic motions are varied and embellished in idiomatic piano textures, as we can see in Example 13.



Example 13

Kalkbrenner (1849, 15): An Embellishment of a Sequential Bass.

Sequences play an important role in Chopin's fragmentations and middle sections. However, Kalkbrenner's lines and textures can also serve as an inspiration for breaking the mold and "nocturnizing" this type keyboard musicianship. Example 14 is my attempt to "nocturnize" Kalkbrenner's pattern. The exercise of breaking symmetry and forming a more nocturne-like phrase can serve as an advanced activity: it raises our awareness of idiomatic accompaniment patterns, while also experimenting with harmonic and melodic writing.⁴²

Though I have taken some license with one of his patterns, some of Kalkbrenner's own keyboard diminutions are extravagant in their own right. For instance, diminutions on what we might call a 5-6 ascending sequence clearly demonstrate the persistence of contrapuntal thinking and keyboard diminutions in nineteenth-century France. The exemplar learning of the partimento tradition, adopted at the Paris Conservatory, is

41 Bellotti ed. (2003-2005 / 2008), Gjerdingen (n. d., ed.), Kalkbrenner (1849).

42 For a discussion of accompaniment patterns in a model composition project, see Silberman (2012).



Example 14

My attempt to “Nocturnize” Kalkbrenner’s excerpt.

echoed here, as we can see in Example 15.⁴³

Readers may wish to experiment with recomposing the final variation in Example 15 in a “nocturnized” fashion: it is a good idea for us as instructors to try out some of the creative tasks that we ask of our students and continue challenging our own musicianship. Much as historical treatises are central to Prof. Schubert’s project of reconstructing historical improvisation, Kalkbrenner’s treatise gives us a vivid sense of one improvisatory aspect of nineteenth-century music.

Kalkbrenner’s sequence models—both literally and in principle—open some options for future implementation:

1. Use selected sequences as keyboard exercises (or play-and-sing / singing exercises) in support of acquiring nineteenth-century diminution patterns;
2. Adapt melodic patterns to model Chopin more closely (as in my Example 14)—a challenging model-composition activity.

These historical diminutions give us a glimpse of the types of skills that we spend less time on in the curriculum, perhaps with the exception of highly specialized training in historical improvisation. Prof. Schubert insists that his counterpoint students learn several pieces by heart. This insistence on the currently frowned-upon activity of rote

⁴³ See the discussions of the transfer of Neapolitan teachings to Paris in Cafiero (2007), Gjerdingen (2013), Gjerdingen and Bourne (2015).

The image displays a musical score for a piano exercise, identified as Example 15. The score is written for piano (p) and is in 3/2 time. It consists of five systems of music, each with a grand staff (treble and bass clefs). The key signature is one flat (B-flat). The first system shows a simple harmonic exercise with quarter and half notes. The second system introduces eighth notes and sixteenth notes in the right hand, while the left hand continues with quarter notes. The third system features more complex rhythmic patterns, including eighth and sixteenth notes with slurs. The fourth system continues with similar rhythmic complexity, incorporating accidentals (sharps and flats) in the right hand. The fifth system concludes the exercise with a final cadence, featuring a whole note in the right hand and a half note in the left hand.

Example 15
From Kalkbrenner (1849, 32).

memorization may be crucial for an immersive and creative musical experience in any style, historical or contemporary.⁴⁴

Conclusion: Thinking *in* and *about* Music through Model Composition

Chopin’s nocturnes serve as an example for an advanced unit in model composition in a course populated by master’s-level “classical” performance majors. This is a challenge to those of us—like the present author—who are proponents of “thinking *in* music,” since the creative project seems to require quite a bit of “thinking *about* music” before setting to emulate the model, or while struggling through various stages of the process. I had to design appropriate pedagogical scaffoldings for a particularly challenging creative task, in which mere immersion was not enough, at least not within the time frame of a 3-4 week unit.⁴⁵ While explicit thinking was necessary, some of it was concerned with fine idiomatic details rather than with generalizations about harmony, melody, or form that might apply equally to Mozart, Chopin, or the Flintstones theme song, among many others. In this essay, I have reflected on the applicability of a variety of theoretical tools to model composition, or, in other words, the possibility to “reverse-engineer” them for creativity. Descriptions of the incongruence between groupings and meter, definitions of phrase types in Caplin’s sense as well as Gjerdingen’s are meaningful tools for modeling Chopin’s style.

A unit in model composition is an opportunity to incorporate live feedback in the classroom. Spending time listening to, engaging, singing, composing, and workshopping students’ excerpts is invaluable. As Schubert suggests, reacting to peers’ work-in-progress allows students to articulate their evolving musical understanding.⁴⁶ At times, this understanding is more intuitive and informal—e.g., “I liked the rhythmic flow at the beginning of your phrase, but the ending was too repetitive,”; in other cases, “paper-theory” observations—“make your middle section / fragmentation more

44 Sánchez-Kisielewska stresses that rote memorization is valued in second-language acquisition studies (2017, 120–21). While most human beings become expert speakers in their native language, enculturation in music manifests itself in becoming an experienced listener, not a composer or an improviser (Patel 2008). If there were more similarity between these competencies, we would surely not need any explicit music theory in order to become fluent creators within musical styles with which we are familiar.

45 In addition, as stated, these students had already acquired many explicit theoretical tools through their prior training.

46 Schubert (2011).

chromatic”—are necessary.

Schubert’s example suggests that we should all be open to modifying our teaching, even in radical ways. Contradictions along the way are to be expected, and I have not been able to resolve many of my own dilemmas as a teacher. The recent experience of teaching model composition has allowed me to reflect again on what Schubert refers to as the paper-theory toolbox and the experiential stylistic understanding sandbox.⁴⁷ As our discipline and pedagogical practices are opening up to new repertoires, new revelations about historical musicianship, and new technologies that can support audiation and engagement, we can hope to prepare our students for life-long curiosity and explorations of musicianship, creativity, repertoires of their choice, and even music analysis.

The perspective of historical musicianship in composition, improvisation, and anywhere in between also has the potential to blur the lines between “dead-white-male composers” on the one hand and diverse, living musicians who compose, improvise, and perform on the other hand. The reality of the matter is that historical European music from the middle ages to the early nineteenth century had fuzzy lines between these musical activities.⁴⁸ Recognizing the improvisatory quality of European “art music” of the past is thus a way to engage the canon both musically and critically. As we continue to enliven and enrich our theory curricula in ways that reflect our students’ interests and our own, Prof. Schubert’s example and appeal for a more integrated and musical approach remains an inspirational model for emulation.

⁴⁷ Ibid.

⁴⁸ Busse Berger (2005), Gjerdingen (2007), Christensen (2017), Gooley (2018).

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Search-Solve-Sing: A Group Presentation Model to Strengthen Practice and Performance Techniques in Upper-Level Aural Skills Classes

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Whether in a high school or college, from conservatories to liberal arts colleges, singing prepared melodies in upper-level aural skills classes presents unique challenges that differ from those of lower levels. While lower-level aural skills melodies tend to incorporate strings of predictable tonal gestures, upper-level aural skills melodies are often complex and require audiation and pre-analysis even for the most accomplished students. This article presents an aural skills lesson model titled Search-Solve-Sing: a three-part plan for preparing and presenting aural skills melodies that puts small groups of students in charge of analyzing, performing, and teaching in the aural skills classroom.

In Search-Solve-Sing students work in groups to identify simple sections and troubleshoot challenging ones in a melody (the search and solve portions of the process) as they prepare a lesson plan to present to the class. This is followed by a group performance, and subsequent whole-class performance, of the melody (sing!). Through small group work, students engage more deeply with course materials, develop stronger sight-singing abilities, and reap the benefits of learning from one another. Search-Solve-Sing is a student presentation model that flips the aural skills classroom and allows students to teach and learn from one another.



Introduction

Singing prepared melodies in upper-level aural skills classes presents unique challenges that differ from those of lower levels. While lower-level aural skills melodies tend to incorporate a string of predictable and common tonal gestures, melodies presented to upper-level aural skills students are often long and complex and require audiation and pre-analysis even for the most accomplished students. Stacey Davis explains that audiation is still necessary in sight singing—students should not jump in without first hearing at least parts of a melody in their heads. “Audiation could be considered a form of ‘sight-hearing,’ which is a natural counterpart to the other typical aural skills activity of sight-singing.”¹ Regardless of skill level, while preparing a melody for class, students may either think of it as something to simply sing through (or memorize!) without any sort of critical engagement or dismiss the task as too

1 Davis (2010, 40).

difficult and give up. Building upon Anna Stephan-Robinson's "mini-lessons," this article presents an aural skills lesson model that puts small groups of students in charge of analyzing, performing, and teaching melodies in the aural skills classroom.² Titled *Search-Solve-Sing*, it is a student presentation model that flips the aural skills classroom and allows students to teach and learn from one another.

Search-Solve-Sing is a three-part plan for preparing and presenting aural skills melodies. The model involves breaking students into groups to work on a melody, about which they then prepare a mini-lesson. Students work through a melody by identifying simple sections and troubleshooting difficult passages as they prepare a melody lesson plan, which they then present to the class (the *search* and *solve* portions of the process). This is followed by a group performance, and subsequent whole-class performance, of the melody (*sing!*). Through small group work, students engage more deeply with course materials (including more obvious overlap with written theory concepts), develop stronger sight-singing abilities (because they have brainstormed, modeled, and observed other students model how to approach tricky passages), and reap the benefits of learning from one another. In addition, students practice analyzing melodies for phrase, hierarchical, and implied harmonic structure. Gary S. Karpinski explains the value of preparing melodies;

We are generally unable to perform at sight that which we have not yet learned. To become better sight readers we must indeed do lots of sight reading; but to be able to read, interpret, and perform new musical figures we must first encounter such figures in a variety of settings and work them out in practice sessions during which they can be isolated from one or more other musical parameters so as to focus on the very thing to be learned.³

The *Search-Solve-Sing* method presented in this article empowers students by asking them to work together and lead the class in groups, which gives students a sense of agency and control over course materials.

Why is the Search-Solve-Sing Model Effective?

A common obstacle in aural skills classes stems from students' varying background experiences. This is an even bigger issue in earlier levels because students lack the shared foundation they gain as a group in the first few aural skills and music theory courses, but early ability often carries through into the higher levels as well, especially

2 Stephan-Robinson (2018, 111).

3 Karpinski (2000, 189).

with regard to student confidence. This skill disparity challenges instructors to keep higher-skilled students engaged without overwhelming the lower-skilled students. As Cora S. Palfy writes, “pedagogues tend to find that selecting one group to focus on within the varying ranges (such as ‘teaching down’ to students who need extra help, ‘teaching up’ for experts, or aiming for the middle experience level) will inevitably isolate one or more groups within the classroom—experts feeling bored, novices feeling lost, etc.”⁴ Moreover, students are often aware of where they fall on the skill spectrum as Yayoi Uno Everett writes, “most students are aware of their weaknesses but have few clues for overcoming them.”⁵ Group work is one pedagogical method to help encourage student involvement across skill levels while minimizing individual anxiety.⁶

Group work helps ease student anxiety about learning and performing melodies while also giving the students the benefit of one another’s expertise. More skilled students are challenged to find a way to explain and break down skills for struggling students (aural error detection is, of course, a valuable skill on its own); struggling students learn from their peers in a way that is less pressure-inducing than learning in a whole-class setting or directly from the instructor. As Karpinski notes, “Error detection and correction are indeed indispensable skills that all musicians should possess to a useful degree... . The more adept musicians are at detecting and correcting discrepancies between sound and notation, the more often such errors can be corrected and even avoided in their own performances.”⁷ Moreover, group work uses direct, rather than passive, engagement.⁸ Similar to learning in secondary language courses, I have witnessed aural skills groups in which students of varying levels work together and learn from one another.⁹ In constructing groups of varying student skill levels the method prevents “less able pupils... [from] being stigmatized and exposed to a

4 Palfy (2019, 376).

5 Everett (1997, 27).

6 Flannery (2018).

7 Karpinski (2000, 130).

8 For more information on this distinction, see Benware and Deci (1984); Wingfield and Black (2005); and Wolff, Wagner, Poznanski, Schiller, and Santen (2015).

9 Studies on learning a secondary language (L2) show that “mixed proficiency pairs may form collaborative and expert/novice relationships that are conducive to L2 learning.” Storch and Aldosari (2012, 47).

‘dumbed-down’ curriculum.”¹⁰ Group work encourages students to engage with and learn from one another, puts students in control of their aural skills development and alleviates some of the pressure of performing for the class.

Performance anxiety is common for musicians on their primary instrument, but for non-vocalists, aural skills classes often create an added level of stress because faculty ask students to perform on an “instrument” with which they are less comfortable. Just as with dictations, performing even well prepared melodies in an aural skills classroom can induce great amounts of student anxiety.¹¹ Even the most supportive of student peers can be intimidating in a larger class setting, and, as a pedagogue, I am often left to wonder about the value of such performances on students’ long-term growth as musicians. To combat this issue, the *Search-Solve-Sing* model puts the onus on the students to learn the melodies together while also asking them to catch and troubleshoot any areas within that melody other students might find challenging. The students must present solutions that are not simply to drill an interval or tricky passage, but to engage with *why*, musically and structurally, a particular passage presents a challenge, and what creative solutions model more informed practice techniques.

The Process

Before we sing the melody, we go through the *Search-Solve-Sing* model together as a class using a warm-up melody that incorporates the concept or strategy we plan to focus on that day.¹² I project the melody to show how I mark the score, and students have a paper copy of the melody in front of them as well. I prompt the class with directed questions, which students have printed, and we work together to answer the questions for the warm-up melody. This important pre-discussion gives the students a full approach for the melody without taking up much class time (roughly five to ten minutes). Students take notes on the chart or in their score as needed- I do not require or collect the tables. If we stumble when we sing the melody after carrying out this

¹⁰ Glass (2002, 5.20).

¹¹ Rifkin and Urista (2006, 57) explain that dictations “can create a debilitating anxiety that impedes learning, especially for the weaker students... [and] can polarize the class. The students with [perfect] pitch become bored, while the other students become anxious, even resentful.”

