
JOURNAL OF MUSIC THEORY PEDAGOGY

Volume Twenty-Six 2012

SCHOOL OF MUSIC
THE UNIVERSITY OF OKLAHOMA

JOURNAL OF MUSIC THEORY PEDAGOGY

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Journal of Music Theory Pedagogy
School of Music
University of Oklahoma
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ISSN 0891-7639

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From the Editor

STEVEN LAITZ

Like preceding issues of this journal, Volume 26, and its nine contributions, will surely be of value and interest to the reader.

Two articles focus on stylistic composition and improvisation. Peter Silberman's "Teaching Classic Era Style Through Keyboard Accompaniment" explores an often-overlooked topic: the pedagogy of model composition in late eighteenth-century music, focusing on accompanimental textures. In his presentation of two-dozen typical classical-era textures (including some of the well-known musical topics), Silberman illustrates how his students incorporate them in their compositions. Michael Callahan presents a counterpoint curriculum from the angle of keyboard improvisation in his "Teaching Baroque Counterpoint Through Improvisation: An Introductory Curriculum in Stylistic Fluency." Callahan employs carefully-crafted stages, the first accessible even to students with only one or two years of piano study, that lead to high-level activities challenging and enriching to both the advanced student and the teacher.

Another pair of articles that deal with eighteenth-century music are both indebted to the work of William Caplin, especially his *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. In the first of these, "Use of Caplin/Schoenberg Thematic Prototypes in Melodic Dictation," Michael Oravitz applies Caplin's ideas to teaching melodic dictation, an area of skill development whose waters are fraught with navigational obstacles. Oravitz presents a systematic and user-friendly approach that encourages students to hear more-extensive musical units through sentence structures taken from the repertoire. In addition to Caplin's work, Mark Richards' article, "Teaching Sonata Expositions Through Their Order of Cadences," draws on James Hepokowski and Warren Darcy's *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata*. Richards focuses on an often-neglected aspect of sonata form analysis: the form-generating role of the cadence. Richards provides clear criteria for assessing the relative strength of cadences and, by extension, the harmonic functions of the Exposition's main sections, thereby demystifying the choices students must make in analyzing sonata form.

Elizabeth West Marvin provides an extensive and fascinating report on the panel discussion that took place at last year's annual meeting of the National Association of Schools of Music (NASM). "The Core Curricula in Music Theory: Developments and Pedagogical Trends" provides an overview of crucial topics that impact every teacher of music theory, including: "What is the function of the core curriculum in music theory?" and "What fundamental core knowledge should all undergraduate musicians acquire?". Using data amassed from a questionnaire mailed to SMT members, Marvin explores the latest trends, including a sea-change in textbook philosophies, the need for more-concentrated emphasis on analysis and repertoire, curricular integration, technology, and a host of other topics relevant to teachers of music theory.

Leigh VanHandel's article "What Can Music Theory Pedagogy Learn from Mathematics Pedagogy?" is based on the assumption that music theory fundamentals are comparable to basic mathematical operations, and applies the wealth of scholarship on the pedagogy of mathematics education to music theory pedagogy.

In his review-article, Brendan McConville presents a detailed overview of the new interactive music notation software package, *Noteflight*. McConville elegantly details the program's powerful pedagogical potential, addressing such topics as its widespread applicability to a variety of curricular settings, technical and interactive aspects of the program, the practical implications of pricing, institutional requirements and the logistics of implementation.

One final pair of articles share a common inspiration: Prof. Mary Arlin, the 2010 winner of the Gail Boyd de Stwolinski Prize for Lifetime Achievement in Music Theory Teaching and Scholarship, awarded by the Gail Boyd de Stwolinski Center for Music Theory Pedagogy at the University of Oklahoma. This prize is permanently endowed by Louis de Stwolinski, Gail's husband, who recently passed away. The rigorous selection process involves nominations from leaders in the field and the winner is chosen by a revolving panel of distinguished music theory pedagogues. In the past, the winner of this prestigious biennial prize received a substantial monetary award. As we are all too aware, however, money disappears, as does our collective memory of past award winners' names. In an attempt to create a more visible and permanent presence, I've instituted a new policy, which still carries a significant monetary award, but also highlights the winner's

legacy of influence on his or her students. In consultation with the winner, two former students in the field are each invited to write an article on a pedagogical topic of their choosing (likely their area of specialty), sharing how the winner's pedagogical approach enhanced their own. Patricia Julien's contribution "How to Write a Jazz Composition's Chord Progression" is indebted to Arlin's "dedicated attention and instruction" in every class of her freshman theory experience. After beginning with form, phrases, and cadences, Julien explains standard jazz progressions, harmonic rhythm, chordal extensions and substitutions. In "Formalism in the Music Theory Classroom" Roger Grant reflects on the fact that "Those of us who find ourselves in the habit of teaching music theory are often indebted to a great many teachers. Mary Arlin is one of mine. Her nine o'clock course began my first year of college, and I can remember wondering, that morning, how there could be six semesters' worth of material on as curious a topic as music theory. Arlin's students know that her pedagogy is intense in its dedication, musicality, precision, and regard for standards. That unforgettable morning she demonstrated that our six semesters would be only a small introduction to a lifetime of learning in music. With some distance from my freshman year I am able to see the impact of her formidable pedagogy on my scholarship and my own teaching.... In many ways, the recent developments in our field and in the humanities in general have rendered her practices more relevant than ever." Grant is optimistic from the outset: "Music theory pedagogy is ahead of the game" in that "while many in the Humanities are searching for alternatives to... contextual scholarship of the past few decades, our discipline—and particularly our pedagogical practice—finds itself in the unexpected position of having anticipated the newest trend." Defining this trend as a "reinvestment in the study of form and in formalist analysis," Grant delves into the "uneasy relationship between repertoire and formalism."

Last year I introduced plans for a new website that will serve as a repository for music theory pedagogy materials. It is designed for a diverse range of instructors, from those who teach in the high school, community college, liberal-arts college, conservatory, to those at the university. The variety of curricula and teaching strategies is so vast that it can be bewildering, especially given the variabilities of the training and experience of the faculty, the goals of the program, and the students' experience and aptitude.

Ultimately, our aim is to improve the quality of teaching nationwide by providing the specialist and non-specialist with clear and up-to-date musical models and materials. In other words: we offer access to tried-and-true best practices.

The site, Music Theory Pedagogy Online (<http://jmtponline.org>), was launched in September 2012 and will house a vast array of information and amenities, some of which have been completed (including the uploading of all back issues of the Journal) or are in progress, such as the Peer Tutoring Program, where music theory students from geographically distant institutions will have the opportunity to work together on various projects, and to avail themselves of help from undergraduate and graduate student tutors from various hosting universities via Skype. Beyond this, SMT members are encouraged to contribute materials to the site, including:

- Video teaching demonstrations of specific concepts, pedagogical approaches, etc. These demonstrations will be peer reviewed by the six-member Website Editorial Board.
- E-articles. These articles (typically shorter than the printed articles in the Journal) may be presented in any number of formats (print, video, etc.). Topics will range from technology (CAI, web-based instruction, Blackboard, Smartboard interactive, Angel, Noteflight, etc.), to analysis and performance, model composition, aural skills, etc. These entries will also be peer reviewed by the Website Editorial Board.
- Sample analyses of useful repertoire, lesson plans, assignments, etc.
- Teaching materials, including syllabi, structure and philosophy of specific undergraduate core curricula, placement requirements, etc., from a wide variety of school types (university, conservatory, community college, high school, etc.)
- Open Forum. This moderated topic-oriented forum will allow for free and on-going discussions of such topics as the role of AP exams, NASM guidelines, curricular development, classroom management, and specific areas on curriculum design (fundamentals, tonal harmony, post-tonal aural skills, etc.).
- Upcoming Events and Opportunities, including job openings, calls for papers, institutes, and the like.

In all cases, author attribution will be ensured. It is now time to share your ideas, techniques, and experiences with the rest of the music theory community. We look forward to your contributions, questions and comments.



Formalism in the Music Theory Classroom

BY ROGER MATHEW GRANT

Whether or not we are aware of it, music theory pedagogy is ahead of the game. While many in the humanities are searching for alternatives to the careful historicism and contextual scholarship of the past few decades, our discipline—and particularly our pedagogical practice—finds itself in the unexpected position of having anticipated the newest trend. In recent years, many scholars in the fields of literature and the arts have urged a reinvestment in the study of form and in formalist analysis.¹ Scholars of English literature, specifically, have called the movement a “New Formalism.”² The work collected under this rubric employs a diverse array of methods in order to redress a perceived neglect of the forms, styles, techniques, and material dimensions of the cultural products under consideration. Form, in

¹Recent studies representative of or commenting on this trend include Kirstie Blair, *Form and Faith in Victorian Poetry and Religion* (Oxford: Oxford University Press, 2012); Derek Attridge, “A Return to Form?,” *Textual Practice* 22, no. 3 (2008): 563–575; Angela Leighton, *On Form: Poetry, Aestheticism, and the Legacy of a Word* (Oxford: Oxford University Press, 2007); Marjorie Levinson, “What Is New Formalism?,” *PMLA* 122, no. 2 (2007): 558–569; *Reading for Form*, ed. Susan J. Wolfson and Marshall Brown (Seattle: University of Washington Press, 2006); Terry Eagleton, *How to Read a Poem* (Malden: Blackwell, 2007); Caroline Levine, “Strategic Formalism: Toward a New Method in Cultural Studies,” *Victorian Studies* 48, no. 4 (2006): 625–657; W. J. T. Mitchell, “The Commitment to Form; or, Still Crazy after All These Years,” *PMLA* 118, no. 2 (2003): 321–325; and *Renaissance Literature and Its Formal Engagements*, ed. Mark David Rasmussen (New York: Palgrave, 2002), to name only a few. In general the movement shares elements of a broader trend in the humanities that seeks a shift in emphasis away from subjectivity in favor of materiality or, to use Jane Bennett’s words, “the active powers issuing from nonsubjects.” Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010), ix.

²See in particular Levinson, “What is New Formalism?” This movement should not be confused with the movement among late twentieth-century American poets that, coincidentally, goes by the same name. On this poetic “new formalism,” a practice invested in the revival of historic forms such as the sestina, villanelle, sonnet, and so on, see Robert McPhillips, *The New Formalism: A Critical Introduction* (Charlotte, N.C.: Volcanic Ash Books, 2003).

this context, should be understood in the broadest possible sense as a means of organization, and formalisms as the tools employed in order to understand it.³ Music theory, of course, has never truly turned away from form or formalisms, and this is nowhere more apparent than in the standard practices of our pedagogy. Although some of our methods have changed, we remain committed to the technical vocabulary and formal abstraction necessary to understand musical systems. In a way we have been working to accomplish the goals of New Formalism for many years. Nevertheless, instead of congratulating ourselves for holding fast to tradition through the tempest of contextualism (in our field, the “new musicology”), we ought to use this moment to reflect on our classroom formalisms and ask questions about our commitments to the understanding of form.⁴

Those of us who find ourselves in the habit of teaching music theory are often indebted to a great many teachers. Mary Arlin is one of mine. Her nine o’clock course began my first year of college, and I can remember wondering, that morning, how there could be six semesters’ worth of material on as curious a topic as music theory. Arlin’s students know that her pedagogy is intense in its dedication, musicality, precision, and regard for standards. That unforgettable morning she demonstrated that our six semesters would be only a small introduction to a lifetime of learning in music. With some distance from my freshman year I am able to see the impact of her formidable pedagogy on my scholarship and my own teaching. Her classroom procedures reflect a conviction about what sort of thing music theory is and how it ought to be communicated to students. In many ways, the recent developments in our field and in the humanities in general have rendered her practices more relevant than ever. An examination of some of these alongside the relevant trends in humanistic formalism can provide an instructive intervention in the way we understand the pedagogy of undergraduate music theory.

³In this context, musical forms such as the sonata or rondo are only one type of organizing principle among many.

⁴Throughout this essay I will use the terms contextualism, contextual practice, and contextual scholarship in order to describe a body of work that responds to the transformations of our field in the 1980s and 1990s and seeks an understanding of the specific cultural and historical embedment of music. This is the type of work that James Currie calls “contextual politics.” Currie, “Music After All,” *Journal of the American Musicological Society* 62, no. 1 (2009): 145–203 at 154.

THE PLACE OF FORMALISM

At some point during that first semester of music theory, Arlin asked our class to perform a simple melody that was meant to illustrate a point about harmonization. Together as a class we impressively rendered its pitches and durations without fault on our first try. Pleased with ourselves, we thought the exercise accomplished. Arlin was less than satisfied. She instructed us to revisit our performance, checking it carefully for errors. After several unsuccessful trials, Arlin informed us of our oversight: we had performed the melody without regard to the printed dynamics. As hapless first-year students we had thought these paratexts peripheral to the point of the harmonization exercise. Arlin understood them to be constitutive of it.

I relate this story here because it is representative of Arlin’s insistence on a significant relationship between theoretical formalisms and a living repertoire of music. Over the course of her career, Arlin extended the work of a mid-century movement in music theory pedagogy that sought a deeper and more meaningful integration of musical excerpts and entire pieces within basic theoretical training. In Robert Gauldin’s assessment, this shift began during the 1960s with the publication of music anthologies specifically intended for use in the music theory curriculum. These include Charles Burkhart’s *Anthology for Music Analysis* and the volumes compiled by Howard Murphy, Robert Melcher, and Willard Warch under the title *Music for Study*.⁵ Arlin and her Ithaca College colleagues produced their own volume for use in the undergraduate curriculum: *Music Sources: A Collection of Excerpts and Complete Movements* was formally published in 1979.⁶ This text

⁵Robert Gauldin, “Some Personal Reflections on Past Methods of Teaching and What They Can Tell Us About Current and Future Initiatives,” *Journal of Music Theory Pedagogy* 17 (2003): 47–58 at 48–49; *Anthology for Music Analysis*, ed. Charles Burkhart (New York, Holt, Rinehart and Winston: 1964); *Music for Study: A Source Book of Excerpts*, ed. Howard Murphy and Robert Melcher (Englewood Cliffs, N.J.: Prentice-Hall, 1960); *Music for Advanced Study: A Source Book of Excerpts*, ed. Robert Melcher and Willard Warch (Englewood Cliffs, N.J.: Prentice-Hall, 1965).

⁶*Music Sources: A Collection of Excerpts and Complete Movements*, ed. Mary I. Arlin, Charles H. Lord, Arthur Ostrander, and Marjorie S. Porterfield (Englewood Cliffs, NJ: Prentice Hall, 1979).

played a vital role in Arlin's pedagogy, and she stressed that her undergraduates regard its contents as they would regard the music they studied in their lessons and ensembles.

Alongside her emphasis on repertoire, Arlin was invested in a clear and demonstrable vision for music theory's conventional formalisms. Although the harmonization exercise asked us, on the one hand, to think of the combinatorial properties of the melody within a system of rules—the formal elements of which she was concerned to explain—it also asked us, on the other, to think of the melody as something more than a collection of definitive pitch names, durations, metric accents, and so forth. These formalisms of the melody's attributes provide criteria that allow us to attend to its specificity, structure, and potential relationships with other materials (in this case, harmonies). Powerful formalisms, they afford us a way of manipulating the material in a bounded domain that corresponds to one part of the musical experience. Formalism in this sense, then, is a dynamic, active practice that is one part of knowing music.⁷ The simple but important lesson here is that the formal properties of the system are not the point themselves, but are, instead, a particular pedagogical path into the material. They are one way of probing the specific networks of relationships that create the affective qualities so consequential to our students and our audiences.

In an interesting twist, this type of active formalism is the sort of practice to which many recent literary theories aspire. The writing on this issue can sometimes take a tone of nostalgia for something lost—a practice of recuperating an outmoded methodology. Marjorie Levinson, for instance, writes, “we no longer attend to the processes and structures of mediation through which particular discourses... come to represent the real.”⁸ There is a sense in which the criticism of days past has been so far eclipsed by newer trends that the material under investigation is no longer treated to any close scrutiny. Mark David Rasmussen, in the introduction to a volume on Renaissance literature that addresses this problem,

⁷This is what Susan Wolfson calls an “activist formalism.” Wolfson, “Introduction,” in *Reading for Form*, ed. Wolfson and Brown, 3–24 at 6. Along these lines, see also Martin Scherzinger, “The Return of the Aesthetic: Musical Formalism and its Place in Political Critique,” in *Beyond Structural Listening? Postmodern Modes of Hearing*, ed. Andrew Dell'Antonio (Berkeley: University of California Press, 2004), 252–277.

⁸Levinson, “What Is New Formalism?,” 561.

states the matter plainly: “Why is such a change needed now? Briefly, because the field has moved too far away from these questions lately, in favor of modes of analysis that for all of their methodological sophistication tend to interpret Renaissance works as bundles of historical or cultural content, without much attention to the way that their meanings are shaped and enabled by the possibilities of form.”⁹ Rasmussen also couches the intervention as a type of return to past methods and sets of questions no longer emphasized. Still, the ultimate goal of these writers is not to efface the important lessons of contextual scholarship or simply set aside the historical and cultural dimensions of the objects of inquiry. On the contrary, the “return” to formalism that they propose is in fact a broadening out of contextual practices, or a methodological shoring up of those efforts. In the concluding contribution to Rasmussen's collection, Richard Strier asserts, “one has to know the texture as well as the content of ideas to do intellectual or cultural history with true sensitivity.”¹⁰ The emphasis on form and formalist inquiry in this view is something of a logical continuation of historicism and contextualism rather than a turn away from it.

The diversity of articles gathered in Rasmussen's volume reflects the pluralism of approaches to form and formalism that has come to characterize the movement. Paul Alper's contribution discusses structure and texture in Shakespeare's sonnets, reinvigorating early twentieth-century conversations about unity and coherence (a scholarly gesture that mirrors, in certain respects, important lineages in our own field).¹¹ Joseph Loewenstein's essay investigates the prosody, accentual structure, and soundworld of John Marston's poetry.¹² Other essays in the volume take up tropes, borrowing, wordplay, poetic speech tags, and yet more formal devices. The

⁹Mark David Rasmussen, “Introduction: New Formalisms?,” in *Renaissance Literature and Its Formal Engagements*, ed. Rasmussen, 1.

¹⁰Richard Strier, “Afterword: How Formalism Became a Dirty Word, and Why We Can't Do Without It,” in *Renaissance Literature and Its Formal Engagements*, ed. Rasmussen, 207–215 at 212.

¹¹Paul Alpers, “Learning from the New Criticism: The Example of Shakespeare's Sonnets,” in *Renaissance Literature and Its Formal Engagements*, ed. Rasmussen, 115–138.

¹²Joseph Loewenstein, “Marston's Gorge and the Question of Formalism,” in *Renaissance Literature and Its Formal Engagements*, ed. Rasmussen, 89–112.

variety of forms and formalisms under consideration continues to proliferate in the scholarship. In Wolfson and Brown's edited collection *Reading for Form*, Robert Kaufman inspects issues of line length and brevity in a reading of images from the poetry of Blake and Ginsberg.¹³ Angela Leighton's compelling *On Form* provides a historical account of the term itself.¹⁴ Most recently, Kristie Blair's 2012 monograph provides an assessment of the connections between the rhythms of Victorian poetry and expressions of faith.¹⁵ The overarching emphasis in these studies is on compositional techniques, particular manners of fashioning and shaping structure, close reading, and material specificity. This movement is interested in the ways art does the work that it does.

If these motivations sound and feel familiar, it is because they are. Music theory—particularly music theory pedagogy—never experienced the same shift in emphasis away from forms and formalist inquiry that occurred in literature. For the most part we have remained committed to the kinds of formalisms that literary studies would now like to rehabilitate. Indeed, the analytical discourse within the new formalist movement even approximates musicality at times. Terry Eagleton, for instance, can write, "Form concerns such aspects of the poem as tone, pitch, rhythm, diction, volume, metre, pace, mood, voice, address, texture, structure, quality, syntax, register, point of view, punctuation, and the like."¹⁶ Derek Attridge goes so far as to assert that the idea of formalism as a supposedly new paradigm reflects a lack of true interdisciplinary engagement from the standpoint of literary studies. He points out that the analysis of line, rhythm, harmony, melody, and so on, never suffered from neglect in the critical inspection of visual art and music.¹⁷

¹³Robert Kaufman, "Everybody Hates Kant: Blakean Formalism and the Symmetries of Laura Moriarty," in *Reading for Form*, ed. Wolfson and Brown, 203–230. The essays in this collection were originally published in a special issue of *Modern Language Quarterly*: Wolfson and Brown, eds., "Reading for Form," Special Issue, *Modern Language Quarterly* 61, no. 1 (2000).

¹⁴Leighton, *On Form: Poetry, Aestheticism, and the Legacy of a Word*.

¹⁵Blair, *Form and Faith in Victorian Poetry and Religion*.

¹⁶Eagleton, *How to Read a Poem*, 66.

¹⁷Remarking on the lack of attention to form in literary studies during the dominance of the historicist paradigm, Derek Attridge

The unfortunate result of music theory's unbroken commitment to form and formalism is that we have not always been forced to explain it nor—more importantly—to theorize its place in our classrooms.¹⁸ If literary New Formalism seeks a commitment to form renewed, music theory pedagogy might well seek a theorization of our commitment's continuation—a framing gesture that situates our formalism as a practice at a meta-methodological level, and demonstrates for our undergraduate students the work of that practice, its boundaries, and its benefits. Our pedagogical materials, texts, and traditions already profess our ongoing devotion to formalist methods. The component missing, then, is a careful exposition of formalism as a practice that we chose to engage in. Alongside our investment in the role of repertoire in the music theory classroom, we are given the chance to characterize our formalist abstractions as devices that perform specific work in the comprehensive understanding of that repertoire; devices that open sets of investigative pathways we can enter and exit at will.

writes, "Further places to look during this period for insight into formal properties are the disciplines concerned with other art forms—music and the visual arts. It's true that these disciplines have complex histories in which the notion of aesthetic form has sometimes had a rough ride, but qualities of colour, line, shape, tone, rhythm, harmony, melody, and so on have never been subjected to the dismal fate of the equivalent, and equivalently important, features of literary works... A fuller commitment to interdisciplinarity would have led to a greater appreciation of other approaches to formal issues, and perhaps to a richer interplay between the historical and the aesthetic." Attridge, "A Return to Form?," 566. Though Attridge accuses literary studies of insularity, the fact that their return to form has had virtually no presence within our field's journals suggests that we have been equally at fault.

¹⁸This is not to say that the practice of music theory in general does not have its loud defenders—indeed there are many—but rather that these defenses are not often engaged with pedagogical practices. For a recent and potent example, see Susan McClary, "The Powers and Limits of Theory," *Music Theory Online* 16, no. 1 (2010), accessed May 4, 2012. <http://www.mtosmt.org/issues/mto.10.16.1/mto.10.16.1.mcclary.html>.

ONE CASE STUDY:

EXPANDING THE TONIC WITH AN INVERTED SUBDOMINANT

In order to illustrate what I intend by a theorization of our commitment, I will turn to one specific example from first-year music theory. The opening two measures of the finale to Haydn's "Clock" Symphony no. 101 are a textbook example (quite literally) of tonic expansion by means of an inverted subdominant (Example 1).¹⁹ Haydn moves deftly through the subdominant's first inversion to the first inversion of the tonic by means of contrary motion in the outer voices. The melody's ascending $\hat{3}, \hat{4}, \hat{5}$ line is coupled with the broader descending gesture of $\hat{1}, \hat{6}, \hat{3}$ in the bass. The elegant simplicity of this motion sets the stage for the singing style of the first phrase, and its melodic ascent from $\hat{3}$ to $\hat{5}$ becomes an important thematic element later in the movement.

Example 1: Haydn, Symphony no. 101, iv, mm. 1-4.

The progression from the tonic through the subdominant and back to the tonic is one that requires some commentary in first-year music theory, particularly if students have not yet encountered the subdominant outside of its role as an intermediate harmony leading to the dominant. They may well wonder how it is acceptable to return to the tonic so quickly without the intervention of dominant harmony. The explanation of this excerpt therefore requires talk not only of its paradigmatic voice leading but also of expansion and harmonic function. This moment, among others in first-year music theory, can serve as an

¹⁹ Aldwell and Schachter use this example in their chapter on "Other Uses of IV, IV⁶, and VI." Edward Aldwell and Carl Schachter with Allen Cadwallader, *Harmony and Voice Leading*, 4th ed. (Boston: Schirmer, 2011), 233.

interesting place for a discussion about the many characteristics and roles of individual harmonies within the tonal system, and is an opportune time to discuss the ways in which a familiar entity—like the subdominant triad—can serve in an unfamiliar capacity. It should build on similar lessons regarding the many uses of the dominant and the different roles the tonic can play. The abstracted lesson in this case has applications beyond the theory of harmony. Like many apparently simple situations, the harmonic progression in these opening measures touches on fairly complex theoretical and aesthetic issues.

In addition to these larger concerns there is the specific disposition of the writing itself. The opening measures of Haydn's movement demonstrate a way of expanding the tonic through the subdominant's first inversion, allowing for a contrapuntally optimal support of the melody's $\hat{3}, \hat{4}, \hat{5}$ without the use of any dominant harmony. An abstraction of the excerpt's voice leading strategy is given below in Example 2. This paradigmatic I-IV⁶-I⁶ progression allows for a tonic expansion with an ascending melodic line and a descent through scale degree $\hat{6}$ to $\hat{3}$ in the bass. By contrast to the I-IV-I expansion, which uses neighboring motions in the upper voices (Example 3), the outward, broadening motion of this progression is generative of energy. This is one reason that it is particularly effective as the opening to Haydn's lively finale.

Example 2: Voice leading strategy, I-IV⁶-I⁶.

Example 3: Voice leading strategy, I-IV-I.

A number of questions attend the relationships between Haydn's music, the formal properties of the excerpt's voice leading strategy, the abstracted principles of its harmonic motion, and the theoretical issues at stake. We might well ask which of these we are ultimately trying to explain. Does the excerpt help us to understand voice leading in the context of tonic expansion or do our abstractions of its voice leading help us to understand Haydn's music? Which is the ultimate goal in the context of an hour of undergraduate teaching? In Aldwell and Schachter's text, the discussion of this classic example of the I-IV⁶-I⁶ progression comes to the conclusion:

This characteristic function of IV⁶ can be most valuable, especially if a leading-tone chord (VII⁶ or V³) is not wanted as the support for $\hat{4}$... Incidentally, IV³ does not work very well in this situation; the root-position chord following a large leap in the bass creates too heavy an effect for the passing function of the chord.²⁰

The emphasis in this passage is on voice leading, and more specifically on the act of model composition. Aldwell and Schachter are guiding the students through the requisite activity of generating exercises with successful counterpoint and characteristic use of harmonic language. The objective in the background is one in which Haydn's music is re-inscribed into a world of formalisms in order for its specificity to translate into generally applicable principles. The knowledge that the excerpt has to offer enters into this network of formalisms so that it can aid in the explanation of other works of music. In this relationship the repertoire and the formalisms thereof (in this case, its voice leading strategies) work in tandem to explain a larger system that draws on both.

Not everyone will agree that the relationship described above is the most effective in music theory pedagogy, nor will everyone agree that it works as it should for our students. Peter Schubert, among others, has recently criticized the use of music theory's standard formalisms in the classroom, advocating instead for a blend of model composition, stylistic improvisation, and analysis of repertoire. For Schubert, the abstractions of musical processes and formalizations of rules as they are commonly practiced are too far removed from the repertoire to have a meaningful impact on our

understanding of it.²¹ This fraught relationship has long generated commentary (it was part of the impetus for the anthology that Arlin and her colleagues compiled) and there is still a good deal of palpable anxiety surrounding the issue in recent publications. Schubert, for example, advances, "nothing other than real music should appear in class." He goes on to define "real" music as "pieces or parts of pieces composed or improvised by students or from famous composers."²² Hali Fieldman, in a review of three major, twenty-first century textbooks of music theory, suggests that the usual emphasis on formalism "abandons, in a profound sense, the music itself."²³ For my own part I wonder why we wouldn't want to understand formalisms (like voice leading exercises) as part of our experience of the musical repertoire they are based upon. These abstractions capture a particular view of musical structure and therefore can become an integral part of musical listening and experience.

The most significant aspect of the uneasy relationship between repertoire and formalism is that it exists as a dynamic in the first place and has—for better or worse—shaped the way we think about music, music theory, and music theory pedagogy. There are myriad ways in which to theorize this relationship, and teachers of music theory will rely more heavily on some than on others. In the case of the Haydn finale, we could use the properties of the inverted subdominant to explain its role in the opening passage, or we might use the passage as an exemplar to demonstrate some larger point about harmony. Alternatively, we might ask our students to improvise a two-part, classical phrase at the piano; in this case, the first two measures of the Haydn example are a specific instance of how one might handle an opening, and the rules of its voice leading are tools for understanding the groundwork of the passage in generalizable terms. No matter the desired relationship, it should go without saying that an articulation thereof is a basic part of our pedagogy.

²¹ Peter Schubert, "Global Perspective on Music Theory Pedagogy: Thinking in Music," *Journal of Music Theory Pedagogy* 25 (2011): 217–232.

²² Schubert, "Global Perspective on Music Theory Pedagogy," 230.

²³ Hali Fieldman, review of *Harmony in Context* by Miguel Roig-Francoli; *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening* by Steven G. Laitz; *The Musician's Guide to Theory and Analysis* by Jane Piper Clendinning and Elizabeth West Marvin, *Music Theory Spectrum* 30, no. 2 (2008): 366–382 at 379.

²⁰ Aldwell and Schachter with Cadwallader, *Harmony and Voice Leading*, 233.

In addition to this, though, we ought to consider the incorporation of another important layer: we owe our undergraduates an explanation of the reasons that we create knowledge about music through a system of relays between repertoire and formalism at all. This entails a discussion of formalism as a practice that we can engage in and disengage from. Jonathan Loesberg, writing about literary scholarship, notes that the practice of formalism often requires the “temporary acceptance of disciplinary enclosure” or “voluntary askesis.”²⁴ Once inside the system, there is a discretionary detachment that allows formalism to do the work that it does. Most important in Loesberg’s observation, however, is that the enclosure or askesis is voluntary and temporary. We need a way of theorizing the interface between our formalisms and other ways of knowing. If we want to understand tonality through such formalisms as voice leading exercises, rules for model composition, and so on, we need to demonstrate for our students that this entire system of relationships is itself a deliberate methodological choice that sets in motion certain points of inquiry and forestalls others. As such, it is a practice that we voluntarily agree to initiate—and thereby temporarily separate ourselves from other ways of knowing—in order to reach the particular types of insights that it affords.

CLOSER TO HISTORY

Mary Arlin never let us forget that the production of musical knowledge is deeply imbedded in institutional legacies. Her own interest in and involvement with the histories of Ithaca College, the Society for Music Theory, the Music Theory Society of New York State, and of music theory itself attest to her deep and ongoing interest in how these institutions function. Arlin’s simultaneous insistence on a rigorously formal practice in the classroom and a careful historicization of that practice are not at odds whatsoever. As Barthes once told us, “the more a system is specifically defined in its forms, the more amenable it is to historical criticism... a little formalism turns one away from History, but... a lot brings one back to it.”²⁵ Barthes’s oft-repeated maxim bears repeating here because it characterizes formalist practice as one component of

²⁴ Jonathan Loesberg, “Cultural Studies, Victorian Studies, and Formalism,” *Victorian Literature and Culture* 27 (1999): 540-541.

²⁵ Roland Barthes, “Myth as a Semiological System,” in *Mythologies*, trans. Annette Lavers (New York: The Noonday Press, 1972), 111.

an analytical system with high standards for comprehensiveness (the type of standards Arlin is known for upholding). As Barthes goes on to say, “the important thing is to see that the unity of an explanation cannot be based on the amputation of one or other of its approaches.”²⁶ Historical work is incomplete without formalist inquiry, and formalisms open up possibilities to do historical work.

The practice of formal abstraction in music theory pedagogy presents the opportunity to inquire about the ways in which our knowledge of music has been conditioned. Consider the formal abstractions made with regard to the Haydn example discussed above. At issue are the passage’s tonal strategy, harmonic function, and contrapuntal design. Each one of these topics points beyond the example to a number of rich intellectual genealogies that have come to bear on our conceptualization and hearing of Haydn’s music.

The selection of the passage as an example of tonic expansion, to begin with, draws on the methods of linear analysis and on Schenkerian theory in particular. If the goal of introducing this excerpt is to show how the triad built on the fourth scale degree can serve to prolong the tonic—rather than lead to the dominant—then the lesson is much more about tonality and function than it is about Haydn. This framework suggests questions such as: “how can we harmonize $\hat{4}$ when it serves as a passing tone between $\hat{3}$ and $\hat{5}$ within the tonic area?” In this case Haydn’s music is the answer rather than the progenitor of the question, even as the framework for discussing it allows us to hear the passage in new ways. There is more than just Schenkerian heritage to this type of thinking: on a deeper level the focus on the subdominant triad’s properties is a feature of scale-degree theory, in which harmonies receive their identification and place within the system based on the scale-degree of their root. This tradition’s legacy reaches back to the early nineteenth-century writings of Gottfried Weber.²⁷ In other respects, though, the idea that the subdominant triad does different work within tonic expansion than it does in dominant preparation borrows from the notion that harmonies have different

²⁶ Barthes, “Myth as a Semiological System,” 111.

²⁷ Gottfried Weber, *Versuch einer geordneten Theorie der Tonsetzkunst*, 3 vols. (Mainz, B. Schott, 1817-1821). On the historiography of tonal theory in general, see Bryan Hyer, “Tonality,” in *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge: Cambridge University Press, 2002), 726-752.

functions in different musical contexts that relate to their resolution and their role within progressions. This concept has Riemannian shadings and owes much to Rameau.²⁸ It is now commonplace for our contemporary college music theory curricula to build simultaneously on these different traditions of linear analysis, scale-degree theory, and harmonic function. The material that results is a productive mixture that is indebted to all of them.

Contrapuntal traditions also contribute to our understanding of the short excerpt from Haydn. The contrary motion of the outer voices is desirable insofar as it is understood to reflect the standard desiderata of eighteenth-century counterpoint. Within these criteria, Haydn's pairing of $\hat{3}$, $\hat{4}$, $\hat{5}$ against $\hat{1}$, $\hat{6}$, $\hat{3}$ is particularly successful, since the conjunct ascent of the melody compliments the gapped descent in the bass. Haydn's bass line neither mimics the melody's conjunct motion nor creates too disjunct of a line against it. As Aldwell and Schachter note, a descending bass line of $\hat{1}$, $\hat{6}$, $\hat{1}$ (in the progression I-IV⁶-I) leaves too large of a descending leap between the second and third bass pitches.²⁹ Haydn's counterpoint also avoids the odd angularity (and awkward voice leading) that would result from a bass line ascent from the $\hat{6}$ of IV⁶ to the higher $\hat{3}$ of the following I⁶. Finally, the counterpoint of the excerpt works together with its durations and meter. The passing $\hat{4}$ in the melody falls on the weak beat of the first measure and the appropriately emphasized $\hat{5}$ on the following downbeat. All of these elements of Haydn's musical logic are apparent within the guiding principles of eighteenth-century counterpoint—a tradition famously codified by Fux with a much older heritage in the music of the sixteenth century.³⁰

The use of the inverted subdominant within tonic expansion makes musical sense to many of us. Haydn's opening measures appeal to our musical intuitions as coherent and graceful. Cultivating these intuitions in our students, we draw on the traditions that have shaped our own. A basic lesson like this one, appropriate

²⁸ Jean-Philippe Rameau, *Génération harmonique* (Paris: Prault fils, 1737); Hugo Riemann, *Vereinfachte Harmonielehre* (London: Augener, 1893).

²⁹ Aldwell and Schachter with Cadwallader, *Harmony and Voice Leading*, 233-234.

³⁰ Johann Joseph Fux, *Gradus ad Parnassum* (Vienna: Johann Peter van Ghelen, 1725).

for first-year theory students, offers us countless opportunities to explore the intellectual allegiances that have informed our thinking and listening. If we uncover these allegiances for our students, we have the chance to demonstrate the multiplicity of approaches to musical style and structure that are available. Foregrounding the plurality of intellectual heritages that have supported these ways of knowing has the benefit of forcing us to articulate which of them we are disposed to, the reasons why, and the ways in which they have conditioned our knowledge. Students, given the opportunity to see how knowledge on music is organized in formal systems that are historically contingent, can then recognize their own place within the system.

In a useful piece on debate in the music theory classroom, Matthew Bribitzer-Stull suggests that even the most basic concepts of music theory can lend themselves to critical engagement and productive dialogue among students.³¹ Taking a cue from him, I suggest that we push the notion of critical engagement still further. We ought to explain to our students where music theoretical knowledge comes from, what its histories are, who makes it, and why we believe in it. Asking our students to understand, articulate, and assess the various positions from which knowledge on music is constructed provides them with a sense of ownership over the claims about music they will learn to assert; it can empower them to make decisions about how they will acquire further knowledge on music. If we want music theory pedagogy to do more than simply disseminate the received wisdom, then we need to fold our undergraduates into the process of evaluating the formalisms we teach them. They need to understand that formal voice leading abstractions are a powerful practice that we chose to engage in for a reason, rather than a requirement for graduation. If we are indeed committed to the work that the enclosure of formalism is able to accomplish for us, then we should be inspired to demonstrate that work for our students in discussion and debate, allow them to understand why we have chosen to systematize knowledge on music in the ways that we have, and explain to them how the power of formalist analysis can transform our understanding, hearing, and performance of music. This metacritical level of engagement sets the stage for the type of skills that transfer across disciplinary

³¹ Matthew Bribitzer-Stull, "Contention in the Classroom: Encouraging Debate and Alternate Readings in the Undergraduate Theory Class," *Journal of Music Theory Pedagogy* 17 (2003): 21-58.

boundaries. Music theory can and should be the type of subject that prepares students for a lifetime of active, engaged, and critical analysis of the world around them.

NOTHING HALFWAY

Early on in that first semester with Mary Arlin our class was assigned a page of interval writing. Working quickly and with false confidence, I dashed off the intervals with ease, sure that I knew all the answers. When Arlin handed our assignments back, I was shocked to see that I had received a grade of 50%. Red strokes ran through each pitch I had notated, but not because any of them indicated an incorrect interval. In my haste, I had not drawn the note stems to the appropriate length. I have never thought casually about notation again.

I pass this story on to all of my undergraduates, not only because it makes an impression on them and generally cleans up their stems and note heads, but more importantly because it captures the studied commitment of a tenacious scholar and teacher. To say that Arlin taught me music theory is to miss the point. Arlin taught me to be committed to music theory.

Commitment, it seems, is related to the practice of formalism in certain important ways. Because formalisms require us to focus on some materials at the expense of others—Loesberg's "temporary enclosure"—they necessitate an avowal of intent. This is clear in the literature on the New Formalism, which is characterized by its many affirmations and re-dedications to the formalist practice. In order to turn momentarily away from contextualism or to think beyond it, scholars in the New Formalist movement provide us with an assurance about their activities in the form of a pledge to their method. In this sense, formalism begins to look like a specific kind of commitment itself. As Kaufman has it, "formalism... has also been a name for commitments to the modes by which the irreducibly formal dynamics of aesthetic experience enable us to sense an at once affective and intellectual capacity crucial to critical agency."³² By this view, one could call music theory a kind of commitment to music.

In a set of meditations on commitment and formalism, W. J. T. Mitchell suggests some nuance in the relationship between the two, and distinguishes the act of making a commitment from the

circumstance of being committed. While making a commitment is a behavior one elects, being committed is a state in which one finds oneself. For Mitchell, literary scholarship has always been committed to form and formalisms without having known it, or without having expressed its commitment explicitly. In his view, formalism will continue to return in various guises, and continue to shape our thinking whether we are conscious of it or not.³³ Given the intellectual history of music theory, this would seem to be true for our discursive practice as well. We return again and again to systematicity, generalizability, and the power of abstraction. Perhaps we will find that we have always been committed to formalism.

I would like to suggest that there is room for us to go a step further than being committed. It is not enough to uphold our commitment to music theory's formalisms in the classroom. We need to make our commitments explicit, articulate them to our students, and require that they understand our reasons for them. In order to provide them with the full scope of music theoretical engagement—in order to do nothing halfway—we need to explain that formalism is a practice that we chose to engage in, momentarily entering its boundaries in order to experience its powerful effects. Theorizing the place of formalism in the classroom allows us to investigate our commitment itself and involve our students in the critical process. In so doing, we create an opportunity for more theory, and for more commitment to music.

³²Kaufman, "Everybody Hates Kant," 207–208.

³³Mitchell, "The Commitment to Form; or, Still Crazy after All These Years."

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How to Write a Jazz Composition's Chord Progression

BY PATRICIA JULIEN

I am writing this pedagogical article for two reasons, both of which are motivated by my experiences with Dr. Mary Arlin, while I was an undergraduate music student at Ithaca College. The first is that no detail was too small or basic for her scrutiny and her dedicated attention and instruction. The second is that one of my most enduring memories was working on an assignment from her class with a singer classmate. I remember his joy at partwriting a I-IV-V-I progression. It was as though he had never before experienced those chords or that progression, and it was partly his involvement in creating the harmonies and being responsible for those sounds and relationships that felt so gleeful and new to the singer. This resonated with me (I recognized that feeling of delight and fascination), I think, because as a flutist able to produce just one note at a time, I, too, regularly encounter harmony as a rich, captivating enterprise. Thus began my continuing love of harmony (of its chord progressions, voice leading, and voicings) and it is ever present in my work as a composer. In the spirit of Arlin's steadfast pedagogy, one that honored the basics (partly exemplified by not presuming previous knowledge, and treating everything with seriousness and respect), this essay offers an overview of jazz composition concerns related to creating the harmonic foundation of a piece.

INTRODUCTION

When I teach the Advanced Jazz Composition and Arranging course at the University of Vermont, students often express trepidation about composing the chord progression of an original piece. Although they have studied harmony in their undergraduate theory classes, are adept at analyzing chord progressions, and have had some experience with arranging, the responsibility for creating the chord progression is often daunting. Composing the melody does not seem to cause students distress and I suspect the chord progression anxiety is amplified by the awareness of needing to write a chord progression that will not only support the theme but also serve as a vehicle that inspires improvisation. This essay is a primer on how to help students conceive and write a stylistically appropriate jazz chord progression.

Of course, there is no single way to write a piece. One may compose a melody first and then harmonize it, one may compose the chord progression first and then craft the melody, or one may simultaneously create the melody and harmonic setting. To sharpen the focus of this vast topic, this essay concentrates on the second approach—chords first. Many excellent texts are available on jazz composition and arranging,¹ but none seems to cover the topic of writing a jazz composition from scratch and being attentive to large-scale architectural concepts such as form, phrase lengths, and harmonic rhythm, along with more local issues that occur within a phrase and include the basic chord progression plus chord substitutions and harmonic embellishments. Those existing texts, when discussing harmony, chiefly address voicings (i.e., chord spellings, the distribution of pitches registrally, spacing, instrumentation, doublings, and the intervallic basis of chord structures such as tertian, quartal, or cluster), reharmonization of existing pieces, and homorhythmic harmonizing of the chord tones and nonchord tones of a melody for an ensemble (as in a big band sax solo). This essay begins with an overview of large-scale concepts and then focuses on the local issues.

FORM

A good starting place for writing any piece is to decide on its form. Students can envision the large-scale structure of the piece and work from a plan they design. They should become well acquainted with the features of the three most frequently utilized forms in jazz: AABA; ABAC; and the 12-bar blues. AABA forms normally consist of four 8-bar phrases or eight 4-bar phrases. The A sections present the main thematic material and establish the home key of the composition. The B section, known as the bridge,

¹See, for instance, Tom Boras, *Jazz Composition and Arranging* (Belmont, CA: Thomson Schirmer, 2005); Andrew Charlton and John M. DeVries, *Jazz and Commercial Arranging*, vols. 1 and 2 (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1982); Bill Dobbins, *Jazz Arranging and Composing: A Linear Approach* (Advance Music, 1986; reprint Delevan, NY: Kendor Music, Advance Music Publications, 2005); Henry Mancini, *Sounds and Scores* (Northridge Music, Inc., 1973; reprint Northridge Music, Inc., 1986); and Rayburn Wright, *Inside The Score* (Delevan, NY: Kendor Music, 1982).

is important to the form not only for its contrasting melody but also its change of tonality. This 8-bar section typically ends on the home dominant.²

²In some pieces in AABA form, the first two A sections are in an antecedent-consequent relationship, often making use of a first and second ending. The first A ends with a half cadence and the second with an authentic cadence, forming a parallel period. The B section typically has a contrasting melody, is in a different key, and ends on the home dominant making the bridge roughly analogous to the digression in binary forms. In this configuration, the AA' BA' form is a match for sectional rounded binary (with neither part I, AA, nor part II, BA, repeated). See, for example, "Confirmation" by Charlie Parker.

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Example 1, "Satin Doll" lead sheet (reprinted with permission)

For example, "Satin Doll" by Duke Ellington and Billy Strayhorn clearly establishes the home key of C major with the 8-bar phrase of its A section (expressed in two-measure segments). The contrasting B section consists of two 4-bar phrases, employing longer melodic figures (phrase-length four-measure lines, rather than the two-measure segments of the A section). The start of the bridge modulates to the subdominant; indeed, the first four measures of the bridge are generally considered fully in the key of F major.

Although in most classical contexts additional confirmation, beyond a single phrase, would be needed to consider this a fully-established contrasting key, jazz practice tends to consider more compact portions (sometimes requiring only a ii-V-I progression) to establish a key. Also, in a 32-bar piece, four measures is a fairly substantial portion (comprising nearly 13% of the composition).³

The ABAC (sometimes ABAB') form is essentially a 16-bar AB form repeated, with the final measures modified to create a 32-bar form.

³From the abundant number of pieces in AABA form, other examples include "Body and Soul" by Johnny Green, Edward Heyman, Robert Sour, and Frank Eyton, "God Bless the Child" by Billie Holiday and Arthur Herzog, Jr., "Have You Met Miss Jones" by Richard Rodgers, "Stormy Weather" by Harold Arlen, and "Take the 'A' Train" by Billy Strayhorn.