¹² At my school, a liberal arts institution centered on engaged learning, aural skills classes meet twice a week. My typical structure for upper-level courses is to have one day focused solely on singing and the other on dictations (with singing incorporated as well). This model works well for the singing-focused day, and I use it almost every week in upper-level aural skills classes.

analysis, we debrief together, evaluating what was successful and challenging in the performance. We add to the *solve* section if need be and then try again.

As the semester progresses, students know what to look for and become faster at the process. This fluency then carries through into their sight-singing exams where they quickly scan melodies and anticipate and think through potential pitfalls before singing. It leads to a more melodically-informed tonic finder (a tonally idiomatic warm-up phrase that establishes a key—see Example 1) as well, which then makes it more likely that students will both correctly sing chromatically-altered pitches and anticipate those pitches' resolution points.¹³



Example 1
Basic Tonic Finder.

Once we are warmed up, I break the class into groups of 3–4 students. I try to make sure each group has one more experienced student, and at least one student who is less confident or experienced. Note that student strength or weakness is not necessarily related to student confidence or comfort with singing or the group—often some very experienced students are shy about performing, while some less experienced students are confident enough to perform. I assign each group a different melody and give them fifteen minutes to work. Groups may stay in the classroom, or they may go elsewhere—typically one group stays in the classroom while others go into a practice room, an empty classroom, or outdoors. Students structure these group meetings themselves, but I model the ideal approach over the first few classes so they have a point of reference.

The students have three primary objectives to cover in their meeting: first, to quickly identify and dismiss recognizable and thus easily-executable passages; second, to identify and diagnose any problematic areas; and third, to carry out a structural or hierarchical analysis of the melody to give their peers a better overview of how to conceptualize that melody.

¹³ Karpinski (2000, 151ff) provides further information on how to teach and use tonic finders.

Search

Groups work together to, first, analyze their melody for recognizable patterns (sequences, arpeggiations, scalar passages, etc.).¹⁴ Much of earlier aural skills education is simply teaching students to recognize and execute certain common melodic gestures, such as *mi-fa-mi*, *mi-re-do*, or *do-sol-do* (we use moveable *do*). Ideally, students will be able to quickly diagnose and dismiss these kinds of patterns in the first step of this process, aiding in their ability to “chunk” the melody and form a plan to efficiently work through it. Karpinski defines “chunking” as the ability to “hear and immediately understand such features as scalar passages, triads, repetitions, sequences, modulations, and rhythmic patterns... [which] afford[s] listeners the opportunity to encode music in meaningful chunks, thereby dramatically reducing the number of memorable ‘bits’ in a passage.”¹⁵ This is an important skill—students who are able to quickly dismiss a section as familiar is able to then devote more time to new musical information. As Davis explains,

[G]ood sight-readers have better chunking ability, which reflects their understanding of musical structure, expectation, and grouping. For instance, it is advantageous to recognize a triad or seventh chord as a single entity rather than as multiple, individual pitches. Noticing such patterns reduces the amount to be remembered and facilitates the performance of unfamiliar music.¹⁶

These are the uncomplicated sections that they can easily categorize based on familiar prototypical patterns.¹⁷ This portion of the meeting should be quick and should take up very little time in the ultimate presentation. Chunking the melody then also helps establish “anchor” pitches to help students orient themselves if the performance gets off track.¹⁸ While this portion of the meeting is brief, it is extremely important—

14 Karpinski (2000, 163). This step is essentially a long version of Karpinski’s “mumbling”—a useful tool in sight singing, but one that, for many students, must be taught in small steps. “Mumbling” is “a kind of rapid reading that stands somewhere between freely scanning out of sequence on the one hand and reading actively in real time on the other. Its main goal is to point up salient aspects of pitch that will provide anchor points along the way and help to keep the actual sight singing moving as smoothly as possible.”

15 Karpinski (2000, 73-5).

16 Davis (2010, 45-6).

17 Roberts (1986).

18 Karpinski (2000, 69) defines “melodic anchoring” as a “cognitive means of processing melodic pitches into hierarchical relationships. . . [which] helps organize pitches into what may be more easily memorized structures.”

it works on students' ability to scan a melody efficiently in a novel sight-reading scenario, and thus strengthens the resulting performance.

Solve

Second, students identify any potentially problematic areas in the melody. When students find a problematic passage, they first work to answer *why* a particular passage presents a challenge. This allows them to more easily identify potential solutions to that problem. Rifkin and Urista explain, “in traditional dictation practice, skills are usually assessed solely in terms of the final stage—notation. Errors in a student’s finished exercise will indicate the existence of a problem but won’t necessarily reveal the source of the problem or its solution.”¹⁹ Students regularly make mistakes when singing but diagnosing the *why* behind a mistake is an important skill that requires development. Mistakes are also often dependent on the individual—some students are particularly weak around *fa*, for example, or regularly struggle with leaps of a fourth. In response to this obstacle, a thoughtful approach to group structure is important. If I group all of the more experienced students together, they may have trouble identifying passages that cause less experienced students to stumble. If all less experienced students are grouped together, they may struggle with part one, or to come up with effective practice techniques for tricky passages.

Moreover, understanding why certain mistakes are logical while others are not is an important skill. As Stacey Davis writes,

[I]ncorrectly played pitches that violate tonal context are perceptually different than those that remain suitable in the prevailing key,” and “errors that do not disrupt tonal, metric, or harmonic context are considered ‘reasonable’ and are easily overlooked. Knowing that these errors are less noticeable might help to explain many student strengths and weaknesses.²⁰

Bruno H. Repp notes that “even errors that have been detected still vary in degree of severity, and a listener probably could rate them accordingly. Errors then are a matter of degree.”²¹ Students should focus on melodic expectations or how a particular melody may challenge them. Then, in their presentation, students can say something like: “We expected the melody to go to *mi* because of the preceding *fa*, but instead it goes to *fi* and so we practiced it by...”. Indeed, there is a sort of hierarchy to mistakes

19 Rifkin and Urista (2006, 57-8).

20 Davis (2010, 52 and 61).

21 Repp (1996, 179).

in sight singing—when the implied harmony is dominant, expecting *fa* as the chordal seventh to resolve to *mi* is a musically logical assumption. Expecting *fa* to leap to *do*, or somewhere like *le*, is not musically logical in this context.

I ask students to incorporate a hierarchical and structural analysis into their meeting and presentation. Recognizing the overarching system helps students recognize similar scenarios in other melodies, thus deepening the prototypical melodic pool from which they draw. David Castro writes, “Therefore within cognition literature the preferred term for this phenomenon is now tonality, which means the mental construct by which we orient ourselves toward a single pitch and hear other pitches as being related to it in a hierarchical relationship.”²² Orienting themselves within the system, and establishing and maintaining fluency enough to rely on the anchor pitches set up by the chunking process of step one, helps students develop a kind of hierarchical or structural fluency within melodies. Examining the melody as a whole and creating relationships across sections of that melody keeps students from focusing too hard on the note-by-note, thus missing the proverbial forest for the trees. Occasionally focusing on intervals may be necessary, but “the occasional use of intervals in order to understand or identify melodic events does not negate the importance of tonality, which remains a more fundamental system.”²³ Moreover, analyzing a melody at this hierarchical level asks students to think critically about that melody. It is not simply “this note not that note,” but rather “why this note instead of that note,” which leads to a more theoretically-grounded understanding of the musical impetus within a given melody.

Sing!

Finally, students return to class and each group has roughly five minutes to present and perform their melody. As they present, they point out simple areas from part one, highlight problematic areas from part two (including providing at least one practice method for each problem), and go over any hierarchical or structural features of their melody that students might use as anchors. Groups may lead the class through practice demonstrations, and often students from other groups will ask questions or speak out in favor of (or against) certain practice method suggestions. Occasionally, other groups provide additional practice techniques or ideas to supplement those

²² Castro (2013, 145).

²³ Castro (2013, 146).

presented by the group.²⁴ The group then performs the melody for the class, conducting as they go. Depending on the strength of that performance, they may pause to debrief (including commentary from other students or feedback from me).²⁵ Each presentation ends with the group leading the class in a performance of the melody. The success of the class performance is dependent upon (and often directly reflects) the strength of the group's presentation.

In my experience, the start-to-finish time of the presentations including the class performance is somewhere between seven and twenty minutes. I do not strictly enforce a time limit, but I do push them to move quickly and replicate the fast thinking required in a sight-singing situation. If a presentation goes as long as twenty minutes, it is likely that other students are asking questions and contributing ideas, or it is a particularly complex melody. Although melodies grow longer and more complex over the semester, presentations often get shorter as students become more fluent in the *Search-Solve-Sing* model. At my institution, aural skills classes are seventy minutes long, and so if I have four groups presenting it will usually fill the entire class period. I usually devote one class period per week to this activity in upper-level classes, excluding quiz/exam weeks. For my academic calendar, this works out to roughly ten *search-solve-sing* sessions per semester.

Modeling the Process

In this section, I provide a potential melody I might use in a class focused on *fi*, modifying the previously introduced warm-up in keeping with the new material. For each example, I move through the *Search-Solve-Sing* model, highlighting what I expect students to point out. Example 2 shows a typical melody I might use for a day focused on singing *fi*. Example 4 shows this melody as it would be marked up after we finish the discussion but before we sing. Table 1 provides a list of the questions I provide for all melodies, and then the answers for this specific melody.

24 When other students chime in, the length of the leading group's presentation increases accordingly.

25 This again increases the time spent on that melody.

Scott Joplin, *The Easy Winners*

Not fast

Example 2

Warm up melody. Scott Joplin's *The Easy Winners*.

Search

We begin with the search portion of the exercise. This particular example is by Scott Joplin, and so I open the lesson by asking about Joplin, including a brief overview of who he was, and why he is an important figure in music history. In their group work, I expect them to look this information up for their melody. After historically-orienting the example, I ask students what musical features they might expect to encounter in an example by Joplin. We discuss chromaticism, ragtime, and syncopation. Next, I ask them to look for the simple parts of the melody, for things such as scalar passages, arpeggiations, and anchor pitches. In this melody, students identify the neighbor figures in mm. 2 and 3 (which then repeat several times throughout the rest of the melody), the skip from *mi* to *sol* at the beginning, and that the opening gesture appears at the beginning of several more phrases. I use stars to indicate the helpful repetitions in mm. 1, 5, and 9. We mark similar melodic sections as x and y. They notice the similarities between x and y, and quickly scan the differences between x and x', y and y', etc. We mark anchor pitches (typically *do*, *mi*, or *sol*) with an anchor symbol in mm. 4, 12, and 16. We discuss logical breath placement, marked with ', and decide the overall dynamic should be *mezzoforte*. The meter is 2/4 and we plan to conduct in 2 at a moderate tempo (obeying the tempo indication of “not fast” on the score).

Solve

With the less-challenging work out of the way, we switch our discussion toward issues around chromaticism, leaps, rhythms, and making larger connections. First, I ask them to identify and assign solfège to any chromatic pitches and alter the tonic

finder to prepare for those pitches within the melody.²⁶ They quickly identify the solfège for D $\sharp$ (*fi*) and D $\flat$ (*fa*). We discuss *fa* as a courtesy accidental, and I remind them to think up when they sing *fi* and down for *fa*. Together, we alter our basic tonic finder structure (Example 1, above) into one individualized for this melody (Example 3). In addition, we review the resolution of *fa* down and *fi* up, and how each of these pitches function harmonically (in this case either as the seventh of an implied V⁷ or the third of an implied V/V).



Example 3

Tonic Finder Warm Up Individualized for the Target Melody.

Next we focus on tricky leaps and rhythms, something that often causes a lot of student anxiety. We notice two potentially challenging leaps in this melody, the first from *sol* to *re* in mm. 2–3 and the section from *mi* to *ti* in m. 12. We troubleshoot the first one. I ask them: “What is the most important pitch in bar 2? And in bar 3?” Students identify *sol* in m. 2 and *do* in m. 3, but if alternate answers come up, we discuss them as a class. We discuss conceptualizing *la* as the upper neighbor to *sol* and *re* as the incomplete upper neighbor to *do*. We pause and sing our tonic finder, and then hone in on this particular leap very briefly. For the leap from *mi* to *ti* in m. 12, we talk about two approaches. Often students’ first instinct is to simply drill the leap until they have it memorized. With this model I challenge them to think structurally instead: *mi* completes the previous phrase, while *ti* acts as an incomplete lower neighbor to *do*.²⁷ Conceptualizing *do* as the goal makes it easier for students to find *ti*, while also creating a more musical result that does not unnecessarily link the beginning of this phrase with the ending of the previous one. After leaps, we scan for particularly tricky rhythms. This melody is highly syncopated, but with quite a bit of rhythmic repetition. I ask them to choose the one or two gestures that seem the most challenging, and then we tap, clap, or use solmization syllables to work those rhythms out together.

²⁶ In my experience, economically incorporating melodic figures from a given example into the tonic finder is one way to safeguard from error when we sing the melody.

²⁷ Karpinski (2000, 156ff) encourages this auralization as well in his section entitled “Aural Imagery prior to Sound Production.”

Finally, I ask students to examine phrase openings, build connections across phrases, and compare marked repetitions for potential differences. We mark repetition with stars (if it is not already marked), review the *mi-sol* opening gesture of this melody, and discuss *fa* as a passing tone between *sol* and *mi* in mm. 8–9. We compare *x*, *x'*, and *x''* for differences, noting the repeated E♭s of *x'* and simple descending scale to *do* in *x''*.

Example 4

Warm up melody after in-class analysis. Scott Joplin's *The Easy Winners*.

Sing!

After reviewing the warm-up and singing our revised tonic finder, I lead the class through a performance of the melody. After one run-through we discuss things that could have been better—potentially missed leaps, incorrect rhythms or pitches, or absent musicality. We do one final run through before I break them into groups to study a melody on their own.