MY ROMANCE — RICHARD RODGERS / LORENZ HART 289

MEDIUM OR BALLAD

Chord Progression:

A section (measures 1-8): G-7, G-7(b9), G-7, G7, C-7, F7, Bbmaj7, D7

B section (measures 9-16): Eb7(b9), Ab7, Bbmaj7, Bb7, Eb7(b9), Ab7, Bbmaj7

C section (measures 17-24): E-7(b9), A7(b9), D-7, Ab7, G-7, C7, C-7, F7

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Example 2, "My Romance" lead sheet (reprinted with permission)

"My Romance" by Richard Rodgers provides an excellent example of ABAC form. Its A section, in two 4-measure phrases, is in the home key of B $\flat$ major. The B section (mm. 9-16) first tonicizes the subdominant Eb and then, in its second phrase, involves various tonicizations to arrive at F7 and signal the return of the A section. The C section also demonstrates various tonicizations and

firmly concludes in the home key. We will revisit this piece later to consider the melody and more closely examine additional features of its chord progression.⁴

The 12-bar blues, a three-phrase aab form, is a common vehicle for jazz composition and improvisation.⁵ While there are many variations on the harmonic pattern, a basic version is:

I	IV	I	I
IV	IV	I	I
V	IV	I	I

KEY AREAS

Once students have decided on a formal design, they can diagram their plans for the large-scale key areas. Especially in their early work, students should practice modulating to the recognized, characteristic key areas found in jazz literature. For example, as seen in "Satin Doll" (Example 1), it is quite common for a contrasting key area to be the subdominant.⁶ For a piece in a major key, modulation to the submediant also is common.⁷ A piece might modulate from minor to its mediant.⁸ Students also could

⁴ Additional examples of pieces in ABAC (or ABAB') form are "A Foggy Day" by George Gershwin, "All of Me" by Gerald Marks and Seymour Simons, "Fly Me to the Moon" by Bart Howard, "Four" by Miles Davis, "Groovin' High" by John Birks "Dizzy" Gillespie, "Like Someone in Love" by Jimmy van Heusen, and "Someday My Prince Will Come" by Frank Churchill.

⁵ A few 12-bar blues examples are "Blue Monk" by Thelonious Monk, "Blue Train" by John Coltrane, "Blues for Alice" by Charlie Parker, and "Freddie Freeloader" by Miles Davis. "West Coast Blues" by Wes Montgomery is an example of a 24-bar blues which follows the general 12-bar chord progression but each chord lasts for two measures.

⁶ As models for listening and study, examples of pieces that modulate to the subdominant include "Bemsha Swing" by Thelonious Monk, "Misty" by Errol Garner, and "Take the A Train" by Strayhorn.

⁷ Exemplary pieces include "Georgia On My Mind" by Hoagy Carmichael and "There Is No Greater Love" by Isham Jones.

⁸ For instance, "My Funny Valentine" by Richard Rodgers, and "You Don't Know What Love Is" by Gene de Paul.

consider modulation up or down by half step.⁹ Less common are chromatic third modulations, but examples can be found, such as “When Sunny Gets Blue” by Jack Segal (which is in F major with a D major bridge), as seen in Example 3.¹⁰

PHRASE LENGTHS, CADENCE TYPES, AND HARMONIC RHYTHM

A good next step is to plan phrase lengths, cadence types, and harmonic rhythm. Overwhelmingly, the standard phrase length in jazz composition is either four or eight measures.¹¹ (Greater variability in phrase lengths is found following the bebop era [roughly 1945-1950s] as composers experimented with all aspects of jazz composition and as jazz moved further from its origins as music for dancing.) Almost without exception, cadence types are either half cadences or authentic cadences. The plagal cadence, sometimes with mode mixture, is occasionally added spontaneously by performers to prolong the final harmony of a piece. An exceptional example of a conventional, notated plagal cadence can be found at the end of Ellington’s “Come Sunday.” There is also an interesting cadence in jazz practice that is not typically found in classical music: the two-chord cadential pattern $\flat$ VII7 followed by I. The $\flat$ VII7 is a major-minor seventh chord and although its chord quality might suggest dominant function, it more compellingly exhibits plagal attributes because, as seen in Example 4, the $\flat$ VII7 chord contains the root and the third of the minor subdominant (thus evoking mode mixture if in a major key).

⁹For example, “Body and Soul” by Green, Heyman, Sour, and Eyton (in the key of D $\flat$ major with a D major bridge).

¹⁰Chromatic third relations also form the basis for the key areas (E $\flat$ major, B major, and G major) of John Coltrane’s “Giant Steps” and the key areas (A major, D $\flat$ major, and B $\flat$ major) constituting roughly the second half of “Peace” by Horace Silver.

¹¹A notable exception is the jazz standard “Alone Together” written by Arthur Schwartz in 1932. This AABA’ piece has a six-measure phrase for the second half of its first two A sections.

4/4
(BALLAD) **WHEN SUNNY GETS BLUE** - MARVIN FISCHER/
JACK SEGAL

A G-7 C7 Bb-7 Eb7 Fmaj7 G-7

A-7 D7 B-7b5 Bb-7 Eb7 A-7 Ab-7 Db7

G-7 C7 Bb7 A7 D7(b9) E-7 A7

B Dm7 E-7 F#-7 B7 E-7 A7 Dm7

D-7 G7 Cm7 A-7 Fmaj7 D-7 G7 G-7 C7

A G-7 C7 Bb-7 Eb7 Fmaj7 G-7

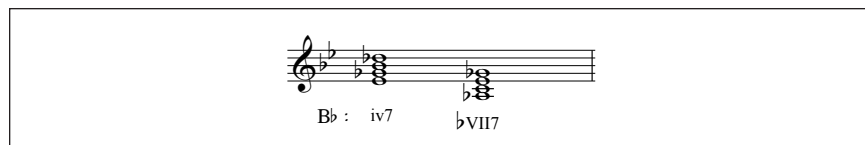
A-7 D7 B-7b5 Bb-7 Eb7 A-7 Ab-7 Db7

G-7 Gb7 Fmaj7 (A-7b5 D7)

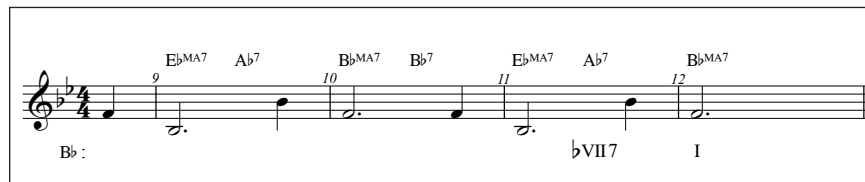
RIT. (LAST TIME)

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Example 3, “When Sunny Gets Blue” lead sheet (reprinted with permission)

Example 4, iv and $\flat$ VII7

The $\flat$ VII7-I cadence is essentially a minor plagal cadence as heard in mm. 11-12 of "My Romance." (See Example 5.)



Example 5, "My Romance," mm. 9-12

Harmonic rhythm is another component to consider when planning the structure of a composition. Choosing a mostly consistent harmonic rhythm throughout a piece contributes to establishing the character of that particular composition (and avoiding a hodgepodge of harmonic rhythm which could lead to a muddled compositional style).¹² A consistent harmonic rhythm, of course, does not necessarily mean unchanging—a change of harmonic rhythm, for example, may help define a contrasting section. As part of harmonic rhythm, remind students that chord changes help to express the meter and should occur on the strong beat(s) of the measure. Do not contradict the meter by beginning a new chord, say, on beat four in quadruple meter and then carrying this chord across the barline into the following measure.

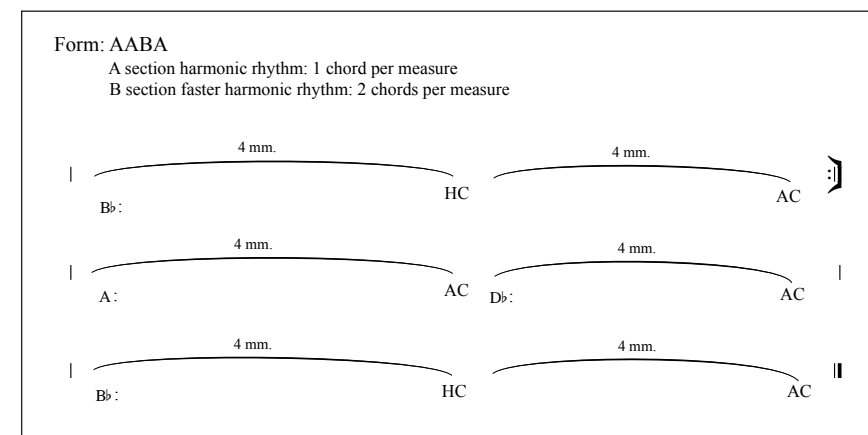
To summarize the discussion thus far, return to Example 2 ("My Romance"). This piece, in ABAC form, is constructed in 4-bar phrases. Each of the two A section phrases ends with an authentic cadence; the first phrase of the B section ends with a modified plagal cadence as described above, followed by a phrase that ends with a half cadence.¹³ The first phrase of the C section ends with a modified

¹² Steven Strunk remarks that "... the importance of harmonic rhythm in different styles of jazz is decisive and easily identified." (Strunk, *The New Grove Dictionary of Jazz* [1994], s.v. "harmony," 489.) He refers to the accelerated harmonic rhythm of bebop (compared to, for example, the preceding era of swing) and observes the characteristic of static harmony in later modal jazz.

¹³ The chord progression momentum here in preparing the return

authentic cadence as vi serves as a substitute for I, and is followed by the final phrase which ends with an authentic cadence. Of all the authentic cadences in "My Romance," this final phrase ending is the only perfect authentic cadence of the piece. The C-7 F7 pair in parentheses, m. 32, is used to help the return to the beginning of the form for the ensuing choruses of improvisation.¹⁴ The harmonic rhythm throughout is almost entirely two chords per measure.

At this point in the compositional process, students should add to their sketch cadence types and the desired harmonic rhythm. The sketch may look something like that shown in Example 6.



Example 6, sample compositional process sketch

This sketch specifies the home key of B $\flat$ major, AABA form, four-measure phrase lengths, key areas, cadence types, and harmonic rhythm. In the bridge, the first phrase (mm. 17-20) modulates down by half step to A major, followed by chromatic third modulation to D $\flat$ major for the second phrase (mm. 21-24). The final A section modulates again by chromatic third to return to the home key (mm. 25-32).¹⁵

of the A section is called a turnaround. The most common turnaround progression is iii vi ii V.

¹⁴ Each improvised chorus is a full statement of the form, using the composed chord progression and creating new melodic and rhythmic ideas.

¹⁵ Although presented in a different form here, the large-scale key relationships are drawn from "Peace" by Horace Silver. (Silver's composition is a ten-measure through composed work.) Even for their original compositions, students should study and imitate the form and chord progressions in jazz standards. They should consider pieces (or phrases from pieces) they particularly like and use them as models which might then be varied or modified.

CONTRAFACIT COMPOSITION AND CHORD EXTENSIONS

Next, ask students to set aside the large-scale plan they have just completed. Armed with their knowledge of form, phrase lengths, key areas, cadence types, and harmonic rhythm, have them compose a new melody to the chord progression of an existing piece. This will illuminate the ideas studied thus far, serve as an introduction to common jazz chord progressions, and engage students in the time-honored jazz composition practice of the contrafact, a procedure of crafting a new melody to the chord changes of an existing composition.¹⁶

After selecting a piece to serve as the harmonic underpinning, it is helpful to begin the process by notating the prominent pitch or pitches of each measure, creating a contour for each phrase, specifying the phrase-ending melodic goal, and considering personal preferences for particular sounds (such as chord tones, chordal extensions, chromatic alterations, and so on). The melody should reflect the underlying harmonies, and students must play their notated ideas at the piano to aid in decision making. (At this stage, there is not yet a need to address rhythm or embellishing non-chord tones.) This brings us to two questions: what is a chord tone in jazz practice, and what additional melody notes can help color the chords. The answer to the first question is the root, third, fifth, and seventh of the chord because in jazz, the normative harmonic unit is the seventh chord. The answer to the second question is the various seventh chord extensions such as the 9th, 11th, and 6th or 13th. Extensions must be selected carefully because chord quality affects whether a particular extension can serve as a melody note. Although other four-note structures are used in jazz, we will address the basic seventh-chord qualities that are fundamental: the

¹⁶ This practice has provided the foundation for every 12-bar blues and every piece based on “rhythm changes.” (Rhythm changes pieces employ the chord progression from George Gershwin’s original composition “I Got Rhythm.” We will look at “Oleo” as an example of rhythm changes.) A few contrafact examples are “Bird of Paradise” by Charlie Parker (based on Jerome Kern’s “All The Things You Are”), “Dig” by Miles Davis (based on “Sweet Georgia Brown” by Ben Bernie and Maceo Pinkard), “Hot House” by Tadd Dameron (based on Cole Porter’s “What Is This Thing Called Love”), and “Ornithology” by Charlie Parker (based on “How High the Moon” by Morgan Lewis).

major-major seventh chord, the major-minor seventh chord, the minor-minor seventh chord, the fully-diminished seventh chord, and the half-diminished seventh chord.¹⁷

Example 7, extensions during various chord qualities

As can be seen in Example 7, the major 9th can be used as the melody note above any of the listed seventh chords. In addition to the major 9th as a possible melody note, the major-major seventh chord may also support a #11 (augmented eleventh above the root) or a major 6th (the term “13th” is usually reserved for dominant chords); the major-minor seventh chord may support the major 9th or the altered b9 and #9 (minor ninth or augmented ninth above the root, respectively), the #11, and either the major 13 or the b13 (minor thirteenth above the root); the minor-minor seventh chord can support the major 9th or the unaltered 11th (perfect eleventh above the root); the fully-diminished seventh chord can support any note that is a whole step above one of its four basic chord tones;

¹⁷ For details on chord symbol nomenclature, see Leslie M. Sabina, *Jazz Arranging and Orchestration* (Belmont, CA: Wadsworth/Thomson Learning, 2002), 2-7; and Rayburn Wright, *Inside The Score* (Delewan, NY: Kendor Music, 1982), 188-190. Many undergraduate theory texts also contain information on chord symbols.

the half-diminished seventh chord may support the major 9th or the unaltered 11th. For major-minor seventh chords, the fifth itself may be altered to $\flat 5$ or $\sharp 5$ (diminished fifth or augmented fifth above the root, respectively).¹⁸

Example 8, sample melody notes for a given phrase

Example 8 illustrates a basic chord progression for a sample four-measure phrase in $B\flat$ major, ending with a half cadence. On the second staff, the half notes and whole notes represent initial melodic pitches as a possible skeletal structure of the melodic line for this phrase. The sample melody begins on the 9th of $B\flat MA7$ and steps up to the chordal third. The same two pitches are repeated in m. 2, now the 7th and root of $D-7$. Measure three features the 11th of $C-7$, and m. 4 issues the 7th of $F7$. Distinctive rhythmic ideas and use of embellishing pitches (such as passing and neighboring notes, including nonchord tones) will help in personalizing the contrafact melody and strengthening the character and mood of the piece.¹⁹

For the contrafact project, the basic “rhythm changes” chord progression (the chord progression from Gershwin’s composition

¹⁸ If the melody is composed first, this same set of extensions can help guide choices for harmonization. Students can try each melody note as the basic root, third, fifth, or seventh of a chord, and consider the possibility that the melody note could be a ninth, eleventh, or thirteenth. Once the student weighs all the options, he or she must think not only about the colorful character of various chord possibilities supporting the written melody note but also choosing chords to generate a logical chord progression.

¹⁹ Although it lies beyond the scope of this paper, helpful advice for crafting jazz melodies can be found in Tom Boras, *Jazz Composition and Arranging* (Belmont, CA: Thomson Schirmer, 2005), 17-38; Andrew Charlton and John M. DeVries, *Jazz and Commercial Arranging*, vol. 1 (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1982), 71-90; and Leslie M. Sabina, *Jazz Arranging and Orchestration* (Belmont, CA: Wadsworth/Thomson Learning, 2002), 123-125.

“I Got Rhythm”) is a challenging yet manageable choice, and it is historically informative because numerous jazz compositions are based on rhythm changes. Examples of rhythm changes contrafacts include “Cottontail” by Duke Ellington, “Oleo” by Sonny Rollins, and “Shaw ‘Nuff” by Charlie Parker.²⁰ All rhythm changes pieces are AABA. A few of the defining characteristics include a clearly established tonic in mm. 1-4, tonicization of the subdominant in mm. 5-6, and, typically, a harmonic rhythm of two chords per measure in the A sections. The bridge is often, but not always, improvised (with no melody composed for this section) and is based on a circle of fifths progression of major-minor seventh chords starting on $III7$.²¹ This chord functions as $V/V/V/V$, moves to $V/V/V$ then V/V and finally V . The much slower harmonic rhythm, each chord lasting for two measures, contributes to the contrasting nature of this section.

²⁰ An extensive list of rhythm changes contrafacts can be found in David Baker, *How to Learn Tunes*, vol. 76 (New Albany, IN: Jamey Aebersold Jazz, Inc., 1996).

²¹ For an example of a rhythm changes piece with a composed melody for the bridge, see “Anthropology” by Charlie Parker and Dizzy Gillespie.

OLEO —SONNY ROLLINS 309

A B $\flat$ G $^{-7}$ C $^{-7}$ F 7 B $\flat$ G 7 C $^{-7}$ F 7

F $^{-7}$ B $\flat$ E $\flat$ A $\flat$ E $\flat$ D $^{-7}$ G 7 C $^{-7}$ F 7

B C $^{-7}$ F 7 B $\flat$

A B $\flat$ G $^{-7}$ C $^{-7}$ F 7 B $\flat$ G 7 C $^{-7}$ F 7

F $^{-7}$ B $\flat$ E $\flat$ A $\flat$ E $\flat$ D $^{-7}$ G 7 C $^{-7}$ F 7 B $\flat$

FINE

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Example 9, “Oleo” lead sheet (reprinted with permission)

“Oleo” by Sonny Rollins is a standard rhythm changes piece. It is in the key of B $\flat$ major and its A sections are comprised of two 4-bar phrases. Notice that the chord progression for the first phrase is essentially I vi ii V played twice (in “Oleo” the submediant has been modified the second time to function as V/ii). The second phrase begins with ii V I of E $\flat$ major, tonicizing the subdominant, which is then modally inflected to become iv. This is followed by iii vi ii V (the common “turnaround”—the progression that helps

initiate the return to the opening), with the iii VI pair functioning as ii-V to tonicize the C minor supertonic. The bridge issues the classic circle-of-fifths progression ending on the home dominant, followed by the final A section. For cadence types, in the first A section both the first and second phrases end with a half cadence in the home key; upon the repeat, the second phrase concludes with a perfect authentic cadence before moving to the bridge. The bridge is generally understood as one long 8-bar phrase (in two-measure phrase segments) ending with a half cadence. The two phrases of the final A section are structured again as a period with a half cadence followed by a perfect authentic cadence.

After composing a contrafact melody (even a skeletal one), students can return to their planned original composition having had some hands-on experience. They will bring a heightened capacity for apprehending the next subject: generating the chord progression content of each planned phrase.

PHRASE CONTENT DETAILS

In general, phrases in jazz repertoire rely on the steadfast tonic-predominant-dominant-tonic (T-PD-D-T) phrase model. Phrases with inconclusive (i.e., half) cadences tend to comply with T-PD-D. Remind students that each phrase should convey a musical idea and move with purpose toward the cadence, the goal of that phrase. For idiomatic chord progression vocabulary, jazz uses the supertonic chord in the predominant position much more frequently than the subdominant. In fact, the most common chord progression segment in jazz is ii-V, with or without resolution to its following tonic. Unlike much classical literature (in which the tonic is generally prolonged and embellished to occupy the largest expanse of time in the phrase, while the predominant and dominant serve more briefly to help articulate cadences), in jazz literature, phrases are characterized by the tonic, predominant, and dominant functions being relatively evenly distributed.

Example 10, "Satin Doll" A section (reprinted with permission)

Let's return to the A section of "Satin Doll" (Example 10) to study its chord progression details. This composition begins with the primary supertonic-dominant pair (D-7 G7) repeated.²² The same material (melody and harmony) is then heard sequentially, up a major second (E-7 A7). As the second half of the 8-bar phrase arrives, the ii-V pair of mm. 3-4 can also be understood to function as a secondary supertonic-dominant to tonicize D7 in m. 5. The D7 (V/V) in m. 5 is itself treated as part of a ii-V pair because it is preceded by the supertonic A-7. The listener expects resolution to the primary dominant (G7) in m. 6, but instead encounters the most common substitution in jazz practice—the tritone substitute dominant.

Example 11, tritone substitute dominant

²²I am using "primary" to refer to the predominant and dominant of the prevailing key, as opposed to "secondary" or "applied" chords involved in tonicization.

In general, substitutions in jazz replace a tonic-, subdominant-, or dominant-functioning chord with another chord that executes the same function. The tritone substitute dominant replaces a primary dominant seventh chord with another major-minor seventh chord whose root is a tritone away. As can be seen in Example 11, this substitution preserves the pitch classes that are the third and seventh in the primary dominant and swaps their position to seventh and third in the tritone substitute dominant. Resolving to the tonic, the substitute dominant replaces root movement by fifth (descending P5 or ascending P4) with root movement by descending half step.²³

In "Satin Doll," the dominant substitution in m. 6 accomplishes a few things: it introduces colorful non-diatonic pitches; it generates some surprise and variety because the expected G7, which has already been heard twice, has been replaced with another sonority; it is part of a ii-V pair whereby D $\flat$ behaves like a primary dominant and is preceded by the chord that would be the primary supertonic, A $\flat$ -7; and it allows for a more interesting and linear bass line. Because it functions as a V chord, the D $\flat$ 7 resolves to the tonic CMA7 and participates in the imperfect authentic cadence.

Before departing from our analysis of "Satin Doll" to continue the topic of chord substitutions, let's also study a few of its melodic details. Each A section (Example 10) begins with the fifth of D-7 and toggles back and forth between A and G, its lower neighbor. The return to the pitch A in the second half of the measure finds the melody supported as the ninth of G7. These relationships are duplicated in the sequential material of mm. 3-4. Measure 5 features the melody note D, also briefly decorated by a lower neighbor, which is the eleventh of A-7 and the root of D7. It is easy to see that both basic chord tones and extensions are important to the melodic character of this piece. In m. 6, supported by the substitute ii-V pair, the featured melody notes are the ninth of the supertonic followed by the fifth of the dominant (swapping the melodic/harmonic relationships of mm. 1-4). The phrase ends with a turnaround progression and the long-held melody note G begins as the chordal fifth of CMA7, then becomes the eleventh of D-7, the third of E-7, and the seventh of A7. It was the decorative lower neighbor of mm. 1-2 but now, in mm. 7-8, is the basic, featured pitch.

²³In some instances, the chord quality of a tritone substitute dominant is changed to a major-major seventh chord. Rayburn Wright names this an "upper chromatic MA7." (Rayburn Wright, *Inside the Score*, [Delevar, NY: Kendor Music, 1982], 57.)

SUBSTITUTIONS

Many of the substitutions found in jazz are familiar to classical musicians.²⁴ For example, vi and iii can serve as tonic-functioning chords, substituting for I.²⁵ The supertonic, often considered a substitute for the subdominant in classical music, is itself the most common predominant chord in jazz, whether a primary or secondary supertonic. The infrequent $\flat$ VII7-I combination (discussed earlier as a possible cadential chord progression) can substitute for iv-I, depicting plagal motion within a phrase.²⁶ While the tritone substitute dominant is the most common substitute for V, it is equally important to note that leading tone seventh chords (half- or fully-diminished) typically are not used as substitutes for the dominant in jazz.

²⁴For additional reading on the use of substitute chords in jazz, see Steven Strunk, *The New Grove Dictionary of Jazz* (1994), s.v. "harmony." See also Strunk, "The Harmony of Early Bop: A Layered Approach," *Journal of Jazz Studies* VI (1979): 4-53; Rayburn Wright, *Inside The Score* (Delewan, NY: Kendor Music, 1982); Tom Boras, *Jazz Composition and Arranging* (Belmont, CA: Thomson Schirmer, 2005); and David Baker, *Arranging and Composing for the Small Ensemble*, revised edition (Harlow, Essex, U.K.: Alfred Publishing Co., Inc., 1988).

²⁵As in classical music, these options also can be used to prolong an area. For example, I might be followed by vi as a means of prolonging the tonic area.

²⁶This chord progression can be found linking two phrases in mm. 7-10 of "Cherokee" by Ray Noble, and within a phrase in mm. 10-11 and 26-27 of "There Will Never Be Another You" by Harry Warren.

Example 12, sample substitutions

To illustrate the use of substitutions, take a look at Example 12. Staff *a* provides a basic, functional T-PD-D-T chord progression in C major. In staff *b*, the supertonic D-7 replaces the subdominant FMA7. There is now stepwise root movement between the first and second measures and circle-of-fifths root movement starting at m. 2. A secondary dominant chord, A7, is added in staff *c* to tonicize the supertonic chord of m. 2. This introduces a new chord with nondiatonic pitches and slightly quickens the harmonic rhythm at the start of the phrase. In staff *d*, A7 of m. 1 is replaced with its tritone substitute dominant, Eb7, and the primary dominant, G7, in m. 3 is replaced with its tritone substitute dominant, Db7. This creates a linear bass line that moves mostly in half steps. In staff *e*, a predominant chord is added in m. 3 to create a substitute ii-V pair. In staff *f*, a tritone substitute dominant is added in m. 2 to tonicize the following Ab-7. This staff exhibits an accelerated harmonic rhythm and reveals a bass line that moves by half step into each downbeat. Example 12 is but one set of possible realizations using substitutions (and adding chords through tonicization) to modify the given basic chord progression, and any one of these variations (*b-f*) could be selected to serve as the chord progression.

APPLIED AND EMBELLISHING CHORDS

There is one more topic concerning the chord progression content of a phrase. In addition to the options chord substitutions provide, chords can be added as applied chords (secondary predominant and dominant), as seen in Example 12, and as connecting or embellishing chords (such as passing and neighboring chords). The most common passing chord is a fully diminished seventh chord built, for example in an ascending fragment, on the root that is a step above the root of the preceding chord and a step below the root of the chord that follows (vice versa for a descending fragment). See the first phrase of “My Romance” in Example 13.

Example 13, “My Romance,” mm. 1-4 (reprinted with permission)

In mm. 2-3, the $D\flat^{\circ}7$ serves as a connecting passing chord between the diatonic $D-7$ that prolongs the tonic $B\flat MA7$ and the following diatonic $C-7$ that is the predominant of the ii-V pair leading to the imperfect authentic cadence at m. 4.²⁷ Both passing and neighbor chords may be diatonic to the prevailing key. Example 13 also illustrates a diatonic passing chord ($C-7$) in m. 1, connecting the tonic $B\flat MA7$ and the following tonic substitute, $D-7$. Embellishing chords also may exhibit parallel structure to the decorated chord(s). For example, the $D-7$ $E\flat-7$ $D-7$ chord progression (organized as 16 mm., 8 mm., 8 mm.) for solos in the modal composition “So What” written by Miles Davis in 1959.²⁸

²⁷ For additional examples of fully-diminished seventh chords as passing chords, see mm. 3-4 of “Isn’t It Romantic?” by Richard Rodgers (ascending passing chord) and mm. 31-33 of “All The Things You Are” by Jerome Kern (descending passing chord).

²⁸ This nonfunctional neighboring motion is the harmonic structure of the piece. The departure from the emphasis on ii-V pairs of the bebop era and the number of successive measures on a single harmony (sometimes referred to as “static harmony”) are characteristics of modal jazz. In the

RHYTHM CHANGES DEVELOPMENTS

Developments in the rhythm changes chord progression in different eras provide a useful format to summarize and review the phrase content items we have been discussing. The basic chord changes are shown in Example 14.

Example 14, Basic rhythm changes

The original piece, “I Got Rhythm,” was written in 1930 and it was not long before jazz musicians began to experiment with ways to make the diatonic mm. 1-4 more challenging for improvisation.²⁹ One popular swing era (roughly 1935-1945) variation, seen in Example 15, had A sections that featured fully-diminished passing chords.³⁰

head (the composed theme—melody plus chord changes), the $D-7$ of the A sections and the $E\flat-7$ of the B section are themselves embellished by notated neighbor voicings of parallel structure, $E-7$ and $F-7$, respectively.

²⁹ Steven Strunk points out that “[t]he development of jazz harmony from early styles through the 1950s may . . . be characterized as a general movement from simple to complex chord progressions and from a relaxed to a rapid rate of harmonic change.” (Strunk, *The New Grove Dictionary of Jazz* [1994], s.v. “harmony,” 494.)

³⁰ The m. 1 $B^{\circ}7$ and m. 2 $C^{\#}7$ could be considered substitutes for $G7\flat 9$ and $A7\flat 9$, respectively, with the roots omitted.

Example 15, Sample swing era A-section

The B $\flat$ /F chord symbol in m. 7 indicates that F is to be played in the bass (i.e., in second inversion). Also, the swing era at times used triads rather than four-note seventh chords.

As swing began giving way to bebop (roughly 1945-1950s), A sections included chord extensions and tritone substitute dominant chords. See Example 16.

Example 16, Sample bebop A-section

Example 16, Sample bebop A-section

Notice that some of the dominant chords use altered extensions (e.g., $\flat 9$ or $\sharp 9$, rather than the unaltered major 9th above the root).

The basic rhythm changes bridge (as seen in Example 14, and “Oleo” studied previously) is a secondary dominant sequence in which each seventh chord acts as the dominant of the chord that follows, leading to the primary dominant to prepare the return to the final A section. Bebop musicians liked to add a supertonic chord before each dominant (see staff *a* of Example 17). Musicians also employed tritone substitute dominant chords (see staff *b* of Example 17) and sometimes preceded those with supertonic chords (see staff *c* of Example 17).

Example 17, Sample rhythm changes bridges

Example 17, Sample rhythm changes bridges

CHORD PROGRESSION PROCESS

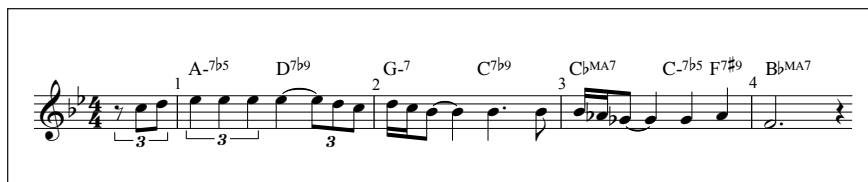
Now that students have studied many of the essential aspects concerning composing a chord progression for an original jazz piece, they should return to their earlier sketch and flesh out and notate each phrase. For the chord progression, it is often constructive to begin with the cadence and work backwards, preceding each chord with a functional chord that will contribute to generating a sense of direction when the phrase is played forward. For example, consider the first four measures of Horace Silver's “Peace” in Example 18.

Example 18, “Peace” mm. 1-4 (modified)

Example 18, “Peace” mm. 1-4 (modified)

As in this composition, to arrive at the tonic chord at the end of the phrase (here, m. 4), the student could work backwards, preceding this tonic with, in m. 3, a ii-V pair. This particular pair makes use of mode mixture (e.g., C- $\flat 5$ is the supertonic chord quality in B $\flat$ minor rather than B $\flat$ major). The F7 of m. 3 is tonicized, preceded by its ii-V pair (G-7 C7) in m. 2. G-7, the secondary supertonic of m. 2, is itself tonicized by its ii-V pair (A- $\flat 5$ D7 $\flat 9$) in m. 1.³¹

³¹ Another alternative, for example, would have been to tonicize C7, the secondary dominant in m. 2, by preceding it with its ii-V pair (D-7 G7). This would not work if the melody were already fixed because the minor-minor seventh chord D-7 cannot support a $\flat 9$ (E $\flat$) as an extension.



Example 19, "Peace" mm. 1-4 (actual)

The student could then add an embellishing lower neighbor chord ($C\flat MA7$) at the start of m. 3, connecting the preceding $C7\flat 9$ and the following $C-7\flat 5$.³² This chord progression (seen in Example 19) matches Silver's.



Example 20, "Peace" mm. 1-4 (alternate)

Alternatively, the student could work forward from the start of the piece and initially consider beginning the piece (as shown in Example 20) with the primary supertonic-dominant pair in m. 1 and presenting the tonic in m. 2. Then, for variety (and as seen in the actual composition in Example 19), the student could substitute the submediant ($G-7$) for tonic in m. 2 and exchange the primary ii-V of m. 1 for the secondary ii-V tonicizing vi. Proceeding forward,

The $A-7\flat 5$ $D7\flat 9$ tonicization of $G-7$ fits interestingly with the melody ($E\flat$ is the flat 5 and the flat 9 of those chords). If tonicizing $C7$ had been vital, Silver could have used the tritone substitute dominant and predominant pair, $A\flat-7$ $D\flat 7$, which would effectively support the main melodic pitch of m. 1: $E\flat$ as the chordal fifth of $A\flat-7$ and unaltered ninth of $D\flat 7$.

³² Particularly due to its strong metric placement at the start of the measure, it is worth considering whether the $C\flat MA7$ chord of m. 3 might instead be a major seventh chord one half step above the $B\flat MA7$ goal chord of m. 4, essentially modifying the chord quality of a tritone substitute dominant to a major-major seventh chord (Wright's "upper chromatic $MA7$ "). This interpretation is not as persuasive as considering $C\flat MA7$ a nonfunctional lower neighbor because, in m. 3, it is followed with a conventional, functional ii-V of $B\flat$ and general practice is to increase tension by moving from conventional to substitute relations (rather than the reverse) to heighten the sense of resolution that follows. It is quite possible, though, to hear the $C\flat MA7$ simultaneously as both an embellishing lower neighbor and an upper chromatic major seventh.

the m. 2 submediant can then be reimagined as the secondary supertonic of V, paired with the secondary dominant of V ($C7$), to move into the primary dominant ($F7$) as part of the cadence. This shows that there are numerous possible chord progressions and alternate ways to arrive at the same chord progression, whether working backwards or forward.

SUMMARY

If you are a jazz musician and composer, no doubt you are already integrating this material into your classes and I hope this essay may help as a summary of several fundamental topics. If you're not a jazz musician and composer but would like to incorporate some jazz chord progression work into your classes, you can do this in three class meetings. It is an ambitious undertaking, given the amount of material to cover, and the benefit to students is that of getting exposure rather than developing expertise, but the exposure to this work can open doors for further investigation and enjoyment. The material covered in this essay works well following the study of binary forms and can be treated as another unit on small forms.

During the first class, you can illustrate the three most common forms (AABA, ABAC, and the 12-bar blues) while viewing lead sheets and listening to recordings (your students may have a few favorites to share). For some pieces, listen to the head only; for others, help students keep their place in the form while listening to the improvisations (rhythm changes pieces, with their AABA form, are particularly easy to follow). You also can talk about cadence types, phrase lengths, and common modulations. For homework, have the students create a sketch of the form for a planned original composition, making explicit decisions about all those items (as in Example 6).

In the second class meeting, cover chord qualities and their eligible extensions, and examine one or two rhythm changes compositions. Undertake a Roman numeral analysis of the basic rhythm changes chord progression and talk about harmonic rhythm. The assignment can be for students to compose a melody to a basic rhythm changes chord progression (you provide the key and chord progression from which students should not deviate). The melody can involve rhythmic and melodic details or it can simply be two half notes per measure as a melodic sketch for further development. Remind students that the melody should help express the chords by using chord tones and appropriate extensions as the featured pitches.

In the third class, you can return the sketches you collected previously and collect the newly completed rhythm changes assignment. During class, talk about ii-Vs, chord substitutions, and connecting and embellishing chords. Revisit lead sheets and recordings from the previous two classes to apprehend the chord progression details of each phrase. The assignment is for students

to use their sketch and compose a chord progression to depict the form, modulations, and cadence types they had specified. Ask them to fill in their phrases with basic chord progressions and then elaborate upon (to a greater or lesser degree, for example you can specify that they must use at least one instance of a tritone substitute dominant) the progression. The harmonic foundation should be fully realized. Students would also sketch at least some portion of the melody—perhaps one or two featured pitches in each phrase, along with cadential goal pitches, or perhaps a motivic idea they would then develop throughout the piece (as in “Satin Doll” with its melodic lower neighbor and the rhythmic motive introduced in m. 2). If they have time, they should compose the complete melody. You might also have students write a brief paragraph, to hand in with their composition, describing a feature of their composition they are particularly happy with and why.

CONCLUSION

As a composer, the student should have a reason for every chord used in a piece. Students should think about large-scale form and how it will be manifested in a particular work. They will benefit from considering T-PD-D-T relations and planning phrases so that the choice of cadence can communicate the desired degree of tension or rest at particular points in the piece. With so many opportunities to vary and enhance a basic chord progression through the use of substitute, applied, and embellishing chords, it is important for the teacher to help students appreciate the features of each of the myriad possibilities and to help them focus their choices on the most musical options.

As an educator, Mary Arlin was in some ways conservative in stressing the importance of fundamentals in her theory classes, but she was also cutting-edge. For example, she embraced the use of technology to assist instruction, creating cassette tapes to help students drill intervals, among other ear training exercises, long before CAI became common. And I believe she was broad-minded in other ways, too, for she did not disparage my interest in jazz. In Professor Arlin, I found a commanding presence, someone who expected excellence and supported exploration. I am grateful to her for those very attributes, which contributed to my becoming the composer, flutist, and educator that I am today.





Teaching Baroque Counterpoint Through Improvisation: An Introductory Curriculum in Stylistic Fluency

BY MICHAEL CALLAHAN

During the Fall 2010 semester, I found myself teaching the same topics in two very different courses. One was a traditional tonal counterpoint curriculum in which students scratched out homework assignments with pencils and manuscript paper. The other was a hands-on keyboard workshop that taught figured-bass realization and used it as a springboard for improvisation. In spite of the different formats, the two courses had the same objective: for students to create, either on paper or at the keyboard, music in the style of the eighteenth century. My expectations for the keyboard improvisers were modest, given their lack of experience at the instrument; in contrast, I expected the counterpoint students to master minuets, two-part inventions, and chorale preludes. However, almost without exception, the keyboard students improvised better counterpoint than the counterpoint students wrote; the work of the former was more idiomatic, more musical, and much more fluent than that of the latter. This article illustrates the more successful pedagogy—that of the keyboard course—and adapts it to teaching the written course more effectively as well.

Several scholars have argued for the value of improvisation in the pedagogy of music theory and aural musicianship.¹ In their adaptation of Benjamin Bloom's learning taxonomy to music, Deborah Rifkin and Philip Stoecker classify it as one of the most advanced stages of learning.² Nancy Rogers notes that it encourages creativity, fostering an environment in which there

¹See, for instance, Kate Covington, "Improvisation in the Aural Curriculum: An Imperative," *College Music Symposium* 37 (1997): 49-64; Steve Larson, "'Integrated Music Learning' and Improvisation: Teaching Musicianship and Theory Through 'Menus, Maps, and Models'," *College Music Symposium* 35 (1995): 76-90; and Peter Silberman, "Post-Tonal Improvisation in the Aural Skills Classroom," *Music Theory Online* 9/2 (July 2003).

²Deborah Rifkin and Philip Stoecker, "A Revised Taxonomy for Music Learning," *Journal of Music Theory Pedagogy* 25 (2011): 155-89.

is no single correct answer.³ Peter Schubert makes improvisation a primary focus from the beginning, discarding abstractions and asking students to “play in the sandbox” by improvising real music in every class.⁴ This report is intended as a resource for instructors wishing to incorporate improvisational learning throughout a curriculum on Baroque counterpoint; it presents classroom-tested exercises and teaching strategies ranging from very basic to more advanced.⁵ Even for non-pianists, the activities are most directly applicable at the keyboard, although their primary objective is not to train keyboard improvisers. Rather, they cultivate fluency with basic contrapuntal techniques, permitting instructors to expect better mastery and musicality from their students.⁶ The two-voice exercises demand only modest keyboard technique, while the ones in three voices suit those with some comfort at the instrument. While figured-bass realization in four voices could certainly play a role in the curriculum as well, I soft-pedal it in favor of thinner textures that emphasize independent voices rather than full chords. I have observed even graduate students resorting to rote memorization in order to cope with the demands of playing and keeping track of four simultaneous voices; when these demands are fewer, the same students are able to attend to the more sophisticated tasks that ultimately matter more in counterpoint study (e.g. incorporating dissonance, playing motivically, transposing).

Parts of this improvisational method are also appropriate for core undergraduate courses in theory and aural musicianship. All of the two-voice activities can be adapted to other single-line instruments, including voice, if students take turns improvising the

upper line while another student, or the instructor, or a recording, provides the bass.⁷ Finally, there are many modes of improvisation, some stricter and some looser, that are beneficial to the pedagogies of counterpoint, aural skills, and written music theory. Of course, the strictest mode involves generating pitches and rhythms on an actual instrument in real time, but even this is prepared to some degree. In addition, students should be encouraged to experiment during practice, work out (but not notate!) a realization of the assigned task, and play it in class. The process still engages aural, haptic, and logical learning processes; it still teaches idiomatic patterns and techniques; and it even trains musical memory. In fact, it is exactly this “mostly prepared improvisation” that makes an improvisational curriculum accessible to all levels of students, and permits the inclusion of sophisticated techniques such as motive and imitation. Furthermore, in a course that involves written work, improvisational skill is applicable even in the absence of an instrument; students who can improvise can also compose fluently (or “virtually improvise”) at the chalkboard or on manuscript paper. Improvisation converts contrapuntal topics and principles (e.g. dissonance treatment, voice leading) into tasks—and, even better, habits—which are relevant even outside of real time and away from an instrument.

Parts 1 and 2 present simple activities in two voices, which focus on constructing and then varying contrapuntal frameworks. Part 3, a methodological interlude, offers strategies for individual practice and for group learning in the classroom. Part 4 explores improvisation in three voices, both actual and implied, and Part 5 suggests one avenue of further study for more advanced students. The curriculum engages aural, visual, intellectual, and instrumental modes of music learning to develop skills that fuse theory with musicianship. Students do more than obey abstract rules and avoid pitfalls, and indeed learn to play in the style of the eighteenth century. They gain first-hand experience with composing pieces

³Nancy Rogers, “How Structured Improvisation Can Improve Sight-Singing Performance (And More),” *AP Music Theory: Teaching Sight Singing* (pp. 49-58), ed. Ken Stephenson (New York: The College Board, 2008).

⁴Peter Schubert, “Global Perspective on Music Theory Pedagogy: Thinking in Music,” *Journal of Music Theory Pedagogy* 25 (2011): 217-33.

⁵Peter Schubert and Christoph Neidhöfer’s textbook on Baroque counterpoint includes brief descriptions of some improvisational activities within several of its chapters. My intent is to provide exercises in sufficient number and detail to comprise the improvisational track of an entire curriculum.

⁶This approach utilizes the keyboard as accessibly as possible. Keyboard specialists interested in more advanced Baroque-style improvisation could investigate the wealth of historical treatises that address the subject, which are far too numerous to list here.

⁷Due to the primarily instrumental models of Baroque counterpoint, in contrast to the vocal and choral ones of the Renaissance, instructors should be careful not to rely exclusively on the voice for teaching the former. Moreover, neither the voice nor any single-line instrument can simulate the task of juggling two contrapuntal voices simultaneously. Hence, while many of the activities are designed to accommodate classes that do not take place in keyboard labs, at least some individual keyboard work is essential.

in historical styles and develop a deeper understanding of the literature that they play—tools that equip them for advanced coursework while also illuminating the true value of counterpoint study.

PART 1: CONTRAPUNTAL FRAMEWORKS

Without guidance, a beginner may improvise with either too much or too little emphasis on chords. Student A's vertically conceived arpeggiations (Ex. 1a) need a more coherent sense of line, while Student B's line (Ex. 1b) lacks an awareness of consonance and dissonance. A contrapuntal framework for the upper voice (Ex. 1c) changes the game dramatically: Student A's orientation becomes more linear, while Student B's instinct for a smooth line is reigned in by a set of consonant targets.

Example 1 consists of three musical staves labeled a, b, and c. Staff a shows a single melodic line with arpeggiated chords. Staff b shows two melodic lines with frequent dissonances. Staff c shows the same two lines as b, but with a more coherent and consonant framework, where the upper voice line is more linear and the lower voice line provides a stable harmonic base.

Example 1: Sample student improvisations lacking linear coherence (a) and dissonance control (b), and a solution (c).

Ready-made contrapuntal idioms, or schemata, provide an efficient way of constructing outer-voice frameworks. Students internalize patterns, which range from two intervals through an entire sequential progression, and learn the contexts in which each can be applied.⁸ These idioms fall into categories such as tonic-prolongational, sequential, and cadential (Ex. 2).

⁸This method resonates especially well with historical pedagogies that approached improvisation schematically; fluency comes more easily to a student who can concatenate pre-learned idioms than to one who must generate the music from scratch. See, for instance, the discussions of *partimenti* in Robert Gjerdingen, *Music in the Galant Style* (New York: Oxford University Press, 2007); Robert Gjerdingen, "Partimenti Written to Impart a Knowledge of Counterpoint and Composition," *Partimento and Continuo Playing in Theory and Practice* (pp. 43-70), ed. by Dirk Moelants (Leuven University Press, 2010); and Giorgio Sanguinetti,

Example 2 shows two musical staves illustrating contrapuntal idioms. The top staff is labeled 'tonic-prolongational:' and shows a series of chords with figured bass notation (6 6, 6, 4 6, 4 6, 4 6, 4 6, 4 6). The bottom staff is labeled 'sequential:' and 'cadential:' and shows a sequence of chords with figured bass notation (6 6, 5--6, 5--6, 5--6, 6, 6 6, 6 5). The sequential part shows a descending line in the upper voice, while the cadential part shows a descending line in the lower voice.

Example 2: Contrapuntal idioms.