A Model Presentation

In this section, I give one melody I would assign to a student group and give an overview of a typical student presentation. As students work on their presentation, they move through the topics we covered in the warm-up, along with topics covered on previous days. The content of each presentation is dependent upon the assigned melody, but each assigned melody highlights the overarching topic of the day, in this case, singing and hearing *fi*. Example 5a is one melody I might assign a group to present in class. I assign it to a group and review their objectives: to *search*—identify

	Questions	This melody. . .
S E A R C H	<i>What is the melody? Who wrote it? (Google!)</i>	Scott Joplin, 1868-1917, The Easy Winners. Black composer known for ragtime
	<i>What expectations do you have based on #1?</i>	Expect syncopation and potentially more chromaticism because it's from the 20th-C.
	<i>Find easy things such as scalar passages, arpeggiations, and anchors</i>	Neighbor figures in x and y; Arpeggiation from mi-sol opening
	<i>Find and mark any repetition you can use to your advantage. Flag repeat signs.</i>	Marked x and y (with x', x'', and y'). Repetition marked with stars. Anchor pitches marked with anchor.
	<i>Mark breaths, phrasing, or dynamics as needed</i>	Breaths marked with '. Overall mf dynamic with shaped phrases based on breath marks.
S O L V E	<i>What is the meter and what conducting pattern will you use?</i>	2/4, will conduct in 2 to avoid going too fast (note indication at beginning of "not fast")
	<i>Is there any chromaticism? What's the solfege? What will your tonic finder be?</i>	Fi and Fa! Marked on score. Discuss Fa as a courtesy accidental, and discuss singing up for fi and down for fa. Establish new tonic finder.
	<i>Are there tricky leaps? Use hierarchy.</i>	Two leaps: Sol-re in mm.2-3. Hierarchy: what is the important pitch in bar 2? Sol! In bar 3? Do! La as UN to sol. Re as IUN to do. Leap mi-ti in m. 12. Could conceptualize as leap or instead, think of mi as completing previous phrase. Breath. Ti introduces the next phrase as an ILN to do. Use do as anchor to find ti.
	<i>Any tricky rhythms?</i>	Lots of syncopation. Tap/clap rhythm at opening. Note repetition of syncopated pattern.
	<i>Link phrase openings, build connections across phrases</i>	Repetition marked with stars- review mi-sol opening and discuss fa as PT between sol and mi in mm. 8-9.
SING!	<i>Compare marked repetitions for potential differences</i>	Compare x, x', and x''. Compare y and y'
	<i>Anything else?</i>	N/a
SING! (Unexpected stumbling? Return to solve, revise and try again!)		

Table 1
Summary of Warm up melody analysis/ Search-Solve-Sing model.

and dismiss easy passages; to *solve*—identify and troubleshoot challenging passages; and, finally, to *sing*—first as a group and then leading the class. Table 2 provides a list of the questions I provide for all melodies, and then the answers for this specific melody.



Example 5a
Franz Schubert's *Du bist die Ruh*.

Search

After fifteen minutes, students return to class ready to lead. They break their presentation into the three parts listed above, beginning with *search*. For this melody, I expect students to begin with historical context and information about the piece: Franz Schubert (1797–1828, late Classical or early Romantic style, melody composed for voice, and the title translates to “You are Rest.”) Next, they shift focus to the prototypical features: the *do-ti-do* neighbor figure in mm. 3–4, and the three ascending scales in mm. 7, 11, and 13. Students should point out the repeat sign (circled in Example 5b), and mark their scores for any melodic repetition (marked with stars in mm. 5 and 9). Students indicate breath marks, and that the overall dynamic (*pianissimo*) echoes the gentle implication from the piece’s title. One potential stumbling point for students is this melody’s meter—some students will want to conduct it in three, while others will want to feel it in one. Depending on the group, students might try it each way in their meeting. No matter which they choose for their presentation, I will suggest we try it both ways as a class.

Solve

Next, students should help their classmates identify chromaticism in the score, in this case marking the *fis* and *fas*. Students should discuss them as lower neighbors (sometimes also marking this in the score) and will likely discuss singing *fa* as a potential challenge. They discuss expectations around *fa* as the chordal seventh of V⁷,

which they want to resolve down, but in this case, it is simply a lower neighbor. *Fi*, on the other hand, is the new material for that day and acts as the applied leading tone to V or the third of a V/V. Ideally, students will work *sol-fi-sol* and *sol-fa-sol* into their tonic finder; if they skip this step, I encourage them toward it.

Next, students address any tricky leaps or skips in this melody. This example has two tricky parts: first finding *la* in m. 5, and second from *do-mi* in m. 12. It is critical students think through several options in order to analyze *why* a particular leap is tricky; this extra thought allows them to effectively teach their peers. For the first leap, there are three methods students should present. If any one of the three is missing from their presentation, I step in and help them along to the missing possibility. The first method is to connect *do* at the end of m. 4 to *la* in m. 5 using *ti* as a bridge. After practicing that way a few times, students remove *ti* and can usually find *la*. A second method is to link the *la* in m. 2 to *la* in m. 5—this requires longer-range hearing, and it will certainly not work for all students. A third method is to link the opening *sol* from m. 1 to the opening *la* in m. 5 as a sequence up a step. Again, this is more of a long-range hearing option. In my experience, presenting students with multiple options means at least one resonates and gives them a model for future troubleshooting on their own. Moreover, it reveals to them how people can analyze and hear a passage differently, enriching the analytical skills they carry into the theory classroom.

For the second leap from *do-mi* in m. 12, students' first instinct may be to simply drill. If that is the method they choose to present, I challenge them to think back to *fa* as a chordal seventh and their expectations around *fa* in m. 11. Students quickly make the connection that they wanted *fa* to go to *mi*, and it eventually does, in m. 13. They can then link this *fa-mi-re-do* descent in the melody from mm. 12, 13, 14, and ending on the very last note in m. 15. This reductive approach pushes them beyond simply singing each note on the page as if they are all structurally equal. Depending on how much time we have in class, I may step in and discuss the opening phrase as an ascending stepwise line from *sol-do*, and connect this to the second half of the melody as one large descent from *la-do*, where *la* is an accented upper neighbor to *sol*, the structurally-important pitch.

Students address any tricky rhythms, which in this melody are minimal; perhaps only the dotted figures, and link phrase openings (if they did not already do so in comparing the opening on *sol* to the second phrase's opening on *la*). Stars mark these repetitions in Example 5b. Students should give brief attention to comparing the sixteenth-note patterns for differences, and end by pointing out that mm. 12 and 14 combine to arpeggiate tonic. I would push them to identify the final cadence and ask if

the melody implies a V or a V^7 in the penultimate bar. If students suggest it is a V^7 , we would review chord quality and discuss what *fi* implies, as compared to *fa*.

Sing!

Finally, the group performs the melody for the class and then leads the class in a performance. Ideally, they will have the class perform it once conducting in one, and once conducting in three, and then lead a brief discussion about how this choice might lead to a different musical result.

The image shows a musical score for Franz Schubert's "Du bist die Ruh" in 3/8 time. The score is written on two staves. The first staff begins with the tempo marking "Langsam" circled above the first measure. The melody starts on a treble clef. There are several annotations: a circled "pp" (pianissimo) below the first measure, a circled "Fi!" above the eighth measure, and a circled "Fa!" above the ninth measure. The second staff begins with a circled "8" above the first measure. The melody continues on a treble clef. There are several annotations: a circled "Fi!" above the fourth measure, a circled "Fi!" above the fifth measure, and a circled "Fi!" above the sixth measure. The score ends with a double bar line. The title "Schubert, Du bist die Ruh" is written above the first staff.

Example 5b

Melody after student analysis and class discussion. Franz Schubert's *Du bist die Ruh*.

	Questions	This melody . . .
S E A R C H	<i>What is the melody? Who wrote it? (Google!)</i>	Franz Schubert (1797-1828), <i>Du bist die Ruh</i> (“You are repose”)
	<i>What expectations do you have?</i>	Late Classical/ Early Romantic style. Meant to be sung.
	<i>Find easy things such as scalar passages, arpeggiations, and anchors</i>	<i>Do-ti-do</i> neighbor figure before repeat. Ascending scales at the in phrases after the repeat.
	<i>Find and mark any repetition you can use to your advantage. Flag repeat signs.</i>	Repeat sign in m. 4. Repetition at beginning of phrases in mm. 5 and 9 (marked with stars).
	<i>Mark breaths, phrasing, or dynamics as needed</i>	Breaths marked with ‘. <i>Pianissimo</i> - peace, gentle!
	<i>What is the meter and what conducting pattern will you use?</i>	3/8. Try conducting in 3 and in 1. Discuss after performance – which led to a more musical result?
S O L V E	<i>Is there any chromaticism? What’s the solfege? What will your tonic finder be?</i>	<i>Fi</i> and <i>fa</i> ! Marked on score. Both are LNs to <i>sol</i> - could be trickier to find <i>fa</i> because it isn’t continuing down. Discuss resolution of <i>fa</i> as chordal seventh in V7 (review) vs. <i>fi</i> as leading tone in V/V (new). Tonic finder: <i>do-ti-do-re-mi-fi-fi-sol-fi-sol-la-sol-fi-sol-la-sol-fi-mi-re-do-mi-sol-mi-do</i> .
	<i>Are there tricky leaps? Use hierarchy</i>	a. <i>La</i> in m. 5, three methods: sing <i>ti</i> to fill the gap between <i>do</i> and <i>la</i> a few times, then cut it; hold on to <i>la</i> in m. 2 in your ear and link m. 2 to m. 5; link m. 1 <i>sol</i> to m. 5 <i>la</i> as just a step away. b. <i>Mi</i> in m. 12. This one’s cool- it’s resolving that <i>fa</i> chordal seventh from m. 11! Link <i>fa</i> to that <i>mi</i> , and then down to <i>re</i> in the penultimate bar.
	<i>Any tricky rhythms?</i>	Not too tricky- point out dotted rhythms and maybe tap/clap m. 7.
	<i>Link phrase openings, build connections across phrases</i>	Already linked m. 1 to m. 5. M. 5 also links to m. 9, marked by stars.
	<i>Compare marked repetitions for potential differences</i>	Again hit <i>fi/fa</i> and compare sixteenth-note patterns beginning on <i>fi</i> , then <i>fa</i> , then <i>re</i> .
	<i>Anything else?</i>	Point out that m. 12 and m. 14 arpeggiate tonic. Talk about harmonic implications of final cadence V-I. Is it a V7?
SING! (<i>Unexpected stumbling? Return to solve, revise and try again!</i>)		

Table 2

Summary of presentation melody analysis/ Search-Solve-Sing model.

Conclusion

This article presents a method of learning how to learn—a practical approach to practicing prepared melodies in an aural skills classroom. The method trains students in an analytical system that gives them a sense of control over sight singing. Instead of looking at a melody from beginning to end without critical thought, students learn to look ahead, to scan for potential pitfalls, and to strategize those passages before they begin. Moreover, the method puts the onus on the student to brainstorm and troubleshoot in a system that will help when they are on their own in the practice room or, later, in as real-world musicians.²⁸ They practice the melodies and start to think ahead about what they might point out if assigned a particular melody in a group. They think of this as “cheating” or “working ahead;” I think of it as practicing, learning, and growing as musicians.

Through group work and presentations, this method flips the aural skills classroom from a teacher-student model, to one where students assume the role of teacher. As groups prepare their presentations, they engage with the melodies on a deeper level, incorporating phrase structures, implied harmonies, and other materials from the written theory class. Students learn from one another and gain a sense of control over their progress in the course.

The group work makes class a place for engaging and collaborative learning, rather than an anxiety-inducing environment dependent on individual progress. While statistical results are beyond the scope of this project, anecdotal evidence from students suggest student anxiety is low, and their musical growth high with this model; students reported feeling more confident as sight singers and that they built useful habits and strategies in a way not previously presented to them in drill-based aural skills classes. An interactive classroom is an essential goal, and as students work with, challenge, and learn from one another, their understanding and engagement with course material goes far deeper than if the instructor always takes control from the front of the room. Moreover, music is a collaborative activity and this exercise helps students learn how to work with musicians at varying levels and with different strengths from their own. The *Search-Solve-Sing* model is more than a method for learning aural skills melodies; it is a method that teaches students how to learn and teach, leading to long-term musical and interpersonal growth.

²⁸ Palfy (2019, 380) suggests that with scaffolded assignments, “students feel empowered from their in-class activities to critically examine the effectiveness of their at-home practice and take on the onus of challenging themselves to increase mastery.”

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Gateways to Understanding Music

by Timothy Rice and Dave Wilson
New York and London: Routledge, 2019

reviewed by KRISTIN TAAVOLA



The [CMS manifesto](#), a familiar document in the pages of *JMTP*, urges a fundamental rethinking of the theory curriculum on several levels, including the integration of theory and aural skills with music history, and the expansion of music repertoires to include jazz, popular, global, and classical European music, particularly emphasizing creative African traditions (19–20). Even before the original publication of the document in 2014, a general trend in theory textbooks such as *The Musician's Guide to Theory and Analysis* by Jane Clendinning and Elizabeth West Marvin, and *Contemporary Musicianship* by Jennifer Sterling Snodgrass, has been to expand the repertoire, but the radically complete revision of teaching approaches advocated by the CMS Task Force on the Undergraduate Music Major (TFUMM) is arguably still in a nascent phase.

Enter *Gateways to Musical Understanding* by ethnomusicologists Tim Rice and Dave Wilson. The book, which includes classical music, world music, popular music, and jazz, all organized chronologically, fulfills the call for more diverse repertoire in the undergraduate curriculum, but it's not a harmony textbook. Rice and Wilson describe it as fundamentally intended for non-major general education courses, suggesting that it could also be adopted for a one-semester introduction to music history, or a general "Introduction to Music Study" course. But could this book be used in a theory course, either as a reference, or a second textbook?

After reviewing the introductory materials and the general organization (summarized below), my initial impression was that it offered some thought-provoking juxtapositions of different musical genres and their structures, which, in and of itself, might be enough for a music theorist to spend some time with the book. Having now done so, I can definitely say the broad collection of music in the text is inspiring, and the authors' listening-based approach is primarily appealing. As is the case in any cross-cultural study, however, there are certain challenges that the contents might present as part of a theory curriculum.

Below, I overview its materials and organization, then present three possible ways to adapt the contents for different types of music theory courses.

Materials and organization

A 504-page 8.5"x11" paperback, *Gateways to Understanding Music* has the feel of your Art History 101 textbook: historical organization, lots of images, and cultural anecdotes interspersed with technical terms. To be clear: it's not an obvious choice for the sole textbook in music theory course. Rice and Wilson have consciously avoided the use or introduction of music notation, Western or otherwise, instead building a methodology based on three substantial listenings for each of sixty "gateways," or musical works. Recordings are available on a [Spotify playlist](#). The repertoire draws from the following genres, classified by the authors (xvii):

Classical music	26 gateways (44%)
World Music	18 gateways (30%)
Popular Music	8 gateways (13%)
Jazz	8 gateways (13%)

Seven themes frame the commentary for each gateway: aesthetics, emotion, social life, culture, politics, economics, and technology. These themes are threaded through a set of five questions, always presented in the same order:

- *What is it?* (Initial listening)
- *How does it work?* (Musical terms and listening guide)
- *What does it mean?* (Cultural context)
- *What is its history?* (Historical detail)
- *Where do I go from here?* (Additional suggestions for listening)

In the context of these questions, Rice and Wilson work hard to put "disparate kinds of music and music makers into an implicit conversation with each other" (Teacher's Guide, 2). *Gateways'* historical organization is one step in that direction, contextualizing music—and history—in ways that should be obvious, but, given that many of our canonized "stories" of music history have fundamentally formed around European art music, can be surprising and eye-opening.

In multiple places in the text, the authors reinforce historic context across cultures with details that bring their commentary to life. For example, a Thomas Hardy painting of Haydn is captioned, "Franz Joseph Haydn looking a bit like his contemporary, George Washington (1732–1799)" (173). This passing comment occurs

in the same chapter that introduces both the First Viennese School and music of the Atlantic slave trade, a more arresting contrast that lays the groundwork for later discussions of gospel, soul, and rap alongside *Rite of Spring*.

Overall, genre focus changes with historical period. For example, Western art music is heavily featured during the Classical period, but it takes a back seat to popular music and jazz over the course of the twentieth century.

The text divides into three chronological parts:

Part I: Pre-Modern era up to 1500 CE

Part II: The Modern era from 1500–1900

Part III: The long twentieth century from 1890–present

Within each part, the concurrence of different genres shapes each chapter. This list collates details from the authors' introduction regarding Part II:

- 1. The age of European discovery (1500 to 1600)**
 - Christian religious music
 - Court music traditions of India
- 2. The age of global commerce**
 - Early symphonic works by Bach and Vivaldi
 - Large orchestras of gongs and other metallic instruments built on Java
- 3. The age of Enlightenment and revolution (1750–1800)**
 - First Viennese School
 - Music of Atlantic slave trade and Brazilian popular music
- 4. The early nineteenth century (1800 to 1850)**
 - Beethoven, Berlioz, and Chopin
 - Bluegrass and Stephen Foster songs
- 5. The late nineteenth century (1850 to 1900)**
 - Wagner operas and Debussy's *Prélude à l'Après-midi d'un faune*
 - Spirituals, gospel music, and soul music

Part III chronicles the “long twentieth century,” beginning in 1890 with recording technology. Reflecting the musical abundance resulting from this innovation, its chapters divide into shorter historical periods, ranging from eleven to twenty-eight years. The juxtapositions are similarly compelling: ragtime and Balinese gamelan; country music and Shostakovich's Symphony No. 7; Jimi Hendrix, Milton Babbitt, and Tito Puente.

The Prescribed Listening Process

The Teacher's Guide provides a variety of practical classroom suggestions, as well as ample explanation of the multi-faceted approach to the material.¹ It also comes across as a sort of pedagogical manifesto. Rice and Wilson outline seven concepts underlying the text's conceptual framework. In this excerpt, the authors describe their third concept, one of the most persuasive reasons for a music theorist to take a look:

A third concept integral to the book's design is the notion that music is an art form, which can be appreciated for its structural properties, and a vehicle for the expression of human emotion, cultural values, social patterns, political ideology, and economic relations. To teach students this important lesson about the nature of music, we provide them with a vocabulary ("the elements of music") and an analytical framework (timed listening guides) to enable them to think, speak, and write about music as art. We then teach them to connect their explanations of music as art to its emotional, cultural, social, political, and economic meaning and significance (Teacher's Guide, 5).

The table in Example 1 captures the essence of each of seven "elements of music," including the Spotify repertoire paired with each term in the Introduction (9–12).

The pairing of contemporary repertoire with traditional Western musical terms is a refreshing start. It also exemplifies the authors' philosophy that all music can be studied from a structural perspective, supported by the main analytic technique of the book, the listening guides.

It's likely that many readers of this journal have included formal listening assignments in the undergraduate theory curriculum, asking students to document modulation in sonata form or a strophic song, for example. In *Gateways*, the authors describe the listening process broadly in order to adapt it to a wide range of repertoires. Presented in a casual tone, the following description encapsulates their attitude throughout the text:

Listening for the form of a performance means understanding whether what you are hearing now is a repeat of something you heard before, a variation of something you heard before, or something different from what you heard before. The "something" in this formulation is usually the melody or a melodic phrase. In principle, however, a performance of music may have timbral form, textural form, rhythmic form, and harmonic form... . Form can also be analyzed at two or more temporal levels.

¹ In the Teacher's Guide, the authors also advocate for a version of Thomas Turino's semiotic analysis to assist students in analyzing their own and others' emotional responses to music (Turino, 1999). In essence, separating the sign (the music) from the myriad of possible referents (icons and indexes) allows students to begin to think more flexibly about musical meaning. The authors don't discuss semiotics in the text, but *JMTP* readers may wish to investigate Turino's work further; I've used a similar approach in classes for non-majors and had significant results.

So, for example, the A melody may consist of, say, four melodic phrases indicated with lower-case letters, for example, A = a b a c (12).

TERM	DEFINITION	REPERTOIRE
Timbre	Timbre or sound quality is a function of overtone structure and sound envelope. The text indicates timbre can be discretely described as a voice or an instrument; otherwise we use metaphor (harsh, smooth, rough, bright, etc.).	Joni Mitchell, “A Case of You”
		Jimi Hendrix, “Star-Spangled Banner”
		Ken Burrell, “But Not For Me”
Texture	Monophonic vs polyphonic	Ladysmith Black Mambazo, “Unomathemba”
Rhythm	Nonmetrical vs metrical; duple vs. triple, groupings of pulses or beats called measures or bars	Prince, “Let’s Go Crazy”
Melody	Melodic part, line, melodic shape as ascending, descending, undulating, and flat	Duke Ellington Orchestra, “The Mooche”
Harmony	“The systematic combination of simultaneously sounding tones over the course of a section or piece of music.” Two or more simultaneously sounding pitches is called a chord .	Caroline Shaw, “Partita for 8 Singers” (No. 4: “Passacaglia”)
Form	The “shape” of a musical performance as it unfolds through time from beginning to end.	Irish accordionist Sharon Shannon, the Beatles’ “Norwegian Wood,”
Performance Techniques	Timbral choices, dynamics, ornamentation, articulation, tempo	Whitney Houston, “I Will Always Love You”

Example 1
Seven elements of music.

The authors use this flexible description of form for each gateway.

It is most effective for music that is primarily melodic. The detailed analysis of North Indian raga maps the introduction of each new scale degree, also noting different drum patterns (121). It’s a thorough introduction for an instructor unfamiliar with the genre, and the substantial commentary offers enough information to fill an entire class period. For repertoires that employ harmonic change, however, the melodic emphasis sometimes produces ambiguous or anomalous results, as I’ll attempt to illustrate later.

With the knowledge of these parameters, it would seem that Rice and Wilson have taken significant steps in realizing the vision the CMS Manifesto put forth:

If theory and music history were conceptualized in an integrated fashion using perspectives advanced by TFUMM, opportunities could arise for deeper, more rigorous understanding. This understanding would merge analytical content with historical-cultural content and move from a technical-informational base to an inquiry base so students could discover the structural, textural, design, and aesthetic dimensions of the sonic experience defined as music (20).

That said, adopting *Gateways* as the primary text for the theory core would be a significant undertaking. Without notation, the instructor would have to decide whether to introduce scores or transcriptions, or, per the authors' prescribed listening process, to teach an entire course by ear—a question that is beyond the scope of a book review. Instead, I'll explore three potential ways that it could support innovation or supplementation of the theory core, or, at a more advanced level, development of an upper-division undergraduate or graduate course:

- Culling a cross-section of pieces from a specific genre
- Using the glossary and index to find examples of musical technique across genres
- Assigning specific chapters to provide cultural context

In the course of this discussion, the vignettes for each of these models raise various philosophic, analytic, and pedagogical issues that may affect any type of course designed with *Gateways*, specifically regarding transcription, terminology, and formal segmentation, as well as cultural nuance.

Culling a Genre Cross-Section: A Vocal Music Course

Vocal music is well represented in *Gateways*; a cultivated selection of different styles could create a dynamic syllabus that lends itself to novel avenues for music skill building—for example, practice with formal listening and vocal techniques. This approach emphasizes the listening guides, which could allow for a course-long exploration of notation and style. Imagine teaching a unit on “*American Idol* Vocal Stylings,” asking students to analyze the different melismatic styles that rendered contestants successful, or not. Their results could be compared with a Mozart aria, Purcell's *Dido*, or Billie Holiday's “Strange Fruit,” works we all know. Or, using specific tunes from the *Gateways* text, Hildegard von Bingen's “*Quia ergo femina*,” (Chapter 2), Bessie Smith's “Backwater Blues,” (Chapter 9), and the Mariachi song “*La Negra*” (Chapter 10).

Perhaps the biggest stumbling block in building a stylistically varied course—one that draws from music both inside and outside the Classical canon—is notation.

To some extent, students who have taken undergraduate music history are familiar with varying levels of notational precision: consider the keyboard notation in Terry Riley's *In C*, Pierre Boulez's piano sonata, a Bach flute sonata with unrealized figured bass, and a jazz lead sheet. Add to that some discussion of the various tempo and dynamic differences in five performances of any Chopin prelude, and the idea that notation can be profoundly interpretive becomes quite obvious. *Gateways'* selections take it a step further: some pieces have a published score available, and others a lead sheet, but a substantial number are non-notated. How can we present these pieces side-by-side in the classroom?

I imagine several solutions, appropriate to different levels of difficulty. The first is to emphasize the listening process codified in *Gateways*, rather than visual analysis. Having students distinguish formal types and sections engages medium- to large-scale conceptualizing, and the text presents a good range: John Farmer's "Fair Phyllis I Saw Sitting Alone" is an imitative madrigal in AABCC form (104–105). "Swing Low, Sweet Chariot" is in strophic form (255). A recent song in the *música nortea* style of Northern Mexico, "La Bala," is modified strophic, AAA (minor mode) BB'BB' (major mode) (460–461).

These forms easily lend themselves to the listening assignments included in the supplemental materials online; these are essentially the style template for the *Gateways* listening guides.² The majority of the assignments are instrumental works, but there are some vocal pieces, including the spiritual "Nobody Knows the Trouble I've Seen" (Chapter 8); "El Cascabel" by Mariachi Los Camperos de Nati Cano (Chapter 10); and the Beatles' "Norwegian Wood" (Chapter 12).

Students are asked to comment on the seven different musical parameters introduced for each gateway (timbre, texture, rhythm, melody, harmony, form, performance technique), then to fill in a timed listening guide. The authors' key for the "Norwegian Wood" timed listening assignment appears below:

2 These materials are available with instructor login at the publisher's website: <https://routledge textbooks.com/textbooks/9781138039063/>.

TIME	SECTIONS	FORM	LYRICS
0:00	Instrumental opening	AA	---
0:16	Verse 1	A	I once had . . .
0:24		A	She showed me . . .
0:31		B	She asked me . . .
0:39		B	So I looked . . .
0:49		A	I sat on . . .
0:55		A	We talked . . .
1:04	Instrumental interlude	AA	---
1:20	Verse 2	B	She told me . . .
1:28		B	I told her . . .
1:36		A	And when I . . .
1:44		A	So I lit . . .
1:52	Instrumental postlude	A	---
2:02	End		

Example 2
Timed listening guide, “Norwegian Wood.”

The template could easily be expanded to include instrumentation, modulation, or other techniques, or adapted for additional compositions, possibly from the “Where Do I Go From Here?” section. For example, supplementary selections that follow “Swing Low, Sweet Chariot” include other recordings of the same piece, a video of Bessie Jones and the Georgia Sea Island Singers, a performance by Marian Anderson or Paul Robeson, and Mahalia Jackson’s “Precious Lord, Take My Hand.”

Admittedly, this listening strategy has its limits: it doesn’t improve score reading skills, and not every student will be able to hear modulations or specific chromatic chords and inflections. Still, challenging any student to document multiple pieces per week would develop a strong ear for basic aspects of form. Depending on the repertoire, this can be more sophisticated than simply recognizing a verse and a refrain: narrative questions could be expanded to include specific aspects of vocal technique, such as vocal slides, melisma, tuning, etc. For performers who tend to learn by listening, honing that skill, rather than insisting they turn to the score instead, could be a potent strategy.

More advanced work could gradually introduce transcription projects. Shorter assignments might include only the chorus of a longer tune; comparison of elaborated

iterations of the same chorus might follow. Students might be asked to notate only the bass line of a pop tune, or the rhythm battery of a salsa tune, or structural melody and later the blue notes of a soul tune. This type of course model could also be adapted for other genres (instrumental music, folk-influenced works, etc.) as the instructor's specialty allows.

The possibilities are vast—perhaps *too* vast. This brings us to our first thorny analytic and pedagogical issue. For transcriptions of familiar repertoires, especially those with a standard notation practice such as classical or jazz, an instructor might reasonably expect a limited range of student results. But for music that is non-notated, or music that has basic structural notation with lots of elaboration, the act of transcription raises myriad questions.

Consider this video of [Bessie Jones and the Georgia Sea Island Singers](#), recorded by Alan Lomax in Williamsburg, Virginia in 1960. The opening is rubato. If we are using Western notation, where is the downbeat? Where are the accents? Are the singers ahead or behind the beat, and how does that affect where we might place a note in a bar? Should we use bar lines at all?