Students learn idioms through the following process: (1) play an idiom (or play one voice while singing the other); (2) transpose it to other keys and do the same; (3) when just soprano or just bass appears, fill in the missing voice and play both; (4) parse a longer bass or soprano into its idiomatic segments and fill in the missing voice.⁹ Indeed, the entire elementary pedagogy that follows points, though not explicitly, in the direction of idioms; by utilizing figured basses as the basis for instruction in diminution, it actually teaches common progressions all along.

Idioms permit improvisational fluency by teaching the most common gambits, but students must be able to generate their own outer-voice counterpoint from scratch as well. In the absence of the latter method, they adopt a mindset of solving the riddle (i.e. "What is *the* soprano that I am *supposed* to use above this bass?"), overlooking both the existence of multiple good options and the

The Art of Partimento: History, Theory, and Practice (New York: Oxford University Press, 2012). Several modern theory textbooks also teach standard progressions and prolongations through contrapuntal idioms, or paradigms. For example, see Steven G. Laitz, *The Complete Musician*, third ed. (New York: Oxford University Press, 2012), pp. 177-9; Edward Aldwell and Carl Schachter, *Harmony and Voice Leading*, third ed. (Belmont, CA: Wadsworth, 2003), pp. 119-20; and Robert Gauldin, *Harmonic Practice in Tonal Music* (New York: Norton, 1997), pp. 156-60.

⁹Rogers presents an interactive method for teaching what she calls "building blocks" (pp. 52-3), by which a student listens to what another student sings (or plays), analyzes it immediately in terms of the idioms that were used, and then recreates it from the identified modules. The process works very well in any classroom with more than one keyboard.

value of choosing flexibly from them. Figured basses are well suited to teaching this flexibility because they offer an unambiguous harmonic underpinning, but within a context that privileges voice leading over chord roots. Students first arpeggiate rapidly beginning with each bass note (Ex. 3a), ignoring voice leading initially in order to discern quickly what is consonant. This is possible on any instrument, including voice if the syllables demonstrate pitch awareness (i.e. fixed-do solfège or note names).¹⁰ I next introduce constraints that set the stage for desirable counterpoint, such as omitting outer-voice octaves except at cadential arrivals and avoiding $\hat{5}$ at authentic cadences (Ex. 3b). I also encourage students to include, if possible, any chromaticism that is prescribed by the figured bass (e.g. in the third measure) and any pitches necessary to define a particular harmony. However, I am careful not to overstate this last concern, since it could exclude good options (e.g. the parallel tenths at the opening) or place too much weight on chord content at the expense of voices. On keyboard, visual shorthands help students to associate intervallic shapes with figured-bass symbols—over a $\sharp$ figure, a third beginning a tenth above the bass (e.g. B-D over G), and over a $\natural$ figure, a fourth beginning a tenth above the bass (e.g. G-C over E).

Example 3: Arpeggiation exercises for building figured-bass fluency.

Students then learn to lead an individual voice from a given starting pitch, creating 1:1 counterpoint that balances voice-leading requirements, smoothness, and interest. Fill-in-the-blanks activities

¹⁰If singing, students must simulate playing by employing a phenomenal, rather than a conceptual, set of syllables. The differences between the two systems are discussed in detail in William Marvin, "A Comparison of Four Sight-Singing and Aural-Skills Textbooks: Two New Approaches and Two Classic Texts in New Editions," *Journal of Music Theory Pedagogy* 22 (2008): 131-47.

work well. The whole class plays (or sings) only the provided soprano pitches while just one student at a time improvises a solution in each of the blanks; the bass is played by the whole class to keep everyone engaged, or by just the instructor if there is only one keyboard. The exercise in Ex. 4a shows that the D in m. 4 and the G in m. 8 are obligatory resolutions of the leading tones that precede them, while measures 2 and 6 each have multiple equally good options (shown beneath). The task in Ex. 4b is slightly more advanced, requiring students to approach a given note rather than to depart from one; they learn to distinguish requirements, such as the F# in m. 7, from preferable options, such as the parallel tenths in mm. 1-4.¹¹ Improvisers develop problem-solving ability by realizing each activity in several different ways.

The image shows a musical score for two exercises, 'a.' and 'b.', on a grand staff. Exercise 'a.' is in 3/4 time and consists of two staves. The first staff has a treble clef and a key signature of one sharp (F#). The second staff has a bass clef and a key signature of one sharp (F#). Exercise 'b.' is in 3/4 time and consists of three staves. The first staff has a treble clef and a key signature of one sharp (F#). The second staff has a treble clef and a key signature of one sharp (F#). The third staff has a bass clef and a key signature of one sharp (F#). The score includes various musical notations such as notes, rests, and bar lines.

Example 4: Fill-in-the-blanks activities.

The class eventually works through unprepared figured basses with no soprano pitches provided, using the bass and figures to visualize (on the keyboard, or on a staff) multiple options for an

¹¹ Given the abundance of possible paths through any improvisational task, it helps to draw a distinction between well-formedness rules and preference rules, as in Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge: MIT Press, 1983). A framework with parallel fifths or an unresolved seventh is ill-formed, whereas one with a poorly motivated soprano or a preponderance of mid-phrase perfect consonances is simply less preferable.

upper voice. Eventually, the generative strategy and the idiom strategy intersect, the latter affording fluency—when improvisers instinctively resort to a learned idiom for a standard cadence, prolongation, or sequence—while the former encourages flexibility. Subsequent figured basses can feature the rhythmic variety of real music, rather than constant half notes, so that students can gain insight into harmonic rhythm and phrase design even while they improvise something as simple as 1:1 counterpoint.¹²

With its limited scope, note-against-note counterpoint is a crucial first step in an improvisational curriculum. It is a manageable environment in which to develop not only the basic skills of an improviser (e.g. fluent command of idioms, flexible problem solving), but also the fundamental tenets of counterpoint (e.g. traits of a good line, prolongations vs. progressions, outer-voice intervals). Indeed, even if undergraduate theory students were to reach only this far as improvisers, it would be no small achievement.

PART 2: DIMINUTION AND DISSONANCE TREATMENT

In my experience, the pedagogy of improvised diminution is successful insofar as it relies explicitly on the work that students have already done with contrapuntal frameworks. I employ spiral learning, returning to transpositions of the same basses taught in Part 1 in order to capitalize on their familiarity.¹³ Although the techniques presented in this section are widely applicable, it is the process of applying them to *particular* frameworks—and exhausting their possibilities—that builds mastery of diminution.

¹² Schubert rightly argues that style and skeleton work at odds with one another; to focus on abstracted paradigms is to ignore, deliberately, aspects of rhythm, motive, and texture (2011, pp. 223-26). Still, I defend the virtue of this first unit on two grounds: it lasts only a few weeks, and it lends indispensable scaffolding to the subsequent units on diminution.

¹³ The reader will notice that many of the sample exercises in this article feature transpositions of the same bass as well. While this is just one of many basses in the curriculum, its recurrence here is intended to demonstrate the value of spiral learning in the development of contrapuntal skill. I work almost exclusively in major and minor keys that appear on the top half of the circle of fifths (i.e. up through three sharps and flats), but try to use these fourteen keys equally throughout the curriculum.

In order to prevent beginners from losing sight of the frameworks and reverting to improvisations such as the ones in Exx. 1a and 1b, I initially require that *each structural soprano pitch* (Ex. 5a) *be both the first and last in its time span*; I encourage notated “lead sheets” that display the two outer voices as a reference. Carefully targeted etudes introduce each of the following embellishment types: simple repetitions in various rhythms (Ex. 5b); upper and lower neighbors in various rhythms (Exx. 5c and 5d); upward and downward leaps to and from other non-octave consonances (Exx. 5e and 5f); and passing motion that fills in these leaps (Exx. 5g and 5h). Exercises g and h are elaborations upon earlier activities, so students benefit from having the simpler version notated as a reference. Improvisers assemble a vocabulary of diminutions by practicing etudes such as these over other figured basses and in a variety of keys and meters.

Example 5: Etudes to introduce simple diminution techniques.

Using the skills developed in Part 1, students visualize the stable consonances available to them, which are the only pitches eligible to bookend skips and leaps. The next set of exercises begin each time span with the structural pitch as before, *but now insert a different consonance between it and the next one*.¹⁴ The seams between changes of harmony require careful crafting; students must navigate (on keyboard) as well as audiate a smooth path across the seam. Example 6 shows a contrapuntal framework (a), an embellishment following the exercise described above (b), and a more elaborate version that adds lower and upper neighbors (c).¹⁵

Example 6: Exercise in inserting additional consonances between the pillars of a contrapuntal framework.

Thinking too specifically about the function of each diminution option can be paralyzing if students stop to ask themselves, for example, “Should I use a passing tone here, or a lower neighbor?” Therefore, it pays to approach the activities in Exx. 5 and 6 as visual

¹⁴Of course, consonance and dissonance are reckoned chordally rather than acoustically. A perfect fifth above a bass figured with $\frac{6}{8}$ or $\frac{4}{2}$ is dissonant, while a diminished fifth belongs above a leading tone figured with $\frac{6}{8}$.

¹⁵The choice of additional consonant pitches in Exx. 5 and 6 does not always result in a complete harmony, or even in the inclusion of a chromatic or otherwise essential pitch (e.g. the G# in m. 2 of Ex. 6). While I tell students that complete harmonies are preferable, I avoid emphasizing this early on because it encourages a chordal orientation; see the block arpeggiations in Ex. 1a. Linearly conceived counterpoint and correct dissonance treatment are huge achievements at this stage, even if the texture is occasionally thin.

and kinesthetic habits, rather than only as cognitive constructs such as passing tones, neighbors, etc. Versatile melodic figures reduce the cognitive burden even further through shortcuts. One of the most pedagogically savvy historical presentations appears in the third volume of Michael Wiedeburg’s treatise, *Der sich selbst informirende Clavierspieler*, published in 1775.¹⁶ Each of three four-note melodic figures approaches a metrically strong consonance by means of a differently shaped series of three auxiliary pitches, as shown in Ex. 7: *Schleifer* (a and b), *Doppelschlag* (c and d), and *Schneller* (e and f), each in both directions.

Example 7: *Schleifer* (a/b), *Doppelschlag* (c/d), and *Schneller* (e/f).

Students discover the contrapuntal situations to which each figure is suited, noting that the first pitch of the four must be consonant whenever it is approached by leap. These particular figures combat the novice’s instinct to focus on each measure in isolation, using the bar lines as conceptual boundaries and sacrificing smoothness across the seam; they force students to understand consonance and dissonance *within* the harmony and melodic design as *approaching and including* the onset of the next one. A preparatory exercise (Ex. 8) provides a contrapuntal framework (a) and asks students to discover where the *Schleifer* (b), *Doppelschlag* (c), and *Schneller* (d) are each appropriate. The same figures also work equally well in triple and compound meters (Exx. 8e and 8f).

¹⁶I elucidate Wiedeburg’s figures in greater detail in a recent article (2010); the present discussion highlights just one of their simplest applications within an improvisational curriculum.

Example 8 consists of six staves labeled a. through f. Staves a. through d. are in 4/4 time and feature a soprano line with various melodic figures and a figured bass line with figures such as 6 5, 6, and #. Staves e. and f. are in 3/4 time and show a similar structure with a soprano line and a figured bass line.

Example 8: Application of *Schleifer*, *Doppelschlag*, and *Schneller*.

At this stage, a rigid contrapuntal framework would restrict the 4:1 soprano too much; the improviser's mindset must shift from connecting the pitches of a *single*, predetermined soprano to weaving a more fluid path among an assortment of potential ones. Ex. 9 demonstrates an application of the same three melodic figures as in Ex. 8, but it outlines a disjunct series of downbeats that would not be planned in advance (shown on the middle staff). The figured bass is provided without a skeletal upper voice, thereby allowing the 4:1 soprano to span a wider melodic range.

Example 9 consists of two systems of staves. Each system has three staves: a soprano line, a middle staff with a disjunct series of downbeats, and a figured bass line. The staves are labeled with various melodic figures and figured bass notation, including 5 6, 6, 4, 6, 5, and #.

Example 9: Melodic figures spanning a wider range and liberated from a predetermined contrapuntal framework.

Improvisations will remain sterile if they invariably place consonance on every downbeat, so students must learn to displace these pillars through suspensions and accented passing tones. The

challenge of improvising suspensions is that their preparations must be anticipated without disrupting the surrounding melodic context. After combing models from the literature for typical upper-voice suspensions in two voices (i.e. 4-3 primarily over $\frac{5}{3}$ and $\frac{7}{4}$, 7-6 over $\frac{6}{4}$ and $\frac{5}{3}$, and 5-4 over dominant $\frac{4}{3}$), students examine a familiar figured bass for its suspension possibilities and construct a “suspension lead sheet” (Ex. 10a). As they improvise, they play each preparatory pitch exactly as notated and proceed downward from it (Ex. 10b), learning to anticipate where on the keyboard they need to be, and when, in order to prepare a suspension correctly. Finally, they tie the same preparatory pitches into suspensions (Ex. 10c), improvising freely elsewhere.

Example 10: Suspension lead sheet (a), preparatory activity (b), and improvisation incorporating suspensions (c).

Eventually, I wean improvisers from the suspension lead sheet by teaching them to see the multiple suspensions latent in a figured bass alone (e.g. trying to prepare the seventh above an upcoming bass note figured with $\frac{6}{4}$, or the fourth above one figured with $\frac{5}{3}$). Example 11 shows a figured bass, two suspension lead sheets (which eventually would be imagined without notation), and a sample improvisation based upon each.

Example 11: Two suspension lead sheets over the same bass, and corresponding sample improvisations.

I spend less time on accented passing tones because, unlike suspensions, their overuse poses more of a threat to harmonic clarity than their underuse does to style. I first teach some relevant idioms (Ex. 12).

Example 12: Idioms incorporating accented passing tones.

If student improvisations are technically correct, but stale due to lack of dissonance, I provide an entirely consonant piece and ask them to work out a “souped-up” version by incorporating as much accented passing motion as possible, especially in descent. Of course, there are many possibilities, some far more successful than others; students learn to discriminate tastefully between accented passing tones that add interest and ones that obscure the harmony too much. The original (a) and a sample solution (b) appear in Ex. 13.



Example 13: Exercise in “souping up” a consonant framework (a) with accented passing motion (b).

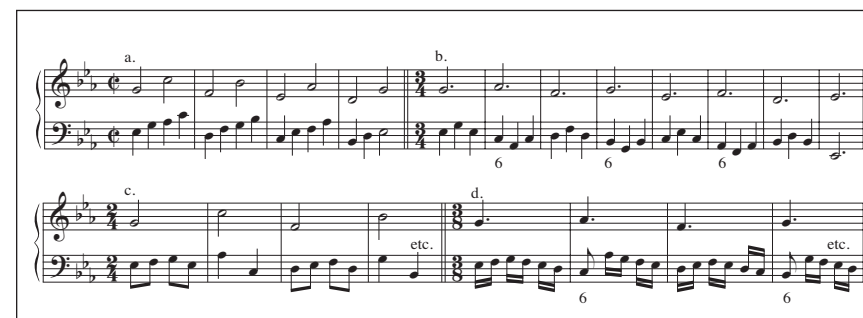
To this point, I have neglected the bass voice in order to demonstrate diminution techniques that are accessible to single-line instrumentalists, vocalists, and non-specialist keyboard players who lack hand independence.¹⁷ Beginners need careful guidance with bass diminutions due to the greater effect of changes to the bass voice (e.g. chordal fifths causing $\frac{5}{4}$ chords). The circle-of-descending-fifths sequence is a convenient testing ground. Example 14 illustrates three combinations of repeated notes and octave leaps intended simply to activate the left hand independently. Even this preparatory exercise generates bass figurations that are ubiquitous in Baroque music.



Example 14: Preliminary etudes targeting bass diminutions.

¹⁷For those on single-line instruments or voice, the focus now shifts to the bass voice alone while the upper voice is played by another student, the instructor, or a recording.

To move beyond purely rhythmic embellishments, students learn to incorporate a particularly chosen secondary bass note, which is always a third away from the primary one (or a sixth in the opposite direction). The root and third exchange (as in $\frac{3}{2}$, $\frac{7}{4}$, $\frac{5}{3}$ and $\frac{6}{5}$ figures), the chordal fifth uses the third as a secondary note (as in $\frac{4}{3}$ figures), and the seventh uses the fifth (as in $\frac{2}{7}$). In simpler terms, the secondary bass note is a third above the primary one for root-position harmonies, and a third below for virtually all others. Example 15 shows an introductory activity that begins with just the primary and secondary pitches (a), then adds more complex alternations (b), and finally features passing motion between the two (c and d). Students learn to conceive of the bass voice in terms of relevant intervallic regions, a third in size, within which elaborations may be added at no cost to harmonic clarity.



Example 15: Activity incorporating secondary bass notes.

Weaker keyboardists may stop here, but capable students can learn to link bass and soprano through what I call *sympathetic embellishments*. They comb the same sequential progressions for opportunities to add voice exchanges, parallel tenths, and parallel sixths between outer voices. The challenge is to determine where sympathetic embellishments can create a more sophisticated texture; Ex. 16 demonstrates several possibilities.



Example 16: Activity incorporating secondary bass notes and sympathetic upper-voice embellishments.

Finally, I introduce bass suspensions to students who are already in command of upper-voice suspensions and simple bass diminutions. Stepwise bass descents into $\hat{6}$ and $\hat{5}$ figures (especially over $\hat{7}$ and $\hat{3}$) are the primary opportunities, so students mark these with ties. Example 17 shows an annotated figured bass (a), a simple two-voice realization incorporating bass suspensions (b), and a more elaborate one based upon it (c). Realizations such as these can be worked out in advance to varying degrees; students need not invent something this complex on the spot in order to reap the benefits of generating it at an instrument.



Example 17: Exercise on bass suspensions: an annotated figured bass (a), a simple realization (b), and a more florid version (c).

By the end of this second module, students can convert figured basses and contrapuntal frameworks into idiomatic two-voice counterpoint with an active bass. As a capstone project, they work

in pairs to incorporate ear training into improvisational learning. After working individually on the same short progression, the two students come together, on two keyboards, and improvise a set of 10-12 variations over it. Student A improvises one variation; Student B repeats what Student A has just played and then improvises on the third time through; Student A repeats that and improvises on the fifth loop; etc. I forbid them from writing anything down, so they must learn each other's ideas aurally, which often takes several iterations. The paired practice serves a dual function: it encourages students to share their ideas and thereby develop larger vocabularies, and it teaches them to be responsive and creative in real time as opposed to rehearsing their own ideas repeatedly.

PART 3: PRACTICE STRATEGIES AND CLASSROOM TECHNIQUES

To supplement the exercises presented elsewhere in the article, this section offers individual practice strategies as well as classroom techniques designed specifically for teaching improvisation in a group setting. All of the classroom techniques are applicable in either a keyboard lab or a standard classroom; in the latter, students perform vocally or on their own primary instruments.

Practice Time. I encourage students to divide each practice session in half, working out of time in the first half to discover and internalize patterns. (For a beginner, a "discovery" might be as simple as the interval between two chord tones, and the diminution options afforded by that distance.¹⁸) In the second half, they practice in time, with a metronome, to recall and apply the internalized patterns; I suggest looping each figured bass continuously during this time. Novice improvisers are prone to stopping and treading carefully, since they do not trust their instincts or have not developed any instincts to begin with. The equal division of practice time develops both vocabulary, which is assembled out of time, and fluency, which is practiced in time.

Transposition and Variation. While it is beneficial to play in

¹⁸ There is value in asking students to discover these patterns on their own, but many of them lack either the time or the stylistic awareness needed to do so successfully. I often supplement their discovery with either a handout or a recording of sample realizations, much like the examples in this article, which students transpose, vary, and play in other meters.

various keys and meters, the acts of transposition and variation themselves are also tremendous aids to memorization and fluency.¹⁹ It is possible to learn a pattern in one key as specific pitches, but the abstraction required to transpose forces students to think schematically. I often provide a figured bass and a written-out improvisation in one key, but require students to prepare each in other keys and other meters, and to improvise variations beyond the given samples.²⁰

Usage of the Voice. For those improvising on any non-wind instrument, the voice can play an important role in the acquisition of improvisational skill. Early on, I ask students to sing one voice of a contrapuntal framework while simultaneously embellishing that same voice on an instrument (Ex. 18); the activity reinforces the presence of the framework even when it is not actually sounding. In addition, the tendency of non-vocalists to preserve a linear framework that is *easy to sing* actually helps them to prioritize stepwise motion beneath the surface of a phrase.

Example 18: Sing-and-play activity.

A more advanced activity involves improvising over a figured bass and immediately singing the upper voice that was just played. This develops a potentially elusive skill: knowing that they will

¹⁹ The importance of these two processes is discussed in virtually every improvisation treatise of the seventeenth and eighteenth centuries, as well as explicated in Aaron L. Berkowitz, *The Improvising Mind: Cognition and Creativity in the Musical Moment* (New York: Oxford University Press, 2010); see, in particular, pp. 39-55.

²⁰ Transposition is more beneficial by fourth or fifth than by step, since the former forces the music to be regarded functionally rather than merely "sighted" a line or space higher or lower than notated.

need to recall what they improvise, students reckon in real time with the bigger picture of what their line does, rather than working in an entirely moment-to-moment manner.

Usage of Notation. An outer-voice "lead sheet" provides a sketch of the large picture of a phrase so that students can develop advance planning and audiation even while they target more local skills such as suspensions and motivic diminutions. However, I discourage students from notating their improvisational brainstorm notes for note. This is a tricky matter. On any assignment, I am quite satisfied if they develop realizations at the keyboard, transpose and vary them, rehearse them, and reproduce them for me. While not entirely spontaneous, this shares many of the benefits of improvisation because all of the learning takes place at and with the instrument; it is different from writing out a realization, memorizing it from the score as a concert piece, and reciting it to me in class. The distinction is crucial for our weaker students, who may struggle with real-time improvisation, but can still develop pattern acquisition and fluency if we encourage them to compose (or "improvise out of time") at the keyboard, rather than exclusively with the pencil.

Classroom Techniques for Group Learning. I have taught improvisation both in a keyboard lab (where each student's keyboard can play either into headphones or through speakers) and in a classroom with a single piano. In order to demonstrate classroom techniques that work in both settings, I will discuss motive as a sample topic, which is introduced as students begin to master the techniques in Part 2. The most important element of an improvisation class is the preservation of a steady pulse; it prevents the inefficiency of stopping as well as insists upon fluency and rhythmic playing. Basses played on continuous loop work well for presenting new material and for keeping everyone engaged even if they are not constantly improvising.

Format #1: Echoing (Pattern Acquisition). All students play the bass line continuously throughout the activity.²¹ I project each contrapuntal

²¹ This assumes a keyboard lab environment; in a classroom, I divide the group in half, with one half responsible for playing or singing the bass line and the other half for participating in the improvisational activity. The class is trained to switch roles instantaneously upon hearing the word "switch," which occurs every four to six times through the ground bass. This way, the bass voice is covered even without a room full of keyboards, and student concentration does not lapse from being relegated to bass-line duty for too long.

framework (Ex. 19a) using PowerPoint; with a presentation remote, I can play along rather than pointing to a handout or erasing and rewriting on the board. I play an upper-voice realization while all students play the bass line; they immediately echo it during the next iteration. Each realization applies a motivically consistent diminution pattern to the projected framework, so students learn to decipher the motive in order to reduce the amount of music to be memorized serially. Example 19 shows a series of five consecutive echo patterns (b through f); realizations d through f require an awareness of consonances beyond those in the framework in order to situate the upward and downward leaps correctly. As students gain confidence, I call on one person (or, for example, the back row) to echo the pattern, and then on the entire class during the third iteration, thereby monitoring student progress more precisely. A yet more advanced variant involves asking one or two strong students to lead the activity; they either prepare the echo patterns in advance or create them on the spot.

Example 19: Classroom activity involving echoed patterns.

Format #2: Call-and-Response (Interactive Improvisation). Students must learn to see a figured bass as a web of overlapping motivic potentials. I provide an instruction—"Using this figured bass, explore as many motivic possibilities as you can that feature the melodic interval of a third"—which asks them to see the progression

through a third-colored lens. The task is certainly possible in individual practice sessions, but the classroom environment permits a more dynamic and collaborative learning process.

After the instructor or one student improvises over the first measure or two of the bass, a different student immediately takes over and improvises a motivically consistent continuation. Meanwhile, the entire class plays the bass line and attends carefully to what is played, since the next student is identified just a few seconds in advance. (Following the spatial order of student seating works poorly, as students learn to zone out except immediately before they play.) Constraints such as the one above serve to focus the activity.

The aural demands are more complex in call-and-response than in echoing, since students must identify the pattern that is played, map it onto their instruments, and plan how to adapt it to the *different* contrapuntal context of the upcoming passage. In the initial stages, a student begins the improvisation and I play the more difficult role of continuing with their motives; as we progress, the onus is shifted onto them to lead their own activity, with only occasional interjections from me.²² A thirty-second sample appears in Ex. 20 beneath the contrapuntal framework that would appear on the screen; asterisks and changes in stem direction indicate where a new student takes over.

²² Call-and-response often morphs into echoing, especially when a student produces a motivic realization that I want the whole class to learn. The opposite is also true when students are keen enough to pick up on a motive that I play for echoing, and begin to play along before I even reach the repeat sign.

Example 20: Classroom activity involving interactive improvisation.

Many more classroom activities are possible, of course, but class time is best dedicated to activities that make use of the large group to learn collaboratively, rather than simply dividing the available time into individual coachings with each student. These coachings are often too short to be productive, and the other students can easily become disengaged from the learning process (particularly *after* their coaching).

PART 4: THREE-VOICE FRAMEWORKS, COMPOUND MELODY, AND MOTIVIC IMITATION

Adding a second upper voice enables single-line instrumentalists to improvise compound melody—a technique essential to them in particular—and it also equips keyboardists to play in a more sophisticated texture.²³ Two clearly defined upper voices prevent

compound-melodic improvisations from merely arpeggiating in the blind; Exx. 21b and 21c show two invertible options for two voices above the bass given in Ex. 21a. To ensure that students learn these as combinations of three *voices*, rather than as stacks of chords, I ask them to play just the bass and soprano (or, if not on keyboard, just one of the two) while singing the alto. On keyboard, they picture a “thumb voice” and a “pinky voice,” separating the two visually and kinesthetically; even some non-keyboard instruments afford this experience (e.g. as an A-string voice and a D-string voice on violin, or as different partials on a brass instrument).

Preliminary exercises build dexterity, first separating the two voices through rhythmic alternation in several meters and permutations (as in Ex. 21d, based upon Ex. 21b), and then adding neighbors to one voice at a time (Ex. 21e, based upon Ex. 21c). Lead sheets (Exx. 21b and 21c) permit students to sense—conceptually, aurally, and instrumentally—the presence of both voices even when only one is sounding. I introduce the metaphor of a juggler trying to keep several objects in the air at once, attending to all in roughly equal amounts without needing to touch more than one at a time. A compound-melodic improvisation is successful insofar as it “re-throws” each voice consistently throughout the phrase.

²³Since students spend far more time on four-voice part writing than on three-voice counterpoint, it will probably be necessary to provide simple criteria for constructing a good three-voice framework: “After creating the soprano-bass counterpoint, aim in the alto voice for complete triads (or maximally complete seventh chords, omitting the fifth) in balance with maintaining a smooth and singable line.” Importantly, the middle voice of three is freer to leap than the soprano is, particularly to preserve complete sonorities or to keep both upper voices playable by one hand.

Musical score for "The Rose Tree" in G major, 3/4 time. The score is for a four-part setting (Soprano, Alto, Tenor, Bass) and includes a piano accompaniment. The key signature has one sharp (F#), and the time signature is 3/4. The score is divided into two systems. The first system includes measures 1-4, and the second system includes measures 5-8. The piano part is marked with 'p' for piano. The vocal parts are marked with 'h.' for Soprano, 'i.' for Alto, 't.' for Tenor, and 'b.' for Bass. The score includes various musical notations such as notes, rests, and dynamic markings.

Example 21: Graded exercises in compound-melodic improvisation beginning with a figured bass (a) and two three-voice frameworks (b/c).

Stepwise motion between voices balances the inherently frequent leaps. I teach students to observe not only the actual melodic intervals within each voice (e.g. B-A in soprano, D-D in alto), but also the potential melodic intervals across changes of harmony (e.g. the rising fourth between the alto D4 in m. 2 and the soprano G4 in m. 3). This orientation permits more conjunct improvisations such as that in Ex. 21f. The next step is to alternate between voices less predictably and with more motivic consistency. Imagine improvising something like Ex. 21g while looking at the lead sheet in Ex. 21b: the trick is to leap mainly to and from the pitches of the framework, and to alternate between a segment of the upper voice and a segment of the middle voice. The lead sheet reminds students of where they are headed.

Finally, building on exercises discussed in Part 2, students incorporate implied suspensions into a compound-melodic upper voice. Example 21h provides a suspension lead sheet as before, but now in three voices; students initially play only this scaffolding while singing the longed-for resolutions, and then fill in the rhythmic space without sacrificing the preparation. To produce a texture like the one in Ex. 21i, the procedure is simple: (1) get to one of the preparations in Ex. 21h; (2) immediately leap away from it to a consonant pitch *in the other voice*; (3) return to the suspended voice, either to the resolution right away or to the suspension first. Implied suspensions are subtle, but not difficult to produce if students practice the algorithm of *preparation in voice A—leap to consonance in voice B—resolution in voice A*.

The three-voice techniques that follow are the first ones to be exclusive to the keyboard, but they need not be exclusive to expert pianists; on the contrary, three-voice improvisation is an accessible next step after compound melody. Both techniques employ the same three-voice contrapuntal frameworks, and the familiar mindset of “juggling” two upper voices—preserving both but creating activity in just one at a time—now describes two upper voices that complement each other rhythmically. One voice simply sustains (rather than drops out) while the other is florid. I demonstrate by playing two versions of a phrase for students, saying first that one will be “in two voices” and the other “in three voices” (Ex. 22).



Example 22: Demonstration of the connection between implied and actual three-voice textures.

Two guidelines help to preserve the clarity of a three-voice texture: (1) the same or similar motivic shape should appear in alternation between the two voices, and (2) the two voices may be florid simultaneously *only* when they move in parallel thirds or sixths. Intricate-sounding imitation between upper voices is actually easier to improvise than a haphazard assortment of motivic shapes. Students begin with a notated framework (Ex. 23a) and one or two simple motives (Ex. 23b or Ex. 23d); Wiedeburg's three melodic figures, discussed earlier, also serve well. With some preparation, and some scouring of the progression for possibilities, improvisers follow the two guidelines above to produce realizations such as those in Exx. 23c and 23e.

Example 23: Exercise in improvising two motivically related upper voices above a figured bass.

As students develop comfort with two upper voices, I once again begin to advocate for the contrapuntal equality of the bass voice. While the idea of sympathetic embellishment, introduced in Part 2, is not new, the higher workload of three moving voices necessitates careful practice. As with two-voice textures, the most powerful tools are the secondary bass note, parallel tenths (and sometimes sixths), and voice exchange. I provide a fully notated texture of two florid upper voices over an unelaborated figured bass (Ex. 24a); students enrich the texture by activating the bass voice by means of octave leaps, passing tones, and the strategies listed above. The result (Ex. 24b) is relatively simple to produce, but far more sophisticated than the original.

Example 24: Exercise in elaborating the bass of a three-voice texture through sympathetic embellishment.

Simple models from the repertoire can also teach idiomatic three-voice textures, but only if students do more than play them in their original form. I require the improvisers to vary each model and to extract techniques from it to apply to other progressions.²⁴ Handel's sets of Chaconne variations in G major, HWV 435 and 442, are both accessible and rich. Variation 12 of the latter (Ex. 25) features almost constant parallel tenths between alto and bass and incorporates a single motive into all three voices.²⁵

²⁴ The reader may wonder why repertoire enters the conversation so late. I actually do introduce some two-voice models from the literature earlier on, but have omitted them here for brevity in favor of the more didactic exercises. However, as William Porter argues, there is a considerable advantage to delaying students' engagement with repertoire models until after they have some improvisational skill. It takes some improvisational competence to examine pieces in an improvisationally relevant manner (as opposed to just memorizing excerpts serially). See Porter, "Reconstructing 17th-Century North German Improvisational Practice: Notes on the Praeambulum with a Report on Pedagogy Used in December 1995," *GOArt Research Reports* 2, ed. Sverker Jullander (Göteborg: Göteborg Organ Art Center, 2000), pp. 35-6.

²⁵ This variation set is a treasure trove of excellent and accessible models for a wide variety of improvisational techniques. See, for example, Variation 43 for a study in two-voice texture and in the use of voice exchange to expand harmonies; Variations 16 and 17 for a demonstration of the role of melodic figures in the creation of a perpetual-motion texture; and Variation 5 for a transparently stratified three-voice texture. Other variations on the same progression by F. Couperin, Purcell, Buxtehude, and J. S. Bach (i.e. the first eight measures of each of the Goldberg Variations) are fertile as well.

Example 25: Handel, Chaconne in G major, HWV 442, variation 12.

Students play the variation as written and then reduce it to counterpoint that can serve as the basis for other embellishments (Ex. 26a); due to the spiral nature of the curriculum, they are already familiar with this eight-measure progression. Next, they transpose their reductions, and then Handel's exact surface, to other keys. Eventually, they apply a slightly different diminution strategy to the counterpoint (Ex. 26b) and they "play the Handel in $\frac{3}{4}$ and in $\frac{6}{8}$ " (Exx. 26c and 26d). The goal of this repertoire modeling is twofold—to master new techniques, and to develop stylistic awareness through engagement with musical literature.

Example 26: The same Handel variation in reduction (a), with different surface figuration (b), in $\frac{3}{4}$ time (c), and in $\frac{6}{8}$ time (d).

PART 5: MORE ADVANCED TECHNIQUES

To advance past the techniques discussed so far, students must untether themselves from provided figured basses. This section merely sketches an approach to minuet improvisation that is accessible to the top tier of students who can master the nuts-and-bolts curriculum explained in Parts 1 through 4. The objective is to move beyond varying a contrapuntal framework and actually determine it in accordance with the tonal trajectory of a typical minuet. The simple first reprise in Ex. 27 provides a way to make this hierarchical relationship—the subservience of contrapuntal idioms to the tonal demands of the piece’s form—salient to students. They play the reprise and describe what it does, tonally: prolong G minor, reach a half cadence, introduce a modulation to the relative major, and secure a perfect authentic cadence there.



Example 27: First reprise of a sample minuet in G minor.

How else might we reach this same series of tonal waypoints in the same amount of time? I challenge students to assemble, in 1:1 counterpoint, other progressions that would accomplish each of the same four tasks. I encourage them to emulate the motivic sophistication of repertoire models by crafting the second phrase in a way that relates to, or rhymes with, the first one—a challenging task because one phrase modulates while the other prolongs an opening tonic. Example 28 presents two other options underneath a reduction of the original. The first option features a rhyming perfect fourth in the bass (m. 2 and m. 6); the second exceeds the climactic D5 of the first phrase with the E♭5 in m. 7; and the third reharmonizes the B♭4-C5-A4 of mm. 1-2 with a modulatory F♯ in m. 5, followed by an augmented transposition of the bass D3-C3-B♭2 from m. 2. In turn, each of these worked-out paths can be varied by means of the techniques discussed in Parts 1 through 4.

Example 28: Three contrapuntal frameworks accomplishing the same tonal tasks.

To improvise the rest of the piece, students categorize the contrapuntal idioms that they know into the tonal tasks relevant to the form of a minuet: prolongations, half and authentic cadences, modulation techniques (primarily to III in minor and to V in major), and common digression strategies such as dominant pedals and sequences. Each of these categories contains several specific options for each tonal marker in the formal blueprint; the latter shows the location of cadences, modulations, and sequences. Figure 1 provides a specific plan for a 24-measure minuet.²⁶

²⁶ The number of measures is prescribed here not only because symmetrical phrase lengths are normative in minuets, but also because alterations are best learned after the more typical structures are mastered. A similar activity appears, with just an opening contrapuntal framework and subsequent key areas, in Steven G. Laitz, *Skills and Musicianship Workbook to Accompany The Complete Musician*, third ed. (New York: Oxford, 2012), pp. 324-5. I indicate more than just the key areas in Figure 1 because the additional detail (e.g. types of sequences, precise locations of modulations, cadence types) makes it easier for students to assemble sensible phrases; it also demonstrates how accessible an entire binary-form piece is to someone who has mastered a few of each basic type of contrapuntal progression.

Figure 1: Tonal blueprint for an entire minuet.

At first, I insist that students improvise 1:1 counterpoint without diminution, ignoring the latter so that they can learn to choose progressions that are appropriate to each task. Example 29 presents a sample improvisation within this constraint, which realizes the blueprint in Figure 1.

Example 29: Realization of the blueprint in Fig. 1 in 1:1 counterpoint.

Beyond this improvised framework, it takes only the diminution techniques already mastered in order to create a convincing piece. For greater sophistication, students can rehearse each section of the minuet with different options each time: a *monte* (i.e. ascending-seconds sequence with applied dominants) after the first repeat sign instead of a *fonte* (i.e. descending-seconds sequence with applied dominants), or a cadence in the supertonic in m. 16 rather than one in the submediant, etc.²⁷

²⁷I explore minuet improvisation in more depth, as well as other techniques relevant to longer-range keyboard improvisation, in another publication (2012).

CONCLUSION

This article presents a curriculum for teaching Baroque counterpoint through improvisation, beginning with the simplest two-voice textures and progressing through more complex techniques in three voices. While the pedagogical sequence works best on keyboard, everything from Part 1 through the first half of Part 4 is possible on any instrument including voice. Moreover, most of it demands no more technical facility than a diligent non-pianist could develop, so it is suitable as the keyboard component of any course in counterpoint, written music theory, or aural skills.

What is the payoff of redesigning a curriculum to feature improvisational learning? Paradoxically, my students learned to improvise counterpoint more easily than they learned to write it; the quicker method is also the more sophisticated one. The improvisations were creative, not just correct; the improvisers invested themselves in the learning process as something musical and even fun, rather than dismissing it as intellectual “theory homework.” I believe that two crucial factors underlay the profound difference in learning between the two courses that I mentioned at the outset: multimodal musicianship and fluency.

In spite of our exhortations, many students struggle through their written assignments in the hallway during the fifteen minutes before class, dissociating the activity from music-making and relegating both the process and the value of their work to the status of an abstract exercise—no more musical than a set of math problems or a Sudoku puzzle. Even the students who do sing or play their work before turning it in are often surprised, and not pleasantly, by the fruits of their intellectual forced labor. Improvisation leaves students no choice but to fuse their aural and instrumental intuitions with their knowledge of how music works, thereby strengthening both.

The second factor is fluency, which can be neither taught nor assessed in written form. An instructor can identify a written assignment as technically correct or not, and as idiomatic or not, but cannot tell whether it was written in just five or ten minutes by a student in command of the style, or ploddingly extricated from a cloud of cerebral sawdust. The first student has, of course, learned more and learned better than the second, even if his or her work has a few more errors. When counterpoint takes too long to write, it is sometimes because students neglect to follow their

aural instincts or because these instincts are not in sync with the style that they are trying to emulate. Other times, students focus on what to avoid (e.g. a doubled leading tone, parallel octaves); they are slowed by the inefficiency of generating countless bad options before stumbling upon one that does not violate a rule. Improvisation teaches only good options, empowering the student to produce something stylistic right away. In other cases, students know what the options are, but they generate them from scratch each time; they have learned the system and its principles, but no useful instances. (One thinks of the student who rediscovers each time, after locating the chordal seventh, that $V\frac{4}{2}$ resolves to I^6 .) Improvisational pedagogy eliminates the need to choose between teaching accuracy—itself a formidable task in a language foreign to most students—and building fluency.

For at least two reasons, I would not replace all written work with improvisation. First, there are many contrapuntal topics (e.g. fugue, invertible counterpoint, chorale prelude) that are worth teaching even though they far exceed what the majority of my students can learn to improvise in a semester. Secondly, a counterpoint classroom is a great place to teach revision, refinement, nuance, taste, critical evaluation, and so on—important principles that require engagement with counterpoint outside the boundaries of real time. The point is not to avoid manuscript paper altogether, but rather to use it only when it is the most effective teaching tool.

The goal of a counterpoint class is not to train the next generation of Baroque-style composers or improvisers, but the benefits of even basic improvisational skill are real. As soon as the improviser possesses enough skill to imagine generating something idiomatic in real time, a more secure bond forms between that musician and any music—not just improvisations—that he or she hears, studies, or plays. (The latter connection is familiar to any pianist who, in the midst of a momentary memory slip, is able to continue playing convincingly until he or she recovers.) The vocabulary lists and grammar rules that are admittedly easier to teach are not substantial enough to have this kind of impact; students must acquire more than reading knowledge and indeed learn to carry on a fluent conversation, however simple. So, while I probably will not teach counterpoint completely without manuscript paper, I will never again teach it without improvisation.

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The Use of Caplin/Schoenberg Thematic Prototypes in Melodic Dictations

BY MICHAEL ORAVITZ

INTRODUCTION: MELODIC INTRA-PHRASE COMPONENTS IN CAPLIN/SCHOENBERG THEMATIC PROTOTYPES

The use of repertoire for melodic dictations as a complement to author-composed melodies is clearly desirable, but also poses challenges. Author-composed melodies can be designed to engage specific topics in a pedagogically organized manner, such as use of a specific interval, harmonic outline, a cadential scheme or a rhythmic event. When using repertoire for melodic dictation, such focus on a given musical parameter is no less significant. One set of parameters that is highly useful is the collection of certain intra-phrase melodic, harmonic, and cadential conventions found within William Caplin's thematic phrase-pair models for the period and sentence.¹ This article proposes strategies for assembling melodic-dictation activities that underscore these conventions. Acquisition of these conventions fosters an ability to transcribe period- and sentence-based melodies by allowing one to think in terms of broader two-measure modules of what Caplin deems "basic" and "contrasting" ideas as opposed to more localized, note-to-note perceptions. In the case of the sentence, specific melodic-sequential models are also in play.²

An understanding of these components facilitates increased confidence in transcription and instills knowledge of thematic style conventions in Classical-era music as well as the music of other eras and genres. Gary Potter³ stresses the importance of

¹ William Caplin, *Classical Form* (New York: Oxford University Press, 1998), 9–13.

² For further insights on melodic linear motion and ear training, see Robert Gauldin, "Some Strategies for Beginning Melodic Dictation," *GAMUT* (Journal of the Georgia Association of Music Theorists) 4–5 (1987–88): 5–12. Also see Donald Watts, *Toward an Understanding of the Pedagogical Value of Hierarchical Structure in Tonal Pitch Dictation*, Ph.D. thesis. University of Maryland, College Park, 1998.

³ Gary Potter, "Identifying Successful Dictation Strategies," *Journal of Music Theory Pedagogy* 4 (Spring 1990): 68–69.

pattern recognition in conjunction with knowledge of “melodic conventions of Western music” for success in melodic dictation; Caplin’s models engage certain of those melodic conventions.

Caplin’s text *Classical Form* has clarified and enriched seminal ideas on thematic structure presented by Arnold Schoenberg in *Fundamentals of Musical Composition*⁴ and by Schoenberg’s student Erwin Ratz in *Einführung in die musikalische Formenlehre*.⁵ Caplin’s models are infused with a number of recurrent melodically driven intra-phrase components. A notable refinement by Caplin of Schoenberg’s lexicon is Caplin’s concepts of the “basic idea” and “contrasting idea” to describe these intra-phrase components. As Caplin’s broader constructs of period and sentence structure are well known, only a brief summary will be provided below. I refer readers to his book *Classical Forms* for further insights.

The limited thematic function of period and sentence structures

Period and sentence phrase groups⁶ often function as thematic presentations in music of the Classical era.⁷ Clearly, not all melodies or opening themes are periods or sentences. Melodies, whether functioning thematically or otherwise, come in a wealth of shapes and styles. Yet, the period and sentence models reach both backward and forward in time, occurring often in Baroque

⁴ Arnold Schoenberg, *Fundamentals of Musical Composition* (London: Faber and Faber, 1967).

⁵ Erwin Ratz, *Einführung in die musikalische Formenlehre*, 3^d ed. (Vienna: Universal: 1973).

⁶ I refer to any logical pairing or grouping (usually no more than three total) of phrases into a broader whole as a “phrase group.” Thus, “phrase group” in this article is a general construct representing such types as “period phrase groups,” “sentence phrase groups,” or others. Typically, these are phrase pairs. This is in slight opposition to existing lexicons, whereby the term “phrase group” is reserved for a pair or group of phrases that link together due to similar gestures or motives but do not end on a cadence (as in Douglass Green’s *Form in Tonal Music*, 2nd ed., p. 54; or Miguel Roig-Francoli’s *Harmony in Context*, 2nd ed., p. 283).

⁷ Within *Classical Form*, Caplin presents the period and sentence among his broader discussion of “tight-knit themes”, which are phrase structures that are specifically designed to function in a thematic capacity.

works and prevailing to this day in many popular compositions. Because of the prevalence of the period and sentence constructs in a number of styles, their study as material for dictation reinforces an organizational melodic construct that transcends the stylistic confines of the Classical era.

Although this article focuses upon strategies for the use of periods and sentences in melodic dictations, a well-balanced curriculum will certainly feature melodies of various organizational constructs. For example, aural skills sources and curricula often feature folk melodies, which may or may not demonstrate periodic or sentential traits. Though outside of the scope of this article, it is worth noting that Caplin’s insights on formal-process-driven melodic traits is not limited to periods and sentences. Drawing upon those process-driven approaches to form, curricula could also feature the study of melodies varying in formal function and character, such as transitional passages (possibly featuring modulation), sequential passages (possibly in the spirit of emulating a developmental area) or codetta-like passages with marked tonic-prolongational traits, to name a few.⁸ As a starting point, this article engages the manner in which the aural-skills study of standard thematic functions of period and sentence can be beneficial. As the article is grounded in Caplin’s methodology, it—like Caplin—limits its repertoire under discussion to that of the Classical era, while acknowledging that principles put forth can apply to other eras and styles that use periods and sentences in the specific manner defined by Caplin.

Within period structures, both types of Caplin’s two-bar components, the basic and contrasting idea, occur as basic-idea/contrasting-idea pairs in both the antecedent and consequent phrases (see Example 1a). Contrastingly, in sentence structures, two consecutive basic ideas comprise the initial four-bar “presentation” phrase of the sentence (see Example 1b). The sentence’s presentation phrase, Caplin argues, generally lacks any cadential function, and is thus distinct from the period’s antecedent phrase in that regard. The presentation phrase is followed by the “continuation” phrase, which ultimately features a drive to a cadence. Thus, unlike the period, the sentence possesses no local “contrasting idea” within either of its four-bar phrases, and has only a single cadence at

⁸ Caplin’s use of prolongational constructs to support his observations is generally framed within flanking harmonic functions rather than linear/contrapuntal models. See, for example, his discussion of prolongational progressions within *Classical Form*, pp. 25–26.

its end rather than a pair of cadences; additionally, a sentence's cadence may or may not be authentic. The sentence's single cadence (prototypically at its eighth bar) is often either a perfect authentic or a half cadence.

Caplin employs the terms "basic idea" and "contrasting idea" as early as 1987.⁹ He defines the basic idea as "[a]n initiating function [generally] consisting of a two-measure idea that usually contains several melodic or rhythmic motives constituting the primary material of the theme".¹⁰ It is a crucial "opening" phrase unit of music that is arguably more than a mere motive, yet not quite a phrase. Its consistency among a vast number of Classical-era themes¹¹ legitimizes it as a conventional component of the style.

Caplin defines the contrasting idea as "a concluding function [generally] consisting of a two-measure unit that follows and contrasts (i.e., is not a repetition of) a basic idea".¹² It is characterized by its possession of a cadence formula, and—again—generally features a two-bar length in the majority of its occurrences.

⁹ William Caplin, "The 'Expanded Cadential Progression': A Category for the Analysis of Classical Form," *Journal of Musicological Research* 7 (1987): 215–57.

¹⁰ Caplin, *Classical Form*, 253.

¹¹ These two-bar components are found in tonal music of several eras, but are more standard in the Classical era.

¹² Caplin, 254.

1a: Period Design: Beethoven, Bagatelle, Op. 33, no. 6 (mm. 1 – 8):

Antecedent phrase

basic idea ----- | contrasting idea-- IAC |

Allegretto quasi andante.

Con una certa espressione parlante.



Consequent phrase

basic idea ----- | contrasting idea---- PAC ||



1b: Sentence Design: Mozart, Violin Sonata in A, K. 402, i (mm. 1 – 8)

Presentation phrase

basic idea 1 ----- basic idea 2 --- (no cadence)

Andante, ma un poco adagio



I ----- V -----

Continuation phrase (melodic motion to a cadential formula; PAC) ||



I (V⁷/IV) IV^{6/4} - I vi ii⁶ V⁷ I

Example 1: Two-bar components within the period and sentence phrase pairs

Both of these components—the basic idea and contrasting idea—constitute significant units of phrase infused with syntactic, motivic, harmonic and linear conventions that may be effectively internalized by the student in a melodic-dictation/melody-study context. A percentage of an instructor's dictation exercises may be framed around Caplin's more specific period and sentence models in order to

- a) create intimacy with the inner workings of motivic/thematic structures and phrase design to reinforce students' knowledge of Classical or Classical-derived thematic design, and
- b) provide a certain element of conventional predictability that can, in turn, offer structural guideposts as more complex elements (such as chromatic inflections, more challenging leaps and rhythmic diminutions) are featured in quasi-parallel or transpositionally sequential statements.

Potter, as mentioned, stresses the strategic benefits that come with familiarity of the conventions of Western music, while also acknowledging the importance of offering students "something to hang pitches on".¹³ Caplin's models are ideal for addressing these concerns.

A need for further Caplin-based aural-skills modules

Joel Phillips, Jane Piper Clendinning and Elizabeth West Marvin—authors of *The Musician's Guide to Aural Skills* (hereafter as "MGAS")—address sentence and period constructs in certain chapters devoted to phrasing, harmony, melody and cadence structures albeit without a direct engagement of Caplin's basic-idea and contrasting-idea prototypes.¹⁴ Deborah Rifkin and Diane Urista¹⁵ have illustrated the benefits of framing real-time composition activity aural-skills "games" around Caplin's two-bar components,

¹³Potter, 63.

¹⁴Joel Phillips, Jane Piper Clendinning and Elizabeth West Marvin, *The Musician's Guide to Aural Skills*, Volume One (New York: W. W. Norton & Co, 2005), 467–75.

¹⁵Deborah Rifkin and Diane Urista, "Developing Aural Skills: It's Not Just A Game," *Journal of Music Theory Pedagogy* 20 (2006): 71–72.

specifically in the sentence structure. MGAS, however, generally defines sentence structure as an internal "xy structure"¹⁶ (typically comprising four rather than eight bars) capable of assembling into a four-bar prototypical phrase, while acknowledging the potential for that same structure to form a prototypical eight-bar phrase pair. In both the MGAS text and Rifkin/Urista article, the use of such models in aural-skills dictation activities is beneficial to the discipline. As period and sentence phrase pairs are omnipresent in repertoire (though most commonly grounded in the Classical era), a variety of excellent aural-skills texts will feature them among their melodies from literature. They are readily found throughout Ottman/Rogers,¹⁷ Berkowitz,¹⁸ Karpinski¹⁹, and Krueger,²⁰ to name a few. All of these texts have extremely well-planned pedagogies

¹⁶See, for example, MGAS's description of the internal phrase structure of the tune "When the Saints go Marching In" on p. 470. Although the authors note, on p. 468, that sentences "may be independent (e.g., opening of Beethoven's Piano Sonata, Op. 2, No. 1) or part of a period structure," their general use of the sentence is as a smaller 1+1+2-measure design comprising a phrase rather than that of a 2+2 phrase followed by a four-bar phrase, which is the structure favored by Schoenberg and Caplin and the one used throughout this article.

Steven Laitz (*The Complete Musician*, 3rd ed. [New York: Oxford University Press, 2012], 312), makes a clear distinction between these two notions of sentence by referring to the smaller 1+1+2 structure as a miniature sentence which has the potential to "nest" inside a larger sentence or be a component of a period. Caplin, in such cases where a "miniature sentence" is used to build a period, would consider the 1+1 portion to be the "basic idea" and the ensuing two-measure portion as the contrasting idea. See, for example, Caplin's discussion of his Example 4.6 (Caplin, 51–52) on such miniature sentential structures within the antecedent and consequent phrases of the opening theme to Mozart's Piano Sonata in A, K. 331.

¹⁷Robert Ottman, Nancy Rogers, *Music for Sight Singing*, 8th ed. (Upper Saddle River, NJ: Prentice Hall, 2011).

¹⁸Sol Berkowitz *et al.*, *A New Approach to Sight Singing*, 5th ed. (New York, NY: W.W. Norton & Co, 2011).

¹⁹Gary Karpinski, *Manual for Ear Training and Sight Singing* (New York, NY: W.W. Norton & Co, 2007). Gary Karpinski, Richard Kram, *Anthology for Sight Singing* (New York, NY: W.W. Norton & Co, 2007).

²⁰Carol Krueger, *Progressive Sight Singing*, 2nd ed. (New York, NY: Oxford University Press, 2011).

that move from simple to more complex issues of harmony, melody and rhythm, yet they do not possess a specific module or chapter for engaging longer phrase-related issues or Caplin's two-bar components. Phillips *et al.*'s MGAS is somewhat of an exception, in that it features a brief discussion of sentence structure (but, again, free of any mention of the "basic idea" phrase unit) along with a number of excellent modules devoted to phrase types, phrase expansions, specific conventions of modulatory phrase groups, etc.

PERIOD-STRUCTURE MELODIES

The opening phrase group to Beethoven's Bagatelle, Op. 33, no. 6, shown in Example 1a, is ideal as an introduction to the period; it is non-modulating and is diatonic, with a limited number of small leaps and a moderate *allegretto* tempo. As an initial dictation, it could be played slightly under tempo and ornaments could be set aside. Even if only a transcription of the melody is desired, it is preferable to play the actual passage (all voices) as opposed to an isolated hearing of the melody, given the various cues offered by the harmony and bass.

Shown above the score are its two-bar "basic idea" and "contrasting idea" phrase components. These categories can significantly boost the student's ability to internalize information by offering detailed style- and structure-sensitive "handles" regarding the melodic and harmonic content of such an eight-measure passage. As seen, the two-bar components provide more informational depth than a traditional description of a "parallel period," because they provide students a musical unit between the poles of "motive" and "phrase." Specifically, it is a certain type of "subphrase" that possesses a paradigmatic framework within a thematic phrase pair.

This opening theme, like a majority of periods, possesses four prototypical traits of the non-modulating period:

1. A basic idea within a "parallel" period²¹ will generally occur in mm. 1–2 and be duplicated (in either a literal or highly similar "structural" and non-transposed repeat) in mm. 5–6.
2. The antecedent phrase ends with a weak cadence²² of some kind, and its contrasting idea—comprising mm. 3–4—thus possesses a melody whose caesura will end on a pitch to accommodate that cadence (something other than $\hat{1}$).
3. The consequent phrase ends with a perfect authentic cadence in most instances. Thus, its contrasting idea—comprising mm. 7–8—will possess a melody that will usually end on the tonic pitch, often approached with stepwise motion.
4. The beginnings of each contrasting idea will generally share a high degree of similarity (often featuring the same starting pitch and rhythm). However, each contrasting idea will veer in its own melodic direction in order to accommodate its particular cadence formula.

The majority of introductory examples of period structures given by both Schoenberg²³ and Caplin²⁴ possess these four standard

²¹ Caplin (1998, p. 265 n.1) notes that "Schoenberg and his followers restrict the concept of period to what is frequently called the "parallel period" (i.e., where the beginning of the consequent is the same as the beginning of the antecedent), and [in Caplin's own work] this tradition is continued here." He goes on to note that "[t]he so-called contrasting period is better understood as a *hybrid theme* [i.e., a hybrid of periodic and sentential structures]."

²² Here, following Caplin's practice (1998, p. 12 et al.), I use the general term "weak cadence" to refer to any cadence that does not bring about full melodic and tonal closure on the tonic; that is, any cadence except the PAC. No metric or rhythmic sense of "weak" (as in "weak-beat") is implied in using this term. Also note that Caplin (1998, p. 43) does not consider the so-called "deceptive" cadence or the "plagal" cadence to be legitimate terminative cadences.

²³ Schoenberg, *Fundamentals of Music Composition*.

²⁴ Caplin, *Classical Form*.

qualities, as do the majority of periods in the Classical repertoire. Modulating periods also possess these traits, but with a new local tonic arrival for their PACs.

The instructor, using the knowledge of melodic construction in two-bar modules, could proceed in a number of ways in order to foster various approaches to listening. The dictation could be a single line played at the keyboard. Or, preferably, the actual excerpt itself could serve as the sound source, whereby students would be required to supply both the soprano and bass melodies (or a simplified bass comprising a single pitch per harmony) together along with a harmonic analysis. Whether one begins with a rhythmic sketch of one or both lines, with an immediate call-response singing to lodge the melody into the memory or with a direct transcription, all of the four prototypical traits listed above can come into play by properly placing fixed stylistic expectations in the transcription and allowing students to steer their focus on information not yet internalized.

When periods are first introduced in the curriculum, the four traits listed above could be fixed in dictations until students gain a general confidence in hearing them. The use of carefully selected melodies from the repertoire that feature a fixed similarity between basic ideas, such as the Beethoven in Example 1a, are ideal. This melody's clear metric accents on its structural pitches ($\hat{3}$ - $\hat{4}$ motion in the basic idea in mm. 1-2 and the reciprocal $\hat{4}$ - $\hat{3}$ motion in the contrasting idea in mm. 3-4) are also helpful. Supplying a template of sorts that visually aligns the antecedent and consequent phrases can be useful in underscoring these conventions, as is shown in Examples 2a and 2b.

2a: Period-structure transcription template (blank)

Antecedent phrase:

(mm. 1-2) transcribe basic idea

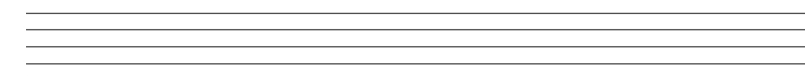
(mm. 3-4) transcribe contrasting idea,
end on a scale-degree fitting for an IAC or HC



Consequent phrase:

(mm. 5-6) recopy mm. 1-2 here;
make adjustments if necessary

(mm. 7-8) notate the first pitch of m. 3 in m. 7;
end on $\hat{1}$



2b: Student sketch using period-structure transcription template

Antecedent phrase:

(mm 1-2) transcribe basic idea

(mm. 3-4) transcribe contrasting idea,
end on a scale-degree fitting for an IAC or HC
8va--



Consequent phrase:

(mm. 5-6) recopy mm. 1-2 here;
7; make adjustments if necessary
8va----- etc.

(mm. 7-8) notate the first pitch of m. 3 in m.
end on $\hat{1}$



Example 2: Period-structure transcription templates

Here, the student has perhaps had a single hearing, and—as shown in 2b—has transcribed the basic idea, has heard and recognized the cadential type in m. 4, has sketched the recurrence of the basic idea in mm. 5-6, and has blocked in the scalar descent to the tonic arrival in m. 8. The instructor may need to address the issue

of octave transposition of the consequent phrase in this particular dictation exercise to override the student's learned behavior of sketching in mm. 5–6 in the usual self-same register, or simply cue students to make use of the octava sign prior to transcription as is done in the above template. In the final measure, the potential student has lost track of the downbeat and has notated the PAC's cadence formula a quarter note late. Other students may have had issues with the anacrusis. Given an anacrusis, students new to this type of dictation may need to be reminded that the initial note of the repeated basic idea will appear as the last note in the top staff (given the two four-bar staff arrangement shown). Nonetheless, given a single hearing, this is a very good start on the transcription. Through a single follow-up call-response or recall singing among the peers in the classroom and/or a second hearing, one can easily imagine the completion of a successful transcription.

During an introductory module, one could also draw on suggestions given by Rifkin and Urista²⁵ by having students compose, perform (sing), and improvise period structure phrase groups given the fixed parameters listed above. An instructor could offer framework pitches that bring about suggested cadence types, while allowing the student to fashion his or her own basic and contrasting ideas around those frameworks. A follow-up module could feature slight variations to the prototype—most often through the use of minimal diminutions of the basic idea in mm. 5–6. The maintenance of these parameters for period structures, which can gradually loosen over time in order to mirror actual compositional practice, provides an environment whereby the first-semester student can now begin to dictate longer melodies (specifically, melodies eight bars in length) with a degree of confidence. In addition to instilling confidence, the following benefits also accrue:

- a) Students hone their knowledge of an important stylistic component of musical form, and are engaged in transcribing a dictated melodic span of music that is arguably less abstract and more stylistically and compositionally sound (and thus potentially more engaging) than a more abstract author- or instructor-composed melody.
- b) Students are able to think about longer-reaching linear-pitch organization and its interactive role with harmony and cadential structures (for example, the structural $\hat{3}\text{--}\hat{4}$ and $\hat{4}\text{--}\hat{3}$ in the Beethoven Bagatelle excerpt).
- c) Finally, students are able to apply their own musical creativity in the context of both brief written compositions of periods or improvisations of the same.

The *raison d'être* of this approach is not simply to provide an easy dictation. Rather, it is to infuse knowledge of stylistically sound phrase components that allows the student to move in broader cognitive strokes, thus cultivating that sense of ease. For example, the student can—when needed—relax his or her focus upon a predictable span of music (such as mm. 5–6) in order to focus more acutely on other areas. In this case, focus could be placed upon the proper rhythmic placement and increased melodic activity of the cadence formulas, the contour/melody of the contrasting ideas, and—if also transcribing the bass—the slight variation/delay of the bass's D in m. 5 as compared to m. 1.

Once simpler period structures such as the Beethoven above are mastered, more ornate melodies, possibly with more involved harmonic rhythms and diminution-based variations, could follow. For example, the opening to Mozart's B $\flat$ "*Jagd-Quartett*", K. 458 (Example 3), possesses more activity among its eight measures of melody and bass than the Bagatelle. Additionally, its basic idea in the consequent phrase features minimal diminutions in m. 5 in comparison to m. 1.

²⁵ Rifkin and Urista, "Developing Aural Skills."

Allegro vivace assai.

Example 3 shows the opening period-structure theme in Bb, K. 458. The tempo is *Allegro vivace assai*. The score is in 6/8 time. The first system (measures 1-4) is marked *(f)* and the second system (measures 5-8) is marked *p*. The harmony is indicated by Roman numerals below the bass staff: I, I⁶ I V I⁶ ii (ii⁶) V I⁶ I V, I, I⁶ I V I⁶ ii (ii⁶) V I.

Example 3: Opening period-structure theme to Mozart's String Quartet in Bb, K. 458 ("Jagd-Quartett")

With an involved passage such as this, a reduction stage of this dictation exercise may become more of a necessity. Depending upon class time and preferred pedagogical format, the instructor could either ask the students to listen and create a reduction of their own, or could provide—via dictation—a reduction upon which students could “hang (their) pitches on,” to use Gary Potter’s advice. A possible reduction is shown in Example 4.

Example 4 shows the melodically-reduced dictation materials for the opening theme (mm. 1-8) to Mozart's String Quartet in Bb, K. 458. The tempo is *Allegro vivace assai*. The score is in 6/8 time. The first system (measures 1-4) is labeled "Antecedent phrase" and the second system (measures 5-8) is labeled "Consequent phrase". The melody is in the first staff, and the bass is in the third staff. The harmony is indicated by Roman numerals below the bass staff: I, I⁶ I V I⁶ ii (ii⁶) V I⁶ I V, I, I⁶ I V I⁶ ii (ii⁶) V I.

Example 4: Melodically-reduced dictation materials (melody and bass) for the opening theme (mm. 1-8) to Mozart's String Quartet in Bb, K. 458

The reduced melody²⁶ is scored with grand staves for each parallel four-bar phrase in order to align basic-idea activities.²⁷ As can be seen, even the reduced versions possess much information, melodically and harmonically, when compared to the Bagatelle. In the K. 428, several harmonies are prolonged through chordal inversion in the context of a more active bass line.

Given the challenging tempo, the perfect-fourth descending leap from C to G that approaches the cadence formulas in mm. 3 and 7 (not featured in the reduction), and the interesting weak-beat arrival of the half-cadence in m. 4, knowledge of the two-bar components' expectations is helpful. The expectation that mm. 5–6 will repeat can cue students away from note-to-note listening and onto the fact that the latter basic idea is simply a diminution-laden repeat of the former. In conceiving of mm. 3–4 and 7–8 as contrasting ideas, the student can compare the cadence formulas and—in this case—

²⁶ The sense of “contrast” in this melody’s contrasting idea, especially in this reduced version, is admittedly less apparent than in the earlier Beethoven example, but the variant harmonization and rhythmic figuration offer contrast nonetheless.

²⁷ The anacrusis at the end of m. 4, of course, is the initiating point of the melodic consequent phrase. Nonetheless, a 1–4 and 5–8 measure arrangement in order to accommodate the metric framework of each phrase is beneficial during the transcription process.

come to the realization that—like the openings of the respective contrasting ideas themselves—their closing cadence formulas are also quite similar. Both arrive on a downbeat tonic (in mm. 4 and 8) but with the former then moving to V on the weak beat (to create a half cadence) and the latter simply arpeggiating in the soprano (up to $\hat{3}$ and back down to $\hat{1}$) to prolong that tonic arrival that forms the perfect authentic cadence.

Again, depending upon curriculum pacing and available classroom time, one could approach this excerpt in a number of ways. Strong students could model techniques to internalize melody for weaker students by using a call-response or “recollection form of singing.” Perhaps a complete dictation of the actual melody only above the reduced bass would suffice. Or perhaps a fleshing out of a partially notated score (with selected “guiding” pitches) could be used. Whatever choices are made, the knowledge of the intra-phrase two-bar components’ tendencies can bring this potentially over-involved dictation activity within the realm of possibility.

SENTENCE-STRUCTURE MELODIES

Sentence structures differ from periods in both design and affect. Like the period, a sentence’s prototypical length (as construed by Caplin and Ratz)²⁸ is eight measures (see Example 1b); however, the assembly of its inner components differs greatly. Its initial phrase, the “presentation” phrase,²⁹ comprises two contiguous statements of two-bar basic ideas as opposed to a basic followed by a contrasting idea as found in the period. This repetition results in a build up of energy that negates the potential for a cadence at the fourth measure, in favor of moving directly to a second “continuation phrase”³⁰ featuring momentum towards (and arrival of) a cadence. Caplin notes that “the strongly ongoing quality of the presentation [phrase] generates demand for a *continuation phrase*, one that will directly follow, and draw consequences from the presentation.” Given the complexities of the continuation, the sentence, in most instances, will present a more advanced melodic

dictation task than the period, with notable exceptions, of course.

Due to the presentation phrase’s direct repetition of the basic idea—often by melodic sequential step or untransposed restatement—the task of internalizing the presentation phrase is simplified. Strategies for transcribing the two basic ideas are given based on linear models of tonic prolongation that are often seen in presentation phrases. This is followed by some strategies for engaging the more involved continuation phrase.

“Exact repetition,” “sequential,” and tonic-dominant-tonic “statement-response” models of presentation phrases

Similar to Schoenberg,³¹ I first discuss the presentation phrase and then the continuation phrase. The sentence has only two predictable two-bar phrase components, both of which occur in its initial presentation phrase: the basic idea and its immediate repetition (“b.i. x 2”). The continuation phrase of the sentence (generally comprising its fifth to eighth bars) is comparatively more open-ended in its melodic construct than its periodic counterpart (the consequent phrase), yet it possesses its set of conventions and generally features motivic content from the presentation phrase.

The presentation phrase has specific structural obligations that can greatly aid the student to deftly internalize its melodic (and harmonic) construct. These obligations lie in the nature of the immediate repetition of the basic idea.³² Caplin cites three options for this repetition: exact repetition, statement-response repetition and sequential repetition. My discussion begins with the “exact”³³ repetition and sequential options, but focuses primarily upon the

²⁸ See Caplin, *Classical Form*, 35 and 263, n. 2. Also, for an excellent, concise review on the history of the uses and meanings of the term “sentence” in Europe and North America, see 263, n. 1.

²⁹ Caplin, 10.

³⁰ Ibid.

³¹ Schoenberg, *Fundamentals of Musical Composition*, 20–24 and 58–81.

In his pedagogy of sentence structure, Schoenberg divides his discussion of sentence structures into two parts, “beginning the sentence” and “completing the sentence.” Schoenberg himself does not use the specific labels of “presentation phrase” and “continuation phrase” (this is a refinement of taxonomy by Caplin), but his divided presentation on how to begin and end sentences strongly parallels Caplin’s presentation/continuation model.

³² Caplin, *Classical Forms*, 37–39.

³³ Here, Caplin intends some flexibility in the term “exact” repetition. An exact repetition will be structurally identical (with a highly recognizable maintenance of melody, harmony and phrase structure), but may feature slight diminutions or ornaments in that repetition.

statement-response repetition model, as this last option is by far the most prevalent in presentation phrases.

Exercises featuring an exact or nearly exact repetition of the first basic idea provide an ideal introduction to presentation-phrase transcription. They allow for one to internalize those two basic ideas without engaging the (usually diatonic) transposition that is found between each statement among the more common statement-response construct. Two exact-repetition presentation phrases, both openings to movements within Mozart's Piano Sonata, K. 330, are shown in Example 5.

5a: Mozart, Piano Sonata in C major, K. 330, i; mm. 1–4

basic idea 1 ----- basic idea 2 -----

Allegro moderato.

5b: Mozart, Piano Sonata in C major, K. 330, iii, mm. 1–4

basic idea 1 ----- basic idea 2 -----

Allegretto.

Example 5: Exact-repetition basic ideas in a presentation phrase

Two primary traits of exact-repetition schemes—both in place in these examples—are the presence of a single, prolonged tonic harmony (or brief, implicit I-V motion within each statement) and nominal diminutions in the basic idea's second statement. Specifically, Example 5a's basic idea 2 adds an offbeat rearticulation of the opening $\hat{5}$, G, in m. 3, and Example 5b's basic idea 2 removes the over-the-bar rearticulation of $\hat{2}$ in m. 4, D, in favor of a direct leap to $\hat{4}$, F, which allows for a slight augmentation of the $\hat{4}\text{-}\hat{3}\text{-}\hat{2}$ (F–E–D) descent in m. 4. Upon initial hearing, the students could

identify this as an exact-repetition phrase, and then hone in on either the presence or absence of those expected traits. These particular examples' exact repetitions and primary stepwise melodies also provide a simpler backdrop to offset the challenges of differentiating the diminutions or variations in the second statement, transcribing the thirty-second note motions, and appropriately indicating the use of trill ornamentations.

Regarding Caplin's "sequential" category, one should note his specific conditions for it. A presentation phrase is only a full-fledged "sequential repetition" when "both the melody and its harmonic support are transposed by the same interval."³⁴ However, Caplin notes that "sequential repetition and statement-response repetition can easily be mistaken for each other if only the melodic line is considered [because] ... the melody of a response [in statement-response pairs] is usually transposed stepwise."

An accessible example offered by Caplin³⁵ of a sequential presentation phrase is the opening eight measures to Mozart's Andante from the String Quartet in G, K. 590 (movement ii, in C), Example 6. These measures comprise the first half of a larger sixteen-measure period³⁶ and thus move to a half cadence. The slight challenges due to the passage's use of applied functions, its charming harmonic rhythm (with chord changes delayed over the bar in mm. 2 and 4 of the presentation phrase and tonic resolutions falling on the last eighth note in mm. 5–6 of the continuation phrase), and the somewhat unique use of an ascending-fifth progression in its opening phrase make for a late first-year exercise in most curricula. Those challenges are offset by the passage's moderate tempo, narrow melodic range, homophonic texture and fairly regular, anacrusis-free phrase structure.

³⁴ Caplin, 39.

³⁵ Ibid., 264, n. 24.

³⁶ See Caplin, 64–68. Caplin avoids the more conventional term "double period," opting instead for "sixteen-measure period," in order to avoid an implication that the thematic model in question possesses two periods comprising four consecutive statements of basic and contrasting idea pairs. Four consecutive b.i.–c.i. statements is a rather rare thematic construct. He notes that most "double periods" comprise two sentences rather than two periods, the first ending with a half cadence and the second with a perfect authentic cadence.

Presentation phrase:
basic idea #1 ----- basic idea #2 -----

Andante

I (I⁶) V ii (ii⁶) V/ii

Continuation phrase:

5) HC

ii V⁷ I (· / ·) ii V⁷/V ----- V

Example 6: Mozart String Quartet in G, K. 590, ii, mm 1–8

Given the slight challenge posed by the over-the-bar harmonic stasis in the presentation phrase, an ideal first task is for students to transcribe the rhythmic articulations. This could be done by either conducting and immediately “tah”-ing the rhythm back to lodge it in the student’s aural memory, or the student could scribe long and short dashes in real time during the first hearing. Given the clear and expected sequential repetition of the basic idea, most students would be able to transcribe the rhythm with a single hearing.

Regarding harmony and counterpoint (outer-voice transcription with Roman numerals), an instructor could decide prior to the exercise whether students would be “informed” of this presentation

phrase’s harmonically sequential design (as opposed to the more common “statement-response” model), or whether it might be more interesting to “discover” that trait during the exercise. The melody’s mildly challenging leaps are offset by the clear ascent of root-position arpeggios in the bass. A final step to locking in the harmonic function would be a transcription of the second violin part in order to discover the presence of the C# responsible for the tonicization of the supertonic in m. 4. Again, given the expectation of sequential repetition, this task is simplified. The following basic questions can be posed with regard to any sequential restatement (be it in a sentence or otherwise):

- 1) Was the second b.i. (in mm. 3–4) higher or lower (higher)?
- 2) What are the pitches of the second violin (alto) line in the first b.i. (C to B)?
- 3) Let’s duplicate this up a step for a sketch of the second b.i.; is this second violin line a “real” or “tonal” transposition (real, D to C#)?

Strategies for transcription of continuation phrases are discussed in more detail below, and this example’s continuation is not engaged in that discussion. Briefly, this passage’s continuation features its own miniature sentential structure³⁷ (a 1+1+2 “a-a-b” construct) that, if recognized, greatly eases the transcription task and offsets the slight challenge of the aforementioned weak-beat resolution to tonic in mm. 5 and 6, along with the tonicization of V and the use of a weak-beat half cadence in m. 8.

A more involved example of sequential repetition³⁸ discussed by Caplin is the opening to Beethoven’s Op. 14, no. 2 Sonata in G, which also features both a broad tonic-supertonic progression by step and a stepwise ascending melodic sequence within its presentation phrase (Example 7). Here, in Example 7, a number of interesting challenges are:

³⁷ See Laitz’s discussion of miniature (1+1+2) sentences in footnote 16.

³⁸ Interestingly, this passage (Example 7) is arguably not a “true” sequence, in that the bass tone G remains in place as a pedal tone in the second basic idea’s statement (forming a suspended 7th and a ii⁴), but it meets Caplin’s conditions of featuring both a harmonic and melodic (soprano-line) transposition (in this case, up an interval of a second).

- a) the perceptual meter as opposed to the notated music (one tends to hear the left-hand chord entrances in conjunction with the agogic arrivals in the right hand as emphasized beats in mm. 1 and 3, either one eighth-note later or earlier than notated),
- b) the expressive diminished-fourth descending leaps in the basic ideas,
- c) the wide and impractical vocal range of the entire sentence, which would require strategic octave displacement for any call-response singing, most likely with a reduction of the minor tenth ascending leap (A4 to C6) to that of a minor third in the anacrusis to the continuation phrase, and
- d) the implicit compound melody in the soprano line's final cadence formula (C4 resolving down to B3 and F#4 up to G4).

Beethoven, Piano Sonata in G, Op. 14/2, i, I-8

Example 7: William Caplin's "Example 3.4,"³⁹ featuring sequential repetition of basic ideas

³⁹ Ibid., 36.

Taking this theme's complexities into consideration, an instructor may wish to introduce it as a dictation activity at the sophomore level, and present it with guided discussion in lecture/drill as opposed to an evaluated test activity. As a first step to this activity—rather than setting up this example with a visual staff, starting pitch, key signature and time signature, or by "counting out" the proper beats and tempo—an instructor could promote the self-discovery of its metric ambiguities by having students first listen to the passage and arrive at a potential meter and a potential location for a downbeat. Two plausible student notations of the rhythms of the presentation phrase might look something like Example 8. The former option is arguably more strongly perceived than the latter, but both share in a general conversion of the opening basic idea's agogic stresses from off-the-beat to on-the-beat phenomena in mm. 1-4.

(2/4?): right hand:	- - - - - - - - - - - - - - - - - - - - ??
left hand:	- - - - - - - - - - ??
(2/4?): right hand:	- - - - - - - - - - - - - - - - - - - ??
left hand:	- - - - - - - - - - ??

Example 8: Plausible perceptual rhythmic sketches of Op. 14. no. 2, i, mm. 1-4:

Ultimately, the realization that there is a new perceptual downbeat (one that, incidentally, aligns with the notated downbeat) beginning in m. 5—brought about by the agogic stress on A5—would bring about a reevaluation as to how one could rhythmically notate the entire passage. Of interest is the fact that the downbeat of the continuation phrase is the first place where both notated and perceptual downbeats align. This could be pointed out to students to show how Beethoven offsets the presentation and continuation phrases with this metric resolution. Sorting out the rhythmic/metric issues in this dictation can be a helpful first step before proceeding to pitch transcription.

Another challenge—in addition to the diminished-fourth chromatic lower-neighbor embellishments—is the fact that tonic-dominant statement-response repetitions usually feature the stepwise melodic sequences in this passage. Thus, a student may initially hold the expectation that limited tonic and dominant harmonies associated with the statement-response model are in

place (as opposed to the actual tonic-supertonic progression). One possible avenue for clarifying the harmonic function in mm. 1-4—and overriding that expectation—is to play the left hand alone, have students sing it back, and come to a (momentary and incorrect) realization that they are hearing a tonic followed by a pedal-bass $IV_4^{\flat}$ (*sic!*) harmony. The instructor could then proceed to the soprano melody's transcription.

Drawing upon the knowledge that there is a stepwise ascending melodic sequence between the two basic ideas, the instructor—through student listening, call-response singing, and Socratic questioning—could guide a discussion that leads to the realization that each one-measure motive comprises a structurally descending root-position triad. The first basic idea comprises two tonic triads and the next basic idea two supertonic triads (thus, the earlier perception of $IV_4^{\flat}$ is now revised to that of $ii_4^{\flat}$). With that structure in place, the task of hearing the chromatic diminished-fourth descending leaps is rendered manageable: each structural triad member is embellished with incomplete lower neighbors at the sixteenth-note level that resolve up by half step.

The great majority of presentation phrases, however, take on the “statement-response” model, and it is this particular model's tonic-dominant interaction that typically germinates the predictable stepwise melodic-sequence relationship between its two basic ideas.

Caplin notes that the statement-response form of the presentation phrase, in one form or another, comprises a tonic prolongation.⁴⁰ Among the presentation phrase, one finds two general harmonic “options” for the span of this prolongation. Given a phrase with tonic initiation, the local return to tonic generally occurs either within the presentation phrase's m. 4 or at the onset of the continuation phrase in m. 5—as in K. 402 (Example 1b). To be sure, the span of a tonic prolongation may vary from those two models (see, for example, Caplin's analysis in Example 7), and harmonies other than tonic and dominant may be in play among the presentation phrase; but the tonic-dominant-tonic model is by far the most common.

Caplin notes “a variety of harmonic patterns can create tonic and dominant versions of an idea”.⁴¹ Statement-response models generally take on one of the following harmonic formats, which I summarize here as Options 1 and 2.

- Option 1) Basic idea #1 (“statement”) is tonic; basic idea #2 (“response”) is dominant (I in mm. 1–2; V in mm. 3–4). Within this format, there may also be an interpolated V within 1-2 (forming a I-V-I motion) and an interpolated I within mm. 3–4 (V-I-V).
- Option 2) Basic idea #1 (“statement”) features a I-V progression in mm. 1–2; basic idea #2 (“response”) features a V-I progression in mm. 3–4. Caplin notes the occasional use of a predominant (such as ii, IV or V/V) in place of the first sounding dominant, thus creating a T-S-D-T (tonic, sub- or pre-dominant, dominant, tonic) as opposed to the T-D-D-T progression.

The Mozart K. 402 (Example 1b) is a clear example of Option 1 (a broad I-V motion over four bars). The melodic-sequence relationship between its two basic ideas is not exact, as the common tone between I and V, $\hat{5}$, remains fixed while its melodic framework comprises an ascending step (from $\hat{1}$ to $\hat{2}$). An example of Option 2 (featuring the I-V V-I progression over four bars) is seen in the horn melody's opening presentation phrase shown in Example 9 (Horn in E $\flat$). It also features a melodic sequential relationship between its basic ideas. Again, in this example, it is mostly by ascending step.⁴²

In this instance, as in a number of presentations phrases' tonic prolongations (such as Example 1b), a conventional *Anstieg* to $\hat{3}$ (or on its way to $\hat{3}$ in an “Option 1” type) is a basis for the presentation phrase, with $\hat{2}$ providing the linear connection between $\hat{1}$ and $\hat{3}$. The commonality of the melodic sequencing in presentation phrases is due to the potential to map out structural stepwise motion by moving left to right given either Option 1 or Option 2, as is shown in Example 10. The stasis of $\hat{5}$ is exemplified in Examples 1b and 9, is reflected in Example 10.

⁴² Ibid. Caplin notes that “[M]ost statement-response repetitions involve transpositions to a different scale degree in order to accommodate the change in harmonization ... [and that] the transposition is usually stepwise, except when the melody in both versions circles about the fifth scale degree, a tone common to I and V.”

⁴⁰ Ibid, 10, 39–40.

⁴¹ Ibid.

Presentation phrase:
b.i. #1 ----- / b.i. #2 ----- /

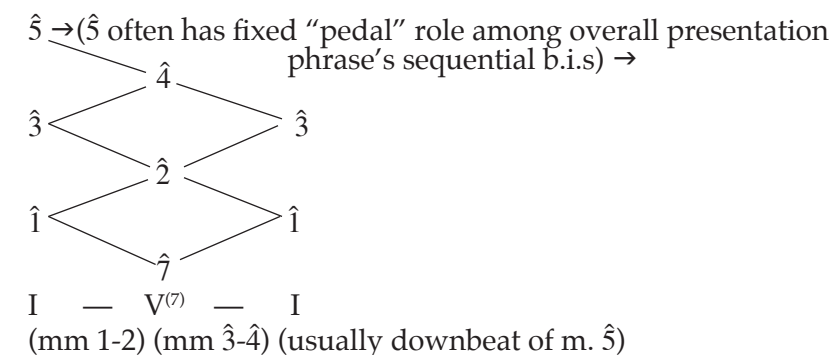
Allegro
p

Continuation phrase:

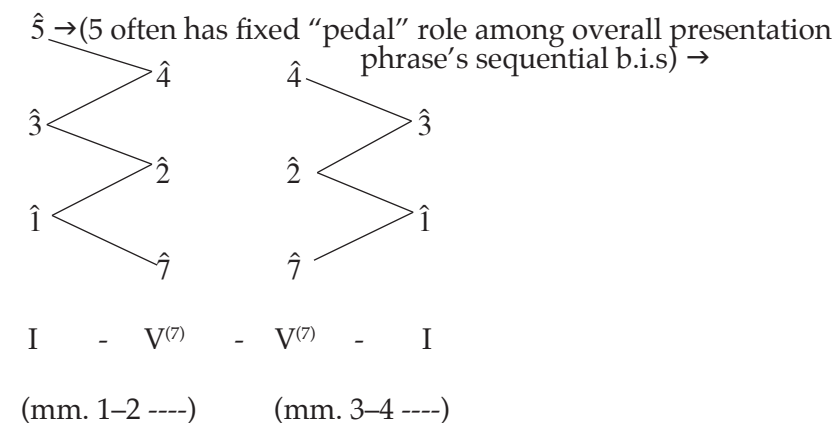
Example 9: Mozart Concerto for Horn, K. 447, iii, mm. 1–8, presentation phrase (reduced score; horn in E $\flat$)

When tracing an “Option 1” model, which generally features a tonic arrival at or near the downbeat of m. 5, there will be a single structural pitch per two-measure harmony. We note that Example 1b’s opening melody comprises a broader move from $\hat{1}$ to $\hat{2}$, approached with $\hat{5}$ to initiate each basic idea over the course of mm. 1–4. In such instances, as discussed above regarding “sequential” restatements, the instructor can ask “was the second basic idea higher or lower than the first?” Generally, the ability to answer that simple question also results in the ability to successfully frame out the melodic content of mm. 3–4 once mm. 1–2 have been properly internalized and notated.

Option 1:



Option 2:



Example 10: Potential melodic-structure paths for tonic-dominant based presentation phrases:

Option 2 melodies generally possess a pair of structural pitches for each basic idea, with one pitch usually devoted to each harmony. For example, the opening horn melody in the presentation phrase shown in Example 9 can clearly be characterized as a pair of melodic ascents ($\hat{1}$ – $\hat{2}$ in mm. 1–2 and $\hat{2}$ – $\hat{3}$ in mm. 1–4) that frame an *Anstieg* in a melodic sequence by ascending diatonic step.

Below is an encapsulation of how a dictation activity framed around the opening presentation phrase of the sentence to Example

9 might proceed. The second sentence, not shown, completes the broader sixteen-measure period of this movement's opening theme. Challenges in this span of music (mm. 1–4) are the brisk tempo, the descending leap occurring between the two basic-idea statements and the use of chromatic passing motion in the melody among each basic idea. This presentation phrase is ideal as an introductory exercise in stepwise chromaticism within melodic dictations. It is possible that a significant pool of students new to this task would overlook the chromatic passing tones in their first hearing, and notate mm. 1–2's melody contour in purely diatonic fashion in the manner shown in Example 11. Such an error could be rectified and a successful notation of the first four measures could be realized by engaging certain facets of sentence structure.



Example 11: Incorrect notation of K. 447's opening melody

Given that the relationship between first and second basic ideas is often sequential and stepwise, students could quickly ascertain whether the sequential step in mm. 3–4 was higher or lower (here, it is higher). Additionally, given that the starting pitch is $\hat{5}$, students would be aware of $\hat{5}$'s potential fixity among basic-idea pairs. Here, in Example 11, the student has correctly done so in order to notate the descending leap to B $\flat$, even though its approaching G and the resultant interval of a major sixth is incorrect. A next step would be to sketch the second basic idea based on what has been transcribed thus far. Given the incorrect "diatonic" dictation of the first basic idea, the result might be as is shown in Example 12.



Example 12: Erroneous sketch of K. 447's presentation phrase

Different possible pedagogical avenues to fixing this transcription follow. Perhaps the simplest tack is to have the students sing the last note of the phrase ($\hat{3}$) and compare it with tonic ($\hat{1}$); they will instantly hear that they are a step off.

Two other approaches, though perhaps more indirect, can foster a productive in-class discussion on melodic and harmonic structure. First, the incorrect transcription could be visually shared with the entire class, played by the instructor,⁴³ and then sung on the syllable system of the instructor's choice. The incorrect performance could then be compared with a correct orchestral-reduction keyboard performance by instructor or a recording. Here, the highest note of each basic idea in the actual score—F and G respectively—could stand in aural contrast to the incorrectly sung transcription whose high pitches are G and A $\flat$. Realizing that they've gone "too far" in their melodic ascents, students could then reevaluate their transcription and listen more critically for the chromatic passing tone that provides the medium for a major-second three-note ascent in each basic idea.

Alternately or additionally, harmonic progression could be addressed to remedy the incorrect transcription. In its incorrect state, the "diatonic" presentation phrase strongly implies single-harmony basic ideas—tonic in mm. 1–2 followed by dominant in 3–4. Yet, the actual music possesses a I–V motion for the first basic idea and a reciprocal V–I motion in the next, all clearly delineated in the bass with root-position harmonies. The disconnect between that progression and the incorrect transcription could prompt student inquiry and reevaluation, leading them to a realization of the $\hat{1}-\hat{2} / \hat{2}-\hat{3}$ melodic framework. Or, in other words, it is based on the "option 2" rather than "option 1" model shown in Example 10.

Another apt early-stage presentation-phrase example is the opening sentence theme to Beethoven's Op. 2, no. 3 Piano Sonata, shown in Example 13. Though free of chromaticism in its soprano line, its increased melodic activity and increased leaps provide contrasting challenges to the Mozart in Example 9.

⁴³ It is usually necessary to actually play back the incorrect transcription at least once for the students rather than have them attempt to sing it, since they would otherwise generally gravitate towards the "correct" sounds they have heard and sing them back rather than accurately singing their incorrect transcription.

Example 13: Opening presentation phrase (mm. 1–4) of Beethoven's Sonata in C, Op. 2, no. 3

Here, the melodic structure comprises a pair of melodic descents ($\hat{3}\text{--}\hat{2}$ in mm. 1–2 and $\hat{4}\text{--}\hat{3}$ in mm. 3–4) in a sequence by ascending diatonic step, thus prolonging $\hat{3}$ with a structural “turn” or “double neighbor” figure as opposed to framing an *Anstieg*. Also helpful is the fact that these structural pitches are clearly reinforced with metric accent. The second basic idea's melody is, once again, essentially a diatonic transposition of the first, supported now with a dominant seventh that intensifies the V triad of the initial basic idea. The only difference lies in the melody's arpeggiated prolongations in mm. 2 and 4, where the dominant harmony of m. 2 leaps up a perfect fourth from $\hat{2}$ to $\hat{5}$ (from chordal fifth to root) and the tonic harmony of m. 4 leaps up a sixth from $\hat{3}$ to $\hat{1}$ (from chordal third to root).

Some strategies for internalizing sentences' continuation phrases

The path of melodic events in the sentence's second phrase, the “continuation phrase,” is arguably less codifiable than the presentation phrase. Caplin⁴⁴ notes that this process of continuation is made apparent by any one or more of the following traits: fragmentation of the basic idea into smaller motivic utterances, acceleration of harmonic rhythm, an increase in surface rhythmic activity, and/or harmonic sequence. To this list one could add the tendency for continuation phrases to feature a miniature sentential structure, as in the K. 590 Example 6 and many others.⁴⁵ In Example

1b, Mozart's K. 402, the second and third traits are clearly present, and one could argue for the presence of the first. The continuation ultimately leads to the single cadence formula and cadence. Caplin also limits genuine cadence types to the half, perfect-authentic and imperfect-authentic, noting that these three “are the only genuine cadences in music in the Classical style,”⁴⁶ noting that other types of interim “cadences” are usually deceptive cadences⁴⁷ that are generally followed soon after by ones with more complete closure.

Given these complexities, a first goal—especially for continuation phrases—would be rhythmic/metric sketching that allows the student to arrive at an accurate temporal map of the phrase group's articulations. Another practical step would be to ask students to initially listen to the entire sentence with the intent of focusing upon the continuation phrase in order to sketch which of the above-outlined traits are in play. Here is a possible thought-provoking questionnaire of “continuation phrase traits.”

- 1) Are there sequences? Is there a miniature sentential/sequential structure in the continuation phrase? In what measures and beats (approximately) are they heard? Do they seem to be by step? If not, can you determine the interval?
- 2) Is there more surface rhythmic activity? If so, is it motivic? Can you sketch the pattern of the motive and determine how many (continuous) rhythmic repetitions of the motive are in place?
- 3) Are there moments of clear scalar descent leading into (or as part of) the cadence? What rhythmic values are used in the descent?
- 4) What type of cadence are you hearing at the end of this sentence, and what scale-degree is in the soprano of this cadence? Is a cadential six-four in use?

of Beethoven's Op. 2. no. 1 sonata (in F minor), all feature this miniature sentential structure. I thank Steven Laitz for sharing this continuation-phrase phenomenon with me.

⁴⁶ Caplin, 43.

⁴⁷ Here, Caplin uses the term “deceptive” in a broader sense of an evasion of expected cadence, rather than a specific harmonic formula involving dominant resolution to the submediant or inverted subdominant.