The social, cultural, and analytic implications of these types of decisions have long been a central focus in ethnomusicology. This sort of discussion might be relevant in a theory classroom, especially in a graduate course. In *The Study of Ethnomusicology: Thirty-Three Discussions*, Bruno Nettl introduces notation and transcription in Chapter 6, giving a history of relevant literature that offers a rich reading list. His summary of pertinent issues suggests a string of theoretical questions:

Several issues dominate this history: the contrast between prescriptive and descriptive notation; the nature of the unit of musical thought, song, or piece that is being transcribed; the relationship of transcription, as the outsider's interpretation, to notation as the way a society expresses its own understanding of its music; the roles of humans and machines; and transcription as a unified technique for the field, as against the development of specialized techniques for providing special insights (Nettl 2015, 75).

Nettl's "nature of the unit of musical thought, song, or piece that is being transcribed" is especially relevant as we consider different analyses in *Gateways*. The "unit" of understanding changes for different repertoires. A "downbeat" or "rhythm" may mean one thing in BaAka dance music, and another in salsa music. A "transition" is different in a sonata form and a blues song. The translation of terms across genres and styles—our second thorny issue—can create some anomalies, as we'll see below.

Using the Glossary and Index: A Course on Selected “Elements of Music”

The glossary covers a broad range of terms: **colotomic structure**, **commissions**, **comping**, and **coda**, to name a few. As an example of incorporating the text’s glossary in a theory course, I’ll discuss a family of terms that piqued my curiosity: the **poly-** terms, including **polyphony**, **polymeter**, **polyrhythm** and other variants. The first suggests Palestrina or Bach, while the next two might bring to mind Ghanaian drumming or Steve Reich.

Example 3 shows a selection of works employing different “poly-” techniques, according to the authors.³

TECHNIQUE	REPERTOIRE	GATEWAY
Polyrhythm Inherent Polyphony	Central African foragers (BaAka)	Ch. 1, Gateway 1
Inherent Polyphony	Mbira Players, “Nyamaropa”	Ch. 3, Gateway 3
Imitative Polyphony	Palestrina, “Sicut cervus” motet	Ch. 4, Gateway 12
Imitative Polyphony	J.S. Bach, Prelude and Fugue in C Major	Ch. 5, Gateway 20
Inherent Polyphony	Louis Armstrong, “Struttin’ with Some Barbecue”	Ch. 10, Gateway 40
Stratified Polyphony Polyrhythm	Balinese Gamelan, “Tabuh Sekar Jepun”	Ch. 9, Gateway 39
Polytonality Polyrhythm	<i>The Rite of Spring</i>	Ch. 9, Gateway 38
Polyrhythm	Steve Reich (mentioned in text)	Ch. 12
Polyrhythm	Tito Puente, “Oye Como Va,”	Ch. 12, Gateway 52
Polyrhythm	Bob Marley, “Buffalo Soldier”	Ch. 13, Gateway 56
Polyrhythm	Esperanza Spalding, “Black Gold”	Ch. 14, Gateway 58

Example 3
Selected “poly-” terms.

This sampling hints at several analytic connections. Indeed, the authors employ **inherent polyphony**—defined as the experience of polyphony when a monophonic line is played—to draw a consistent thread through African genres, beginning with the music of the BaAka people and mbira playing, later linking these genres to New Orleans

³ One of these, the Palestrina motet, was not listed in the index; depending on the concept you are searching, be aware there are non-indexed examples scattered throughout.

jazz, reggae, and contemporary jazz.⁴ They also include a variety of rhythmically complex textures, contrasted above in Balinese contemporary gamelan and *Rite*. The text includes other genres, such as mariachi, that feature similar types of rhythmic interlocking, though the authors don't label them as polyrhythmic (330).

At first glance, the relationship between **polyphony** and **polyrhythm** is not entirely obvious. Why place Bach next to African music? A brief examination of the authors' further definitions of the various **poly-** terms suggests how these techniques might overlap according to the authors' analyses.

Polyphony, or **polyphonic texture**, has the familiar definition of "a performance with many lines or parts" (10, 480), in contrast to **monophony** (10, 479), essentially one line or part. While the notion of **imitative polyphony** is clear, recall the broad meaning of **inherent polyphony**. Oxford Music Online does not list this term; it seems to appear more often in analyses of comedy, satire, or other literary genres, highlighting multiple levels of reference in and across time. In *Gateways*, the term becomes a catch-all for a variety of different textures, associating both polyphonic and polyrhythmic phenomena. The authors sometimes use the term to contrast sound patterns with movement patterns of dancers or performers. In different cases, **inherent polyphony** might be described as **compound melody** or **polyrhythm** by music theorists.

Rhythmic definitions are similarly expressed more generally than in the theoretical literature: **polyrhythm** is described as "multiple parts with different rhythms," in the text, and "overlapping, interlocking rhythmic patterns" in the glossary (284, 480). **Polymeter** is consistently defined as "the simultaneous presence of two meters in a musical texture" (26, 480). Both interpretations omit definitions of beat division and metric grouping, so the distinction between polyrhythm and polymeter might be considered vague.

One might easily assume that these problems in terminology arise from a lack of clarity in the text. Perhaps, though, we can take a more curious approach. What if the authors' attempt at general terminology reflects that fact that discrete concepts like "meter" and "downbeat" either aren't native to many of the traditions discussed, or don't function the same way as we treat them in tonal music? Here, we see Nettl's "nature of the unit of music thought" query at play again. The two examples below illustrate some aspects of both a "unit" and its representation in a transcription of sorts from the text.

First, in a discussion of "Bisengo Bwa Bolé," music and dance of people from the

4 As mentioned earlier, the glossary organization is haphazard. **Inherent polyphony** is listed in the glossary (477) under "I." Related terms, such as "**polyphony, imitative**" (p.480) appear under "P."

Central African Republic,⁵ the authors describe a drum/dance pattern that creates what they term two-against-three **polymeter** via the juxtaposition of triple-sounding pitches with a duple hand pattern on the drum, stating that “the two parts yield a single monophonic drum part,” which is an example of **inherent polyphony**.

Text Transcription of BaAka Drum/Dance Pattern, p. 26

Pitches	L-H-H-L-H-H
Hands	R-L-R-L-R-L

Pitches: L = low and H = high

Hands: L = left and R = right

While it’s easy to see two-against-three grouping in the above example, the music does *not* feature conflicting meters. This pattern repeats indefinitely in the music, so it does not have an accented downbeat in either part. Nevertheless, as the authors describe, the two parts function together to create a single continuous texture, one which might be described as cyclic due to the repetition of the pattern above.

That said, some students may be confused by this notation, specifically the dual use of “L” as both “low” and “left.”

Contrast this type of notation with the salsa example below:

Text Example of *Cha-cha-chá* dance rhythm:

Tito Puente (1923–2000), “Oye Como Va,” (1963), pp. 400–401

Beats	1	2	3	4	1	2	3	4	
Claps	X	X	X	X	X	X	X	X	X
Piano	X	X		X	X		X	X	
Bass	X			X	X		X	X	X
Clave		X	X		X		X	X	

5 This track is missing from the Spotify playlist. It can be found on the CD set that accompanies Michelle Kisliuk’s book. Alternatively, [an Afropop Worldwide video on YouTube](#) features Kisliuk teaching a song from the same genre, “Makala.” She demonstrates the two-against-three rhythmic pattern discussed here.

This notation shows “1” as what we might initially consider the downbeat in a 4/4 measure. Without listening, a beginning student might feel the beat is if it were a John Phillip Sousa march. The chapter commentary, however, thoroughly describes the “polyrhythmic structure of interlocking beats.” First, it notes that the dancers start on beat two, in what might be felt as “2-3 cha-cha-cha, 2-3 cha-cha-cha” (400). In this case, the clave underlines that “2-3” feel in a pattern that spans eight beats, counted as two groups of four. Thus, while we might consider the “meter” 4/4, it might be more accurate to think of an eight-beat unit. The strongest accent might be termed the “downbeat,” but surely it does not have the same relative weight as it conventionally does in “The Stars and Stripes Forever.”

Thus, while the “fuzzy” quality of general definitions might be frustrating at first, careful delineation of their differences, as well as their use in specific contexts, could be considered the fundamental query of an analysis course. What is Nettl’s “unit” of beat feel in each example? How are these terms the same? Different? How do they combine, or not? Asking our students, and ourselves, to reflect on these questions can be a rewarding undertaking.

Assigning Specific Chapters to Provide Cultural Context

It might be tempting to simply assign readings from *Gateways* to provide cultural context, as well as varied repertoire, in a traditional analytic course. As we’ve seen above, the authors’ approach doesn’t always map one-to-one with the goals of a theory course. The potential benefits, pitfalls, and learning opportunities of this approach are perhaps best described through the familiar lens of sonata form. I’ll explore some issues in both the listening guides and the chapter commentary that might significantly affect pedagogical choices.

The listening guide for the exposition of Beethoven’s Piano Sonata Op. 13 (*Pathétique*), mvmt. 1, illustrates some idiosyncrasies in formal definitions (192-196). The authors identify three themes, contrasting that with the usual two. I have added measure numbers in italics that map the score to the Spotify recording.

TIME	SECTION	DESCRIPTION
0:00	Slow Introduction	A short six-note melodic motive in block chords is repeated in sequence a number of times ending with a rapid chromatic descent.
1:43	Exposition	
1:43	First theme <i>m. 11</i>	A “rocket theme” in C minor accompanied by rapid octave tremolo in the bass.
1:55	Transition <i>m. 27</i>	Descending runs contrast with ascending variants of the rocket theme.
2:14	Second theme <i>m. 51</i>	Still in minor, the new melody starts with long tones followed by descending trilled tones.
2:45	Third theme <i>m. 89</i>	This theme, in the relative major of E-flat, has a stepwise ascent accompanied by arpeggiated chords.
3:04	Transition <i>m. 113</i>	Fast descending runs lead to a restatement of the rocket theme, now in E-flat major.
3:26	Exposition repeat	

Example 4

Listening Guide excerpt (194), Exposition of Beethoven's *Pathétique* Sonata, mvmt. 1.

Here, the authors' formal conventions differ from relatively standard practices. For example, their “Third theme” might be considered a secondary theme in the second tonal area. Also, formatting is a bit confusing: there are double entries for the beginning of the exposition and the first theme.

More confusing, however, is the “Transition” at m.113. It is solidly in E $\flat$, and there is a convincing PAC in E $\flat$ that ushers in this section. Its descending run might be considered the Closing Theme (mm.113-120), and the return of the rocket theme at m.121 could be a Codetta.

This usage also contradicts the text's own definition of **transition**. As one might expect, the term is characterized as “extended material” to move between the first or second themes, or from key to key. Here, as well as in three other sonata listening guides, the authors show a transition at the *end* of the exposition. In fact, these passages have already achieved a new tonal area, rather than moving from key to key.

Perhaps we might understand the use—or misuse—of “transition” here as an intuitive correlate to a **bridge** in popular music or jazz, which the authors define as “a section of a popular music or jazz form that typically departs from yet connects the sections that precede and follow it, such as the B in AABA form” (474). Indeed, sometimes a bridge is solidly in a new key before the introduction of a return, so it

could be possible to consider the terms parallel, although certainly the rhetoric of the forms is different. Here again, we rub up against the uniqueness of the “nature of the unit of musical thought,” in different idioms. To distinguish between different types of transitions, one possible analytic activity might be to compare a sonata development with another bridge from *Gateways*: George and Ira Gershwin’s “I Got Rhythm” (Chapter 10), or Lady Gaga’s “Till it Happens to You” (Chapter 14).

An additional word of caution: besides the listening guides, the narrative description of some sonata conventions holds a few surprises. Here’s our third thorny issue, one that raises not only analytic and pedagogical issues, but also (to choose the most neutral term possible) philosophical ones when social currents flow into the classroom.

Gateway 24 features the “*Cinque...dieci*” duet from Act 1 of Mozart’s *Le nozze di Figaro* (186–192). After an introduction to Classical opera, the text describes the scene as a truncated sonata form. On one level, the choice of this well-known scene is a particularly apt example of interplay and development of the first and second themes of sonata form, here enacted by Figaro (A theme) and Susanna (B theme). The descriptive analysis, however, describes the A and B themes as gendered, with Figaro’s “punchy, short motive and expression of masculinity in his case,” and Susanna’s “undulating, stepwise motion now an expression of her femininity” (188–189).

Initially, the characterization is innocuous enough, though it perhaps seems like an unnecessary flourish. The portrayal of the recapitulation duet as Figaro’s devotion seems to be a standard reading of the narrative. I wondered if the authors had intended to use the story to illustrate the strength of Mozart’s female characters, an argument advanced by several authors in recent years (Ford, 2012).

Later in the commentary, however, the authors move in a different direction, drawing a parallel with the contrasting motives in the finale of Haydn’s string quartet Op.76, No. 3. An earlier gateway featured the second movement, which includes the St. Anthony Chorale (172–179), so students would be familiar with the work and its cultural context.

The theme of the fourth movement consists of two motives: a loud, forceful, staccato three-pitch gesture followed by a soft, delicate, undulating six-note melodic phrase. They may be nothing more than a musical representation of a vague contrast between strength and weakness, vigor and fragility. After Mozart’s *Figaro*, it is hard not to interpret these melodic motives as a conversation between a man and a woman; he perhaps angry and powerful, she perhaps defensive and powerless (190).

In our current cultural climate, that last sentence strikes me as a pedagogical pipe bomb: it could immediately release an amalgam of reactions in the classroom, certainly strong enough to derail a discussion of tonal areas in the movement.

The nature of this comment suggests some assumptions about gender roles in the eighteenth century. It would seem (there are no footnotes) that the authors are referring to nineteenth-century music theorists, or specifically to A.B. Marx, who, in 1845, included a short passage on masculine and feminine themes in sonata form, contrasting them as energetic and emphatic, milder and supple. In 1994, James Hepokoski aptly stated that the construction of gender Marx describes “would become one of his most influential assertions, one that, for us, has become both disturbing and deeply problematic” (Hepokoski 1994, 494). Indeed, the topic has produced a wide span of scholarship over the past thirty years that is beyond the scope of this study.