⁴⁴ Caplin, 41–42.

⁴⁵ For example, the continuation phrases (not shown) that follow the presentation phrases shown in Examples 5a and 5b (Mozart, K. 330, i and iii) and Example 13 (Beethoven, Op. 2, no. 3), along with mm. 5–8

Asking a student to concomitantly attend to all of these questions during a single hearing is—on the surface—impractical if not impossible. The list, rather than being a “checklist” used in real time for every single hearing, is more for the purpose of gradually instilling, with practice, a set of expectations that can lead to more fluency in hearing and transcribing continuation phrases.

The linear descent that typically occurs as part of this process should be studied as a guiding principle that often governs the increased harmonic rhythm, locally-sequential motivic statements, and increased surface rhythmic activity. By no means does every cadential arrival in a continuation phrase possess a crystal clear linear descent; suggesting such a thing to students could foster an unmerited sense of safety. But to share with them the fact that the faster values in a continuation phrase (often at or near the cadence formula) are more often than not stepwise and descending is helpful.

As an example, let us look once again at Beethoven’s Op. 14, no. 2 (Example 7). For convenience’s sake, its continuation phrase is reprinted here as Example 14.

Example 14: Continuation phrase of the opening theme to Beethoven’s Op. 14, no 2 Piano Sonata in G, i, mm. 5–8 (excerpt of Caplin’s “Example 3.4”)

In this example, the student could note a variety of the traits listed above. First is a continuous scalar descent from the high C6, beginning at m. 5’s anacrusis, mostly in sixteenth-note motion. In mm. 6–7, the student could take note of the repeated motivic figure that sounds four times in succession. Given the tonic arrival at m. 6, the goal note of that scalar run is clearly B4, ornamented with a local suspension. Among the wide leaps of various distances in mm. 6–7,

the instructor could assist students by asking if there is a cadential, descending line heard (and if there is or is not a cadential six-four in place). Students could sing from the B downward as the instructor plays the passage slowly, checking to see if notes are present to create this descent, discovering the structural B-A-G-F#-G line in the process. Once those tones are in place, the more “free” leaps in Beethoven’s cadence formula could be addressed.

Finally, given the potential increase in information in the continuation phrase, the instructor may wish to employ a “split hearing” for more involved sentence structures. So as to not overly burden the short-term memory of students, the two basic ideas of the presentation phrase are played, as is the first tone of the continuation phrase. A fifteen-second pause is followed by a hearing of the continuation phrase, which commences with its first tone. In most instances, then, m. 1 to the downbeat of m. 5 is played, a fifteen-second pause ensues, and then m. 5 to the end is played. One possibility is a four-hearing sequence, with the first and last hearings being complete and the inner two being “split.” My experience has been that students find this quite helpful.

CONCLUSION

Caplin's specific models of period and sentence structure are excellent complements to the more traditionally abstract topics often found in aural skills source materials. Chapter headings such as "The Interaction of Melody and Harmony: More on Cadence, Phrase and Melody," as seen in Phillips, Piper Clendinning and West Marvin⁴⁸ clearly speak to this issue. More abstract topic headings such as "melodies featuring leaps larger than a 5th" or "melodies featuring arpeggiations of the dominant in compound meter" often found in aural-skills source materials certainly have their place, but are strongly complemented when later applied to the study of more style-based formal structures. As Michael Rogers notes, "[s]uccess in melodic dictation does not depend upon mastery of intervals or other fragments ... , [and] can be hindered, in fact, by over-reliance on a note-to-note type of hearing".⁴⁹ And as William Marvin has stated, "If students are to achieve the ability to shape musical phrases over the course of an entire movement, then an aural-skills curriculum must provide materials for developing instantaneous reading skills, and also for learning through the rehearsal of lengthier excerpts."⁵⁰ Learning to readily hear and dictate these thematic constructs is a positive step towards that end.

Some limited predictability in these structures, rather than being an exposed answer key hindering pedagogical progress, serves as a welcome framework upon which the student can map out the unique designs of various melodic/thematic ideas. As Schoenberg has noted in quoting Mattheson's *Der vollkommene Kapellmeister* of 1739,

" 'A theme should have a certain something which the whole world already knows.' "⁵¹

⁴⁸ Phillips, Piper Clendinning and West Marvin, *Musician's Guide*, ix.

⁴⁹ Michael Rogers, *Teaching Approaches in Music Theory*, 2nd ed. (Carbondale, IL: Southern Illinois University Press: 2004), 110.

⁵⁰ William Marvin, "A Comparison of Four Sight-Singing and Aural-Skills Textbooks: Two New Approaches and Two Classic Texts in New Editions," *Journal of Music Theory Pedagogy* 22 (2008): 139.

⁵¹ Schoenberg, *Fundamentals*, 20.

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APPENDIX

a graduated list of eight-measure period- and sentence-based themes

The following themes are loosely arranged in order of increasing complexity within each category below. Certain of the themes, as noted, can be found in selected aural-skills texts. In a number of cases, the authors have strategically transposed those melodies from their original keys and/or clefs.

Period themes:

~Diatonic, non-modulating, primarily stepwise motion

- Mozart: "Das klinget so herrlich" from *The Magic Flute*, Finale of Act I (8 measures; also in Krueger, p. 415, melody 31)
- Mozart: Concerto for Horn in D, K. 412, ii (Allegro Finale), mm. 1–8 (also in Krueger, p. 405, melody 30)
- Mendelssohn: Symphony no. 4, op. 90 ("Italian"), ii (Andante con moto), mm. 4–11 (also in Berkowitz, p. 351, melody 32)
- Schubert: *Der Entfernten*, D. 350, mm. 1–8 (also in Ottman/Rogers, melody 8.43)
- Haydn: Symphony 44 ("Trauer"), Hob. I:44, iii (Adagio), mm. 1–8

~Non-modulating, primarily stepwise motion, surface chromaticisms, smaller leaps

- Beethoven: Symphony no. 8, op. 93, i, mm. 1–8 (to IAC) or 1–10 (to PAC) (also in Berkowitz, p. 362, melody 77)
- Mozart: "Schnelle Füße, rascher mut" from *The Magic Flute*, Finale of Act I (8 measures)
- Mozart: Piano Sonata in B $\flat$, K. 281, iii, mm. 1–8 (also in Krueger, p. 472, melody 5)
- Mozart: Piano Sonata in B $\flat$, K. 570, iii, mm. 1–8 (also in Krueger, p. 475, melody 17)
- Beethoven: Piano Trio in G, Op. 1. no. 2, ii, mm. 1–8 (also in Krueger, p. 475, melody 23)

~Modulating

- Beethoven: Piano Sonata in D, Op. 31, no. 2, mm. 23–30
- Haydn: Piano Sonata in C, Hob XVI:3, iii (minuet), mm. 1–8

- Haydn: String Quartet in d minor, Hob III:22, iii (Adagio cantabile), mm. 1–8
- Mozart: Piano Sonata in D, K. 284, iii, mm. 1–8
- Beethoven: Violin Sonata in C minor, Op. 30, no. 2, ii (Adagio cantabile), mm. 1–8

Sentence themes:

~Diatonic, non-modulating, mild leaps, primarily stepwise motion

- Schumann, “Ich will meine Seele tauchen,” *Dichterliebe* Op. 48, no. 5 (also in Berkowitz, p. 359, melody 64 and Krueger, p. 352, melody 17), mm. 1–8 (first part of a sixteen-measure period)
- Mozart, Cassation, K. 99, Minuet, mm. 1–8 (also in Ottman/Rogers, melody 9.3)
- Mozart Symphony no. 10, K. 74, ii (Finale Allegro), mm. 1–8 (also in Ottman/Rogers, melody 8.29)
- Beethoven: String Quartet no. 16 in F, op. 135, Lento, mm. 1–8 (in D $\flat$ major; also in Ottman/Rogers, melody 8.27)
- Mozart: Piano Sonata in D, K. 311, iii (Allegro), mm. 1–8

~Non-modulating, mild surface chromaticisms, smaller leaps

- Haydn: Symphony no. 83 in G minor (“The Hen”), Andante, mm. 1–8 (in E $\flat$ major)
- Haydn: Symphony no. 83 in G minor (“The Hen”), Minuet, mm. 1–8 (in G major)
- Mozart: String Quartet in D (“Dissonance”), K. 465, Allegro, mm. 23–30
- Beethoven: Symphony no. 2, op. 36, ii, mm. 17–24 (also in Krueger, p. 480, melody 45)
- Mozart: Divertimento in B $\flat$, K. 229, no. 2, Larghetto, iii, mm. 1–8

~Modulating*

- Mozart: Sonata for Violin and Piano in C, K. 6, Minuet I, mm. 1–8†
- Haydn: Piano Sonata in G, Hob. XVI:27, iii, mm. 1–8
- Haydn: Piano Trio in A $\flat$, Hob. XV:14, ii, mm. 1–8
- Haydn: Piano Trio in E minor, Hob XV:12, iii, mm. 1–8
- Beethoven: Thirty-three Variations for Piano (“Diabelli”), Op. 120, 1–8

*Caplin (*Classical Form*, 47) notes that a “modulating sentence rarely stands alone as an independent formal unit. Rather, it tends to link up with other units to form a larger-scale theme, one that ultimately returns to the original key and closes there with a perfect authentic cadence. Modulating sentences thus are found most often in the first part of small ternary or small binary forms.” I have provided the first two examples, and have taken the last three from Caplin (88, n. 49, p. 265).

†This particular opening theme is also well known due to its inclusion in *Easy Classics to Moderns* (for piano), p. 23, compiled and edited by Denes Agay. In that arrangement, the violin’s opening descant is not included; one may wish to use this easier, descant-free version as an introductory dictation for modulating sentences.



Teaching Classic Era Style Through Keyboard Accompaniment

BY PETER SILBERMAN

Stylistic composition often plays a large part in the undergraduate music theory curriculum.¹ Many schools of music, colleges, and universities offer courses in Renaissance or Baroque counterpoint, in which students are taught to imitate the works of Palestrina or Bach.² Many twentieth-century music courses include the composition of free atonal and/or serial works, perhaps in the style of Schoenberg or Webern. However, students less frequently are taught to imitate the repertoire between the Baroque and the twentieth century.

In particular, there are limited resources available that help students learn to write in the Classic era style. This lack of resources is surprising, as the works of Haydn, Mozart, and Beethoven form the foundation of much theory instruction. While many of the standard undergraduate textbooks include chapters on such Classic era staples as periods, sentence form, and sonata form, few offer any substantial comments on stylistic features.³ In contrast,

¹The author would like to thank Timothy Johnson, Daniel Zimmerman, and several anonymous reviewers for helpful comments on earlier drafts of this article.

²Counterpoint texts often are written with this imitative approach in mind. See for example Robert Gauldin's *A Practical Approach to Sixteenth-Century Counterpoint* (Englewood Cliffs: Prentice-Hall, 1985) and *A Practical Approach to Eighteenth-Century Counterpoint* (Englewood Cliffs: Prentice-Hall, 1988), which eschew a rule-based approach to counterpoint in favor of careful study and imitation of musical examples by representative composers.

³I use the term "sentence" form to name an eight-measure unit that consists of a two-measure idea that William Caplin (following Schoenberg and Rufer) calls the Basic Idea, a two-measure repetition, and a four-measure continuation phrase ending with a cadence. See William Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (Oxford: Oxford University Press, 1998). Caplin discusses sentence form on pages 9 – 12 and presents the opening theme of the first movement of Beethoven's Piano Sonata in F minor, op. 2 no. 1, as a representative example. He later discusses sentence form in more detail on pages 35 – 48.

studies of the Classic era style tend to be book length, aimed at the scholar or graduate student rather than the undergraduate, and too in-depth for a unit on Classic era composition that is shorter than a full semester.⁴ What clearly is needed is a step-by-step method that gives students specific guidelines for writing in the Classic style, and which is concise and efficient enough so that students can master that style in a reasonable amount of time, perhaps a half- or quarter-semester unit.

This article will work toward this goal by focusing on one aspect of Classic era style, keyboard accompanimental texture. In my experience, students have little difficulty learning to write melodies that mimic those from the Classic era via the use of period or sentence form.⁵ However, writing an idiomatic accompaniment to such a melody can be quite challenging, particularly for students who have composed in chorale style only. Many textbooks merely suggest the use of Alberti bass or broken-chord arpeggios, while ignoring other accompanimental textures. Alberti bass and arpeggios are certainly common in Classic era keyboard music, but it is a rare composition that uses them exclusively, and even eight-measure periods and sentences can contain changes in accompanimental texture. Further, some textures are better suited

⁴See for example Charles Rosen, *The Classical Style* (New York: Norton, 1972), Leonard Ratner, *Classic Music: Expression, Form, Style* (New York: Schirmer, 1980), James Webster, *Haydn's "Farewell" Symphony and the Idea of Classical Style* (Cambridge: Cambridge University Press, 1991), and Robert Gjerdingen, *Music in the Galant Style* (Oxford: Oxford University Press, 2007). Nicholas Cook, *Analysis Through Composition: Principles of the Classical Style* (Oxford: Oxford University Press, 1996), a composition textbook, is intended for the advanced student who is highly familiar with the Classic era style, and is meant to be used over two semesters. Robert Gauldin "The Evolution of a Styles Simulation Course for Graduate Theory Students," *Journal of Music Theory Pedagogy* 23 (2009): 101-122, contains valuable composition exercises in the Classic style, but those exercises are designed for graduate students.

⁵For a full discussion of small Classic era forms see Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. Edward Lowinsky shows how Mozart's melodies, often in period or sentence form, are richer and more subtle than those of his contemporaries. Along the way, Lowinsky identifies aspects of Mozart's melodies that could be helpful in stylistic composition. See Edward Lowinsky, "On Mozart's Rhythm," in *The Creative World of Mozart*, edited by Paul Henry Lang, 31-55. New York: Norton, 1963.

to certain melodic characteristics than others, and any method for instructing students should take this observation into account.

Before presenting my method, I will survey several popular undergraduate theory textbooks that include discussion of accompanimental textures that lack the richness and variety of typical Classic era accompaniments. Next, I will discuss the literature on Classic era style briefly to discover what Classic composers actually wrote as accompaniments, and how that differs from most textbooks' approaches. Then I will present my method, with examples from the music of Mozart. This article will conclude with samples of successful writing by my students.

Several popular undergraduate theory textbooks discuss accompanimental patterns, usually in the context of melody harmonization. *Harmony in Context*, by Miguel Roig-Francolí contains a representative section on keyboard texture.⁶ In a passage entitled "Harmonizing a Melody with Keyboard Figuration," Roig-Francolí lists the following types of textures: repeated block chords, bass and afterbeat, repeated broken chords, chordal arpeggios, and Alberti bass. Since his aim is to assist students in harmonizing a melody, his main focus is on chord selection. Chords are then arranged in one of the aforementioned patterns. Example 1 reproduces Roig-Francolí's two sample harmonizations of a Schubert melody, one with a bass and afterbeat accompaniment and one with an Alberti bass.⁷

⁶Miguel Roig-Francolí, *Harmony in Context* (Boston: McGraw-Hill, 2003), 367-373.

⁷*Ibid.*, 372.

Example 1: Accompaniments from Roig-Francolí (2003), p. 372
Miguel Roig-Francolí, *Harmony in Context*. ©2003, McGraw-Hill.
(Reproduced with permission of The McGraw-Hill Companies.)

Note that, as befits a harmony textbook, the focus here is on harmony rather than on creating an interesting accompaniment. As a result, while the accompaniments are appropriate for nineteenth century piano works, they are monotonous and lack the variety of textures commonly found in actual compositions from that era. Although Roig-Francolí provides examples of accompaniments from the works of Mozart and Beethoven, he does not show students how to use Classic era textures. None of his examples show more than one accompaniment pattern, and give the misleading impression that Classic and early Romantic era piano works rarely include changes in accompaniment patterns.

Tonality and Design in Music Theory, by Earl Henry and Michael Rogers, contains similar suggestions for accompanimental patterns. Henry and Rogers include a chapter on sonata form, and at the end of that chapter describe a project that teaches students to write a sonata form exposition for piano.⁸ Henry and Rogers suggest the use of repeated chords, Alberti bass, or a more contrapuntal texture as accompaniments to sonata form themes. Example 2 shows their sample accompaniments.⁹

⁸ Earl Henry and Michael Rogers, *Tonality and Design in Music Theory* (Upper Saddle River, New Jersey: Prentice-Hall, 2005), vol. 2, 227-230.

⁹ *Ibid.*, 228.

Example 2: Accompaniments from Henry and Rogers (2005), p. 228
Henry, D.J.; Rogers, Michael, *Tonality and Design in Music Theory*, Volume 2, 1st Edition, ©2005.
(Reprinted by permission of Pearson Education, Inc., Upper Saddle River, NJ.)

All three examples consist of four-measure antecedent phrases followed by the first measure of a consequent phrase, suggesting an unfinished parallel period. These examples would not be out of place in a Classic era composition, but the authors provide no guidelines for choosing accompaniments. The Alberti bass example is puzzling, as the Alberti bass breaks off in measure 3 without comment from the authors. The “More Independent Accompaniment” is interesting and musical, although it contains a different type of accompaniment in each measure, but the authors do not describe how a student could write such an accompaniment. These three musical examples, while useful, do not begin to display the wide variety of accompaniments found in Classic era keyboard music, and the authors offer no assistance for a student wishing to imitate the Classic style.

Other textbook authors who discuss keyboard accompaniment include Laitz (2012), Clendinning and Marvin (2011), Steinke and Harder (2010), and Turek (2007).¹⁰ With the exception of Steinke and

¹⁰ Steven Laitz, *The Complete Musician*, 3rd edition (New York: Oxford

Harder, these authors' discussions are quite general. None mention any aspects of musical style, Classical or otherwise, none show more than just a few basic accompanimental types, such as Alberti bass, and none provide the student with suggestions for choosing one accompanimental type instead of another. Turek alone suggests that students vary accompaniment patterns during a phrase instead of using the same pattern throughout, but his musical examples do not do so. Steinke and Harder's list of accompaniment types is much longer than those in other books, with multiple examples of each type and helpful guidelines for preserving correct voice-leading. Steinke and Harder also provide very general stylistic suggestions (bass and afterbeat patterns work well in waltzes and mazurkas, block chord accompaniments sound stately), but do not mention historical styles or melodic cues that might suggest a particular accompaniment or a change in accompaniment.

Students using the aforementioned textbooks as guides often write unimaginative, unstylistic accompaniments. Such student-written accompaniments appear in an article by Sylvia Parker.¹¹ Parker describes an innovative approach to teaching students to write sonata forms. She asked students to select two melodies from *Music For Sight Singing* by Robert Ottman.¹² Students used one melody as the primary key area and the other as the secondary key

University Press, 2012), 72-78; Jane Clendinning and Elizabeth West Marvin, *The Musician's Guide to Theory and Analysis*, 2nd edition (New York: Norton, 2011), 167-169, 239-241, and 253-256; Greg Steinke and Paul Harder, *Harmonic Materials in Tonal Music, Part 1*, 10th edition (Upper Saddle River: Prentice-Hall, 2010), 357-368; and Ralph Turek, *Theory for Today's Musician* (Boston: McGraw-Hill, 2007), 651-654. Leonard Ratner's textbook, *Harmony: Structure and Style* (New York: McGraw-Hill, 1962), which is long out of print, contains a chapter entitled "Varieties of Texture" (pp. 148-156) that illustrates many of the ideas about texture found in Ratner's more academic studies of the classic era in a format more accessible to students. Using examples from the works of Classic and Romantic era composers, Ratner shows various textures containing broken chords, repeated notes, ornamental notes, rhythmic punctuation, countermelody, and imitation. He also provides suggestions for maintaining correct voice-leading when writing accompaniments.

¹¹ Sylvia Parker, "Understanding Sonata Form Through Model Composition," *Journal of Music Theory Pedagogy* 20 (2006): 119-137.

¹² Parker used the 5th edition of this book, Robert Ottman, *Music for Sight Singing* (Upper Saddle River, New Jersey: Prentice-Hall, 2001).

area, transposing them to the appropriate keys and adding keyboard accompaniment in a Classical style. Students then connected the melodies with a transition and added closing material to finish the exposition. Parker guided the students in writing accompaniments by using examples from Mozart's music and from the Roig-Francolí and the Henry and Rogers books, along with a few very general suggestions, such as putting strong notes (chord roots, for instance) on strong beats. Students were allowed to change accompanimental patterns during their sonata forms.

Example 3 shows sections of a sonata exposition written by one of Parker's students.¹³

¹³ Parker, "Understanding Sonata Form Through Model Composition," 126.

Example 3: Sonata Exposition written by student from Parker (2006).

The student provided an accompaniment that combines an arpeggio with Alberti bass for her primary key area, the beginning of the chorus "See, the conqu'ring hero comes!" from Handel's *Judas Maccabeus*. While perfectly acceptable given the assignment

instructions, the student's accompaniment does not evoke any particular historical style.¹⁴ Further, the low bass note on each downbeat is too prominent, interrupting the melodic flow, and would be difficult to play given the large jump preceding it. Also, the low B $\flat$ would be unusual in a Classic era composition. The student's accompaniment in her secondary key area, an adaptation of a melody from Mozart's *Serenade*, K. 203, is somewhat more stylistic in that it provides more variety, but still contains problems, discussed below. The closing material returns to the nondescript accompaniment pattern of the primary key area, temporarily enlivened by a chain of descending thirds in measure 26.

The secondary key area's accompaniment is quite problematic. Measures 18 and 19 of the secondary key area clearly belong together as a subphrase, while measure 20 starts something new. However, the accompaniment undermines the melodic organization. Measures 18 and 19 have different accompanimental patterns despite their melodic similarities, while the accompaniment in measure 20 returns to the pattern of measure 18 rather than changing to match the new melody. Further, the rests in the melody in measures 18 and 19 provide an opportunity for the accompaniment to fill in the silence with something more melodic. Mozart's original version, shown in Example 4, does just that. (This filler material is circled on the score.)

¹⁴ A problem arises with this type of assignment if a student selects a Baroque melody but attempts to write an accompaniment in a Classical style. Although the excerpt from "See, the conqu'ring hero comes!" functions conveniently as a contrasting period, many Baroque melodies suggest phrasing and harmonic rhythm that would be out of place in a Classical composition, thus hampering efforts to write an idiomatic Classic era accompaniment. Handel's accompaniment to "See, the conqu'ring hero comes" consists of a straightforward chorale-like texture. A typical Handelian walking bass also would fit well with this melody.

The image shows a musical score for a piano, measures 7-12 of Mozart's Serenade, K. 203. The tempo is marked 'Allegro assai'. The score is written for a single instrument, with a melody in the right hand and accompaniment in the left hand. The key signature has one sharp (F#). Three measures of the accompaniment are circled, showing a pattern of eighth notes in the left hand. The score is presented on a single page with a light gray background.

Example 4: Excerpt from Mozart's *Serenade*, K. 203, mm. 7-12, showing accompaniment.

The accompaniment in measures 18 - 20 is too low to sound clear, and there is too much space between the melody and accompaniment, particularly in measures 20 - 22. Octaves on the downbeats of measures 18 - 20 sound too empty. Finally, the steady eighth note rhythm of the student's accompaniment is too monotonous.

In contrast to accompaniments presented in harmony textbooks, actual Classic era accompaniments exhibit great richness and variety. Thus, any study of Classic era accompaniment should include an examination of solo keyboard and chamber works by Haydn, Mozart, and their contemporaries. Several studies of Classic era music mention aspects of keyboard accompaniment, and can act as excellent commentaries on works by these composers and others.¹⁵ Leonard Ratner's book *Classic Music: Expression, Form, and Style* includes many valuable insights on accompaniment. Ratner introduces the concept of topics: "materials which composers, performers, and listeners at that time associated with various moods, attitudes, and images."¹⁶ While Ratner specifically mentions only two types of keyboard accompaniment, Alberti bass and murky bass, "a bass in broken octaves" (p. 135), many types of accompaniments appear in his topics. Also, many of his non-

¹⁵ Classic era theorists and composers seem to have written little about accompaniment texture. Joel Lester, *Compositional Theory in the Eighteenth Century* (Cambridge: Harvard University Press, 1992), which discusses eighteenth-century compositional treatises by Kirnberger, Koch, Riepel, and others, does not cite any discussions of accompaniment texture in these works. Mozart's well-known exercises for Thomas Attwood and Barbara Ployer consist mainly of two-part counterpoint, but also include several settings for string quartet. However, the string quartets offer few interesting accompanimental features. See "Thomas Attwoods Theorie- und Kompositionsstudien bei Mozart," in *W.A. Mozart Neue Ausgabe* X, 30, 1 (Kassel: Bärenreiter, 1965) and "Barbara Ployers Theorie- und Kompositionsstudien bei Mozart," in *W.A. Mozart Neue Ausgabe* X, 30, 2 (Kassel: Bärenreiter, 1989).

¹⁶ Ratner (1980), *Classic Music: Expression, Form, and Style*, 1. Another article, Leonard Ratner, "Topical Content in Mozart's Keyboard Sonatas," *Early Music* 19 (1991): 615-619, identifies topics in the exposition of the first movement of Mozart's Piano Sonata in D major, K. 284. Very clear examples of Classic era topics can be found in Elaine Sisman, "After the Heroic Style: Fantasia and the 'Characteristic' Sonatas of 1809," *Beethoven Forum* 6 (1998): 67-96. Sisman lists topics used by Beethoven in the Fantasy, op. 77 on p. 77 corresponding to musical examples on pages 72-75.

keyboard examples have accompaniment patterns that also appear in keyboard music. Ratner discusses dance types, military and hunt music, the singing style, the brilliant style, and many other styles that have typical accompanimental features. Ratner also includes several chapters that discuss basic concepts of texture in chamber music, orchestral music, and vocal music.

Example 5 shows two examples of Ratner's topics showing typical accompaniment patterns.

a. Hunting topic – Mozart Quintet, K. 614, I, mm. 1 - 4



b. *Empfindsamkeit* - Mozart Fantasia in D minor, K. 397, mm 12 -24



Example 5: Two examples of Classic era topics from Ratner (1980).

The fanfare from the first movement of Mozart's Quintet, K. 614, Example 5a, is accompanied by "horn fifths," mimicking hunting horns.¹⁷ The horn fifths are bracketed in the example. The opening of Mozart's Fantasia in D minor, K. 397, Example 5b, exhibits the sensibility style, also known as *empfindsamkeit*, a style used

¹⁷Ratner, *Classic Music: Expression, Form, Style*, 18.

frequently by C.P.E. Bach.¹⁸ Ratner writes that this style "has rapid changes in mood, broken figures, interrupted continuity, elaborate ornamentation, pregnant pauses, [and] shifting, uncertain, often dissonant harmony."¹⁹ Not all of these characteristics are present in the example, but several features give the flavor of this style. The sudden change from piano to forte dynamic in measure 16, the emphasized diminished seventh chords interrupted by rests in measures 16 and 17 (shown in boxes), the descending chromatic lines (also in boxes), and the highly dissonant non-chord tones on the downbeat of measure 22 (circled) are all common markers of *empfindsamkeit*. Mozart's accompaniment helps emphasize these features. The diminished seventh chords appear as block chords rather than arpeggios or some other figuration, which heightens their dissonant sound. The accompaniment to the descending chromatic melody in measure 18 alternates rhythmically with the melody so that each note of the chromatic line is more noticeable because the accompaniment rests as each melody note is struck. The following chromatic line, in measures 20 – 22, is brought out by octave doubling. In measure 22 the lack of rhythmic activity in the accompaniment allows the dissonant A and D# to be heard. Finally, much of the accompaniment is in a high register, reinforcing the unstable nature of much of this passage. A listener would expect an accompaniment to appear in a lower register, and an expectation of a future registral descent amplifies the feeling of instability.

Mark Radice examines eighteenth-century keyboard works written in the *styl galant*, or galant style. Radice limits his study to those works containing the word "galant" in the title. Thus, his study encompasses a limited repertoire, written for amateurs primarily between 1735 and 1770. As a result, familiar later composers such as Mozart and Haydn are omitted. Radice lists a number of features of this repertoire, including four types of accompaniment patterns: parallel thirds and sixths; murky bass; moving bass line; and trommelbass ("drum bass"): "a drone adapted to a keyboard instrument other than organ," distinguished from a true drone because it consists of a repeated pitch, often in eighth notes, rather than a long held out note.²⁰

¹⁸Ibid., 22.

¹⁹Ibid., 22.

²⁰Mark Radice, "The Nature of the 'Style Galant': Evidence from the Repertoire," *The Musical Quarterly* 83/4 (1999): 635.

Example 6 shows a murky bass, a moving bass line, and a trommelbass.²¹

murky bass

Haydn, Piano Sonata H. XVI: 35, III, mm. 54 – 59

moving bass line

Mozart, Piano Sonata K. 333, III, mm. 1 – 7

Allegretto grazioso.

trommelbass – “drum bass”

Mozart, Piano Sonata K. 284, I, mm. 6 - 13

Example 6: Examples of a murky bass, a moving bass line, and a trommelbass, each enclosed in a box.

²¹ According to Czeslaw Halski, the origin of the term “murky bass” is obscure. Halski suggests that the name may have come from the Polish village of Murcki, in which eighteenth-century villagers played bass string instruments on which the murky bass is idiomatic. He also notes that the Polish word “murek” (plural “murki”) describes a muttering man, and the Polish word “murkot” means a growl. Either of those words could have been used to describe the sound of the murky bass, and thus could have given the murky bass its name. See Czeslaw Halski, “Murky: A Polish Musical Freak,” *Music & Letters* 39/1 (1958): 35-37.

A more comprehensive list of Classic era accompaniment types, with musical examples, appears below as Example 9.

Four authors relate types of texture to specific locations in Classic era compositions. Instructors can use these articles, or the information therein, in creating longer composition assignments. The articles discussed below complement the works of Ratner and Radice nicely. While Ratner and Radice discuss settings of individual melodies, Frank Lorince, William Caplin, Janet Levy, and Paul van Reijen discuss how accompaniment interacts with form.²²

Frank Lorince, in a comprehensive study of texture in Classic era keyboard music, examines aspects of melody, counterpoint, dynamics, and register in addition to accompaniment. He lists the following types of accompaniments: block chords, arpeggios, pedal tones, trills, parallel thirds and sixths, and moving bass line. Lorince limits his investigation to compositions in sonata form in order to determine to what extent a melody retains the same texture (including accompaniment) upon its subsequent appearances. He concludes “It is clear ... that each musical idea within a work characteristically has a textural identity. The consistent practice is to reserve the textural setting, which originally occurs with a theme for use with subsequent entries of that material. Definition of form is therefore achieved not only through melodic-rhythmic-tonal relationships, but through the handling of textural elements as well.”²³ Lorince’s observation about textural identity is useful for any sort of extended composition assignment, and his musical examples amply illustrate textural identity in many works by C.P.E. Bach, Haydn, Mozart, and Beethoven.

William Caplin observes that changes in texture occur at boundaries between events, and at beginnings of new events. At

²² Frank Lorince, *A Study of Musical Texture in Relation to Sonata-Form as Evidenced in Selected Keyboard Sonatas from C.P.E. Bach Through Beethoven* (Ph.D.dissertation, Eastman School of Music, 1966); Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*; Janet Levy, “Texture as a Sign in Classic and Early Romantic Music,” *Journal of the American Musicological Society* 35/3 (1982): 482-531; Paul van Reijen, “Zur Klassifizierung und Position der Murkybässe in den Klavier-sonaten von Haydn, Mozart, und Beethoven” in *Konzepte der Musikwissenschaft*, Vol. 2, edited by Kathrin Eberl and Wolfgang Ruf, 411-420 (Kassel: Bärenreiter, 2000).

²³ Lorince, *A Study of Musical Texture in Relation to Sonata-Form as Evidenced in Selected Keyboard Sonatas from C.P.E. Bach Through Beethoven*, i.

the phrase level, changes in accompaniment are used to create contrast between phrases. At an even lower level, accompaniments frequently change in the middle of a period's consequent phrase. That is often the place in a parallel period where the consequent phrase departs melodically from the antecedent phrase, and this location also begins the approach to the period's cadence. The change in accompaniment thus alerts the listener to both the change in melody and the upcoming cadence. Example 7 shows such an example, an eight-measure parallel period by Mozart from the opening of the third movement of the Piano Sonata in B $\flat$ major, K. 570, that features a change in accompaniment in measure 7, in the consequent phrase.

Example 7: Parallel period by Mozart showing change in accompaniment in measure 7. Piano Sonata in B $\flat$ major, K. 570, III, mm. 1 - 8

Measures 5 and 6 repeat measures 1 and 2, but the melody in measure 7 is new, underscored by the change in accompaniment. Further, Caplin lists locations at which texture tends to be thinned: the ends of the transition and development in sonata form, and the end of the middle section of a ternary form.

Janet Levy, in a much broader article, explores how texture interacts with other aspects of the music. She writes, "it is possible to explore certain aspects of texture's role in the syntax of particular movements, and, especially, its capacity to function as a sign — both for where we are in the piece and for what may or may not happen next."²⁴ Example 8 reproduces Levy's Example 2, a sentence form

from the beginning of an anonymous sonatina movement that may have been written by Beethoven.

Example 8: Example from Levy (1982)
Beethoven, Sonatina in G, Anh. 5 no. 1, mm. 1 - 8 (sentence)

Levy describes how its accompaniment signals an increase in stability as the eight-measure unit progresses from two-measure phrases to its final four-measure phrase.

The change [in a sentence] from an unfigured homophonic accompaniment (mm. 1 – 4) to a conventional Alberti bass pattern (m. 5) is an instantaneous instruction to perform and/or to take in what follows as a more fully formed statement than what we have heard so far. The beginning of the accompaniment pattern makes it highly probable that motion will coalesce into a longer unit of musical action; and so it does. The sign value of the beginning of the accompaniment is particularly evident here since the melody in measure 5 is identical with that in measure 1. Because of the cues for stability given by the appearance of the Alberti bass, we understand the nature of the passage the moment it begins (beats 1 and 2), even before we hear the harmonic motion to V7/IV [in measure 5]. Moreover, the beginning of a regular accompaniment pattern cues us to what we will *not* hear. The passage is not likely to be the beginning of a transition, for example, or even of a phrase-group that is complementary to the first, with two-measure units matching measures 1-2 and 3-4.²⁵

²⁴ Levy, "Texture as a Sign in Classic and Early Romantic Music," 529.

²⁵ Ibid., 489-490, italics Levy's.

Levy's description focuses on what accompaniment communicates. In the musical example, the accompaniment tells the listener about such features as the function of the passage (stable passage versus transition) and the grouping of measures. Thus, an effective use of texture should strive to reinforce such musical features rather than contradict them.

Van Reijen's study takes an opposite approach to those of Lorince, Caplin, and Levy. Those three authors present broad studies of accompaniment and form, and sometimes subsume accompaniment under the larger category of texture. In contrast, van Reijen traces just one accompaniment type, murky bass (a bass in broken octaves), through several Classic era sonata form compositions to discover where it is used. He observes that murky bass is most commonly found in the secondary key area of a sonata form, sometimes in developments, and less often in other locations. Any use of murky bass in a student composition should conform to van Reijen's observations.

The above authors mention many different accompaniment types and comment on their use including their affect on the listener (when used in various topics), their ability to communicate the music's structure, their interaction with melody, and their most common locations. Example 9 compiles all of this information in one list. The list includes the name of the accompaniment, a brief description if necessary, and a short musical example. Within each musical example the specific accompaniment type is enclosed in a box.

1. Alberti bass

Mozart, Piano Sonata K. 545, II, mm. 1 - 3



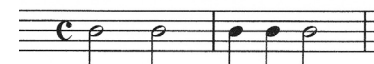
2. accented offbeats – common in agitato style

Haydn, Piano Sonata H. XVI: 49, I, mm. 193 – 201



Example 9: List of Classic era keyboard accompaniment types.

3. *alla turca* – characteristic rhythm:



Mozart, Piano Sonata K. 331, III ("Alla Turca"), mm. 25 – 29



4. *alla zoppa* ("limping") – characteristic rhythm:



Haydn, Piano Trio H.XV:25, III ("Rondo all'Ongarese"), mm. 130 – 135



5. bass and afterbeat

Mozart, Piano Sonata K. 332, II, mm. 19 – 26



6. chordal arpeggios

Mozart, Piano Sonata K. 545, I, mm. 10 – 13



Example 9 (continued): List of Classic era keyboard accompaniment types.

7. chromatic stepwise bass – fantasia style, ombra (supernatural) style

Mozart, Fantasia K. 397, mm. 17 – 24

**8. counter melody**

Mozart, Piano Sonata K. 333, I, mm. 59 – 63

**9. counterpoint** – strict style, learned style (church)Haydn, Piano Sonata H. XVI: 37, I, mm. 45 – 50
chain of suspensions – fourth species

Example 9 (continued) : List of Classic era keyboard accompaniment types.

10. drone on a single note or open fifth/pedal tone – musette or pastoralHaydn, “A Pastoral Song” from *VI Original Canzonettas*, H. XXVla: 27, mm. 1 – 4**11. horn fifths** – hunting style

Mozart, Piano Sonata K. 332, I, mm. 10 – 18

**12. imitation**

Mozart, Piano Sonata K. 545, III, mm. 1 – 4

**13. moving bass line**

Mozart, Piano Sonata K. 333, III, mm. 1 – 7

**14. murky bass** – broken octaves – rustic style; in sonata form, secondary key area or less often development

Haydn, Piano Sonata H. XVI: 35, III, mm. 54 – 59



Example 9 (continued) : List of Classic era keyboard accompaniment types.

15. ornamental notes such as trills

Mozart, Piano Sonata K. 281, III, mm. 117 – 123

**16. parallel thirds and sixths**Mozart, Piano Sonata K. 331, I, mm. 1 – 6
bass creates parallel thirds with melody

Andante grazioso.

**17. punctuating bass – accents on strong beats – Italian style**

Mozart, Piano Sonata K. 332, I, mm. 60 – 66

**18. rapid passages – brilliant style**

Mozart, Piano Sonata K. 310, mm. 43 – 49



Example 9 (continued) : List of Classic era keyboard accompaniment types.

19. reinforcement of melody (octave doubling) – Italian style

Mozart, Piano Sonata K. 309, mm. 1 – 5

**20. repeated block chords**

Mozart, Piano Sonata K. 310, I, mm. 1 – 4

Allegro maestoso.

**21. repeated broken chords – singing allegro style; Italian style**

Haydn, Piano Sonata H. XVI: 52, I, mm. 4 – 9



Example 9 (continued) : List of Classic era keyboard accompaniment types.

22. repeated notes (trommelbass – “drum bass”) – singing allegro style

Mozart, Piano Sonata K. 284, I, mm. 6 - 13

**23. rhythmic punctuation – accompaniment plays in melody's rests**

Mozart, Piano Sonata K. 331, I, mm. 19 – 22

**24. true bass – bass line in quarter notes separated by quarter rests, changes with harmonies**

Mozart, Piano Sonata K. 331, I, mm. 128 - 134



Example 9 (continued) : List of Classic era keyboard accompaniment types.

The twenty-four accompaniment types listed show the breadth and diversity of Classic era keyboard accompaniment patterns found in actual music, rather than the three or four types found in many undergraduate textbooks. A student could craft an idiomatic Classic era composition by choosing accompanimental patterns from this list.

Several aspects of this list deserve comment. Some of the accompaniment types are fairly generic, and can be found in many different styles of music. Bass and afterbeat, chordal arpeggios, countermelody, counterpoint, imitation, and parallel thirds and sixths, for example, are not specific to the Classic style. Other accompaniment types, in contrast, are found rarely in other styles of music. Alberti bass and the *alla turca* rhythm are emblematic of Classic era music. A composition that includes them would sound more stylistic than one that merely employs chordal arpeggios, for example.

Various characteristics of accompaniment types suggest their suitability for certain types of melodies. Or, given a particular melody, an accompaniment can be selected on the basis of how it interacts with that melody. Some accompaniment types, notably *alla turca* and *alla zoppa*, are rhythmic patterns, and melodies they accompany should not have rhythms that conflict with them. The *alla turca* rhythm often appears in the melody itself; Mozart's well-known rondo "Alla Turca" from the Piano Sonata K. 331 is a good example. Rhythmic punctuation, in which the accompaniment sounds only during the melody's rests, requires particular care in its use so that the melody and accompaniment can dovetail properly. If a student wishes to use rhythmic punctuation, it is often best for the student to write melody and accompaniment at the same time. In contrast, some accompaniment types are primarily harmonic, such as chordal arpeggios and repeated block or broken chords, and some are melodic, such as countermelody, counterpoint, moving bass line, parallel thirds and sixths, and reinforcement of melody (octave doubling). Harmonic accompaniments can be paired with simple rhythms and thus are good choices for rhythmically complicated melodies, and for melodies with running sixteenth notes or other short rhythmic values. Melodic accompaniments either emphasize the melody, a good choice for a climactic moment, or provide strong contrast to it, perhaps appropriate for developmental passages. Finally, some accompaniment types combine pitch and rhythmic patterns, such as Alberti bass, bass and afterbeat, and murky bass.

Certain accompaniment types are appropriate for some styles but not others. The chromatic stepwise bass suggests either a fantasia or the supernatural, and would be out of place accompanying a pastoral melody, for example. A contrapuntal accompaniment consisting of simultaneous independent melodic lines works best for liturgical music, a drone for a musette or a pastoral style, horn fifths for hunting music, and so forth. Students should consider the stylistic implications of a melody in order to choose an appropriate accompaniment.

Accompaniment types on this list are not mutually exclusive. One could combine two or more to craft a stylistic accompaniment. Some accompaniment types combine better than others. For example, one good choice is to combine an accompaniment type that is primarily rhythmic with one based primarily on pitch. The beginning of Mozart's Piano Sonata in C Major, K. 545, shown as Example 10a, illustrates one such instance.

a) Piano Sonata in C Major, K. 545, I, mm. 1 – 24 (primary and secondary key areas)

Allegro.

Example 10: Excerpts from Mozart's piano sonatas with accompaniment types identified

b) Piano Sonata in B $\flat$ Major, K. 333, I, mm. 59 – 63 (closing material)

c) Piano Sonata in A Major, K. 331, I, mm. 19 - 22

Var. I.

Example 10: (continued) Excerpts from Mozart's piano sonatas with accompaniment types identified

The passage from measures 18 to 21 of the excerpt uses three simultaneous accompaniment patterns: rhythmic punctuation (rhythmic), in which the accompaniment is active (sixteenth notes) during the melody's quarter notes and rests; chordal arpeggios (harmonic); and rhythmic imitation, which describes the interaction of melody and accompaniment.

How does one present this material to students? I provided students in my third-semester theory course with excerpts from three Mozart piano sonatas, shown in Example 10. Beneath each staff, I bracketed and numbered different types of accompaniment. Note that in the excerpt from K. 545, Example 10a, eight distinct accompaniment patterns occur in twenty-four measures, in contrast to the single type often found in textbook examples. Example 11, which I also gave students, shows my explanation of accompaniment types found in Example 10. Numbers that identify accompaniment types in Example 10 correspond to descriptions of accompaniments in Example 11 in the same order (bracketed accompaniment 1 in Example 10 is explained by description 1 in Example 11, etc.). Example 11 also contains suggestions for use of accompaniments, which I will discuss below.

Types of accompaniment textures (including but not limited to these!):

1. Alberti bass – Named after Domenico Alberti (1710-1746), Italian composer, harpsichordist, and singer, who frequently used this type of accompaniment. Alberti bass is an arpeggiated chord: low – high – middle – high. Treat this as a compound melody – each note is a voice, connected to a similar note in the next chord (for example, connect all lows, all middles, all highs). Follow all rules for voice-leading (resolving tendency tones, etc.). Use as 8th notes or 16th notes, never quarters. This is the default accompaniment for the Classic era; when in doubt, use Alberti bass.
2. “get out of the way” accompaniment – use when you have a complicated melody, or you want to emphasize the melody
3. bass line – especially used at a cadence, often quarter notes
4. arpeggio – most often low to high – 8th notes or 16th notes, never quarters
5. countermelody – often a moving line, or a moving line alternating with a recurring note – 8th notes or 16th notes
6. rhythmic alternation – accompaniment alternates with melody, also called countertime or complementary rhythm
7. repeated block chords – use sparingly, otherwise your composition will sound too heavy
8. rhythmic punctuation – accompaniment plays in melody’s rests
9. imitation – use sparingly, avoid Baroque textures such as fugal writing or excessive counterpoint
10. parallel 3rd and 6^{ths} with melody – don’t overuse!

Suggestions for use:

- Use several different types, not just one or two. Try not to have more than four measures with the same type, and occasionally change more frequently than that (but no more than two types per measure). You can use accompaniment types in any combination.
- Change on strong beats only.
- Include some cadences with rests.
- Add passing tones, neighbor tones, and other non-chord tones, as needed. Some can be chromatic, but don’t obscure the harmony!
- When in doubt, keep the texture thin; thick textures in the left hand tend to imply multiple voices and often create voice-leading problems, and also make your composition sound too heavy.
- Harmonic rhythm should be supported (not contradicted) by the accompaniment.

Example 11: Explanations of accompaniment types identified in Example 10 with guidelines for their use

The excerpt from K. 545, Example 10a, begins with an Alberti bass, probably the most stereotypical Classic era accompaniment. Because it is ubiquitous in Classic era keyboard compositions, I suggest students use it as a “default” when imitating the Classic style. One difficulty in writing Alberti bass is that each note in each arpeggiated chord usually acts as a contrapuntal voice and therefore must follow conventional voice-leading rules. K. 545 offers excellent examples of proper Alberti bass voice-leading. F, the seventh of the V4/3 chord at the beginning of measure 2, appears in the Alberti

bass’s middle voice. The F then resolves correctly to the middle voice E in the second half of measure 2, shown in the example by an arrow. Likewise, the leading tone B in the lowest voice at the beginning of measure 4 resolves to the tonic in the lowest voice in the second half of measure 4, also shown by an arrow.