It may or may not be beyond the scope of your class. The quote might be engaged as a “teachable moment,” supplemented with a bit of history surrounding nineteenth-century music theorists, a careful look at Hepokoski’s article, and maybe an essay on Mozart by Susan McClary, as well as a deep analysis of the fourth duet of the quartet (McClary 1986). On the other hand, you may simply decide not to assign the chapter.

Conclusion

Having imagined some the pedagogical possibilities of incorporating Gateways into the theory curriculum, we can see that, while the juxtaposition can be inspiring, the pedagogical, analytic, and philosophical questions deserve substantial consideration. As I have tried to show, importing a musical term from one genre to another may seem intuitive, but doing the work of analysis—breaking a whole into constituent parts, or Nettl’s “units of musical thought”—can expose certain subconscious assumptions about the elements of music that may or may not be equivalent in disparate repertoires.

The inquiry into such differences is a compelling reason for music theorists to consider engaging the repertoires in *Gateways*, possibly both as teachers and researchers. A vocal music course might raise new questions about notational style, or a form and analysis course might bump into issues of terminology and meaning. Naïvely mixing terms from one idiom to another can obfuscate musical processes in both systems, but a careful consideration of each might lead to new musical insights, which is the true opportunity here.

Pedagogically, does the textbook achieve some of the goals set out by the CMS Manifesto? Let’s revisit the opening quote: one might argue that the integrated

Gateways approach might help move a class design towards TFUMM’s “inquiry base,” so that students discover the “structural, textural, design, and aesthetic dimensions of the sonic experience defined as music.” The committee goes on to say, however:

An inquiry-based structure puts more responsibility for factual-informational-technical learning into the hands of students, permitting class time to be used to focus on higher-order analysis and study (somewhat in the mode of the currently popular concept of a “flipped classroom”) (20).

Here, *Gateways* exposes a weakness in the Manifesto. The TFUMM statement tacitly assumes that “factual-informational-technical” content remains fixed, so the instructor can easily hand it over to the students. I argue that is definitively *not* the case: in the examples we’ve seen, the instructor would have to do *more* work, not less, to clearly define “facts” and terms for students in a cross-genre context.

Encountering cross-genre frictions, which can occasionally be overwhelming, frustrating, or even inflammatory, can cause some performers and scholars to discard the CMS Manifesto out of hand. Its pedagogical prescriptions, while certainly in line with larger university initiatives in the twenty-first century, sometimes fail to recognize the inherent translational difficulties. Such careful thinking should lead us from the manifesto to more serious scholarly work. I advocate here for a considered approach, one that moves twenty-first century frictions closer to the center of analytic discourse and pedagogical frameworks. This might be an excellent reason to adopt *Gateways*, a textbook that could incite equal degrees of inspiration and frustration.

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Report on the 2019 Workshops in Music Theory Pedagogy at the University of Massachusetts Amherst

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Introduction

On June 24th, 2019, fifty-seven music theory aficionados gathered at the Fine Arts Center at the University of Massachusetts Amherst for the fifth triennial meeting of “Workshops in Music Theory Pedagogy.” Participants ranged from college professors and high school teachers to students and prospective students, some traveling as far as 3,787 miles to attend the workshops. Workshop organizer and featured speaker Gary S. Karpinski arranged for four other prominent theorists to speak each day about pedagogy-related topics of their choice: Joseph Straus, Leigh VanHandel, Justin London, and Cynthia I. Gonzales. All distinguished authors and pedagogues, the guest speakers brought unique perspectives to the workshop and encouraged participants to think outside the realm of traditional pedagogy in their music theory classrooms.

The conference lasted five days, each day featuring five hour-long presentations given by the guest faculty members, special breakout sessions, and social and networking events in the evening. The atmosphere was lively and full of dialogue, with participants constantly bouncing ideas off of the panel and asking questions pertaining to the theory curricula at their respective institutions. While each speaker had a different area of expertise, several common themes linked the presentations over the course of the week: inclusivity in the field, an emphasis on literature, pedagogical approaches informed by music cognition research, aural skills pedagogy, and new approaches to post-tonal theory. Each topic was approached with an open-minded perspective meant to engage and meet the needs of the 21st-century music student.

Inclusivity and Accessibility

Student learning and success remained at the forefront of every conversation held throughout the conference, as participants and speakers alike raised questions about how to make their music classrooms more inclusive to all students. In a country more diverse than ever and a society that has become increasingly sensitive

towards physical and mental wellness, it is clear that educational accessibility should be of paramount concern to all teachers, regardless of discipline. Throughout their respective presentations and topics, many of the speakers tackled different angles of the question, “What can we do to make the disciplines of music theory and aural skills more inclusive towards and accessible to all students?”

During Monday’s workshops, Joe Straus gave a presentation entitled “Disability and the Music Theory Classroom.” The goal of the presentation was twofold: first, to suggest accommodations that can be made in the theory classroom for students with disabilities, and second, to discuss the ableist and normalizing discourse that permeates the discipline of music theory. Straus began his discussion by outlining the three models for conceptualizing disability: the medical model, which considers disability to be a defect that should be cured/normalized, the religious model, in which disability is a divine affliction, and the sociocultural model, in which disability is a difference to be celebrated. Straus urged the workshop participants to embrace the sociocultural mind frame in their teaching and treat student disability not as an affliction, but as a unique perspective that can enrich the classroom learning environment.

Straus recommended that instructors shift the burden of disability from the students to the classroom design, thus avoiding a “disabling” environment and curriculum that fail to accommodate different kinds of learners.¹ To avoid this issue, Straus advocated for using principles of Universal Design for Learning (UDL) to help shape music theory curricula. UDL is a system meant to make learning inclusive and accessible to all students, and while it can lessen the need for individual accommodations, its goal is to improve the learning experience for everyone. If a student with a disability requires a time extension, for example, an instructor using UDL would either give the entire class extra time or adjust the exam to make it easier to complete within the original timeframe.² When explaining his UDL-inspired curricula, Straus recommended introducing topics in a way that caters to a variety of different learning styles, including kinesthetic, visual, and aural components.

Straus concluded his seminar on Monday by critically examining the intrinsically “normalizing” discourse within the music theory discipline, and discussed the pedagogical implications of said discourse. He suggested that music theory is often aligned with the medical model of disability, designed to rationalize the “abnormal”

¹ Quaglia (2015).

² For more specific advice about implementing UDL in the music theory classroom, see Gillespie (2018).

elements of music with respect to “normal” ones. For example, when analyzing form, theorists often refer to atypical structures—usually those that deviate from Classical-era prototypes—as formal “deformations.” The music theorist assumes the role of a medical practitioner in such a scenario, diagnosing the non-normative conditions of the music and correcting them with rationalizations about what should or shouldn’t be prototypical. Assuming a standard of normalcy in music risks discrediting and misunderstanding the music that does not align with those standards—standards that are usually biased towards male, Caucasian, Western European composers and their works. Consequently, Straus urged the theory instructors at the conference to move away from the narrative of normalcy when discussing music in class, and instead, should learn to embrace the oddities of a piece, treat them autonomously, and use them as gateways into deeper discussions of the music. Straus referred to this perspective as “disablist” music theory, which aligns with the sociocultural model of disability.

Justin London pointed out that when designing lessons, it is important to take not only students’ learning abilities into account, but also their personal backgrounds and interests as well. The majority of London’s presentations concerned designing music theory classes for liberal arts students and non-music majors, drawing primarily from his experiences as a professor at Carleton College. Because his students at Carleton possess a wide array of academic/educational backgrounds and have varying degrees of musical expertise, London aims to make his theory classes as widely applicable and inclusive as possible. London urged the participants to take their student demographics and interests into account, and to avoid topics/practices that might exclude those that don’t have a lot of musical expertise. Two such practices mentioned were the harmony and piano-centric approaches that dominate many theory curricula. Excessive emphasis on vertical harmony has a Western Classical bias, can make analysis seem dry, and often takes too much time away from other interesting topics (i.e. timbre, texture, rhythm, etc.), while too much emphasis on the piano can exclude and discourage those who are unfamiliar with the instrument. To avoid these exclusionary pitfalls and make classes more accessible, London suggested that instructors “move beyond the worksheet” and incorporate more creative writing, group-based, and project activities into the class.

As an introductory assignment for his first-year theory class, London poses the question, “What is a musical instrument?” From here, he addresses fundamental acoustic properties, encouraging students to understand how instruments work and how sound is created. London introduces the Hornbostel–Sachs system of classifying instruments, as well as the different parts of an instrument: the oscillator, resonator, and modifier. Once his students have been given sufficient information about how

an instrument functions, they are given the task of creating an original instrument from everyday objects. Finally, after the students have presented their own musical instruments, London uses the information learned during the unit as a stepping stone to listening to and analyzing music literature in the classroom.

In addition to including more hands-on and creative assignments in the curriculum, Cynthia Gonzales advocated for incorporating more technology in the theory class. Because technology is usually a familiar medium for students, using online programs and applications can help make the learning process easier and more accessible for them. Gonzales makes use of SmartMusic and instructional YouTube videos in her classes, and has her students practice skills and complete take-home assignments using both platforms. It is Gonzales's hope that this incorporation of technology will not only make the learning process more accessible to students, but more enjoyable as well.

Emphasizing Literature

Throughout the week, many of the speakers touched on the importance of using 'real' music, as opposed to acontextual exercises, to teach theoretical concepts. Cynthia Gonzales has successfully implemented this notion in her aural skills classroom, using the aforementioned YouTube videos for at-home student practice. These videos—with musical examples ranging from Mozart Masses to "Puff the Magic Dragon"—serve as a way for students to become familiar with solfege and chord function while listening to music of different genres and singing along with the harmonies. In Gonzales's classroom, the end-of-semester project is a culmination of students' at-home learning: they must choose any song and use solfege to arpeggiate the chords as the piece progresses. The freedom to select a piece of music from any genre allows students to understand and apply the concepts they have been learning all semester through a familiar medium.

Gonzales and VanHandel find it important to distinguish "compositional practice" from "rules" in music theory voice leading. VanHandel takes a scientific approach in her instruction, using the parameters of the auditory system to help students understand stylistic constraints of a particular composer and time period.³ VanHandel noted that composers were following certain practices because of what sounded good to them, but "considering limits of parameters can help [students] to understand 'violations' of the guidelines." This approach can make traditional voice leading and

³ For more information about the perceptual principles behind voice leading, see Huron (2016).

counterpoint more meaningful to students, who are often frustrated by the long, seemingly arbitrary list of rules. Similarly, Gonzales selects Bach chorales to illustrate the compositional practices that underlie some of the limitations of part writing. She has students analyze the chorales, counting the intervals between bass notes and then between soprano notes. After completing a horizontal analysis of the music, students move on to a vertical analysis, observing the intervals between the bass and soprano, and tallying the number of consonances and dissonances. Using Bach's music as an example, Gonzales can then empirically analyze Bach's compositional choices, a notion which gives merit to the guidelines of SATB part writing. By placing specific composers and their stylistic practices at the forefront of teaching part writing, VanHandel and Gonzales give students a more concrete way to conceptualize the "rules" which guide music theory topics.

On the second day of the workshop, Straus gave the participants a preview of the forthcoming second edition of *Concise Introduction to Tonal Harmony*.⁴ Each conference participant was given a copy of the uncorrected proofs for the post-tonal portion of the book. Straus, who defines post-tonal music as pitch-based music in the western classical tradition since 1900, recognizes many of the difficulties that surround teaching post-tonal music theory. Many of the tips he gives to those embarking on this journey involve talking less about theory and more about music. In their approach, Straus and Burstein implement these tips, creating a book with an expanded music repertoire and an emphasis on diagrams before text. All of the musical examples are taken from literature, and are selected to demonstrate post-tonal theory topics. Straus finds that teaching through real music is critical for student understanding. This is precisely the approach that Gary Karpinski takes in his aural skills classroom. Karpinski advocated for the inclusion of music literature in sight-singing exercises so that students are learning compositional practices from real composers. When given the opportunity to explore these historical contexts, students' comprehension of how music is composed and analyzed improves and they can apply analytical skills from one piece to the next. Karpinski's *Anthology for Sight-Singing* (2017) exemplifies this approach, exposing students to musical works from many different genres and eras at the very beginning of their music studies.

⁴ Burstein and Straus (2016).

Pedagogical Applications of Music Cognition Research

Over the course of the week, the rising field of music cognition was given special attention as a pedagogical tool in the theory classroom. Leigh VanHandel began by comparing basic mathematics to theory fundamentals; research suggests that the cognitive processes underlying both disciplines are similar, each requiring abstract and systematic thought. The disciplines of music and mathematics both make use of notational systems, require fluency with those systems, and encourage an understanding of meaningful patterns rather than disconnected knowledge. This level of understanding is put to the test when students must choose use different strategies to answer questions. VanHandel said, “Students need to be explicitly shown that another strategy is more effective and more efficient by presenting them with questions that exploit weaknesses in a lower-level strategy.” When given these strategies, students gain a better conceptual understanding of fundamental topics and are able to retrieve information more quickly. So, why is mathematics pedagogy applicable to music theorists? As VanHandel explained, “the way that students learn math could help us to more effectively teach music theory.” She has found success in using tasks like pattern matching, spatial rotation, and even the math SAT as early predictors for student performance in music theory fundamentals, hoping to pinpoint which students may need more individualized attention.

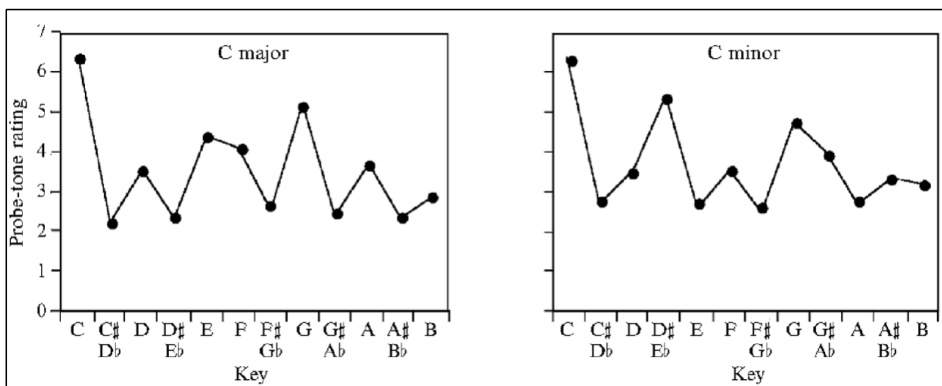
The role of working memory in music theory was another topic that emerged during the week. VanHandel started by defining working memory as the “capacity for holding and manipulating a small amount of information for a short period of time,” a skill which may be taken for granted too often in the music theory classroom. Working memory has a large effect on things like reasoning, decision-making, and mathematics. Unfortunately, there are many factors that work to negatively influence students’ working memory; it can be affected by genetics, sleep deprivation, threat or anxiety, and pain. Many students who struggle with working memory problems have difficulties following instructions, problems with activities that require storage and processing, and appear to be inattentive and distractible. VanHandel shared a variety of techniques to help struggling students, adding to the above list of ways to make music theory more inclusive towards and accessible to all students. One of the most effective ways to aid working memory is to reduce students’ cognitive load: the less information they have to process, the more successful they can be in solving problems. VanHandel suggested to the participants that they can reduce their students’ cognitive load by signaling essential information, formatting things in a straightforward

manner, and removing extraneous content from questions and activities. Additionally, it is important to encourage students to develop their schema by using adaptive strategies, and to promote the active recall and retrieval of information, rather than simply “restudying” the information.

In the case of aural skills, it is especially crucial that students develop chunking strategies to help reduce their working memory load. Gary Karpinski explained that chunking is an important skill for students taking melodic dictation, as the brain cannot always accurately remember all of the musical information it has received. Karpinski cited George Miller’s “seven plus or minus two bits” as the limit to short-term memory, but explained that students should group notes into meaningful “chunks” in order to aid memory during dictation.⁵ In using this strategy cognitive load is reduced, allowing working memory to function more successfully. In addition to chunking, Karpinski suggested encouraging students to use their “extractive memory,” that is, to focus their attention on different parts of the dictation passage. This method differs from chunking because it requires students to focus on one specific section of the passage at a time rather than chunking all parts of passage. Using chunking and extractive listening strategies reduces the brain’s cognitive load, and students are far more able to utilize their short-term and working memory to accurately transcribe a melodic dictation melody.

Later in the week Justin London spoke about how music cognition can be used in the theory classroom. Using Krumhansl and Kessler’s 1982 probe tone experiment as a model, London explained how demonstrations of empirical or data-driven approaches to music can have many benefits. London conducted a version of this experiment in real time during his presentation, and analyzed the data to show participants how empirical data can be used to learn about or teach music theoretical concepts. In the experiment, all workshop participants listened to a tonic-establishing progression followed by a single tone, which they were prompted to rate on a scale from 1–7 based on how well they thought it fit into the key. This procedure was repeated multiple times based on different scale degrees. Example 1 shows Krumhansl and Kessler’s results, which were replicated by pedagogy workshop participants.

⁵ Karpinski (1990, 201).

**Example 1**

Krumhansl and Kessler (1982) probe tone experiment results.

Empirical approaches to music theory can provide support for musical intuition, show how the study of music translates into “hard data,” and aid in musical analysis. VanHandel illuminated some of the perceptual reasons for standard SATB voice-leading “rules,” noting that “explaining how SATB part writing works within parameters of the auditory system may help students understand stylistic constraints.” In her discussion, she used David Huron’s *Voice Leading: The Science Behind a Musical Art* (2016) as a way of outlining the principles of Western tonal music. Though science can be a useful way to teach students about the subtleties of part-writing, VanHandel clarified that science is not justification or a value judgment—music that does not follow the rules of Western tonal music is not bad, but simply uses different principles to express other priorities.

Aural Skills Pedagogy

Of central importance to the week’s proceedings were discussions about aural skills teaching and learning. These themes were particularly prevalent in the workshops conducted by Gary Karpinski and Cynthia Gonzales, both of whom spoke about recently emerging innovations and pedagogical strategies within the field. In keeping with the overarching themes of inclusivity and accessibility, the aural skills-centered workshops featured various methodologies for creating optimal classroom environments for various kinds of learners. While Karpinski’s workshops featured perceptual approaches to dictation and sight-singing, Gonzales focused mainly on the concept of “harmonic listening” and spoke about ways of including technology in the classroom.

In the first session on Monday, Karpinski initiated discussion by polling the crowd about the goals of aural skills training, and questioned the participants about how those goals are brought to fruition in their curricula/institutions. Among the goals suggested (performance, intonation improvement, composition, etc.), the two that seemed to emerge as the most pertinent were the development of functional hearing and the improvement of musical memory. This de-emphasis of external product (singing/performing) and focus on internal process has been referred to by Bruce Benward as the development of the “hearing eye” and “seeing ear.”⁶ This discussion served not only as an entry point for Karpinski’s later sessions about dictation and sight-singing, but also as an excellent framing topic for the entire conference—nearly all of the speakers’ topics included issues of internalization and the mental processes involved in learning music theory. According to Karpinski, functional hearing is a skill that must be reinforced at every stage of aural skills acquisition, which, in his opinion, is best achieved with moveable-do solfege. Karpinski suggested that while each solmization system has its merits, a system such as moveable do allows students to assign functional meaning to each note, thus allowing them to understand larger tonal contexts.⁷

Functional listening skills, particularly the skill of establishing tonic, can be included in the preliminary steps of sight-singing and dictation training. For sight-singing, Karpinski suggested providing students with only the starting pitch (whether it be the tonic or not). Given this information, and after examining the key and structure of the excerpt, the student should be able to place the pitch in a tonal context, find the tonic, and audiate the whole passage with contextual understanding. For dictations, Karpinski suggested providing the students with only the clef, the name of the tonic, and the bottom number of the meter signature. After hearing the whole excerpt, Karpinski claims that the students should be able to identify tonic and contextualize each pitch accordingly in the key.

As an entry point to a freshman aural skills class, Karpinski suggested that instructors begin with the fundamentals of meter and pitch, both of which can be expressed with the “protonotation” system. Derived from the rhythmic theories of Lehrdal and Jackendoff (1983) and traditional moveable-do solfege, protonotation is a way for students to express their understanding of a piece’s basic pitch and metric

6 Benward and Saker (2015, xi).

7 For Karpinski’s breakdown of moveable vs. fixed solmization systems and their respective uses, see Karpinski (2000, 166-68).

properties without the burden of traditional notation.⁸ When dictating or transcribing a piece of music using protonotation, students draw vertical lines to represent the main and secondary pulse layers, horizontal lines in between to represent the rhythms, and write moveable-do solfege syllables above each horizontal line to represent each pitch.⁹

Like Karpinski, Gonzales stressed the importance of sound-before-symbol in her discussion about harmonic singing and listening in the aural skills class. When commenting about students' initial difficulty when learning to use Roman Numerals, she explained, "We cannot call something by name when we do not know the name," implying that students need to form auditory and oral connection to the symbols in order to understand them visually. During her session on Monday, Gonzales shared some of her video homework assignments used to introduce Roman Numerals and harmonic progressions through singing exercises. In the exercises, students learn to sing common harmonic progressions using what she referred to as the "guide tone method." In this process, students listen for a single pitch within each given harmony (usually do, ti, or re), and then sing the arpeggiated chord in closed position on solfege.¹⁰ Gonzales also suggested giving sing-along dictation quizzes, claiming singing through the underlying chord progressions will allow students to have an easier time contextualizing the melody.

Both Karpinski and Gonzales spoke extensively about the importance of error detection in the aural skills classroom and its relevance for music performers, educators, and students alike. As all of the workshop participants agreed, nearly every profession in the field of music necessitates the ability to identify, understand, and correct errors. Karpinski advocated that instructors should model real-world experiences as much as possible when devising error detection assignments—to model the experience of an instrumental teacher correcting a student's wrong note, for instance, an error detection activity should contain mistakes in the accompanying performance or audio file, not the notation. As Gonzales pointed out, error detection also plays an important role in self-assessment when sight-singing, which is often a difficult task for students. To make it easier for students to error detect when practicing at home, Gonzales suggested that aural skills instructors assign SmartMusic exercises, which provide immediate feedback about the students' pitch and rhythm accuracy.

8 This methodology is inspired by the concept of "sound before symbol," outlined in Gordon (2012).

9 For a written-out example of protonotation, see Example 3.15 in Karpinski (2000, 91).

10 All of Gonzales's harmonic singing exercises can be accessed with the following link: <https://www.listen-sing.com/harmonic-listening>.

Teaching Post-Tonal Music Theory

Joe Straus spent much of the week engaging workshop participants about topics in post-tonal music theory pedagogy. He explained that the student anxiety surrounding the genre necessitates careful pedagogical strategies, remarking, “Atonal music gets a really bad reputation, even more than tonal music theory.” Straus shared 10 tips for teaching post-tonal theory: 1. Less theory, more music 2. Expand the repertoire 3. Talk less, do more 4. Hear the music 5. Analyze the music (within limits) 6. Compose (within limits) 7. Visualize 8. Make it real; keep it concrete 9. Relate to performance 10. Plunge right in.¹¹

Straus speculated that the bad reputation of atonal theory is due to students’ unfamiliarity with the genre and its stylistic parameters. To remedy this unfamiliarity, he suggested easing the students into the new material by relating it back to tonal music at every possible opportunity. This curricular scaffolding helps students to draw connections between genres and allows them to use familiar concepts to help navigate the new analytical terrain. As an example, Straus recommended having students analyze phrase syntax in post-tonal music by looking for resemblances of periods, sentences, and other structures characteristic of tonal music. Once the students are able to draw these connections, the music becomes significantly less ambiguous and the often-hidden principles of functionality and order become more apparent. Students are then able to have meaningful conversations about how structure in post tonal music *differs* from traditional periods and sentences, and can then learn about the kinds of structures that are idiomatic to the genre. Similarly, Straus suggested using familiar concepts—particularly scales and collections—to talk about more advanced concepts found in post-tonal musical language.

It becomes quite evident that the forthcoming second edition of Straus and Burstein’s *Concise Introduction* embraces the connections between tonal and post-tonal music, particularly when examining the types of activities found in the accompanying workbook. Some of the most unique features of the workbook are the recomposition exercises, where students are prompted to recompose excerpts of post-tonal pieces to fit traditional tonal prototypes. During his presentations, Straus referenced examples from the *Concise Introduction Workbook* to clarify this activity. Example 2 shows an activity found in Chapter 42 of the *Concise Introduction Workbook* (teacher’s edition with answer key). The top system is a harmonically ambiguous

¹¹ Straus (2018).

excerpt from Stravinsky's Concerto for Piano and Winds, which the student is asked to recompose to fit a tonal prototype. The second system represents a possible student recomposition that transforms the excerpt into a traditional tonic expansion and ii–V–i cadential formula. Such activities help the student to uncover the compositional affects, intentions, and organizational principles of the music.

Note: This is the instructor's version of the Workbook. Students see the shaded material only, and are asked to fill in the rest. The instructor sees my proposed solution.

NAME:

Traditional

5. ~~Traditional~~ progressions recomposed

For each passage, try to compose a simplified, tonal prototype that might be understood to lie behind the post-tonal surface. Provide a Roman numeral analysis of your composition. Some chords and Roman numerals are provided. There will be many possible solutions!

a. Igor Stravinsky, Concerto for Piano and Winds

A min.: i V⁴ i⁶ ii[°] ii[°] V⁸ — 7 i

Example 2

From Bernstein and Straus *Concise Introduction Workbook* (Uncorrected Proofs, p. 609), Stravinsky recomposition exercise.

In addition to their unfamiliarity with the repertoire, Straus noted that one of the main reasons why students struggle with post tonal theory is an over-emphasis on pitch class numbers. For many students, a numbers-based approach can make the analytical process seem cold, sterile, and removed from any kind of familiar music making process. As a solution, Straus recommended “de-mathifying” post tonal theory as much as possible, and suggested using traditional letter name terminology and symbology instead of numbers when applicable. For example, moving from letter names directly into pitch class numbers can be rather intimidating for a new post-

tonal theory student. A viable solution, Straus said, is to just continue using letter names and introduce pitch class numbers later in the class: “students may be less off-put when there are fewer numbers involved, and instead they still feel like they’re still talking about music.”

Conclusion

After a week of engaging presentations, hands-on activities, and lively discussions, participants left Amherst with new ideas to institute in their own classrooms and studies across the country. The workshops served as a forum for theorists of all backgrounds to exchange perspectives and questions, as well as an opportunity to build friendships and community within the field. As is director Gary Karpinski’s goal, the conference provided participants with the opportunity to engage with scholars, students, and educators of all kinds in a uniquely intimate, fast-paced, and thoroughly enjoyable conference setting. On behalf of all the participants, the authors of this report wish to express their gratitude towards the esteemed guest speakers, and to the University of Massachusetts Amherst for hosting these workshops. We eagerly anticipate the next Workshops in Music Theory Pedagogy in the summer of 2022.