Mozart proceeds in measure 5 to what I call the “get out of the way” texture, in which the accompaniment is reduced so that it does not interfere with a florid passage in the melody. A rhythmically complicated accompaniment might have produced a texture that would have obscured the busy sixteenth-note rhythms in the melody. Instead, slower rhythmic values balance and complement faster ones. Mozart slows activity in the accompaniment two ways here: by using rests, and then by writing a whole note. (Mozart also slows the harmonic rhythm during this passage.) Alternately, a “get out of the way” accompaniment can be used to provide greater emphasis on the melody. A limited accompaniment (again possibly containing rests or sustained notes) competes less with a melody for the listener’s attention.

Measures 10 and 12 contain a moving bass line, often written (although not here) in quarter notes. (A more typical example appears at the end of the excerpt from K. 333, Example 10b.) Moving bass lines appear frequently at cadences, assisting the melody in driving towards a goal. Measure 11 of Example 10a interrupts with a new accompaniment pattern, chordal arpeggios, delaying the cadence and extending the phrase. The arpeggios are written in a typical manner — low to high using sixteenth notes. Sixteenth and eighth note chordal arpeggios are common, while the use of other rhythmic values is rare. Arpeggios moving instead from high notes to low notes appear more commonly in nineteenth-century music (for example Brahms’s *Intermezzo* in B minor, op. 119, no. 1) and also are rare in the Classic era.

Measures 13 – 17 present a somewhat disguised countermelody. Notes of the countermelody alternate with a recurring D. The countermelody notes are more prominent in measures 15 and 17 during the melody’s rests (for example, the moving line C B A B C B C A in measure 15), providing interest while the melody is absent. The excerpt from K. 333, Example 10b, shows a clearer example of a countermelody in the left hand in measures 59-61. There is only one measure, measure 60, in which the countermelody notes alternate with a recurring note (F).

Measures 18 – 21 of K. 545 contain a combination of accompaniment types commented on above. Repeated chords (in this case the third and fifth of the chord arpeggiated by the melody) appear in measures 22 and 23 in the left hand. This type of accompaniment is less interesting than many of the others, and I advise students to use it sparingly. Perhaps Mozart chooses it here to emphasize the slowing of the harmonic rhythm approaching the arrival on the tonic of the sonata form's secondary key area in measure 26 (not shown in the example), which ends the secondary key area and begins the closing material.

I also wanted students to see an example of rhythmic punctuation, in which a rest in the melody is filled in by the accompaniment. This pattern does not occur clearly in K. 545 (the melody and accompaniment overlap during the rhythmic alternation in measures 18 – 21), so I added another excerpt, shown as Example 10c. The beginning of the first variation of K. 331's first movement displays a straightforward use of rhythmic punctuation. In measures 19 – 21 the accompaniment sounds only during the melody's rests.

In addition to its descriptions of accompaniments shown in Example 10, Example 11 contains several suggestions for accompaniment use. Students were encouraged to use several different accompaniment types and to change types at least every four measures. However, too frequent changes are as unstylistic as changes that are not frequent enough, so students were given a limit of no more than two accompaniment types per measure. Further, changes in accompaniment should reinforce the meter, so I instructed students to change accompaniments only on strong beats. The remaining instructions remind students that rests in the accompaniment are acceptable (students whose theoretical training primarily consists of writing in four-part chorale texture are often reluctant to use rests in freer textures), suggest the use of non-chord tones in the accompaniment, and warn students of the problems that arise from too-thick accompaniment textures.

A helpful exercise for students would be to ask them to identify types of accompaniments in a Classic era keyboard work in the manner of Example 10 and then discuss why a certain accompaniment is appropriate for a particular melody or location in the work. This exercise could help prepare students to choose accompaniment types and then write accompaniments of their own.

Classic era keyboard music contains typical melodic and rhythmic patterns at cadences, and in order to imitate the Classic style students must learn to write those cadential patterns.

Therefore, I taught students to write what I call a “Mozart cadence” – a weak cadence with double or triple non-chord tones, either appoggiaturas, accented passing tones, suspensions, retardations, or some combination.²⁶ Example 12 shows three such cadences, each enclosed in a box.

a) Mozart, Piano Sonata in D major, K. 576, I, mm. 1 - 10

b) Mozart, Variations on “Dieu d’amour,” K. 352, mm. 1 - 10

c) Beethoven, Piano Sonata in B♭ major, op. 22, III, mm. 1 - 4

Example 12: “Mozart cadences”

²⁶ The eighteenth-century theorist Heinrich Koch called this type of cadence an “overhang.” See Heinrich Koch, *Introductory Essay on Composition: The Mechanical Rules of Melody, Sections 3 and 4*, translated by Nancy Kovaleff Baker (New Haven: Yale University Press: 1983), 24.

(See also the last measure of the excerpt from Mozart's K. 333 shown in Example 10a.) Examples 12a and 12b contain perfect authentic cadences, one approached from above, one from below. Example 12c contains a half cadence. About this sort of cadence Ratner writes "The qualities in classic harmony that enabled the appoggiatura to play a prominent role also led to another striking treatment of dissonance – the *simultaneous sounding of two harmonies*. ... The double or triple appoggiatura is generally found at a cadence to emphasize the arrival effect, and thus it serves a rhetorical and expressive purpose."²⁷

I gave my third-semester theory students the assignment of writing a sonata form exposition for piano, with appropriate Classic era accompaniment. My students had studied species counterpoint, four-part writing with diatonic and secondary chords, harmonic sequences, and modulation to closely related keys during their first two semesters of theory study, and also completed a short unit on Baroque counterpoint. Harmonic topics in the third semester included augmented sixth chords and the Neapolitan chord, which were required to appear in the sonata exposition assignment.

The first half of the third semester was devoted to preparing students for the sonata assignment by gradually shifting from four-part to freer accompanimental textures. Along the way students examined sentences and periods by Classic era composers noting typical harmonic choices before beginning to compose their own sentences and periods. Sample assignments included writing a melody in sentence or period form and harmonizing it with Roman numerals, and harmonizing a pre-existing melody with Roman numerals and later an appropriate accompaniment.²⁸ These

²⁷Ratner, *Classic Music: Expression, Form, Style*, 64, italics Ratner's. For more information on Classic era cadences see William Caplin, "The Classical Cadence: Conceptions and Misconceptions," *Journal of the American Musicological Society* 57 (2004): 51-117, and Robert Gjerdingen, *Music in the Galant Style* (Oxford: Oxford University Press, 2007). Gjerdingen's book in particular could be useful in pedagogy. Gjerdingen shows stereotypical schema (scale degree patterns) in the works of many Classic era composers. These schema could be used by students to craft stylistically appropriate compositions. His chapter 11 (pages 139-176) discusses schema appearing at cadences. Several of his musical examples therein contain a "Mozart cadence," especially Example 11.9 on page 145.

²⁸Other possible exercises include writing a melody over a given chord progression; writing a composition following a diagram that could include information about phrases, cadences, and keys; and writing modulating passages given starting and ending keys.

assignments allowed us to visit other topics such as harmonic rhythm, phrase rhythm and hypermeter, and motivic connections. Finally, students analyzed keyboard sonata form movements by Haydn, Mozart, and Beethoven.

I taught my students to write what Caplin would call "tight knit" melodies. Caplin defines "tight knit" as "a formal organization characterized by the use of conventional theme-types, harmonic-tonal stability, a symmetrical grouping structure, form-functional efficiency, and a unity of melodic-motivic material."²⁹ Since I wanted my students to imitate the most typical aspects of Classic era music, we studied and wrote primarily tight-knit melodies, which have more in common with each other than do their opposites, "loose" melodies. Most of the Classic era excerpts in this article are tight knit.

Example 13 shows my composition assignment, which was due at midterm.

²⁹Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*, 257.

Write the exposition only of a sonata form for keyboard in the Classic era style. Choose either any major key (in which case you will modulate to V) or any minor key (modulate to III). Do not choose keys with lots of sharps or flats. Classic era composers usually avoided these keys.

Your sonata exposition should look like this:

Meter – 4
4

Primary key area – sentence or parallel period, eight measures long, ending with a perfect authentic cadence (PAC). Melodies in the primary key area are often strong or forceful, at least compared to melodies in the secondary key area.

Transition – dependent, at least eight measures long, ending with a medial caesura.

Medial caesura – should be a half cadence in the new key. The half cadence's V chord must be preceded by an augmented sixth chord (any type).

Secondary key area – sentence or parallel period, eight measures long ending with a PAC, but not the same form as the primary key area. (In other words, if your primary key area is a sentence, your secondary key area must be a parallel period; if your primary key area is a parallel period, your secondary key area must be a sentence.) Melodies in the secondary key area are often song-like or graceful, at least compared to primary key area melodies. Make sure your secondary key area provides some melodic contrast to your primary key area. You may, however, want to include the same rhythmic or pitch motives in both areas.

Closing material – at least eight measures long ending with a PAC in the new key.

All cadences except the medial caesura must be typical Classic era cadences ("Mozart cadences").

Also, if you choose to write a sonata exposition in minor, you must use a Neapolitan chord somewhere in your primary key area or transition.

Deadlines:

Friday, 10/15 – primary and secondary key areas due, with accompaniment

Wednesday, 10/20 – primary and secondary key areas returned to you

Friday, 10/22 – Thursday, 10/28 – Individual meetings with instructor. Please have as much finished as you can before the meeting.

Friday, 10/29 – composition due

which would have made the composition too short, and because many of the works we had studied were in 4/4. Students were required to write both a sentence and a period, one in the primary key area and one in the secondary key area. (Students could choose which key area contained which form although the more dramatic nature of the sentence is a better fit with the primary key area, while the more flowing period works best in the secondary key area.) The transition, which was required to be at least eight measures long, had to end with a medial caesura on a half cadence in the key of the secondary key area preceded by any type of augmented sixth chord. The closing area was also required to be at least eight measures long, and end with a PAC in the new key. Additionally, I required all cadences except the medial caesura to be "Mozart cadences," described above, and all sonata expositions in minor to contain a Neapolitan chord.

Example 14 shows a sonata exposition diagram that could be given to students to supplement written instructions.

Example 13: Sonata exposition composition assignment

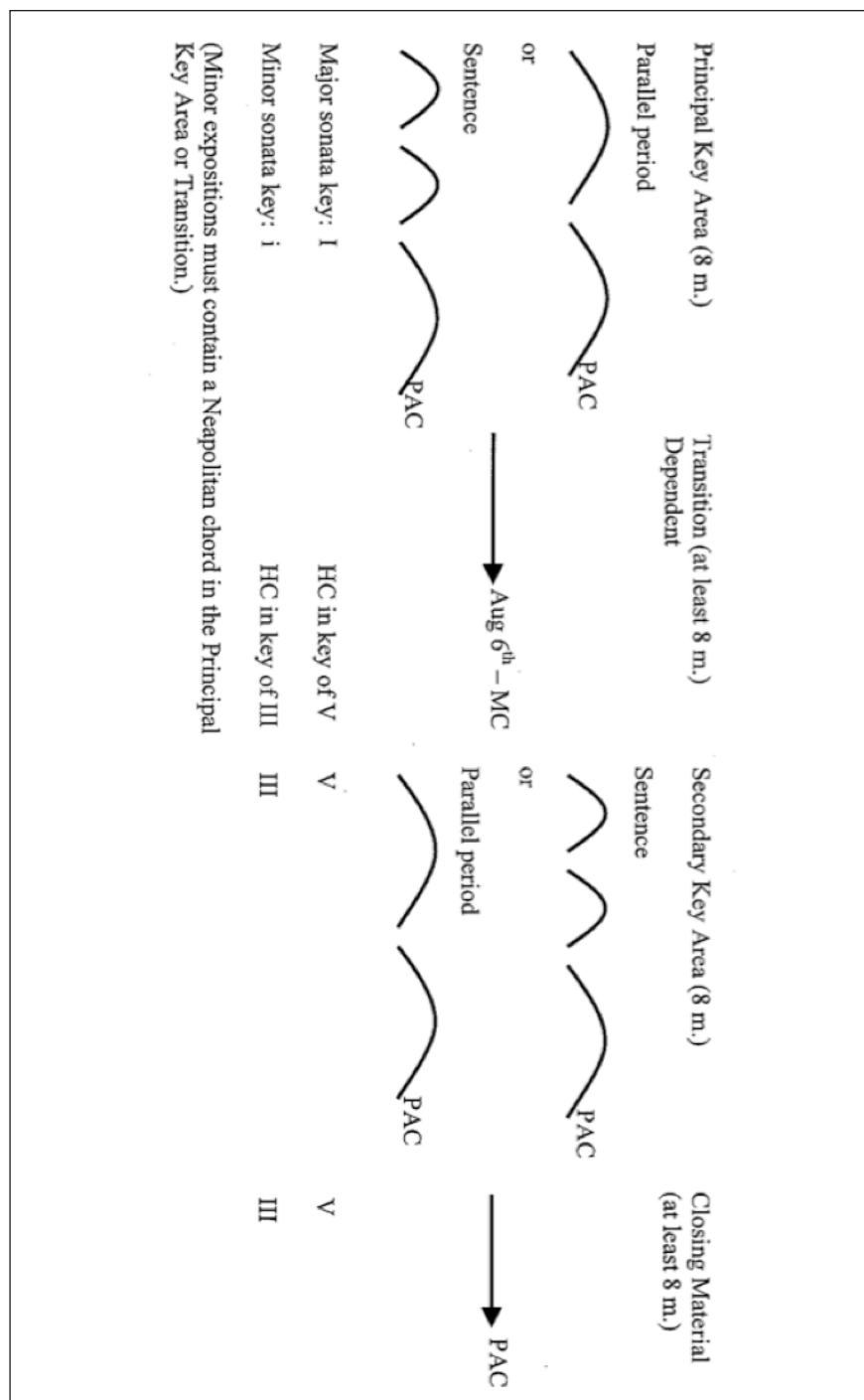
Students could choose either a major key (in which case their composition would modulate to V) or a minor key (modulation to III). In either case they were instructed to choose a key with few sharps or flats, keys commonly found in Classic era compositions. I specified 4/4 meter to prevent students from choosing 2/4 meter,

The diagram contains all the information in the assignment shown in Example 13 in a visual format. Parts of the sonata form, phrases, lengths in number of measures, keys, and cadences are all shown.

The assignment was due in two stages. The primary and secondary key areas (the sentence and period) were due first. I suggested changes to these portions of the assignment and returned them to the students. The entire assignment was due two weeks later. Approximately one week before the assignment was due I met with each student individually (I had a small class of nineteen students) to look over as much of the exposition as they could finish and to offer assistance as needed. Additionally, students completed a listening assignment to ensure that they were as familiar as possible with Classic era keyboard compositions. Students listened to the first movements of Haydn's Piano Sonata in A major, H. XVI:26, Mozart's piano sonatas K. 332, K. 333, and K. 545, Beethoven's piano sonatas op. 2 no. 1 and op. 13, and the first and last movements of Mozart's Symphony no. 41, "Jupiter." A few days before the composition was due students turned in a brief written description of each work they had heard.

My sonata exposition assignment was designed for liberal arts students, many of whom were enrolled in a B.A. program in music. A few of my students were pursuing a minor in music, and a few were taking music theory as an elective. Most were sophomores. This assignment could be adapted easily for other student populations. Bachelor of music students could be required to perform their own compositions (my students were not), non-keyboardists perhaps writing for their own instrument or voice with piano accompaniment. Composition majors or more advanced students could write an entire sonata form. Students with less preparation could be provided with pre-existing melodies, and could be instructed to harmonize and devise accompaniments for those melodies in the manner of the assignment created by Sylvia Parker, described above.

The following examples show successful excerpts by my students taken from their sonata exposition assignments. Example 15 shows two student themes, both from the secondary key area.



Example 14: Sonata exposition layout

a) Student 1, secondary key area, measures 17-24 - parallel period

b) Student 2, secondary key area, measures 17-24 - sentence

Example 15: Two student themes

Example 15a, written by Student 1, a trombonist and pianist, is a parallel period. Its first phrase ends with a half cadence, while the second phrase begins like the first, departs at the end of measure 6, and finishes with a perfect authentic cadence. Student 1's theme is accompanied by Alberti bass followed by a moving bass line at both cadences. Note the "Mozart cadence" in measure 8. Example 15b, written by Student 2, a pianist, displays a typical sentence construction: a two-measure idea (measures 1 and 2) answered in measures 3 and 4, followed by a four-measure continuation phrase and a cadence. Of interest here are the accompanimental scales filling in the melody's rests in measures 2 and 4, and the "Mozart cadence" at the end.

The next examples (16 – 19) show further excerpts from

three student sonata projects that contain a greater variety of accompaniments than those shown in Example 15. Example 16 shows a theme from the primary key area in sentence form, written by Student 3, a pianist.

Example 16: Student 3, primary key area, measures 1 – 8, with accompaniment types identified

I have bracketed portions of his accompaniment and labeled each bracket with the number of the accompaniment type from Example 11, the list of accompaniment types that students used in writing this assignment. Student 3 relies mostly on type 7, repeated chords, type 10, intervals of thirds/sixths, and a bass and afterbeat pattern not listed in Example 11. Even those limited accompaniment patterns produce an idiomatic Classic era piano texture. Student 3's changes in accompaniment are particularly effective, as they help delineate the motivic structure and form. The parallel thirds and sixths at the beginning of measures 2 and 4 reinforce the eighth-note melodic figure they accompany, an excellent choice since this eighth-note motive returns as the primary material of the continuation phrase, measures 5 – 8. (However, Student 3 should have resolved measure 3's bass leading tone in measure 4.) The change in measure 5 to type 6, rhythmic alternation, announces the beginning of the continuation phrase, separating it from the two subphrases in measures 1 - 4. Rhythmic alternation also complements the melody nicely in measure 5. Student 3's final cadence is underscored by an appropriate accompaniment, type 3, a bass line. An additional interesting feature of this composition is the stepwise rising melodic line G – A – B in measures 1 – 4, which is answered by the stepwise

descent from E to G in measures 5 – 8.

Example 17 shows a theme from the secondary key area written by Student 4, a violinist.³⁰

Example 17: Student 4, secondary key area, measures 21-28, with accompaniment types identified

This theme displays a greater variety and more skilled use of accompaniment types, also bracketed and numbered. The theme is a parallel period, and its antecedent phrase, measures 21-24, contains four different accompaniments: type 1, Alberti bass; type 7, repeated chords; type 4, arpeggio; and type 3, bass line. The antecedent phrase is itself a sentence, with a one-measure subphrase, measure 21, that is varied in measure 22 and continued in measures 23 and 24. This phrase displays a sophisticated interaction of melody and accompaniment. The left hand imitates the right hand's group of four eighth notes in measures 21 and 22. Further, the two consecutive rhythmic motives in the melody in measure 21 – four eighth notes followed by a dotted note – appear simultaneously as melody and accompaniment in measure 23.

Student 4's consequent phrase also contains interesting features. Measures 21 and 22 return as measures 25 and 26. Measure 27, the point at which the consequent phrase departs melodically and harmonically from the antecedent phrase, is emphasized by the introduction of a new accompaniment pattern. This feature of antecedent phrases is noted by William Caplin, as described above. The new pattern is type 2, what I call the "get out of the

³⁰ The pitch content of Student 4's melody is reminiscent of that of the first eight measures of the first movement of Mozart's Piano Sonata in A major, K. 331.

way" accompaniment, which lightens the texture giving more prominence to the new idea in the melody. The period ends with a "Mozart cadence" accompanied by type 3, the bass line.

Despite skilled accompanimental writing, there are a few small problems in Student 4's theme. The right hand of measure 22 is a sequence of the right hand in measure 21, and the left hand should be in sequence as well. The accompaniment in measure 22 should have started with Alberti bass rather than an arpeggio to mimic the accompaniment of measure 21. In measure 24, the D in the bass on beat 2 arrives too early since the change to dominant harmony does not occur until beat 3. G or C would have been a better bass note there. The melody in measure 27, a straightforward arpeggiation of tonic and dominant harmonies, is not interesting or florid enough to merit its "get out of the way" accompaniment. The final cadence would benefit by the addition of a middle C to the first chord in measure 28. Despite these small errors, though, this composition is an excellent example of the Classic era style, in part due to its fluent use of idiomatic accompaniment patterns.

Example 18 shows a theme from the primary key area written by Student 5, a percussionist.

Example 18: Student 5, primary key area, measures 1-8, with accompaniment types identified

It shares some features with Student 4's theme: it is also a parallel period, and its first four measures are a sentence. Student 5 also uses a wide variety of accompaniment types, and even combines them. Measures 1 and 2 begin with type 7, block chords, and then switch to a combination of type 4, arpeggio, and type 6, rhythmic alternation, an imitation of the melody's rhythm in the first half of both measures. A particularly nice feature in measures 1 and 2 is the bass passing tone, the last eighth note in each measure, which smoothly connects to the bass of the next chord. (Also the accented chromatic passing tones in the melody in measures 1 and 2 provide additional interest.) Measure 3 contains block chords and then the "get out of the way" texture, used to avoid any conflict with the busy sixteenth-note melody. Measure 4 contains type 5, a countermelody, whose rhythm refers to that of the melody in the previous measure. Block chords follow at the cadence rather than the more typical bass line. Since this phrase is a parallel period, measures 1 and 2 are repeated as measure 5 and 6. As Student 4 also did, Student 5 changes the texture dramatically in measure 7, where the consequent phrase departs from the antecedent phrase. Student 5 also chooses type 2, the "get out of the way" texture, to emphasize the new melodic idea. Student 5 then cadences with type 7, block chords, followed by a combination of type 4, arpeggio, and type 6, rhythmic alternation, reminiscent of the accompaniment in measures 1 and 2. Despite errors in the melodic writing in measure 3 (the harmonies implied by the melody don't match those of the accompaniment) and the absence of "Mozart cadences," overall this is a successful theme due to its skilled handling of accompaniment patterns.

I will conclude by presenting an entire student sonata exposition written by Student 3, shown in Example 19.³¹

³¹ This sonata exposition corresponds to Hepokoski and Darcy's Type 3 sonata, the most typical of sonata form types. See James Hepokoski and Warren Darcy, *Elements of Sonata Theory* (Oxford: Oxford University Press, 2006). Hepokoski and Darcy describe Type 3 sonatas as "standard 'textbook' structures, with expositions, developments, and recapitulations that normally begin on the tonic." (p. 344) The exposition of a Type 3 sonata contains a primary key area in the tonic, a modulating transition ending with a cadence (often a half cadence in the new key), a secondary key area in the new key, and closing material in the new key.

The musical score for Example 19 is a piano sonata exposition in G major, 4/4 time. It consists of 27 measures. The first section, 'primary key area - sentence', covers measures 1-4. Measures 1 and 2 feature block chords in the bass and a sixteenth-note melody in the treble. Measures 3 and 4 continue this texture. The second section, 'transition (dependent)', covers measures 5-8. Measures 5 and 6 repeat the first two measures. Measure 7 introduces a new texture with a 'get out of the way' pattern. Measure 8 cadences with block chords. The third section, 'medial caesura', covers measures 9-12. Measures 9 and 10 repeat the first two measures. Measure 11 features a 'get out of the way' texture. Measure 12 cadences with block chords. The fourth section, 'secondary key area - parallel period', covers measures 13-19. Measures 13 and 14 repeat the first two measures. Measure 15 features a 'get out of the way' texture. Measure 16 cadences with block chords. Measures 17-19 continue the texture. The fifth section, 'closing material', covers measures 20-27. Measures 20 and 21 repeat the first two measures. Measure 22 features a 'get out of the way' texture. Measure 23 cadences with block chords. Measures 24-27 continue the texture.

Example 19: Student 3's sonata exposition

Example 19: (continued) Student 3's sonata exposition

Sections of the sonata form have been marked on the score. I already have discussed the primary key area (Example 16), and therefore will begin my comments with the transition (measure 9). Student 3's dependent transition begins with the same accompaniment as the principal theme, but departs from that previous accompaniment as early as measure 10, signaling in retrospect that measure 9 began a new section of the work. In measure 10, the accompaniment countermelody of measure 2 is replaced by a continuation of the bass and afterbeat pattern, alerting the listener that the succeeding passage will be different from the primary key area. Later in the transition, the accompaniment is significantly different from that of the primary key area as the transition melody strays farther. For example, measure 13 contains a chordal arpeggio and rhythmic alternation between the melody and the accompaniment. The prominent rhythmic figure in measure 13, two sixteenth notes and an eighth note, is the retrograde of the rhythmic figure in the bass of measure 5 (primary key area), an eighth note and two sixteenth notes – a particularly elegant compositional detail. The transition culminates with a half cadence in the new key in measure 17. The cessation of rhythmic motion at this cadence is too abrupt, but the murky bass that leads to it is quite effective, focusing attention on the descending chromatic line that drives to the arrival on the note A. Murky bass is atypical at this location, but other typical features

compensate, including the progression augmented sixth – V and the repeated sixteenth-note patterns in the melody that assist in the drive to the cadence.

The secondary key area, which starts in measure 18, is accompanied by a gentle Alberti bass, in keeping with its more lyrical character, setting it apart from the more energetic accompaniments of the primary key area and transition. The secondary key area is a parallel period, a nice contrast with the sentence structure of the primary key area. The ending of the secondary key area features an appropriate bass line accompaniment and a "Mozart cadence." The closing material returns to the bass and afterbeat pattern, changing to block chords during a brief codetta (measure 34) for more emphasis at the end. While the closing material is perhaps too long for an exposition of this length, it clearly accomplishes what it must as closing material. It reinforces the new key by presenting a repeated cadential gesture (the progression I ii6 V7 I), followed by a dramatic finish created by the acceleration of melodic and harmonic rhythm accompanied by the alternation of I and V chords.

These student compositions seem to me to compare favorably with the keyboard works of some Classic era composers, if not masters like Mozart and Haydn then some of their lesser contemporaries. At the least, my students were able to get beyond the use of stock accompaniment formulas to create something more idiomatic. Further, they were able to incorporate accompaniment into their compositional choices as an equal of rather than an accessory to melody, harmony, and form. They discovered how much accompaniment patterns contribute to musical style, and how various components of musical texture interact with each other. Most importantly, they learned that just because something is not melodic does not mean that it should be unmusical.

A careful study of the keyboard works of Mozart and other composers from the Classic era reveals a richness of accompaniment types not often found in undergraduate harmony textbooks. I have shown that with some help undergraduates can learn these accompaniment types and use them with skill, thus furthering their understanding of the Classic era style. Students can gain a greater sensitivity to all elements of musical texture, not just melody and harmony, which will help them grow as performers, composers, and listeners.

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What Can Music Theory Pedagogy Learn From Mathematics Pedagogy?

BY LEIGH VANHANDEL

Music theory fundamentals are often compared to the basics of mathematics; the skills involved in spelling intervals, scales, and chords are required to be as second-nature to musicians as skills such as addition, subtraction, multiplication and division are to anyone engaging in mathematics. The relationship between mathematics and music theory is an intuitive one as well: music theory consists of many instances of systematic thought that are closely related to mathematical principles; composers have long used the notion of algorithms in their compositions; and recent topics in transformational theory have borrowed from advanced mathematics.

However, the pedagogy of mathematics education is an immense field that has enjoyed much more research attention and funding than the pedagogy of music theory. Current research trends in mathematics pedagogy include incorporating elements of cognitive science and neuroscience in an effort to connect mind, brain, and education. If mathematics and music theory are related, as frequent comparisons and intuition may tell us, teachers of music theory may be able to apply findings in mathematics pedagogy to our own discipline. My intent in this discussion is to illustrate that there is likely a relationship between the cognitive processes involved in learning music theory fundamentals — pitches, intervals, scales, keys, and chords — and the cognitive processes involved in learning basic mathematical processes, and that understanding how students learn mathematics may help us teach music theory more efficiently.

What, other than intuition, can tell us that there is a relationship between mathematics and music theory fundamentals? The evidence that comes out of the literature of music education — specifically, that of identifying factors that may contribute to student musical achievement or success at the university level. Several studies have found significant relationships between measures of academic achievement, such as standardized tests or IQ tests, and achievement in music.¹ Two studies by Harrison focus on how

¹For example, Roby (1962). Summaries of multiple studies on general intelligence and academic achievement are listed in Gordon (1968) and

multiple factors affect performance in freshman year music theory coursework, in order to determine which factors were the best predictors of performance based on grade.² The factors investigated included general achievement, as measured by scores on the verbal and math portions of the Scholastic Aptitude Test (SAT); overall academic achievement as measured by high school GPA; musical aptitude, as measured by performance on a standardized music aptitude test; musical experience prior to enrollment in college, including ensembles and private lessons; principal instrument; and gender. Her first study found that for a freshman year music theory course including four components (written work, aural skills, sight-singing, and keyboard skills), the best predictor of success in the course was performance on the math portion of the SAT exam. Her second article separated the four components of written, aural, sight-singing and keyboard skills and explored the relationship between the predictive factors and the four components; she also investigated whether the same factors were similarly predictive for both first- and second-semester classes. Her analysis determined that for the first semester, student scores on the SAT math test were significant predictors of performance for each of the four components of freshman music theory, and were the best overall predictor of performance in the written skills component. For the second semester the SAT math score was still the best predictor of performance in the written skills component, but was not a significant predictor of performance in the other three components of the curriculum (aural skills, sight-singing, and keyboard skills). Her conclusions include the observation that “[t]he significant relationship between scores on the math component of the SAT and grades in the written-work component might be explained by the structured thought processes required for both.”³ She notes in

Harrison (1996); full citations are in the bibliography.

²C. Harrison, “Predicting Music Theory Grades: The Relative Efficiency of Academic Ability, Music Experience, and Musical Aptitude,” *Journal of Research in Music Education* 38, no. 2 (1990), 124–137; and C. Harrison, “Relationships between Grades in the Components of Freshman Music Theory and Selected Background Variables,” *Journal of Research in Music Education* 38, no. 3 (1990), 175–186.

³Harrison, “Relationships between Grades in the Components of Freshman Music Theory and Selected Background Variables,” 184.

a follow-up analysis that “it is reasonable to suspect that different forms of music achievement may require different skills and knowledge for success.”⁴

Other studies support Harrison’s findings that achievement in mathematics predicts success in the written components of a music fundamentals course, but does not predict performance on the aural skills components. Bahna-James’ study of high school students in a performing arts school setting found significant correlations between student performance in mathematics classes (basic arithmetic, beginning algebra, geometry, trigonometry, and calculus) and written music theory fundamentals skills (focusing specifically on intervals, key signatures, and chords).⁵ The correlation between performance in these mathematics classes and the aural skills activities of sight-singing and rhythmic dictation were mixed.⁶ In a study by Schleuter focusing primarily on the predictive value of standardized music achievement tests, student SAT scores were found to have no significant relationship to grades in aural skills and sight-singing.⁷ More recently, Jones and Bergee found a strong association between two non-musical factors, high school class rank percentile and score on the math portion of the American College Test (the ACT, a standardized test similar to the SAT), on student performance in the freshman written music

⁴C. Harrison, “Relationships between Grades in Music Theory for Nonmusic Majors and Selected Background Variables,” *Journal of Research in Music Education* 44, no. 4 (1996): 350.

⁵T. Bahna-James, “The Relationship Between Mathematics and Music: Secondary School Student Perspectives,” *The Journal of Negro Education* 60, no. 3 (1991), 477–485.

⁶The primary goal of Bahna-James’ study was to illustrate that musically inclined students, such as the type attending an urban performing arts high school, tend to have a negative perception of their abilities in mathematics; her study focused more on the qualitative elements of how students felt about mathematics and whether the students believed there was a relationship between mathematics and music theory.

⁷S. Schleuter, “A Predictive Study of an Experimental College Version of the Musical Aptitude Profile with Certain Music Achievement of College Music Majors,” *Psychology of Music* 11 no. 1 (1983), 32–36. Schleuter’s study only included applied music, sight-singing, and ear training classes and did not include written music theory.

theory course.⁸ These two factors outweighed any musical factor, including performing medium (instrument/voice) and any prior study of music theory fundamentals. As in Schleuter's study, Jones *et al.* found no significant direct relationship between the ACT-Math score and performance in aural skills classes.

If performance on standardized tests such as the math SAT or ACT is one of the best predictors of performance in written freshman-level music theory courses, it stands to reason that there is some kind of relationship between the cognitive processes used in solving the types of problems that appear on the math SAT or ACT and in the music theory curriculum. What are the elements of this relationship? What can music theorists learn from the vast amounts of mathematics education research, and how can we transfer that to the domain of music theory?

Mathematics and music share many similarities. In order to communicate about both mathematics and music, a form of representation is necessary – a system of notation. To be fluent in either mathematics or music requires fluency with the system of representation, and as fluency advances, the systems of representation and the concepts represented become increasingly more complicated and abstract. The basic mathematical functions (addition, subtraction, multiplication and division) are organized as number systems, and the regularities present in the system help children acquire the knowledge necessary within that system.⁹ Similarly, the fundamentals of music theory can be organized systematically, and if students understand the system it can help them understand each piece of the system and to grasp the whole.

Performing mathematical computations requires the use of algorithms, or step-by-step instructions for completing the task; the same may be said for the methods for deriving intervals, scales, or chords. Algorithms depend on representation, and the selection of an algorithm in both mathematics and music requires a student to make decisions regarding the simplicity, efficiency,

⁸M. Rusty Jones and M. Bergee, "Elements Associated with Success in the First-Year Music Theory and Aural-Skills Curriculum," *Journal of Music Theory Pedagogy* 22 (2008), 93–118.

⁹J. Kilpatrick, *et al.*, (Eds.), *Adding It Up: Helping Children Learn Mathematics*. National Research Council: Mathematics Learning Study Committee, Center for Education, Division of Behavioral and Social Sciences and Education. (Washington DC: National Academy Press, 2001), 2.

and precision of the algorithm.¹⁰ Basic mathematical processes and music theory fundamentals also both require the development of expert understanding. Experts typically understand meaningful patterns of information rather than isolated, unconnected bits of knowledge.¹¹ In order to develop expert knowledge, students must be able to create an organized hierarchical structure for the domain; this will help them make connections between material and will also aid in effective retrieval of information. The need to develop an expert understanding of the material is one of the primary challenges in the freshman written music theory curriculum. Students need to be able to calculate intervals, scales, keys, and chords quickly and accurately in order to progress through the class, as well as to succeed in classes that engage with more abstract theoretical concepts. It may be possible to extrapolate from the extensive research within the literature on mathematics education on developing an expert understanding of mathematical fundamentals and apply some of the findings to the written music theory classroom.

When encouraging students to develop the necessary fluency with theory fundamentals, theory instructors frequently use analogies to language and mathematics. Requests to recognize the representation system are often related to language, with questions such as, "If you had to spend time identifying each letter in the word 'the', how quickly would you be able to read?" Similarly, students are frequently directed to memorize elements such as intervals or key signatures via an analogy to mathematics: "At some point in your life, you had to count on your fingers to solve $4 + 3$; now you just 'know' it."

How *do* students learn to solve $4 + 3$, and how do they reach the point where they just "know" it?¹² And, more importantly, how can

¹⁰Kilpatrick *et al.*, *Adding It Up*, 103.

¹¹J. Bransford, *et al.*, (Eds.) *How People Learn: Brain, Mind, Experience and School*. National Research Council: Committee on Developments in the Science and Learning, Committee on Learning Research and Educational Practice, and Commission on Behavioral and Social Sciences and Education. (Washington, DC: National Academy Press, 2000), Chapter 2.

¹²Much of the research on acquisition of the fundamentals of mathematics involves children, as that is when they are presented with the material (addition, subtraction, multiplication, division). It is common for research in mathematics education to extrapolate the

knowing how students learn to solve $4 + 3$ help teach us about how students learn the fundamentals of music theory, and about how we can teach the material more effectively?

Many music theory instructors rely on the drill and test method of instruction, believing that exposing students to the material repeatedly, and holding the student responsible for its acquisition through testing, will result in knowledge. However, as far back as 1935 mathematicians were realizing that drill, absent other types of reinforcement, leads to little if any growth in quantitative thinking.¹³ The timed test on concepts not yet mastered can also have detrimental effects on the student's disposition to the material.¹⁴ Students will not develop more mature and efficient ways of working with the material based on drill alone; they must be instructed how to develop more efficient methods.

Mathematics educators have learned that acquiring proficiency with basic mathematics skills requires much more than rote memorization. The current general consensus is that students learn or develop increasingly advanced and abstract systems and methods for generating answers, and are able to choose adaptively among strategies depending on the mathematical context and their ability level. After working through these systems, many are eventually able to use immediate recall as their predominant method for simple arithmetic skills. This theory has its roots in Piaget's notion of discrete stages or steps of thought. In that model, each step produces a new type of understanding by building on the previous set of knowledge. According to this model, a student uses one strategy to solve problems, switches to a more advanced strategy at some point and abandons the first strategy,

findings of studies on children to those of adult learners, especially in studies involving remedial or fundamental math courses at the collegiate level. In addition, much literature on best practices in mathematics teaching is also generated by studies at the K–12 level and extended to collegiate mathematics teaching practice. (Speer et al., 2010 point this out, while also acknowledging that there are differences at the collegiate level in teacher, student, and in teaching practice; they call for there to be more research on best practices in collegiate mathematics education.)

¹³ W. Brownell and C. Chazal, "The Effects of Premature Drill in Third-Grade Arithmetic," *Journal of Educational Research* 29, no. 1 (1935), 17–28.

¹⁴ Kilpatrick et al., *Adding It Up*, 193.

and later may move to an even more advanced strategy.¹⁵ Recent educational research, however, reveals that the relationship is more complex, and that students frequently use more than one strategy when presented with tasks and are able to readily switch between strategies, and that this is true not only of children but also through teenage years and into adulthood.¹⁶

An example of students using a variety of strategies to solve the same problem can be seen in the five common strategies children use for single-digit addition:

1. the sum strategy, in which a student asked to solve $4 + 3$ will put up four fingers, then put up three more, and then count each finger from 1 to 7 to arrive at the answer;
2. the min strategy, in which a student would count up from the larger number the amount indicated by the smaller number ("4, ... 5, 6, 7");
3. the decomposition strategy, in which the student would translate the problem into an easier form by relying on known information to generate the unknown (" $4 + 2$ is 6, so $4 + 3$ is 7");
4. the retrieval strategy, in which the student is simply able to retrieve the answer from memory;
5. the guessing strategy, in which the student simply guesses at an answer.

Aside from *guessing*, these strategies are listed in increasing order of complexity and abstraction.

According to Siegler and Shipley, students use different strategies for different mathematics problems; in fact, students sometimes use different strategies for the *same* problem when presented on different days, and they do not always move from a

¹⁵ R. Siegler, "Implications of Cognitive Science Research for Mathematics Education," in *A Research Companion to Principles and Standards for School Mathematics*, edited by J. Kilpatrick et al., (Reston, VA: National Council of Teachers of Mathematics, 2003), 219–233.

¹⁶ R. Siegler and C. Shipley, "Variation, Selection, and Cognitive Change," in *Developing Cognitive Competence: New Approaches to Process Modeling*, edited by T. Simon and G. Halford, (Hillsdale, NJ: Lawrence Erlbaum Associates, 1995): 31–76. Also Siegler, "Implications of Cognitive Science Research," and references within both articles.

less advanced strategy to a more advanced strategy.¹⁷ Siegler and Shipley refer to this phenomenon as *adaptive strategy*; students will choose the strategy they feel is necessary in order to complete the task. If a student is able to determine the answer via retrieval, they frequently will, as that is usually the fastest and most accurate method; however, if they are uncertain about the answer, or if it is not available for retrieval, they will adaptively choose among the other 'backup' strategies for verification or for deriving the solution.

Research into student strategies on mathematical tasks reveal that there are four dimensions of strategic competence: (a) which strategies are used, (b) when each strategy is used, (c) how each strategy is executed, and (d) how strategies are chosen.¹⁸ A change in any one of these dimensions can result in overall improvements in student speed and accuracy at a task. If students gradually develop the ability to retrieve answers to single-digit addition problems, and develop confidence in that ability, they will rely less and less on the backup strategies, but may still resort to using the backup strategies on difficult problems or on problems where they are uncertain about the retrieved answer.

However, research also shows that students are reluctant to adopt new strategies unless they see an immediate benefit to doing so or are presented with a situation that virtually requires it. For example, if a student who predominantly relies on the *sum* strategy has been introduced to the *min* strategy, they will likely continue to use the *sum* strategy unless they are given a problem such as " $22 + 3$ ", where the preferred strategy has obvious deficits. Unless presented with experiences that illustrate the advantages of a new strategy, students tend to hesitate to adopt the new strategy and favor older, more familiar strategies.

Siegler and Shipley cite multiple studies illustrating that strategy diversity and adaptive strategy is used in the acquisition of other skills and in other cultures, and is used by adults as well. These concepts can be applied to music fundamentals instruction. As an analogue to simple addition tasks, we can consider the typical processes and strategies students encounter when they learn to write and/or identify intervals.

¹⁷Ibid., 33–34.

¹⁸P. Lemaire and R. Siegler, "Four Aspects of Strategic Change: Contributions to Children's Learning of Multiplication," *Journal of Experimental Psychology-General* 124, no. 1 (1995), 83–96; Siegler and Shipley, *op. cit.*

The generally accepted first step in teaching intervals is to teach students to calculate or identify the generic size of the interval without regard for quality – a fourth, a fifth and so on. The first strategy beginning theory students typically employ is to count note names as if they were counting numbers, albeit in a mod-7 system using letter names instead of numbers; e.g., a fifth above A would be calculated by 'counting' "A, B, C, D, E," and a third above B would be counted as "B, C, D." This strategy is roughly analogous to the *sum* or *min* method in mathematics; the student is identifying a starting point and systematically counting to arrive at the solution.

The second strategy often employed is a visual one – trying to get students to recognize what a third or a sixth looks like when represented on the staff. This can relate to the *decomposition* or *retrieval* strategy; when presented with a fifth, the student might be able to instantly recognize it from its visual appearance; if the student is presented with a sixth, they might remember what a fifth looks like and realize that the interval is one line or space larger than that. As with strategies in mathematics, some students may make the jump to this strategy automatically; other students may require that it be presented to them explicitly.

Next, when the concept of interval quality is introduced, there are multiple mental strategies that students can use to spell or identify requested intervals, listed in order from least efficient/desirable to most:¹⁹

1. Students can memorize the number of half steps or whole steps in a given interval and spell the interval by counting;
2. Students can use a scale-based method for determining intervals; they can imagine that the bottom note of the interval is the tonic degree of a scale, and can use their knowledge about scales and keys to determine the answer;
3. Students can memorize certain pieces of information and use those in a strategy similar to the *decomposition* strategy, where they relate their known information to an unknown. For example, if a student has memorized that C4 to E4 is a major third, they will be able to determine that C4 to E♭4 is a minor third because it is a half step smaller;

¹⁹Note that I am specifically considering *mental* strategies here; there are certainly other strategies that students use, including kinesthetic strategies.

4. Immediate recall – as above, related to decomposition, since decomposition requires that students have an immediately available referent to work with.

As with the strategies for single-digit addition, these strategies are all available for students to use as they are developing their fluency with the material. However, each of these strategies has strengths and weaknesses that both the student and the instructor need to consider.

As with counting letter names, the half step/whole step strategy is analogous to the *sum* or *min* system for addition, as it requires a step-by-step counting process from a starting point to determine the ending point. The strength of this system is that it is algorithmic – when executed correctly, the system will result in the correct answer. However, this system is undesirable due to a number of serious weaknesses. One such weakness is the number of points of potential failure in the system – students may misremember how many half steps are in a Perfect 5th, for example, or may end up with an enharmonic equivalent (C#–A♭ rather than C#–G#), or may simply miscount. A second weakness is that this system tends to be extremely slow, especially for larger intervals. Because of these major problems with this method, many instructors do not use this strategy at all; however, some instructors do use this system, and some textbooks teach it explicitly. Even if an instructor does not teach or encourage this method, a student may have encountered it elsewhere or may even develop it on their own.

The scale-based method has elements of both the *sum* or *min* strategy and of *decomposition*. The advantage of the scale-based method for spelling intervals is that it builds upon existing knowledge; students can rely upon their knowledge of scales and keys to determine the answer. However, there are several disadvantages. First, student knowledge of scales and keys is typically still developing, so relying on that knowledge may be uncomfortable for some students, or may lead to incorrect answers based on mistakes in student's understanding of scales and keys. Second, even if students have mastered key signatures, there are notes that do not appear as tonics on the major or minor circle of fifths, such as D*; this means the student who relies solely on this system will be unable to calculate the interval, or will have to calculate it by spelling the scale using whole steps and half steps. Third, students may make mistakes by thinking about minor scales

and keys instead of major scales and keys, or vice versa.²⁰ Fourth, the scale-based strategy works better for finding intervals above a given note than finding intervals below a given note.

The third strategy is analogous to the strategy of *decomposition* in that students are able to retrieve certain familiar pieces of information and use those as a reference to generate answers to unfamiliar questions. A student who has memorized that C–E is a Major 3rd can easily derive the answer when asked for a Major 3rd above C#, C*, C♭, or C♭♭. Students can determine their own references; some may choose to memorize the 'white-key' intervals, and others may choose to memorize common intervals. This strategy contains elements of the *retrieval* method, discussed next, as it requires there to be some piece of information readily available to be retrieved. The strengths of this method are that it is relatively quick, as it relies on an element of retrieval, and that there are fewer steps in the process where a student can make an error.

The fourth strategy, *retrieval*, is the optimal strategy; it is the quickest method and, once developed, the least prone to errors. In this strategy students are able to recall quickly, efficiently, and accurately that, for example, E to C# is a Major 6th, and that F to A♭ is a minor 3rd. This strategy does not require that students memorize all possible intervals; rather, students tend to memorize frequently encountered intervals and are able to immediately recall those. When presented with an interval they don't have available for immediate recall, students will utilize a different strategy.

Anecdotal evidence points to a combination of *retrieval* and *decomposition* as the preferred method for expert musicians to spell intervals. In a study conducted by Allen Winold, expert musicians were asked to describe their thought process when asked to calculate intervals; the results indicated that they either "just knew" the answer or, for more difficult intervals, would switch to a strategy similar to the scale method and/or decomposition to determine the answer. Unfortunately, Winold's study was never

²⁰ Some instructors have their students think about major scales for major intervals and natural minor scales for minor intervals. (Students frequently generate this method on their own, as well.) A potential problem with this strategy is that the interval from $\hat{1}$ to $\hat{2}$ is a Major 2nd in both the major and minor scales, and this causes a common error for students who are instructed to think of intervals in this way. Other instructors use only the major scales, and have students generate minor, Augmented and diminished intervals from the major scale intervals.

published; it would be an excellent experiment to replicate, as it would be an important insight into whether these two strategies are the optimal and most common strategies for expert musicians, and would verify the notion of adaptive strategies at use in the domain of music theory fundamentals.²¹

Our goal as music theory instructors is to move students from the inefficient strategies to the efficient strategies to facilitate more accurate and immediate knowledge. However, since research illustrates that students are generally unwilling to adopt new strategies unless they are clearly shown that their current strategy is unsuitable, how can we help students who tend to rely on the labor- and cognition-intensive strategies of counting whole steps and half steps or scale-based systems to move towards using the quicker, more abstract method of decomposition or the ultimate goal of retrieval? Siegler and Shipley propose a model for illustrating how students develop their own adaptive strategies, and how they select which strategy to use.²² In the model, each time a student uses a strategy, they accumulate knowledge about its speed and accuracy in terms of global usage, usage in problems with particular features, usage in individual problems, and its novelty, which is considered a strength based on Piaget's observation that students "are often interested in exercising newly acquired cognitive capabilities."²³ The novelty wears off with each subsequent use of a strategy, but the student gains critical information about the strategy's usefulness, speed, and accuracy, so the student is able to better gauge when to use that strategy in the future. Siegler and Shipley also factor in overall success rate of a strategy and recent success rate, surmising that both continued and recent successes with a particular strategy will encourage a student to incorporate that strategy into their adaptive strategy.

However, as mentioned earlier, students often will not adopt a new strategy unless they see a benefit to using it. Therefore, if a student is presented with a new strategy for spelling intervals

above a given note, but is not given the opportunity to explicitly and repeatedly use that strategy successfully, the likelihood is that a student will not adopt that strategy. If a student is missing a critical piece of information necessary for success with a strategy – say, for example, if a student is weak at scales or keys – the student will be unlikely to adopt that strategy for calculating intervals and will instead likely rely on the more reliable (to them) method of counting half steps and whole steps. To convince a student to move away from a low-level strategy, they need to be explicitly shown that another strategy is more effective and more efficient. To do this, use exercises that directly address the weaknesses of the method. For example, if students are still using the counting method, it will take much longer for them to calculate answers for larger intervals. Students who are repeatedly presented with large or compound intervals will realize that the low-level counting strategy is not their most effective option, and that using another strategy would be to their benefit.

Similarly, to get students to move away from the scale-based method, use exercises that exploit the weaknesses in that method. If a student is asked to calculate a Major 6th above D[#], the student using the scale-based method will be unable to do so without incorporating an element of the *decomposition* strategy; they must first figure out the interval above a note they "know," and must use that information to find out the answer to the original question. Getting students to understand and meta-cognate about their thought process can help them to understand that if they were able to retrieve the D–B interval immediately, they would be able to answer the question in one step instead of two (step 1: immediately recall D–B is a Major 6th; step 2: raise D to D[#], raise B to B[#], so a Major 6th above D[#] is B[#]), and that doing so would reduce the potential for error. Other types of questions that can reinforce the move to the decomposition strategy would be requiring students to find the requested interval below a given note, where the scale-based method is at a disadvantage, or the increased use of all interval types, including diminished and Augmented intervals. Again, a student can solve a question asking for an Augmented 5th above C[#] in fewer steps if they can call upon knowledge of a reference interval of the Perfect 5th from C–G; they can move from C–G to C[#]–G[#], and then to C[#]–G^{*}.²⁴

²¹ Personal communication, Allen Winold, November 5, 2010. In public presentations of this material, I have asked audiences of expert musicians to calculate a difficult interval (one not likely to be available for immediate retrieval) and have asked them to describe their mental process in calculating the interval. Indeed, most reported using some version of the scale-based or decomposition method.

²² Siegler and Shipley, *op. cit.*

²³ Ibid., p. 55.

²⁴ Obviously, there are multiple paths to the same solution even within the same strategy, depending on what is available for the student to

Research shows that students learn most effectively when they are allowed to choose the strategy they use to solve problems, and that as they develop knowledge and confidence in the more advanced strategies, the less sophisticated strategies tend to be left behind. In addition, students who adaptively utilize more strategies tend to learn the material better, because they learn to determine what strategy is most effective for which type of problem.²⁵ Therefore, the most effective pedagogical approach to teaching a skill such as intervals may be to gradually introduce various desirable strategies, allowing the students time to determine for themselves the advantages and disadvantages of each strategy.²⁶ As instruction on the topic progresses, however, providing problems of increasing difficulty and having students meta-cognate about the strategies they use may help convince the student still using a more inefficient strategy that moving to a more advanced strategy will ultimately benefit them.²⁷

In my fundamentals classroom, I have found it more helpful to work through fewer exercises with the class as a whole, but to have students describe their process for getting the answer to each exercise to the rest of the class. A sample conversation might go something like this:

Instructor: Student #1, what is a minor 3rd above F?

Student #1: A $\flat$.

Instructor: Good! Can you tell us how you got that answer?

Student #1: I just knew it.

Instructor: Okay, excellent! Now, what if you didn't "just know" it? How could you have found the

recall; if a student can call upon the knowledge that C $\sharp$ -G $\sharp$ is a P5, then they only have to make one alteration to come up with the C $\sharp$ -G* Augmented 5th.

²⁵ R. Siegler, "Implications of Cognitive Science Research for Mathematics Education," and references contained therein.

²⁶ As previously mentioned, many instructors do not wish to teach the counting half steps/whole steps strategy, and for good reasons. Because of the many flaws in that strategy, I would advocate that it is not necessary (and may even be detrimental) to include that low-level strategy in instruction, but teachers should be aware that students may have already learned it elsewhere or may derive it on their own.

²⁷ This instructional strategy is obviously not limited to intervals; it can be used throughout the curriculum.

answer?

Student #1: I could have thought of a major 3rd above F, which would be A, and then lowered the A by a half step to make it a minor interval.

Instructor: Good. Can anyone else think of a way to find this interval?

Student #2: I thought of the F minor scale, and I know that A $\flat$ is $\hat{3}$ in the F minor scale.

Instructor: Good! Any other ways?

Student #3: I thought of the F *major* scale instead, and knew that A was $\hat{3}$ in F major, so F to A is a major third, so then I just lowered the A to A $\flat$.

In this hypothetical conversation, the instructor could then highlight the fact that "just knowing," or immediate retrieval, is the fastest and most efficient method for calculating the answer. Students who repeatedly see their classmates using more efficient and accurate strategies successfully, and who are given the opportunity to practice those strategies themselves, are more likely to adopt the higher-level strategies. The instructor could also take the time to review prior information; for example, in the sample conversation above, the instructor could have asked Student #2 how she knew A $\flat$ was $\hat{3}$ in F minor, providing an opportunity to review scales and/or key signatures.

Siegler and Shipley point out that strategy choice may have some basis in personality types.²⁸ Their study revealed three types of students: the *good* students, the *not-so-good* students, and the *perfectionists*. The *good* students were accurate and likely to rely on retrieval for answers; as expected, the *not-so-good* students were less accurate and relied on retrieval less often than the *good* students. The *perfectionists*, however, were as accurate as the *good* students, but they relied on retrieval even less often than the *not-so-good* students; instead, they relied on backup strategies to either arrive at the answer or to verify the answer they retrieved, slowing them down.

Students need to be both accurate and fluent with concepts. If a music theory student is slow but accurate in their interval spelling, they may be falling into Siegler and Shipley's *perfectionist* category; they may be able to retrieve answers, but for whatever reason, they do not trust their retrieval abilities and are verifying the answers

²⁸ Siegler and Shipley, *op. cit.*

by using a slower, less efficient backup strategy. These students should be encouraged to rely on their retrieval abilities and should be given an opportunity to demonstrate to themselves that the higher-level strategies can be accurate and effective for them.

Understanding the adaptive strategy model can help the music theory fundamentals instructor teach elements of music theory fundamentals more effectively. It requires the instructor to reflect on what strategies students use, and which are the desired or most optimal strategy. In addition, the instructor must present material such that it gradually builds the student's skills while simultaneously reinforcing the development of higher-level and more abstract strategies.

However, if this is all that the music theory instructor does, at the end of the process students will have a good grasp of the fundamentals of music theory, but will not necessarily have an overall conception of how these different elements relate to one another. The overall goal of music theory fundamentals instruction should be to create an interconnected set of abstracted representations of fundamentals concepts; doing so helps students create a larger schemata or domain in which the skills and information reinforce one another and support additional, more abstract learning. The more a student understands how scales, intervals, triads, and seventh chords are related, the easier it will be for them to understand the overall concept of tonality and how more advanced concepts such as secondary dominants, tonicization, and modulation work within the system.

One of the predominant paradigms in current research on mathematics pedagogy focuses on the role of conceptual vs. procedural knowledge and thinking. Procedural knowledge consists of the actions or steps taken to solve a problem; it emphasizes the *how* aspects of developing skills. Conceptual knowledge consists of an abstract understanding of principles and of the relationships and connections between pieces of knowledge in a given domain; it emphasizes the *why* aspects of knowledge.²⁹

²⁹ A. Baroody, "The development of adaptive expertise and flexibility: The integration of conceptual and procedural knowledge," in *The Development of Arithmetic Concepts and Skills: Constructing Adaptive Expertise*, edited by A. Baroody et al. (Mahwah, NJ: Lawrence Erlbaum Associates, Inc., 2003), 1–34; B. Rittle-Johnson and K. Koedinger, "Iterating between lessons on concepts and procedures can improve mathematics knowledge," *The British Journal of Educational Psychology* 79, no. 3 (2009), 483–500; Siegler, *op. cit.*, p. 227.

In the domain of music theory fundamentals, an example of procedural knowledge would be the ability to spell intervals, scales, or chords, or to identify key signatures. It is possible to know how to do each one of these things without understanding how they are interconnected; procedural knowledge of the step-by-step processes can exist in isolation. Conceptual knowledge of music theory fundamentals, on the other hand, would consist of an understanding of how these elements interact to create the concept of the hierarchical system of tonality. For example, a student who understands that the tritone is a unique interval in a key will understand why chords containing that tritone are so strongly directed towards the tonic, rather than just having memorized that V⁷ and vii^o are called dominant-functioning chords.

An ongoing discussion within mathematics pedagogy research regarding conceptual and procedural knowledge is whether one is more important to educational practice than the other. The literature is divided into skills-based educational theories, in which students learn skills before learning concepts, and concept-based educational theories, in which students learn concepts before learning skills. A third and more recent approach is to study how the two dimensions influence each other; the dimensions are not entirely discrete, since conceptual knowledge consists of connections made between knowledge within a domain, some of which may be procedural knowledge.

Recent studies in mathematics education have shown that conceptual and procedural knowledge appear to develop in an iterative fashion; that is, an increase of one type of knowledge leads to increases in the other.³⁰ These findings have implications for classroom practice, suggesting students presented with material that alternately focuses on concepts and procedures will learn material more efficiently and more thoroughly, and will be able to connect the procedural knowledge to the conceptual, rather than having them be distinct. One benefit of an effective integration of conceptual and procedural knowledge should be greater flexibility in the development and use of strategies; students who understand the conceptual reasons for using more abstract and optimal strategies will move towards using those strategies more quickly and effectively.

³⁰ Baroody, *op. cit.*; Rittle-Johnson et al., *op. cit.*; M. Schneider and E. Stern, "Conceptual and procedural knowledge of a mathematics problem: Their measurement and their causal interrelations," in *Proceedings of the 27th Annual Meeting of the Cognitive Science Society*, edited by B. Bara et al. (Mahwah, NJ: Lawrence Erlbaum Associates, Inc., 2005), 341–347.

What implications does the iterative approach have for educational practice in the domain of music theory fundamentals? The music theory instructor wants to make sure that the procedural elements of fundamental elements are connected to one another to create the more sophisticated and abstract conceptual knowledge of the system of tonality. One potential way to achieve this within the music theory fundamentals curriculum may be to constantly create conceptual relationships between the elements of fundamentals and the overall system of tonality.

For example, when students learn scales, the instructor could introduce the notion of function within context, and how an individual pitch-class can play different roles within different scales; a C has a much different function in the key of C Major, for example, than it does in D $\flat$ Major. Exercises that ask students to identify all scales that contain a particular pitch class, or a pair of pitch classes, will help the students understand that the same entity or entities can take on a different meaning in a different context.

Similarly, when students learn intervals, it may be possible to help them contextualize intervals by not just relating them to scales, but by illustrating that the same interval can exist in more than one scale and will serve a different role in that scale. A Major 3rd from G to B is present in a G major scale and carries some important information about the key in that context, but the same interval is also present in a D Major scale, where it doesn't convey as much information about the overall key.

Another possible activity for students is for them to explore the intervallic content of the scale, and to understand what the most "important" intervals are within the scale. Students are often inclined to think that the interval of a major third between the tonic and mediant of a given diatonic major scale is the most important interval of the scale; however, pointing out that a major third also exists between $\hat{4}$ and $\hat{6}$, as well as $\hat{5}$ and $\hat{7}$, may help them to understand that the major third does not necessarily convey that much information about key. The same can be illustrated for all other intervals; while there may be a major sixth between $\hat{1}$ and $\hat{6}$, there is also a major sixth between $\hat{4}$ and $\hat{2}$ an octave higher. If students are asked to calculate intervals in this way, and to figure out what the most important interval in a scale collection is, they should eventually realize that there is only one tritone within the diatonic collection,³¹ and that the tritone is therefore the "key-

defining" interval of the diatonic major scale collection. If you see a tritone between A $\flat$ and D, for example, you know that you are in the key of E $\flat$ Major, because that is the only major key in which that tritone occurs naturally.

A similar activity can be undertaken with the qualities of seventh chords; having students build diatonic seventh chords on each major scale degree and determine the quality of each chord will reveal that there are two types of seventh chords that only appear once within the major system, the Major-minor or dominant seventh chord (on $\hat{5}$) and the half-diminished seventh chord – and, importantly, each one of these unique chord qualities contains the tritone!

These are difficult concepts for students to understand if they are just presented as knowledge without context, but if intervals, scales and chords have all been presented as interconnected systems, this can help them build a conceptual representation of the system of tonality. It may help students understand voice-leading rules that they will encounter later, including the requirement to always resolve the chordal seventh of the dominant seventh down. It certainly helps explain why the dominant seventh chord is used so frequently, as the addition of the chordal seventh (and thus, the tritone) to the dominant triad makes the chord into the unique entity that helps determine and establish the key. It also establishes dominant-functioning chords as important members of the hierarchy of tonality, and sets the groundwork for the difficult concept of tonicization with secondary dominants.

Alternating the procedural knowledge with the conceptual knowledge in a music theory fundamentals classroom will have several beneficial results. First, it results in a constant revisiting and development of earlier information; this 'distributed practice' is a well-known strategy for skill development, extended here to cognitive tasks and the classroom setting.³² Second, it reinforces the material and encourages students to develop their adaptive strategies. If a student is still relying on the strategy of spelling scales via the whole step-whole step-half step method, for example, same pitches and result in an enharmonic interval (+4/ $^{\circ}5$), so there really only is one tritone per major scale. Students who have difficulty with this concept can be asked about the interval between $\hat{2}$ and $\hat{4}$ (a minor third) and $\hat{4}$ and $\hat{2}$ an octave higher (a Major 6th) – even though these two intervals involve the same pitch-classes, the intervals are not enharmonic and so are different intervals.

³¹ The tritone between $\hat{4}$ and $\hat{7}$ and $\hat{7}$ and $\hat{4}$ of a major scale involve the

³² Rittle-Johnson et al., *op. cit.*

returning to scales while working on intervals will encourage the student to adapt to using a more efficient strategy for the earlier material. Third, the iterative process helps create connections between procedures that may otherwise seem somewhat disconnected, creating a conceptual understanding of the elements of tonality.

SUMMARY

If student performance in mathematics is a predicting factor in success in written music theory classes, there may be a cognitive link between the abstract and systematic processes in mathematics and those in music. If that is the case, music theorists should consider the vast amounts of research done in mathematics education to see if we can learn anything about best practices in that discipline.

Research in mathematics education can help us understand the cognitive processes that result in the development of skills and concepts necessary to succeed in the music theory fundamentals classroom and beyond. For example, the concept of *adaptive strategies* can help us to understand how a student progresses through cycles of knowledge development to reach the ultimate goal of immediate recall of information such as key signatures, intervals, or chord spellings, and can help us as teachers learn how to encourage a student to move beyond an inefficient strategy.

Armed with knowledge of conceptual and procedural knowledge, a music theory fundamentals instructor can be aware of the need to create connections between the critical aspects of theory fundamentals in order to work towards the goal of teaching students to develop an understanding of the abstract system of tonality. A solid procedural knowledge foundation in music theory fundamentals and conceptual knowledge of the principles of tonality will provide them with a solid foundation for their continued development, not only in the written music theory curriculum but in all aspects of their musical lives.

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Teaching Sonata Expositions Through Their Order of Cadences

BY MARK RICHARDS

When it comes to the forms of tonal music, there is none more elaborate or varied than sonata form. It can therefore be difficult to introduce to undergraduate students, especially if one wishes to discuss it in some detail but has only a small number of classes in which to do so. And of the large sections of the form, the exposition is without doubt the most complex and hence requires us to devote the majority of our time toward it. Of course, the accepted approach to teaching sonata expositions is through their regular key scheme from the home key to the new key. But I have found that demonstrating this key scheme without a strong emphasis on cadences can lead to problems when students are asked to identify the sections of an exposition, since changes in key do not usually coincide with its main divisions.

When a transition, for example, opens with a counterstatement of the opening theme—what is referred to in most textbooks as a “dependent transition”—students often believe that the transition begins only at the moment that the harmony moves away from the tonic key. Although the problem is easily solved by pointing out the cadence at the end of the first theme group and reminding them that a new phrase generally begins after a cadence and not *in medias res*, it does underscore the importance of cadences in the analysis of expositions.

Furthermore, because of the general lack of correspondence between key changes and major divisions in the form, students can be too easily influenced by melody rather than harmony in locating those divisions—after all, for most students, melody is the most prominent feature of any piece of tonal music. Thus, a cadence in which the melody (and perhaps the entire texture) continues onward without missing a beat may fool students into thinking that there has been no division at all.¹

¹Michael Broyles, *Beethoven: The Emergence and Evolution of Beethoven's Heroic Style* (New York: Excelsior, 1987), chap. 1, discusses this when he distinguishes between “symphony style” and “sonata style”—what he calls “the two styles of classicism.” Symphony style often has melodic overlaps at cadences to preserve a sense of momentum whereas sonata style is more frequently broken up by textural breaks after cadences. Thus

I therefore propose a system that may be added to the key scheme of sonata expositions to alleviate some of the problems in teaching expositions to undergraduates. The system adapts the work of William E. Caplin to focus not just on the key and type of the cadences, but more importantly *the order in which they may be deployed in an exposition*. From my experience, such an approach helps students to better understand the harmonic functions of the exposition's main sections.

I would emphasize that, while this system may be applied to the teaching of sonata form at any level, the core of this essay describes only an introduction to the topic that may be included in an undergraduate curriculum in a variety of ways. If sonata form is taught only as a unit in the tonal harmony sequence, then the classes I discuss below could well span that entire unit. If, on the other hand, sonata form is taught in a required upper-level course on form, then the discussed classes could be a prelude to longer and more complicated pieces. And if the form is taught in both types of courses in the same curriculum, the discussed classes could be incorporated into each, but again only as an introduction. This does not mean that the system is limited to simpler pieces. On the contrary, I believe that the cadential ordering that I advocate here is a fundamental part of all sonata expositions, and that complicated pieces that seem not to follow it can be viewed as altered versions of more typical procedures, something like the view of entire sonata forms adopted by James Hepokoski and Warren Darcy in their *Sonata Theory*.² In the final section of this essay, I provide examples of the system's application to several more advanced pieces.

THE ORDER OF CADENCES IN A SONATA EXPOSITION

Caplin's body of work on form in the classical repertoire has profoundly affected my own thoughts on the topic and, in turn, the way I teach sonata expositions. In his book, *Classical Form*, Caplin discusses "cadential goals in the exposition" as they relate to the modulating key scheme:

cadences may vary in their degree of connectedness with the following phrase.

²James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata* (New York: Oxford University Press, 2006).

In a sonata exposition, the establishment of two primary keys is articulated by a succession of cadential goals. In its complete form, this series of cadences projects a tonal curve that (1) partially confirms the home key by means of a half cadence, (2) fully confirms that key by a perfect authentic cadence, (3) destabilizes the home key by a half cadence or **dominant arrival**,³ (4) partially confirms the subordinate key by a half cadence or dominant arrival, and (5) fully confirms the new key by a perfect authentic cadence (boldface added).⁴

Remarkably, then, the order of cadential goals in an exposition remains consistent from piece to piece even if one or more of the goals are omitted. In fact, Caplin further states that "any one of the first four cadences can be omitted, . . . however, the perfect authentic cadence of the subordinate key must always appear."⁵ But if we consider only the most common type of exposition, in which there is a separate first theme group, transition, and second theme group, (and not those that fuse any of these sections together), then the goals that are present in any exposition become (1) and/or (2), (3) and/or (4), and always (5).⁶

³Throughout this essay, terms in boldface are defined in the accompanying appendix according to either William E. Caplin's theory of formal functions or James Hepokoski and Warren Darcy's *Sonata Theory*.

⁴William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998), 196.

⁵Caplin, *Classical Form*, 196.

⁶In an attempt to remain consistent with a wide range of textbooks and analytical methods, I employ in this essay what are perhaps the most common terms found in discussions of sonata form: first theme group, transition, second theme group, and closing section. Only the last term derives from a single source (Caplin's *Classical Form*) because I prefer to label as such only the final codettas of the exposition rather than complete themes (as many do in identifying "closing themes"). But because this is only a personal preference, alternative conceptions of this "closing" aspect of expositions (suggested below) may be substituted. Some readers may prefer alternative labels for the other sections of the exposition as well, e.g., "primary" and "secondary key area" for "first" and "second theme group", respectively. While the "key area" terms express the fundamental tonal structure of sonata form, they do

In total, Caplin tabulates eight patterns for the ways these goals may play out in an exposition (seven excluding expositions with fused sections), and while it is not necessary to list them here, they are important because they reveal precisely how the cadences interact with the various sections of an exposition. Essentially, all of these patterns contain at least one cadence in each section and thus, for pieces in the major mode, expositions fall into the following cadential scheme:⁷

First Theme Group in I key	Transition	Second Theme Group in V key
I:HC and/or I:PAC	I:HC and/or V:HC	V:HC, always V:PAC
(HC = half cadence; PAC = perfect authentic cadence)		

Notice that the cadences become stronger in the first theme, weaker in the transition (compared to the first theme group), and stronger again in the second theme. This particular order corresponds with the tonal function of each section; namely, that the first theme group establishes the tonic key, the transition weakens it, and the second theme group establishes the dominant key. (Minor-mode schemes are discussed below.)

We may, however, refine the scheme by recognizing that the HC in both the first and second theme groups may appear as an imperfect authentic cadence (IAC), and that many transitions end not with an HC but with a dominant arrival (in either the tonic or dominant key) due to an inversion of V, a form of V⁷, or a prolonged

not describe the phrase structure of the music, which is all-important for determining the beginning and end of each key area. Thus, I prefer the “theme group” terms, which refer not to a theme in the melodic sense but in the form-functional sense of sentence, period, and the like. Nevertheless, all that is necessary for the methodology I present here to function properly is the identification of all the cadences within the exposition. Hence, terminology is a matter of preference.

⁷It will be noted that I omit from this scheme not only Caplin’s pattern 8 (the fused transition and second theme, as discussed above), but also pattern 7, in which, in a first theme structured as a rounded binary, the return of A is diverted to become the transition. I do so because such a pattern is quite rare and to make an exception for it here would obscure the main thrust of the scheme I present for the sake of just a few pieces. After all, the pieces that are chosen as examples of sonata form in textbooks generally do not display this type of structure and hence are not central to an introduction to the form.

V that enters before the end of the phrase.⁸ And if we add a closing section for any **codettas** after the second theme group, then for a major-mode sonata exposition, we obtain the structure seen in Figure 1a. This outline does not substitute for analysis directly on the score, but rather functions as a summary of one’s analysis. In this way, students are able to see at a mere glance the structure of an exposition as determined by the order of its cadences. I find that this method not only helps to focus students’ attention on the tonal structure rather than the melodic material, but also gives them a sense of what to expect at various points in an exposition. If, for instance, there has been a I:PAC near the start of the piece (which will be part of the first theme group), one is likely to find next a phrase ending on some sort of V, which will be part of the transition. For sonata forms in the minor mode, one can simply substitute the V key in the scheme with III (or, more rarely, v), as in Figure 1b.

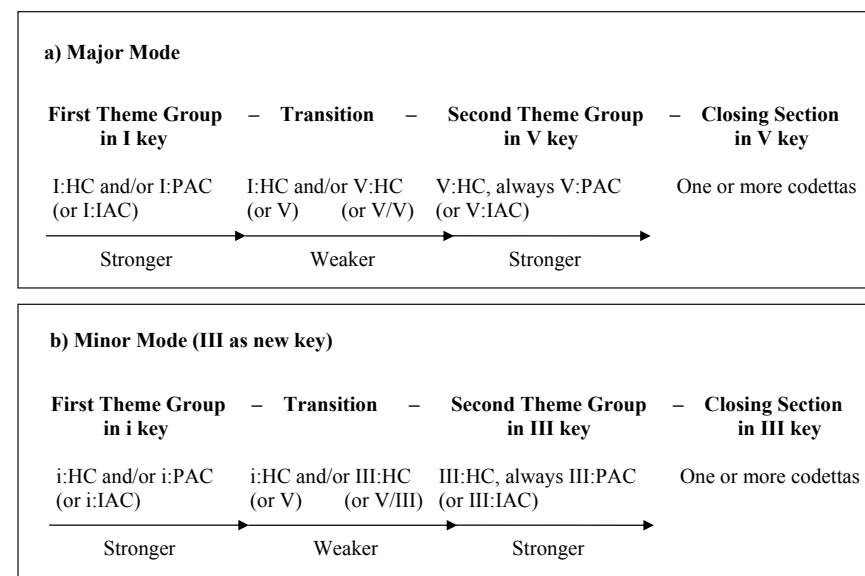


Figure 1 – The Order of Cadences in a Sonata Exposition

⁸ Caplin clarifies that these situations do not constitute cadences in “The Classical Cadence: Conceptions and Misconceptions,” *Journal of the American Musicological Society* 57 (2004): 70 and 88-89. Some readers may prefer a more inclusive concept of cadence in which, for instance, V6-I, V-I6, and vii°6-I are IACs. In the classical repertoire, however, holding firm to the inclusion of a root-position V in all cadences allows the music to be divided into form-functional themes such as sentences and periods,

It should be noted that this scheme can be adapted to one's own preferences as to the closing section. Following Caplin, I consider the closing section to be only the group of codettas at the end of the exposition after all the larger themes have come to a close with a final V:PAC. Others, however, may wish to identify one or more full-fledged themes (i.e., eight measures or any larger length) as closing themes that occur after a second theme. In that case, one could add to the scheme a V:PAC in a "closing theme group", and either include the codettas to the same group (as in Hepokoski and Darcy's **closing zone**) or differentiate them as a separate section (simply naming them "codettas"). Whichever approach one prefers, the basic structure of the exposition via cadential goals remains the same.

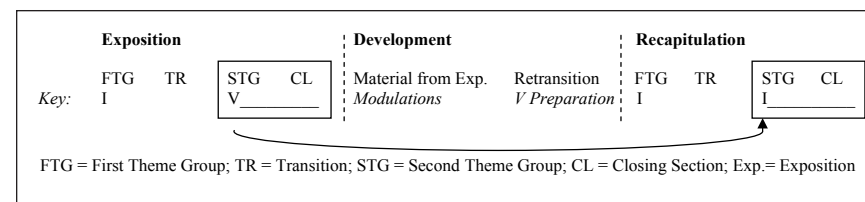
THE TEACHING OF CADENCES AND SONATA EXPOSITIONS

Because of the complexity of sonata form, I build up to it over a number of classes that deal with definitions of phrase-ending cadences (the half and authentic), cadential avoidance (especially deceptive and **evaded cadences**), the standard theme types of the **sentence** and **period**, as well as binary and ternary forms. These initial classes are invaluable for getting students to closely examine analytical details before delving into sonata form and especially to identify cadences by their inclusion of a root-position V chord. Moreover, from the very first class, I emphasize that form in tonal music is dependent primarily on its cadences, *not* its melodic content, and that while melody is certainly not unimportant, it plays a far lesser role than the cadential structure.

Once we reach sonata form, I begin by describing it as an enlarged rounded binary form that usually repeats its first part (the exposition) and that may also include the optional sections of a slow introduction and coda. (I also tell them that some sonatas repeat the development + recapitulation as well.) Because the sonata form comprising an exposition, development, and recapitulation, or what Hepokoski and Darcy call the **Type 3 sonata**, is by far the

which usually end with this stricter notion of cadence. As a result, first and second theme groups in sonata form may be understood as containing one or more complete themes, each ending with a strict cadence. From my own experience, this view enhances students' abilities to locate beginnings and ends of phrases and sections in sonata form, which is the very purpose of this essay.

most pervasive in the classical repertoire, I focus on this particular type. Like most textbooks, I then give an outline that identifies the layout of keys and demonstrates the central feature of recapitulating the second theme group and closing section in the tonic, as in the "balanced" type of binary form:



After this brief outline of the overall form, I prepare the students for the cadential scheme of expositions by first reviewing the cadential hierarchy of strongest to weakest as PAC-IAC-HC. Because of the simplicity of this concept, I find it a suitable introduction to the cadential scheme for expositions, to which I then turn, emphasizing that *it is the order of cadences that determines the function of each of the exposition's sections*. I also note that each section (except the codettas) must contain at least one cadence. Furthermore, I explain that, being generally one to four measures in length, codettas are not long enough to be full themes in the manner of sentences and periods and therefore do not contain cadences. (By this stage in the course, they are accustomed to the idea of most theme types having a normative length of eight measures.) Rather, the function of a codetta is to reaffirm the final tonic chord of a PAC by cadential chords, prolongational chords (commonly tonicizing IV), and/or by literally extending it with a tonic pedal. Most importantly, I mention that the second theme group *always* contains at least one PAC in the new key.

I then present a number of possible schemes for sonata expositions (as shown in Table 1), asking students to identify the sections based on the ordering of weaker/stronger cadences and, crucially, where the new key first begins a phrase, which generally signals the start of the second theme group (hence my inclusion of "in V" to these schemes). Answers are shown above the table. Scheme 1 is an ideal starting point as it gives the most common cadences in each section. Scheme 2 demonstrates that an additional V:PAC in the new key area does not affect the divisions of the section (unless one identifies a closing theme, as noted earlier), and it is good to point out here that many second theme groups have more than one V:PAC (or

that many expositions have a second theme and a closing theme, or multiple occurrences of either or both). Scheme 3 shows a setup that can result when the first theme group is structured as a period. In Scheme 4, there are two phrases ending with HCs in the new key, but the second is part of the second theme group as it is *completely in that key*. Finally, Scheme 5 demonstrates that a transition need not end with an HC in the new key, but may in fact close on an HC in the tonic.

Scheme 5, with its less common ending on a home-key HC, provides a good segue into a brief discussion of the three types of transitions that arise through the cadence or cadences they contain, as shown in Table 2.⁹ This is an especially important issue to address since most current textbooks do not discuss the non-modulating transition in particular, and therefore can give the impression that the function of a transition is to modulate to the new key, which is not necessarily the case.¹⁰ More broadly, transitions undermine the tonic key by ending with a cadence that is weaker than that of the first theme group, which is why the cadences of a two-part transition are always presented in the order I:HC, V:HC, and also why, when the first theme group ends with a I:HC, the transition will generally end with a V:HC.¹¹ Thus, the first phrase containing a weaker cadence, regardless of key (and melodic material, for that matter), is generally the first phrase of the transition. Even if it is

⁹These transition types are from Caplin, *Classical Form*, 125-38.

¹⁰For a historical account of the non-modulating transition in the classical period, see Robert S. Winter, "The Bifocal Close and the Evolution of the Viennese Classical Style," *Journal of the American Musicological Society* 42 (1989): 275-337, whose "bifocal close" is synonymous with the non-modulating transition. Others writers that discuss the non-modulating transition (though not necessarily by that name) include Douglass M. Green, *Form in Tonal Music: An Introduction to Analysis*, 2nd ed. (New York: Holt, Rinehart and Winston, 1979), 196 (but on p. 195, he identifies a number of non-modulating transitions as examples of "the partially modulating transition" because, he claims, they tonicize V, but not V of V, the final "phase" of transitions in his view); Wallace Berry, *Form in Music*, 2nd ed. (Englewood Cliffs, NJ: Prentice-Hall, 1986), 156; and Charles Rosen, *Sonata Forms*, rev. ed. (New York: W. W. Norton, 1988), 230.

¹¹Cf. Caplin, *Classical Form*, 127, which states that "if the main theme closes with a half cadence, a nonmodulating transition is not normally used: a second ending on the dominant of the home key would not, in itself, represent a destabilization of that key."

true that most transitions modulate, there are more than enough instances of the non-modulating and two-part types to make the topic worth discussing with undergraduates.

Scheme #	(First Theme Group)	(Transition)	(Second Theme Group)	(Closing Section)
1	I:PAC	V:HC in V	V:PAC	Codettas
2	I:PAC	V:HC in V	V:PAC V:PAC	Codettas
3	I:HC I:PAC	V:HC in V	V:PAC	Codettas
4	I:PAC	V:HC in V	V:HC V:PAC	Codettas
5	I:PAC	I:HC in V	V:PAC	Codettas

Table 1 - Schemes for Sonata Expositions Based on Cadential Ordering

Non-Modulating	I:HC
Modulating	V:HC
Two-Part	I:HC V:HC Part 1 Part 2

Table 2 - Transition Types as Determined by Cadences

Once I have described the cadential scheme for expositions and answered any questions from the students, I like to move into the analysis of a piece, even before describing developments and recapitulations in detail. In this way, large amounts of information are broken up with musical interludes, and hence tend to keep students focused. The pieces that one selects for classes on sonata form, however, will depend on the particular parameters and needs of each course. In the remainder of this essay, I take the reader through three classes on sonata form, and demonstrate how I apply the cadential scheme I propose here.

SELECTING A PIECE FOR THE FIRST CLASS

Piece selection for a first class on sonata form can be difficult since there are essentially two opposing forces at work. On the one hand, it is reasonable to begin with a relatively short piece that demonstrates many principles in a straightforward manner. On the other hand, such pieces are generally not those that we most wish our students to understand, that is, those of the standard repertoire. I prefer to order the pieces by the complexity of their transition—that is, non-modulating, then modulating, then two-part—because the entire movement itself tends to become longer and more complex with each respective transition type.¹² (This ordering is not to imply that non-modulating transitions, presented to the students first, are the most common type, only the simplest.) With this setup, a three-class unit on sonata form results, but the same idea may easily be applied to more than three classes either by interspersing these classes into more extended discussions of the *entire* form of each movement, and/or by exploring more advanced treatments of sonata form thereafter as suggested in the final section of this essay. In the first class, I like to use a fairly short and simple piece. For this purpose, there may seem to be many possible choices in the piano repertoire (which is the most convenient for introductory classes), but while some pieces may be short and appear to be simply constructed, they can contain features that are not typical of

¹²In this connection, see Hepokoski and Darcy, *Elements of Sonata Theory*, 37, who recognize the non-modulating and modulating transition by the type of **medial caesura** (“I:HC MC” and “V:HC MC”, respectively) and state that “the I:HC MC was appropriate for shorter works, and indeed for more modest works it may be a more commonly selected option than the V:HC MC.”

most Type 3 sonatas and hence are not the most suitable choice. For example, many first movements (where most Type 3s are found) on a small scale fuse the first theme group and transition together into a single formal unit, as in most of Haydn’s early sonatas before Hob. XVI: 19, Beethoven’s Sonata in F Minor, WoO 47, No. 2, and the first three of Clementi’s op. 36 sonatinas.¹³ Even the fourth and fifth sonatinas of Clementi’s op. 36 end the transition with a V:PAC that elides into the second theme group, a tactic that I do not account for in my cadential scheme since it is intended as a model of only the most common procedures in classical expositions.¹⁴ Other pieces such as Beethoven’s Sonata in E♭ Major, WoO 47, No. 1, and again many of Haydn’s early sonatas, lack a proper recapitulation that begins with the first theme and thus constitute Hepokoski and Darcy’s **Type 2 sonata**.

Pieces that are short, simple, and contain the typical features of a larger sonata form do exist but are relatively rare. Although readers may well have their own preference in this regard, some wonderful pieces for this purpose may be found in Mozart’s Six Viennese Sonatinas, which are piano transcriptions of his Five Divertimenti (for basset horns), K. 439b.¹⁵ The movements from these sonatinas

¹³Mozart’s early symphonies and most first movements of early classical pieces in general strongly follow this trend as well.

¹⁴This is not to say that one should not use such pieces at all, for as long as one is willing to explain what happens in the music, then limitations are only a matter of personal preference. For example, Robert Gauldin, *Harmonic Practice in Tonal Music*, 2nd ed. (New York: W. W. Norton, 2004), 560-63, introduces sonata form with the first movement of Clementi’s op. 36, no. 4, and supports the transition’s closing V:PAC by stating that a transition “normally concludes with an emphatic half or authentic cadence in the new key area” (emphasis added). While I instead choose to emphasize the role of the half cadence at the end of a transition, there is certainly no harm in exposing students to the alternative of the V:PAC right from the start.

¹⁵Although the piano transcriptions are titled “sonatinas”, the movements I recommend below are in *bona fide* sonata form. Cf. Green, *Form in Tonal Music*, 230: “The term ‘sonatina’ originally referred to sonatas which were shorter, lighter, and easier than usual and is still used in this sense today. The sonatina form, however, is not inevitably associated with the sonatina. Some sonatinas include movements in sonata form . . . and some sonata movements are in sonatina form. From the point of view of musical structure the sonatina form is a sonata form without a development section, its place being taken by a link or transition leading to the recapitulation.”

that I recommend are the first movement and finale of No. 6, and the first movement of No. 1.¹⁶ Besides the brevity and formal clarity of these three movements, I find them particularly well-suited to classroom use because they avoid the highly ornate style of many classical piano sonatas (especially in Haydn) and are instead closer to the simpler style of classical symphonies as none of them makes use of rhythms even as fast as continuous sixteenth notes.¹⁷ It is not that I shy away from giving students challenging material, but only that, at least for this first class, I like to choose a piece with a minimum of features that could obscure students' understanding. In other words, the simplicity of structure, key, rhythm, and texture in these pieces makes it fairly easy for students to focus squarely on the details that contribute to the formal structure, which is after all the main point in these classes.

CLASS 1: A SHORT AND SIMPLE PIECE

As mentioned earlier, for the first class on sonata form, I prefer to use a Type 3 sonata movement that has a non-modulating transition, and of the pieces I recommend from the Viennese Sonatinas, only the first movement of Nos. 1 and 6 have this feature. I will discuss here the first movement of No. 6 (see Example 1), since it has perhaps a few more interesting aspects than that of No. 1.¹⁸ Moreover, because expositions are the focus of this essay, I will limit my comments to that portion of each piece.

¹⁶ Good transcriptions of the sonatinas may be found in Wolfgang Amadeus Mozart, *Six Viennese Sonatinas*, edited and recorded by Christopher Harding (New York: G. Schirmer, 2010); and *Six 'Viennese Sonatinas'*, ed. Willard A. Palmer (Van Nuys, CA: Alfred, 1978).

¹⁷ These are the sorts of distinctions made by Broyles between "sonata style" and "symphony style" in *Beethoven*, especially in chapter 1.

¹⁸ I provide my own transcription of this exposition in Example 1, hence it differs slightly from other modern versions, especially in my clarification of the imitation in mm. 14-17 through the omission of an inner voice. The original divertimento may be easily located online at <http://dme.mozarteum.at/> by selecting "NMA online" (*Neue-Mozart Ausgabe*) then entering "439b" in the "KV" search box.

Example 1 - Exposition of Mozart's Viennese Sonatina No. 6, I

In addition to a clean score, I give students a copy of the cadential scheme shown in Figure 1a, which demonstrates the principle of cadential ordering as we analyze the exposition. I then play the movement, but just before I do, I point out that the movement starts with two measures of **thematic introduction** and ask them to mark the music where they believe a cadence occurs (not necessarily its key and type), emphasizing that cadences will always include a root-position V chord (either as the ultimate chord of an HC or the penultimate chord of an IAC or PAC). This encourages them not only to try and see but, more importantly, hear the crucial points in the form. Afterwards, I ask them where the first cadence occurs. This can be a tricky question, since mm. 3-4 and 5-6 have V-I progressions that can sound like cadences (though the absence of a pre-dominant is telling here). But the phrase structure of mm. 3-10 as a perfect eight-measure sentence theme makes it clear that the first cadence can only be the I:PAC in m. 10, and that mm. 3-4 and 5-6 are **basic ideas**, the second an **exact repetition** of the first, both of which serve to initiate the theme rather than end it. At this point, I ask them to write "I:PAC" at m. 10 on their score and I indicate in the cadential scheme that the music has achieved a cadence that is part of the first theme group. Of course, because this is the beginning of the piece, we already knew that this PAC was part of the first theme group, but now there is an expectation of what will come next, likely a half cadence of some kind for the transition.

What actually occurs next are a couple short groups in mm. 10-14 that are elided on both sides (according to the harmony and accompaniment rather than the melody) and cycle through the cadential progression I-vi-ii⁶/5-V7-I. I explain that, although these groups may seem like cadences, because of their brevity, they do not function as cadences to a theme. Rather, they reaffirm the tonic chord ending the previous PAC, which is a function of codettas. Unexpectedly, then, this first theme group ends with a repeated codetta, which I have students mark on their scores.¹⁹

With m. 14, the harmony breaks the pattern of the codettas and begins to move in a rising sequence. Along with the changes in

¹⁹Codettas ending the first theme group are certainly not unique to this movement, even if they are relatively uncommon. See, for instance, Haydn, Piano Sonata in C Major, Hob. XVI: 35, mm. 16-20, and Beethoven, Piano Sonata in E $\flat$ Major, op. 7, mm. 17-25. Interestingly, both of these cases elide the beginning and end of the codettas with the surrounding sections, as in the Mozart sonatina.

motive and texture, the onset of this sequence signals the start of a new phrase, one that ends with a V chord in m. 20 that is prolonged until m. 22. In unison textures like this, it can be difficult for students to tell whether a concluding V that is approached through its leading tone (here F $\sharp$) is part of a I:HC or a V:PAC. But the fact that the harmonic rhythm has been changing every half measure since the start of the phrase implies that the last half of m. 19 is all one harmony. And since the tonic chord has been outlined from the middle of m. 18, the implied cadence is a I:HC rather than a V:PAC, creating a non-modulating transition.²⁰ I then show students that this concluding V chord is prolonged by being restated on the downbeats of mm. 21-22, and is therefore an example of a **standing on the dominant**, which, I clarify, is a very common feature at the end of transitions because it heightens our anticipation for the second theme group, even if it remains in the tonic key. Students then indicate the cadence on their scores and take note of it on their cadential schemes. Emphasizing this order of cadences especially helps students to understand why two passages with the same or similar melodic material—in this case, the codetta and transition—can be part of different formal sections.

At this point in the movement, I tell students that, because most transitions have only one phrase, what we expect to follow is the beginning of the second theme group. Depending on one's preferences, one may also want to mention Hepokoski and Darcy's medial caesura in m. 22, indicated most prominently by the rests, especially as it is a strong suggestion that a second theme will follow and a relatively easy feature for students to look for (in addition to the cadence, not of course substituting for it).²¹ Most important, however, in identifying the second theme's beginning is a phrase

²⁰ Another plausible reading for the harmony in this half measure is a 5-6 progression that moves from vi to vii⁶/V on the last eighth note, as is commonly found in the classical repertoire, but sharing this insight in class may complicate matters unnecessarily for the purposes at hand.

²¹ Mentioning the medial caesura, or at least citing its literature, is a growing trend in recent theory textbooks. See Jane Piper Clendinning and Elizabeth West Marvin, *The Musician's Guide to Theory and Analysis*, 2nd ed. (New York: W. W. Norton, 2011), 667; Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening*, 3rd ed. (New York: Oxford University Press, 2011), 542; and Miguel A. Roig-Francoli, *Harmony in Context*, 2nd ed. (New York: McGraw-Hill, 2011), 652-53.

starting in the new key, and being a major-mode movement, we expect that key to be the dominant. This movement provides a particularly good example of a slightly difficult second theme—every good piece necessarily has such oddities—because the section appears to begin in the key of D major rather than the G major we are expecting. However, I point out that, when these two measures are answered in the next two measures by V-I harmony in G major, the whole four-measure unit in mm. 23-26 is heard in retrospect as a **statement-response repetition** in the key of G major, the C#s in mm. 23-24 only being part of secondary dominants of V in that key. This idea is reinforced by the fact that these four measures constitute a sentence presentation, and that statement-response repetition is a normative setup for the basic ideas of a presentation (as discussed in an earlier class).²²

After this presentation, the rest of the second theme proceeds quite regularly, so I ask students where the cadence to this theme occurs, reminding them to look especially for a root-position V chord (in G major) near the end of a phrase. Clearly, this occurs in m. 32, where I then ask them to identify the cadential 6/4-5/3 and I chords, the melodic resolution to the tonic note, and from there, the resulting V:PAC, which they mark on their scores. It is important to reiterate that this new-key PAC is found at the end of *every* second theme group (at least, those they will come across in the class), and that it is the ultimate goal of a sonata exposition since it is the one event that allows the new key to be fully established and therefore pitted against the tonic key. Students can also see this on their cadential scheme, where a V:PAC is a function of the second theme group.