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Conference Report: Pedagogy into Practice 2

ELIZABETH SAYRS



Following the successful inaugural Pedagogy into Practice conference in June 2017 at Lee University, the second biennial Pedagogy into Practice: Teaching Music Theory in the Twenty-First Century conference was held May 23–25, 2019 at the University of California, Santa Barbara. Sponsored by the Gail Boyd de Stwolinski Center for Music Theory Pedagogy in partnership with the *Journal of Music Theory Pedagogy*, the Pedagogy into Practice conferences have joined a flourishing of pedagogy-oriented conferences, workshops, and publications in the last decade, including, for example, the Workshops in Music Theory Pedagogy at the University of Massachusetts, Amherst (organized by Gary Karpinski), the Summer Institute for Music Theory Pedagogy at Eastman, the combination of the print and online versions of the *Journal of Music Theory Pedagogy* into an open access online journal, the Engaging Students Unconferences, and the open source, open access journal *Engaging Students: Essays in Music Pedagogy*. The Pedagogy into Practice conference occupies a distinct niche by marrying a traditional conference approach—peer review of proposals for papers, workshops, panels, and posters, along with invited keynote speakers—with an intentionally open, engaged, and inclusive atmosphere. This is a conference where all those who theorize and practice student-centered pedagogies are welcome, whether they are students, high school teachers, or distinguished professors (all of whom were explicitly invited in the call for papers). The conference organizers intentionally built time and space into the program—through shared breaks and meals, interactive keynote addresses, and group conversations such as the “coda” capping the conference—for attendees to think, interact, and reflect both individually and collectively. While I cannot cover all of the papers, posters, panels, and workshops presented, I hope to give a sense of both the themes that emerged and the types of interactions that made this conference so engaging and inspiring.¹

¹ The conference program, abstracts, and supplemental materials are available at <https://jmtpp.appstate.edu/conference/past-conferences/2019-santa-barbara-o>.

The program committee was chaired by Rebecca Jemian, and included Timothy Chenette, Bryn Hughes, Rachel Mitchell, Susan Piagentini, Derek Remeš, and Jena Root; Janet Bourne and Ben Levy coordinated local arrangements. The conference program helpfully shared information about the number and type of proposals as well as the approximate acceptance rates by gender and rank

Keynote speakers—J. Daniel Jenkins (University of South Carolina), Daniel Stevens (University of Delaware), and Cynthia Gonzalez (Texas State University)—anchored each day of the conference. In the first keynote, “Public Music Theory and Pedagogy,” Jenkins described his experiences teaching music theory to inmates at Lee Correctional Institution, including bringing together his students from the university and his students at Lee to work on a joint concert at the prison. In addition to helping his university students expand their comfort zones, Jenkins’s work helps inmates recognize themselves as talented musicians regardless of their circumstances. The core question posed by Jenkins’s talk still haunts me: why did these men have to go to prison in order to access this kind of opportunity for music education? In this case, public music theory is about far more than chord symbols and time signatures, surfacing issues of class, race, and unequal access to educational opportunities embedded in our current system.

Daniel Stevens encouraged us to play musically in new spaces in the second keynote, “Never Twice the Same: Listening and Improvisation.” This was not an ordinary keynote lecture: we were asked to sit in groups of five, preferably with people we did not know before the conference, and evenly distributed throughout the auditorium. Beginning with an improvisation of a very short but complete piece based on sounds drawn from the names of the people in each group, and ending with participants building a small LEGO model whose spatial characteristics were then translated into musical ideas as the basis for group improvisation, Stevens skillfully led the large audience through a series of structured improvisations and reflections that situated improvisation as central to aural skills rather than “extra,” and ended with suggestions to radically re-center aural skills around solving “real-world creative problems that depend on the ability to think in sound.”

In the final keynote, “SmartMusic: Removing the ‘Fear Factor’ from Sight Singing and Aural Skills,” Cynthia Gonzalez demonstrated how she thoughtfully incorporates technology into aural skills. SmartMusic was originally developed for instrumentalists to practice their ensemble parts, and Gonzalez illuminated the complex process by which an end user can engage productively with a vendor to help them better adapt their software to new uses and purposes. By developing targeted, customized materials and providing the opportunity for immediate and nuanced feedback to student singing, Gonzalez showed how technology not only helps students learn, but also provides students with agency to direct their own learning.

(where known). The Gail Boyd de Stwolinski Center for Music Theory Pedagogy is led by Steven Laitz (director) and Jennifer Snodgrass (assistant director).

In addition to the keynote presentations, the conference comprised eight paper sessions (Pedagogy and Extensions of Music Theory, Aural Skills, Global Pedagogy, Writing, Addressing the Range of Students, Models for Learning, Expanding our Approach, and Fundamentals and Inclusivity), a panel (From Core to Cores), a combination of a panel and related papers (Diversifying the Curriculum), six workshops (Incorporating Music by Women, Assisting Student With Memory Deficits, Galant Schemas and Aural Training, Hearing the Waves, SLOs and Timbre, and Aural Skills) and a poster session featuring twenty-seven posters in five categories (Technology, Performance Skills, Games, Musical Design, and Curriculum and Learning).

There was no better way to start the conference than with a panel addressing some of the big questions that many of us face: How do we redesign our current core curriculum to serve the needs of a variety of students, from traditional performance and music education majors to music therapy and music technology students, all of whom may need a range of different theoretical and aural skills to thrive in their musical and professional lives? Greg McCandless, Jennifer Snodgrass, and Andrew Hannon (Appalachian State University) described their new curricular model, which expands the concept of core theory to multiple cores, embracing a variety of courses tailored to specific student needs, including the possibility of core electives that students can select to round out their theory sequence. It was valuable to see the juxtaposition of the “ideal” curriculum that was initially proposed with the curriculum that was finally adopted after working through complex collegial discussions and practical constraints and mandates, especially for those considering a monumental undertaking like this. Later in the conference, these issues were reinforced by Andrew Gades (College of Idaho), Megan Lavengood (George Mason University), and Crystal Peebles (Ithaca College), who discussed their differing approaches to modularizing the theory core at each of their institutions, with a focus on diversifying the content of the theory core, exploring non-sequential course options, and providing the opportunity for intersections with other disciplines.

In addition to restructuring the theory core itself, another theme that emerged from the conference was the need to reimagine the content of our music theory courses in a variety of ways. One approach was to expand the traditional canon by incorporating, for example, film music (Janet Bourne, University of California, Santa Barbara), popular music (Christopher Doll, Rutgers University; and Andrew Aziz, San Diego State University), and music by underrepresented composers. I especially draw attention to the workshop by Elizabeth West Marvin, Molly Murdock (both Eastman School of Music) and Jane Piper Clendinning (Florida State University) on

incorporating more music by women into the classroom. This interactive workshop trained participants in online resources for locating music by women, explored several pieces through small group listening and analysis, and then shared the results of those analyses with conference participants.² In addition to expanding the canon, multiple presentations challenged participants to rethink traditional topics, including decentering chorale-style writing (Marcelle Pierson, University of Pittsburgh), re-centering error detection (Amy Fleming and Edward Taylor, Baylor University), and incorporating Galant schemas into counterpoint, harmony, and voice leading pedagogy (Nathan Baker, Casper College). Several presenters focused on incorporating important but often overlooked aspects of music and music theorizing, such as the use of traditional aural skills techniques to teach students to identify different synthesized waveforms and basic audio processes in popular music (Paul Thomas, Texas Woman's University), the inclusion of timbre as a salient dimension of music (e.g., William Mason, Wheaton College-Massachusetts; Nora Engebretsen, Bowling Green State University; and Patricia Burt, University of Delaware), and the incorporation of the practice of public music theory (Aaron Grant, Missouri Western State University). A full session focused on writing in music theory courses, not only to develop writing skills, but also as a way to foster broader communication, public presentation, analysis, and reflection skills (Andrew Farina, Butler University; Anna Ferenc, Wilfrid Laurier University; Joan Huguet, Knox College; William Marvin, Eastman School of Music; and Angela Ripley, College of Wooster).

Another significant theme that emerged was an emphasis on applying research in perception and cognition—and not just music perception and cognition research—to how we teach in the classroom. Several papers explored how musical experiences and implicit as well as explicit learning can create mental representations of auditory images to facilitate aural skills (Elizabeth Monzingo, Ohio State University; Elizabeth Sayrs, Ohio University) and can influence how absolute pitch manifests in different cultures (Elizabeth West Marvin, Eastman School of Music and Su Yin Mak, The Chinese University of Hong Kong). Others wove issues of working memory and cognitive load into broader pedagogical frameworks (e.g., Mark Gotham, Cornell University; and Michael Callahan, Michigan State University). Several sessions helped participants get a glimpse of their students' cognitive processes, whether through using cognition research to posit what happens in a student's head as they become more fluent at melodic dictation (David John Baker, Louisiana State University), or by actually

2 In addition to the materials available on the conference web site, additional resources from this workshop are available at <http://musictheoryexamplesbywomen.com/conference/>.

helping participants briefly experience the type of cognitive load that is created when we ask students to perform even some of the most basic activities in music theory. To illustrate the magnitude of what we routinely ask novice music theory students to do, Leigh VanHandel (Michigan State University) asked participants in her workshop on memory to perform a simple task—just spell some chords—but with a little twist: instead of using the letters A through G for pitch names, participants were asked to use the letters H through N. Even something as basic as what feels like the “natural” and easy alignment of pitches with letter names was instantly revealed as a significant draw on a novice’s limited attention and memory.

For me, one of the most inspiring themes to emerge was an emphasis on inclusive pedagogies, reflecting broader trends across higher education, with a focus on changing how we teach in order to meet the needs of a variety of students and to leverage the distinct knowledge and experiences that every student brings to the classroom (Adam J. Kolek, Rowan University). Susan Piagentini’s (Northwestern University) discussion of informal music learning began with the premise that self- and peer-directed learning is critical, and that learning tasks should begin with music that students already know, understand, and choose for themselves. Several papers focused on creating inclusive learning outcomes (Scott M. Strovas and Ann B. Stutes, Wayland Baptist University) and inclusive assessments that provide multiple opportunities for students to show what they have learned (Stefanie Bilidas and Zachary Lloyd, Michigan State University; Andrew Conklin, University of the Pacific). Jane Piper Clendinning (with Nancy Rogers, Colleen Ganley, and Sara Hart, Florida State University) presented work of the Mathematics and Music Theory Project, which brings together faculty members from psychology and music to explore the relationship between math-related learning disabilities (such as the ability to identify visual patterns and recognize representations of rotated three-dimensional objects) and success in music theory courses, including an innovative diagnostic exam. The goal is to identify students who may struggle in theory courses and to intervene and assist those students early in their academic careers, possibly by identifying more efficient ways of attending to musical information.

Finally, the poster session was truly a highlight of the conference. Although only sixteen posters were originally submitted, many proposed papers were accepted as posters, and the conference was better for it. As at the inaugural Pedagogy into Practice conference, the poster session was a stand-alone event without any competing sessions, and the venue buzzed with lively and rich conversations. There were opportunities to engage directly with colleagues on a broad range of ideas,

including how to categorize aural skills excerpts to facilitate software retrieval (Gary S. Karpinski, University of Massachusetts, Amherst), the finer points of “sing-and-plays” in aural skills (Samantha M. Inman, Stephen F. Austin State University), and principles for successful gamification in music theory pedagogy (Douglas Buchanan, Peabody Conservatory of the Johns Hopkins University and Patricia Burt, University of Delaware). I have already implemented some ideas from the poster session in my aural skills class this fall, including ways to cultivate curiosity (Philip Duker, University of Delaware), incorporating more intentional metaphorical opportunities when learning new excerpts (Alex Sallade, University of Delaware), and the use of short review games at the beginning of class (Dana DeVlieger, University of Minnesota and Jennifer Shafer, University of Delaware, who arguably had the best poster title).

While the conference presented a wide range of topics, there were some areas less well represented. In their conference report on the first Pedagogy into Practice conference in 2017, J. Daniel Jenkins and Angela Ripley (2017) noted, “One striking lacuna among the presentations was the lack of discussion of rhythm and meter.” The same was true for this conference. While rhythm and meter were not absent per se—certainly, many papers incorporated aspects of rhythm and meter—theorizing about the pedagogy of rhythm and meter was not a central focus of the works presented.³ And despite the strong emphasis on inclusive pedagogy, compared to recent Society for Music Theory conferences, there seemed to be less focus specifically on issues of race, ethnicity, gender, and sexuality, and less inclusion of world music. I hope that readers interested in these topics will submit proposals for the next Pedagogy into Practice conference scheduled for May 20–22, 2021 at Michigan State University.

My lingering impression of the conference is one in which serendipitous collisions were intentionally fostered—between disparate ideas, between theory and practice, between students, teachers, and scholars. If, as Elizabeth West Marvin (2018) has noted, “theory pedagogy has remained under-represented in mainstream theory research journals,” citing Duinker and Gauvin’s (2017) research that just 2%–5% of the articles in the *Journal of Music Theory*, *Music Theory Online*, and *Music Theory Spectrum* since 1979 have addressed pedagogical topics, this Pedagogy into Practice conference demonstrated that pedagogy’s under-representation is not due to a lack of rigorous, engaging, and important research on the topic.

Perhaps one moment best encapsulates the ethos of the conference: during the

3 This topic became a thread on SMT-Discuss shortly after the conference (<https://discuss.societymusictheory.org/discussion/492/is-no-one-teaching-rhythm-and-meter>). See also Cohn (2015).

Q&A after a paper, an attendee raised her hand and introduced herself as a high school teacher, and said that the session was so valuable to her that she wanted to know how she could get the word out and bring even more high school teachers into the fold. She wanted them to have the same type of transformative music pedagogy experience that she was having. She also admitted that she had been worried the conference would not be accessible to her, but that she had felt welcome and included. This is precisely the type of outreach mission that the Gail Boyd de Stwolinski Center for Music Theory Pedagogy and the *Journal of Music Theory Pedagogy* (and its online resources) embraced several years ago under the leadership of Steven Laitz: to serve as a resource not only for professional music theorists, but for all who teach music theory and aural skills. The second Pedagogy into Practice conference clearly embodied this vision, and the reach, impact, and engagement fostered by the conference bodes well for the evolution of an ever more inclusive and vibrant music theory pedagogy in the future.

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Contributors

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Allison Wente is Assistant Professor of music theory at Elon University. In her research, she explores the displacement of labor, technological mediation, and the differences between analogue and digital technologies as they materialize in early recording media, specifically the player piano in early twentieth-century America. She has presented her work at several national and regional conferences, including meetings of the Society for Music Theory and the Society for Ethnomusicology. She has publications in *Music Theory Online*, *Keyboard Perspectives* (forthcoming) and co-authored a chapter with James Buhler in *Music and Sound in Silent Cinema*. She holds graduate degrees in music theory from The University of Texas at Austin (2016) and the University of Wisconsin-Madison (2011).