After this PAC, I explain that the music in mm. 32-37 breaks down into short units of two measures then half measures (elided at m. 36), all of which sound only I and V chords that prolong the tonic harmony (of the new key, V). Both are typical signs of codettas and therefore of the closing section, which they now mark on their scores, completing the formal analysis of the exposition as in Example 1. I also show them how the exposition conforms to the cadential scheme as in Figure 2.

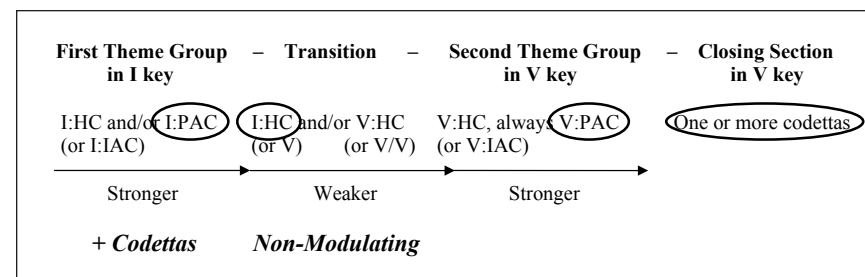


Figure 2 – Analysis of the Exposition of Mozart's Viennese Sonatina No. 6, I, by the Order of Cadences

CLASS 2: A MORE COMPLEX PIECE FROM THE STANDARD REPERTOIRE

After demonstrating the typical features of the exposition on the small scale, I delve into a more complex piece from the standard repertoire, one that contains a modulating transition. There are a great many pieces that would be suitable for this purpose, too many to list here, and more importantly, everyone will have their own preferences with regard to the level of difficulty of the piece, its genre, composer, etc.²³ A favorite of mine to teach is the first movement of Haydn's Piano Sonata in C# Minor, Hob. XVI: 36 (see Example 2), for a number of reasons: while Haydn's sonata forms often contain too many quirks and are too highly ornamented to teach in an introductory unit on sonata form, this particular movement is simple enough to suffice. Moreover, because the movement is monothematic, it is an ideal way of emphasizing to students that the second theme group is *not* defined by the presence of a new melody but rather a stable new key—an essential point to drive home early on in classes on sonata form. It is also a good example of a minor-mode sonata form and is of a manageable length for a single class. Before analyzing the movement, I give each student a score and a cadential scheme for minor-mode movements as was shown in Figure 1b.

²³In "Listen Up!: Thoughts on iPods, Sonata Form, and Analysis without Score," *Journal of Music Theory Pedagogy* 22 (2008): 174, Brian Alegant lists several appropriately "easy" pieces for analysis by Mozart and Beethoven, most of which are piano sonatas. Given the large amount of time Alegant allots to sonata form in his curriculum, he is able to progress from these easy pieces through "medium" ones that are "longer; [and feature] more mixture; [and] more formal ambiguity" to "hard" ones that tackle such romantic masterpieces as the first movements of Brahms's Cello Sonata in E Minor, op. 38, and Schubert's Ninth Symphony.

²²Caplin, *Classical Form*, 39.

First Theme Group
(Introduction) (Sentence)

Moderato

Transition (Modulating)

Second Theme 1
(Sentence)

Second Theme 2
(Sentence)

i:PAC

V/III

III:HC

Example 2 – Exposition of Haydn's Piano Sonata in C# Minor, Hob. XVI: 36, I

22

Deceptive Cadence

26

Evaded Cadence

29

31

Closing Section

III:PAC

Example 2 (Continued) – Exposition of Haydn's Piano Sonata in C# Minor, Hob. XVI: 36, I

As with the Mozart sonatina, I play the piece for the students, asking them to mark off possible locations of cadences by ear as the music progresses. I then ask them where each cadence in the exposition occurs, in order. The first cadence, the I:PAC in m. 6, is extremely clear because of the textural break that follows it, but I stress that cadences must be found on the basis of harmony, not melodic or textural breaks; hence, we still find the crucial factor in the latter half of m. 5—a root-position V chord. These opening six measures also provide a good opportunity to reinforce the concept of the sentence, since, after the thematic introduction of m. 1 (similar to the Mozart sonatina), mm. 2-6 are an excellent example, with a one-measure basic idea and statement-response repetition in mm. 2-3, followed by a continuation in mm. 4-6 by fragmentation then harmonic acceleration (m. 5).²⁴

²⁴If it has been discussed in a previous class, one may note that the basic ideas here are one measure instead of the normative two because,

Having marked “i:PAC” on their scores, according to their cadential schemes students are now on the lookout for an HC of some kind to define the transition. Instead of asking what cadence ends this next phrase, however, I only ask what *harmony* ends it, since the V chord that ends the phrase (m. 9) is not cadential for two reasons. First, and most obviously, being a V6/5 (in III, E major), the chord is inverted and contains a dissonant seventh. But just as important is the fact that the chord enters at m. 9, before the end of the phrase as a **premature dominant arrival**. Thus, I have students mark their scores not with “III:HC”, but with “V/III”, which in the scheme is the alternative shown underneath “III:HC” in parentheses. Because this phrase ending undermines the tonic key (it is weaker than the i:PAC), we can safely call mm. 7-11 part of the transition.²⁵ And because it moves away from the initial tonic, we can mark it as a modulating transition. As before, one may want to draw attention to the medial caesura here, especially as it is quite prominent in this slower tempo.

We now suspect a second theme group to emerge, and sure enough in m. 12, there is a new phrase beginning clearly in the key of E major with its outlining of I and V harmonies in the right hand—hence, this is definitely second-theme territory, and a fine instance of a monothematic exposition since m. 12 essentially restates m. 1 in the new key. (If students have trouble seeing this relationship on the page, they will certainly have no trouble hearing it if both measures are played for them in succession.) But where is this theme group’s first cadence? Again, I stress that we are looking for a root-position V chord, now in E major. The downbeat of m. 16 may seem to be a candidate, but it is a V7 chord, which suggests that the phrase is as yet unfinished. Thus, m. 17 becomes the next possibility. Here, because both voices end on the dominant note, implying a root-position V chord, we have a true III:HC, which the students can then mark on their scores and notice on their cadential schemes.

in this slower Moderato tempo, one notated measure would be heard as two “real” measures, or to cite Caplin’s formula, $R = 1/2N$. See *Classical Form*, 35.

²⁵ As I discuss elsewhere, a phrase may end not only with a cadence, but with weaker non-cadential forms of ending I call “closural functions.” See my “Closure in Classical Themes: The Role of Melody and Texture in Cadences, Closural Function, and the Separated Cadence,” *Intersections: Canadian Journal of Music* 31/1 (2010): 25-45.

Of course, at this point, the second theme group cannot be over, since we have not yet had its most important component, the new-key PAC. And since what follows in m. 17 differs melodically from m. 12 (although it does still pilfer from the first theme), I call the phrase starting at m. 12 “second theme 1”, and that at m. 17 “second theme 2”.²⁶ This latter phrase provides some marvelous instances of cadential avoidance, a topic covered in one of our earlier classes: a deceptive cadence (with suspensions) at m. 24, and an evaded cadence midway through m. 28, with the III:PAC finally being reached at m. 31, which they now mark on their scores and I indicate on the cadential scheme. I point out that this high degree of cadential avoidance is characteristic of many second theme groups and that it serves to heighten our anticipation of the new-key PAC, rendering it more satisfying when it finally arrives. In this way, students begin to understand not just the cadential structure of the form, but also one of the most common ways that its tonal drama plays out.

After the downbeat of m. 31, measure-long units appear that prolong the tonic chord of the preceding PAC through a series of V7-I progressions. Again, these are tell-tale signs of codettas and, in turn, of the closing section, which students mark on their scores, completing the analysis of this exposition as shown in Example 2 and creating a cadential scheme as in Figure 3.

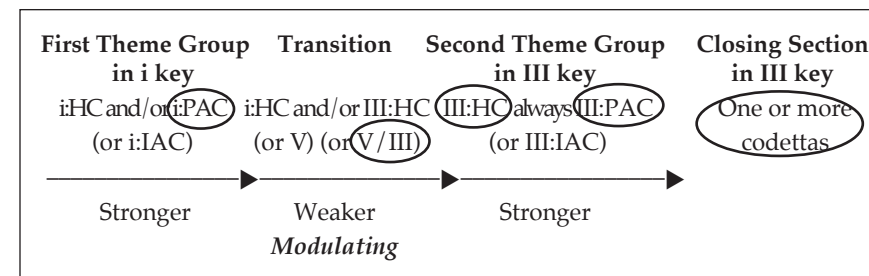


Figure 3 – Analysis of the Exposition of Haydn’s Piano Sonata in C# Minor, Hob. XVI: 36, I, by the Order of Cadences

²⁶ Although Caplin, *Classical Form*, 117, would call these two phrases a **two-part subordinate theme**, I prefer the above labels because they do not imply that both phrases must occur together. Indeed, in the recapitulation of this movement, Haydn omits what I call second theme 1, likely because of its monothematic relationship to the movement’s opening measure. Clearly, Haydn felt that this similarity to the very beginning of the exposition/recapitulation was more important to suppress than that of m. 2/m. 66 to second theme 2.

CLASS 3: A MORE DIFFICULT PIECE FROM THE STANDARD REPERTOIRE

In the third class of this introductory unit on sonata form, I like to select a larger piece that contains both a two-part transition and several unusual features in order to demonstrate some of the complexities that can pose analytical challenges. Because Beethoven often expanded sonata form and always seemed to be toying with its norms, his music is ideal for this objective. Moreover, I find the first movement of the “Pathétique” Sonata, op. 13, to be particularly suitable both because it is in keeping with my selections from the piano repertoire and because it is so widely known (see Example 3). To be sure, this is a difficult movement for any analysis class, but I would argue that its pedagogical benefits outweigh the potential difficulties that students may have.

The great breadth of this sonata can make it difficult to cover in a single class. For that reason, I find it expedient to forgo an analysis of its slow introduction and only emphasize its opening four measures so that students may recognize it when it returns later in the movement. It is not difficult for students to find the general area of the first cadence, since the first phrase begins a repetition at m. 19; hence, they know the first cadence must be at or before this point. Some may believe that m. 18 contains a i:HC because the next measure ostensibly belongs to the following phrase. As with many places in this movement, this is a valuable opportunity to reinforce the concept of elision (or overlap) and to explain that the first cadence occurs at m. 19 and is a i:PAC for a couple of reasons. First, a V7 chord cannot produce an HC due to its dissonant seventh and therefore does not usually end a phrase in a theme group, where cadences are the general rule. And second, the melody’s B4 of this V7 resolves to C5 in the same register before dropping down an octave for the start of the next phrase, suggesting that the higher C belongs to the first phrase and usurps the first note of the second. Once all this is clear, I have the students notate a i:PAC on their scores at m. 19 and I point it out on the cadential scheme.

Allegro di molto e con brio

11 First Theme Group

17 Transition (Part One)

23 Transition (Part Two)

34 Transition (Part Two)

40 Dominant Arrival

i:PAC

V/III Dominant Arrival

Example 3 – Exposition of Beethoven’s Piano Sonata in C Minor, op. 13, “Pathétique”, I

46 Second Theme 1

53

59

65

71

77

Eb minor

Example 3 (Continued) – Exposition of Beethoven's Piano Sonata in C Minor, op. 13, "Pathétique", I

83

89 Second Theme 2

94

98

103

108

III:PAC

Example 3 (Continued) – Exposition of Beethoven's Piano Sonata in C Minor, op. 13, "Pathétique", I

Closing Section

113

p

III:PAC

118

f

Retransition

124

f

Example 3 (Continued) – Exposition of Beethoven's Piano Sonata in C Minor, op. 13, "Pathétique", I

The next cadence becomes quite easy to locate, as the following phrase beginning with m. 19 is almost an exact repetition of the first. It comes, however, with one important difference: at m. 27, the i:PAC has been replaced with a i:HC. Here the idea of cadential ordering becomes of paramount importance, for, given the extremely close correspondence of the second phrase to the first, most students intuitively believe this second phrase to be a part of the first theme group. The i:HC of the second phrase, however, is a weaker cadence than the i:PAC of the first, and hence the tonic key begins to be undermined, which is strictly a function of the transition. This second phrase therefore belongs not to the first theme group, but to the transition.²⁷ I also point out that this HC is

²⁷ Caplin views these phrases in the same way in "Beethoven's *Tempest* Exposition: A Springboard for Form-Functional Considerations," in *Beethoven's Tempest Sonata: Perspectives of Analysis and Performance*, ed. Pieter Bergé et al. (Walpole, MA: Peeters, 2009), 96. In *Elements of Sonata Theory*, 97, Hepokoski and Darcy also read a i:PAC at m. 19 and a i:HC at m. 27, but locate the start of the transition at m. 35 (as a type of "developmental" [i.e., dependent] transition), as have other past writers

followed by a standing on the dominant in mm. 27-35 (elided at both ends), which, as in the Mozart sonatina, enhances our anticipation for the second theme group. In order to drive this interpretation home with students, I demonstrate that this second phrase could very well have ended the entire transition had it provided a medial caesura at m. 35 and continued on to the second theme group (see Example 4)—I also point out that I had to transpose the start of the second theme into the alternative key for second themes in minor movements, minor v (G minor), instead of retaining its original, unusual key of E $\flat$ minor, in order to make the harmonic connection more coherent. Nevertheless, the main idea is clear and demonstrates that the "Pathétique" contains a transition that begins with a highly "dependent" phrase.

Dominant Preparation (= mm. 27-34 + 2 added measures)

p

f

Medial Caesura

Second Theme Group (= mm. 51-54, transposed)

p

f

Example 4 – Hypothetical Ending to the Transition in Beethoven's "Pathétique" Sonata, I

Instead of proceeding to a second theme at m. 35, however, the music takes up a new modulating phrase by the ascending-second sequence, G-A $\flat$ -B $\flat$, and eventually lands on a B $\flat$ -major chord in m. 43 that, in the context of the previous vii $^{\circ}$ 7 of B $\flat$ in m. 42, sounds like V of E $\flat$ major (III in relation to the tonic C minor). Though this chord is not at the end of the phrase, it ends up as the final chord by being

such as Ellis B. Kohs, *Musical Form: Studies in Analysis and Synthesis* (Boston: Houghton Mifflin, 1976), 274-75, and Donald Francis Tovey, *A Companion to Beethoven's Pianoforte Sonatas* (London: Associated Board of the Royal Schools of Music, 1931), 64. While such a view may agree with one's intuition about the form (especially given the extreme parallelism of the first two phrases), it is difficult to sustain because it contradicts the typical distribution of cadences in an exposition.

prolonged through a standing on the dominant. Thus, at m. 43 we have a dominant chord that enters before the end of the phrase, or in other words a premature dominant arrival. By emphasizing the ordering of the phrase endings encountered so far, it becomes easy for students to understand why this is an example of a two-part transition, especially in comparison with Table 2, which is slightly varied by substituting the V:HC (or what would be a III:HC) with the dominant arrival V/III.

At this point, we are very much expecting to reach the second theme group, since there are no other standard options for the transition. And indeed, we get a medial caesura in mm. 49-50, and the start of a new phrase thereafter in the unexpected key of E $\flat$ minor. I then explain that this key is a minor-mode substitute for the more common relative major, III, that is found in second theme groups of minor-mode works. Thus, what was to be a major-mode reprieve from the tragedy of the minor mode in this movement has been replaced with a sudden turn to the tragic minor once more.

Concerning the cadences, while it is not difficult for students to specify their location, their type can be tricky, and is certainly worth some discussion. The first one at m. 89 is somewhat troublesome because the upper voices are not continuous into the downbeat of this measure, especially the melody, which takes a half-bar rest before entering. I had one clever student ask me whether this was therefore an example of an evaded cadence. I responded that I rather view it as a delayed PAC, one in which the expected scoring of the final chord is overwritten by the elision with the new material that enters. The same situation occurs with the end of the next phrase at m. 101. Even so, I admit that there is room for debate and encourage students to ask these sorts of thought-provoking questions. For the sake of the class analysis, however, I refer to m. 89 as a III:PAC that ends second theme 1, and m. 101 as a III:PAC that ends second theme 2.

When this second theme 2 is immediately repeated, its cadence at m. 113 poses a different problem. The cadence would appear to be a clear III:IAC, but considering that second theme groups generally end with PACs, we ought to reconsider such an analysis. While it is true that on the surface, the V7 chord of m. 112 resolves directly to a I chord with $\hat{3}$ in the melody, the actual melodic notes in the entire theme are always the highest ones, with the E $\flat$ 6 of m. 110 continuing a line that moves into the F6 of m. 111, the D6 of m. 112, and finally the E $\flat$ 6 of m. 113. Thus, the cadence at m.

113 is a III:PAC rather than a III:IAC.²⁸ And since what follows is, in mm. 114-121, a repeated four-measure unit based on cadential harmony and, in mm. 121-125, another four-measure unit based on a tonic pedal, these units all constitute codettas and are part of the closing section. Thus, after the transition, there are three PACs in the second theme group (mm. 89, 101, and 113) and a closing section (mm. 113-125). I find that emphasizing the length of these units helps students to understand why they are codettas instead of full-fledged themes. The final unit of this exposition, mm. 125-132, provides a good opportunity to introduce to students the idea of a **retransition** as a modulatory link to an expositional repeat. Hence, after all this analysis, their score appears as in Example 3 and the cadential scheme operates as in Figure 4.

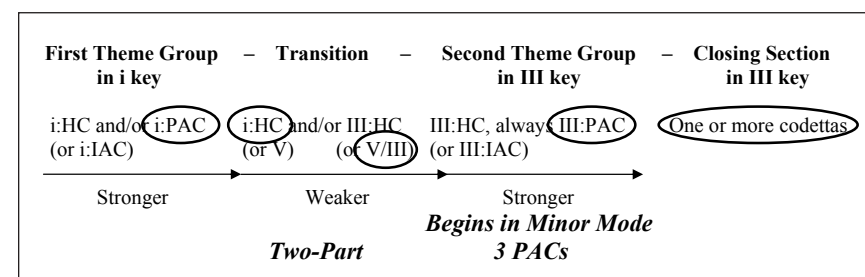


Figure 4 – Analysis of the Exposition of Beethoven's Piano Sonata in C Minor, op. 13, "Pathétique", I, by the Order of Cadences

APPLYING THE SCHEME TO MORE ADVANCED PIECES

As I stated at the beginning of this essay, the three-class unit I discuss provides an introductory rather than a complete exploration of sonata expositions. If one's teaching of the form goes beyond this level, then one can apply the same methodology to pieces of greater length and complexity and from different genres and eras as well. (Those I will discuss here will all be first movements.) Second theme groups that are in a non-normative key, such as Beethoven's frequently-cited use of III for a major-mode movement in his "Waldstein" Sonata, directly affect only the key scheme rather than

²⁸ That the melodic note on the downbeat of m. 113 is of lesser importance is indicated by its lack of consistency in the recapitulation, where, in m. 277, Beethoven replaces the expected parallel note of E $\flat$ ($\hat{3}$ in C minor) with the tonic C. Note, however, that the very next note remains unchanged as the tonic.

the cadential scheme. In larger movements, the increased size is often attained through the addition of more phrases and therefore more cadences from the available options, as in Beethoven's Cello Sonata in A major, op. 69, and "Eroica" Symphony, shown in the cadential schemes of Figures 5a and b.²⁹ In op. 69, additional cadences appear in the first and second theme groups as a result of repeated phrases (mm. 13-24 and 71-94, the latter even expanded) that allow both instruments to play melodic material, as so often occurs in chamber music. In the "Eroica", the expansive length is generated both by a two-part transition (mm. 15-45) and a second theme group (mm. 45-144) that contains no less than four distinct themes (one ending with a dominant arrival in m. 99).

Other expositions, such as Mozart's Violin Sonata in B $\flat$ major, K. 454, are worth discussing since, after a complete phrase in the home key (mm. 14-21), there is a second modulating phrase (mm. 22-29) that ends with a PAC in the new key, then a period theme (mm. 30-50) that is completely in the new key. Is the second phrase a transition that ends, unusually, with a new-key PAC, or a "fusion" of the transition and a second theme 1?³⁰ Either interpretation could be viewed as an alteration of the cadential scheme. But while I favor the former interpretation, shown in Figure 5c, I would certainly expose students to both views and encourage them to decide for themselves whether one strikes them as more convincing, and most importantly, to state their reasons why.

Other difficult pieces fall into the category of the so-called three-key exposition. In Schumann's Second Symphony, after the initial I:PAC of the first theme group (m. 65), the next phrase leads to a PAC in E $\flat$ major (m. 73) followed immediately by a new melody in that key. The same melodic material then reappears at the start of the next phrase (m. 85) in G major, the "correct" key for a C-major movement, thus suggesting that the E $\flat$ material may have been a

false start to the second theme group. But how does one interpret this "false start" formally? Is it the start of the second theme group in an unusual key and after a modulating transition, or an unusually stable second part of a two-part transition? Figure 5d shows both interpretations.³¹

In the case of Brahms, the cadential scheme can demonstrate the composer's nostalgic bent, as pieces like the Fourth Symphony, given in Figure 5e, hardly require any alteration from the classical scheme of modulating from a minor tonic to minor v (apart from the change to the major mode in the second theme group and closing section).³² In spite of this straightforward cadential structure, some of the cadences can be difficult for students to identify because of elisions with the following phrases (mm. 19 and 37) and because the phrases can appear to be "too long" with the relatively small number of cadences.

Throughout this essay, I have advocated the use of a cadential scheme in the teaching of sonata form in an undergraduate curriculum. By demonstrating that the order of cadences in an exposition remains

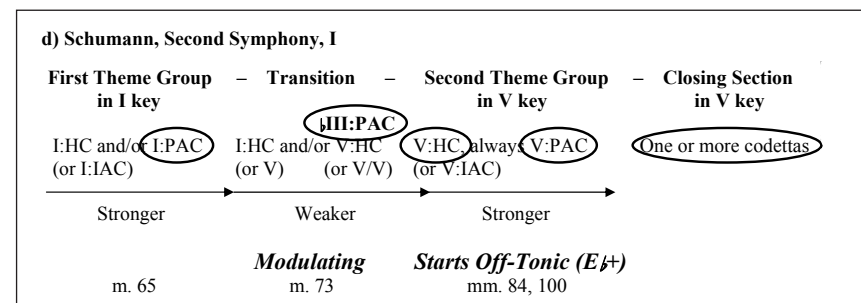
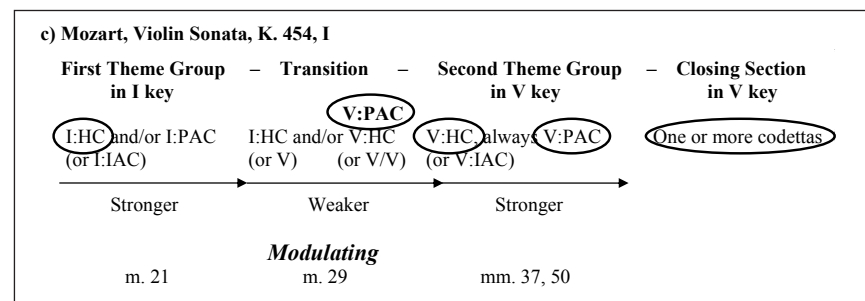
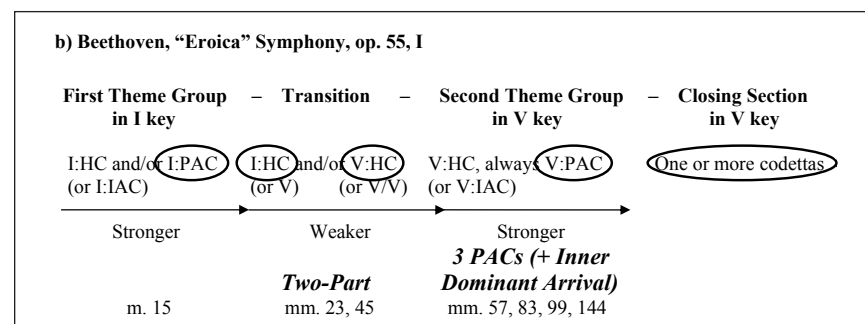
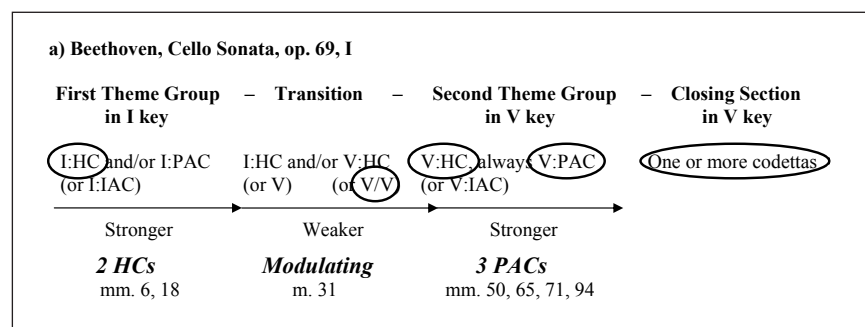
³¹ The second interpretation here offers a different perspective from other writers, who seem to favor the first. See John Daverio, *Robert Schumann: Herald of a "New Poetic Age"* (New York: Oxford University Press, 1997), 319, whose placing of the closing group at m. 92 (which does not directly follow a cadence, hence its lack of agreement with my closing section) likely places the second theme group at m. 73 with the melody in E $\flat$ major (otherwise, if begun with the G-major melody at m. 85, it would be uncomfortably short with only seven measures). This placement of the second theme group is likewise maintained by Anthony Newcomb, "Once More 'Between Absolute and Program Music': Schumann's Second Symphony, 19th-Century Music 7 (1984): 241 (whose closing group also matches that of Daverio); and Brian Schlötel, "The Orchestral Music," in *Robert Schumann: The Man and His Music*, ed. Alan Walker (London: Barrie and Jenkins, 1972), 293.

³² In this movement, the v:HC of the second theme group (m. 93) at first appears to be a PAC in V/V (F $\sharp$ major), but because it moves into B major immediately afterward, it is retrospectively reinterpreted as an HC in V. Caplin, *Classical Form*, 57, describes this phenomenon as a "reinterpreted half cadence". I would also point out that my analysis differs considerably from a recent reading by Walter Frisch, *Brahms: The Four Symphonies* (New Haven: Yale University Press, 2003), 117-18, who seems to be responding more to melodic and key-area changes than cadential ordering, as he maintains that "the exposition is articulated into a first group (mm. 1-53), a substantial transition (53-86), a second group (87-106), and a closing group (107-44)."

²⁹ Measure numbers for the cadences and/or dominant arrivals are shown at the bottom of each figure. In the "Eroica", I interpret the second theme group as beginning at m. 45. For a convincing argument of this interpretation, see William Horne, "The Hidden Trellis: Where Does the Second Group Begin in the First Movement of Beethoven's *Eroica* Symphony?," *Beethoven Forum* 13 (2006): 95-147.

³⁰ In *Classical Form*, 203-5, Caplin advocates the latter view since he holds firm to the idea that a transition must always end with dominant harmony. The former view corresponds with Hepokoski and Darcy's "third-level default" (V:PAC) for a medial caesura. See *Elements of Sonata Theory*, 27.

constant from piece to piece, students gain an understanding of how an exposition's global key scheme plays out on a more local level and obtain a sense of what to expect after each cadence. Moreover, because of its consistency, the scheme may be applied at any level in the teaching of the form, from the very beginning stages to the most in-depth discussions. Thus, overall I hope to have demonstrated some of the benefits of adding such a cadential scheme to the traditional layout of keys for expositions in sonata form.



OR

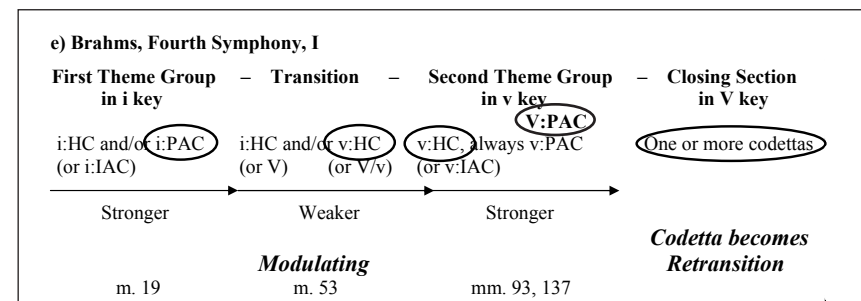
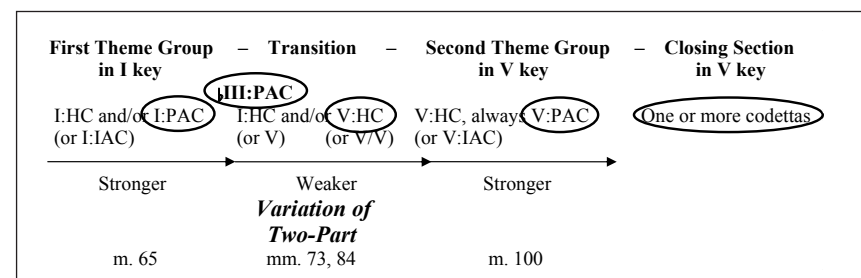


Figure 5 (continued) - Analyses of Expositions by the Order of Cadences

Figure 5 - Analyses of Expositions by the Order of Cadences

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APPENDIX

Terms from Caplin, *Classical Form* (see especially Caplin's Glossary of Terms on pp., 253-58)

Basic Idea – An initiating function comprising a two-measure unit that usually contains several melodic or rhythmic motives and is generally supported by tonic harmony.

Codetta – A postcadential function following a perfect authentic cadence and ranging from a single chord to a four-measure phrase. It is supported by a tonic prolongational (occasionally a cadential) progression. Codettas are not limited to the end of an exposition but may occur after any phrase in a form.

Dominant arrival – A phrase-ending V chord that is non-cadential due to inversion, the addition of a dissonant seventh, or an approach by pedal point.

Evaded Cadence – The failure of an implied authentic cadence to reach its goal harmony. The event appearing in place of the final tonic groups with the subsequent unit and (usually) represents the beginning of a new cadential progression.

Exact Repetition (of a Basic Idea) – A basic idea is repeated exactly when it is harmonized like its original statement. At times, the melody is transposed to a different scale-degree while the harmony remains the same (as when a melody beginning on $\hat{1}$ is restated on $\hat{3}$).

Period – In model form, an eight-measure theme comprising a two-measure *basic idea* followed by a two-measure *contrasting idea* that leads to a HC or IAC to complete an *antecedent*. The basic idea then returns to begin the *consequent*, which ends with a contrasting idea that brings a PAC.

Premature Dominant Arrival – A dominant arrival that appears before the prevailing melodic-motivic and phrase-structural processes have come to an end.

Retransition – An intrathematic function that effects a modulation from a subordinate key or development key to the home key, thus preparing for the return of a main theme (or A' section).

Sentence – In model form, an eight-measure theme comprising a two-measure *basic idea* that is repeated to form a *presentation*, after which four bars of *continuation* usually reduce the size of structural units (fragmentation), providing an acceleration towards its ultimate goal, the *cadential* function (generally contained within the four-measure continuation).

Standing on the Dominant – A postcadential function following a half cadence. Consists of one or more ideas supported by a dominant prolongation. Hence, a standing on the dominant is essentially equivalent to Hepokoski and Darcy's "dominant-lock" (see *Elements of Sonata Theory*, 19) and the traditional term, "dominant preparation."

Statement-Response Repetition – A tonic version of a unit (usually a basic idea) immediately restated by a dominant version.

Thematic Introduction – A short formal function (generally one to four measures) that precedes the initiating unit of a theme. Expresses the sense of "before-the-beginning" and usually emphasizes tonic harmony.

Two-Part Subordinate Theme – A subordinate theme whose first part ends with an internal half cadence and whose second part starts with new, initiating material.

Terms from Hepokoski and Darcy, *Elements of Sonata Theory* (see especially their Terms and Abbreviations, pp. xxv-xxviii)

Closing Zone (C) – Follows the secondary-theme zone (S) and generally occurs after the first PAC in the new key. Includes both a closing theme or themes as well as any codettas that follow them.

Medial Caesura (MC) – The brief, rhetorically reinforced break or gap that serves to divide an exposition into two parts, tonic and dominant (or tonic and mediant in most minor-key sonatas). In rapid-tempo compositions a medial caesura is usually built around a strong half cadence that has been rhythmically, harmonically, or texturally reinforced. Thus, the medial caesura is not merely a textural gap, but one that is usually harmonically prepared by a half cadence. Moreover, the music that follows the gap must necessarily be the secondary-theme zone (S), otherwise what results is some type of “medial caesura declined,” “trimodular block,” or “continuous exposition,” none of which would contain a true medial caesura where initially implied after a half cadence and, perhaps, a textural gap. For a discussion of these three situations, respectively, see *Elements of Sonata Theory*, 45-47, 170-77, and chap. 4. But see also Hepokoski and Darcy’s earlier article, “The Medial Caesura and Its Role in the Eighteenth-Century Sonata Exposition,” *Music Theory Spectrum* 19 (1997): 115-54.

Type 2 Sonata – A “binary” sonata form comprising an exposition, development, and incomplete recapitulation usually beginning with the secondary theme or material just preceding this from the transition.

Type 3 Sonata – A “textbook” sonata form comprising an exposition, development, and recapitulation.





The Core Curricula in Music Theory: Developments and Pedagogical Trends

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What is the function of the core curriculum in music theory? What fundamental core knowledge should all undergraduate musicians acquire? These are among the questions that the National Association of Schools of Music (NASM) posed to a panel of music theorists at its 2011 annual meeting.¹ While the details of theory curricula will necessarily differ from institution to institution, the broad goals will probably not. A mission statement for the undergraduate theory core might go something like this:

- We aim to teach our students to think in music,
- to read, write, and perform music with understanding,
- and so to contribute to artistry.

The ideal theory classroom would thus be intensely musical, absolutely relevant to what students learn in other parts of the core and in their applied study, and it would challenge students to ever higher levels of artistry (regardless of the level at which they begin). Where schools will differ are in questions of scope and emphasis.

In preparation for this discussion, I placed a call for information on the Society for Music Theory's list-serve, held conversations with theorists teaching in the core, and reviewed trends in recent textbooks.² Faculty from 14 institutions responded: from four conservatories, six schools of music within universities, and four

¹ This talk was presented at the annual NASM meeting in Scottsdale, AZ (November 20, 2011) as a part of the organization's review of the current state of the undergraduate core curriculum, and appears in a slightly different form in the *Proceedings of the 87th Annual Meeting*. The other panelists on the session included Gary S. Karpinski (University of Massachusetts at Amherst) and Timothy A. Smith (Northern Arizona University)

² My e-mail solicitation provided an excerpt from the NASM session description, and I asked colleagues for input from the perspective of their institutions, including ways the core had changed or developed over time. This open-ended question allowed respondents to focus on any aspect of the curriculum that they wished.

smaller music departments.³ Based on this input, six themes emerged, which I will discuss in turn.

1) *Engagement of professional music theorists in designing and teaching the core*

Three schools described a transition to their current core from an older comprehensive musicianship curriculum; this coincided with a move from “generalist” faculty (such as composers and performers) to music-theory specialists teaching in the core. The comprehensive musicianship approach—featuring chronological organization of materials, a focus on individual masterworks in historical context, and style composition from faux bourdon to serialism—has given way to curricula organized around development of a harmonically based understanding of tonal music and tonal forms, followed by an introduction to 20th-century and contemporary music. This type of curriculum prioritizes depth of knowledge over breadth of coverage (here, pre-tonal and non-Western traditions suffer), but it provides the best chance of giving students concrete skills that will serve their core repertoire well.

In schools large enough to have graduate programs and teaching assistants, several described movement away from assigning TAs sole responsibility for a class of students and toward a lecture-lab design, where full-time faculty present the core material in large lectures and teaching assistants run small-group “lab” sessions where hands-on skills are practiced. In these schools, as well as schools where theory is taught by non-specialists or adjuncts, a faculty coordinator typically oversees the whole curriculum, chooses the text (perhaps with a committee), and actively trains those teaching in the core in order to achieve consistency of terminology and approach.

³ Responses came from the Boyer College of Music and Dance (Temple University), Cleveland Institute of Music, Crane School of Music (State University of NY, Potsdam), Eastman School of Music (University of Rochester), Houghton College, Hunter College (City University of New York), Ithaca College School of Music, Juilliard School, Nazareth College, New England Conservatory, Oberlin College Conservatory, Schulich School of Music (McGill University), University of Alabama School of Music, and University of Massachusetts at Amherst Department of Music and Dance. The sample is thus a bit biased: toward professional music training rather than liberal arts programs, and it comes from the perspective of music theorists rather than other faculty teaching music theory.

An important trend, not captured by these responses, is that music theory *pedagogy* itself has become a specialization within music theory. Theory pedagogy now has its own degree programs, conferences, and journal.⁴ An important resource for teachers, the *Journal of Music Theory Pedagogy* launched in September, 2012, a new website (<http://jmt.p.ou.edu>) that will provide text, audio, and video support to both specialists and non-specialists teaching theory classes at all levels.⁵ With the rise of theory pedagogy as a research discipline come new pedagogical ideas and a new generation of textbooks influenced by current research. These typically remove the chord-by-chord, roots-by-fifth approach that focused theory classes of the past heavily upon harmony and part-writing. Newer texts now also consider the linear and contrapuntal underpinnings of harmonic motion; they typically begin with two-voice writing before introducing SATB textures, and they attend much more to analysis of phrase and form, giving life and context to the harmonies under study.⁶

⁴ An internet search of theory pedagogy degrees identifies masters degrees at the Eastman School of Music, the Peabody Institute, and Michigan State University. In addition, there are graduate certificate programs in theory pedagogy at the University of Michigan, University of Kentucky, and University of North Carolina, Greensboro. Theory pedagogy conferences have been sponsored by CMS, the University of Massachusetts at Amherst, and the Society for Music Theory's Graduate Student Workshop. Finally, the *Journal of Music Theory Pedagogy* is a thriving research journal, now in its 25th year.

⁵ In addition to articles, it plans to include links to public domain scores and recordings, sample syllabi and assignments, an open forum, and video options such as teaching demonstrations and peer tutoring via Skype.

⁶ Some texts that follow this model include Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening*, 3rd ed. (Oxford University Press, 2011); Jane Piper Clendinning and Elizabeth West Marvin, *The Musician's Guide to Theory and Analysis*, 2nd ed. (W.W. Norton, 2011); and Miguel Roig-Francolí, *Harmony in Context*, 2nd ed. (McGraw-Hill, 2011).

2) *Focus on analysis and repertoire, somewhat less on part-writing*

Because many core curricula now span only four semesters (sometimes five), and since the abstractions of part-writing may seem less relevant to young performers, many theorists are moving to integrate form and analysis and some style composition into the first two years rather than waiting for an upper division theory elective. Nearly half of the schools surveyed reported a move toward engagement with music repertoire and somewhat less emphasis upon figured bass and part-writing. These writing skills, along with an introduction to species counterpoint, remain critical foundational elements for core theory training, but they are not the sole focus. Teachers also understand that some majors—like music education—have so many required courses that topics like form and post-tonal theory, if not included in the core, will likely not be introduced to these students at all. Even more important, we find that students simply do not know repertoire. The iTunes generation comes to us having listened to more music, and more diverse music, than perhaps any generation before—but their musical choices can be eclectic and leave large and important works and genres untouched.

How do schools integrate form and analysis into a curriculum organized by harmonic topic? Rather than introducing musical forms as a chronological progression, musical works are analyzed, and perhaps composed, as soon as the student has studied the harmonic concepts needed to understand each formal type. Thus excerpts from dance suites to sonatas (even pop songs) are used to study phrase structure, once students understand the basics of diatonic harmony and cadences (typically semester 1). With secondary dominants and diatonic modulation under their belts, they can analyze and write binary forms (semester 2). Once sequence types are mastered, students are ready to study invention and fugue; and facility with modal mixture and chromatic harmony gives them access to a wealth of Romantic Lieder, character pieces, and sonatas (semesters 3 or 4). In the final core class (semester 4 or 5) short modal, atonal, or serial works are studied. Thus the entire curriculum is infused with music, and students have the strong harmonic grounding to explore these forms fully.

3) *Integration of aural and written skills and increased time devoted to aural training*

Nearly half of the respondents to my solicitation reported that their schools have increased the amount of time devoted to aural skills training. Most schools report a five-day-a-week theory core, often with Monday/Wednesday/Friday devoted to harmony and analysis and Tuesday/Thursday to aural training. However, two schools report reversing that distribution (at least in some semesters) with MWF for aural skills, to provide closer supervision of the skill-building process. Others report incorporating more aural skills training into the “written” theory classroom, thus complementing and supporting the work of the aural skills classes. Many respondents reported that the theory and aural skills curricula are coordinated in content and pacing, even when the two classes are divided. Sometimes both classes are taught by the same faculty member, and when adjuncts or teaching assistants are used for skills classes, their work is overseen by a coordinating faculty member who ensures consistency of content, terminology, and approach.

4) *Increased use of technology in teaching*

While only five respondents specifically commented on increased use of technology, innovations in this area are impossible to ignore.⁷ Many schools now have adopted course management platforms (like Blackboard) institution-wide, and all course reserves, listening lists, assignments, etc. are downloaded or streamed by students. The availability of public domain musical scores for free download

⁷Technology in the core does not refer to CAI, or computer-assisted instruction. Some schools do adopt drill-and-practice software as an aid for out-of-class dictation practice or for review of musical fundamentals, but these resources have not replaced classroom hours where human interaction and diagnosis of problems is key. Some schools are designing their own online materials for ear-training and fundamentals drill rather than relying on commercial packages; this is a function both of our instructors’ technological savvy and a desire to coordinate materials closely with local pedagogical approaches, terminology, and curricula. To my knowledge, very few schools provide online courses in music theory beyond basic fundamentals classes; most view the in-class teacher-student interaction with the musical materials as crucial.

has reduced the need for musical anthologies,⁸ and library listening rooms stand empty as students listen to all required works by internet streaming (which is available 24/7, unlike most listening labs). Students now have unlimited access to all course materials, so that it is virtually impossible to complain of losing an assignment, not getting to the library for reserve materials, or not knowing when something was due. However, faculty who used to rely on class handouts are now faced with a culture where the norm is the electronic upload, and duplicating budgets have been cut. Asking students to print their own handout before class and remember to bring it ensures that some members of the class will not have crucial material before them when it is needed; students who choose to read the handout from a laptop may really be surfing the web instead of attending to class content.⁹

One solution to the handout problem is to move to digital projection. Many schools have been investing in smart classrooms, and the technology available today has much to offer. A PowerPoint lecture can have lots of bells and whistles—from embedded sound files and YouTube clips, to score excerpts and entertaining animations—but it entails a fundamentally different way of teaching. Students sit in a semi-darkened room and, unless the instructor is very skilled, they receive information in a more passive way. They are not forced to interact with the teacher or synthesize information on the spot. Without a paper copy of the score on their desks, they are less likely to make analytical markings, take notes, or have material to review at home later. With PowerPoint, some of the spontaneity and interactivity of a chalkboard and piano lecture are simply lost.

⁸ Examples of score (or score excerpt) download sites include the International Music Score Library Project, IMSLP (<http://imslp.org/>), Indiana University's Variations project (<http://www.dlib.indiana.edu/variations/scores/>), Sibley Digital Scores (<http://digitalscores.wordpress.com/>), Tim Cutler's theory examples website (<http://musictheoryexamples.com/>), and specialty sites such as Tim Smith's site for Bach cantatas (<http://www.bach-cantatas.com/IndexScores.htm>).

⁹ With regard to student computing, only one school volunteered information about a technology requirement for students in the core. It may be that students now pick up knowledge about music notation programs, recording and editing programs on their own (even before college) without much formal instruction, as software gets better and more intuitive.

Not to oversimplify (because there are always exceptions), we may be seeing a generational digital divide. New assistant professors grew up with computers, used PowerPoint and Finale in high school, routinely design and update their own websites, write and assign blogs, and easily adapt to newer technologies like Smartboards and clickers. Using a smartboard, teachers can project a music notation file, notate a melody or progression interactively during class, listen to it, and save it for future use. Clickers allow students to respond to multiple-choice questions electronically during a lecture, promoting more active learning. Interestingly, technology may enhance core teaching but few faculty seem to rely on it for real instruction outside the classroom. There has been no CAI revolution.

5) Remedial classes are growing

Half of my respondents commented on the increased need for remediation in their incoming freshman theory classes. Creating additional sections of remedial fundamentals classes, however, puts a strain on faculty resources, and often puts these students perpetually behind their peers by a semester or a year. Some schools offer home-grown online tutorials designed expressly for the purpose of getting entering students up to speed before they arrive on campus for a theory placement test.¹⁰ Even so, many students still need the class. One bright spot in this regard is the College Board's Advanced Placement Music Theory Test and coordinated high school theory classes. One respondent noted that scores on placement tests at his institution were going up, possibly due to the increase in AP Music Theory participation (some 18,000 high school students in 2011).

6) Two challenges: improvisation, music outside the Western canon

Because so many theory core curricula are organized around principles of harmonic progression and voice leading, these principles can function as frameworks for structured improvisations; yet improvisation study has been slow in coming to core curricula. There are hopeful signs, however, including new textbooks and new editions of older textbooks that include improvisation as

¹⁰ Notable in this regard are the eTheory class offered by the Eastman School of Music's Institute for Music Leadership (<http://www.esm.rochester.edu/iml/entrepreneurship/eTheory/index.php>), and MFO (Music Fundamentals Online), which has just launched at Indiana University for admitted students (<https://mfo.music.indiana.edu/login>)

a core activity.¹¹ Among the key elements to be considered in an improvisation component are: an early start, with simple melodic or rhythmic pattern improvisations at the beginning, inclusion of exercises appropriate for all instruments and voice (not just keyboard), and clear structures and models for students to elaborate. Viewing improvisation as a series of structured choices within a given framework—rather than as something totally free—makes the enterprise less intimidating for those new to this practice (student and instructor alike).

Over half of the schools surveyed reported that they were now including music beyond the Western canon in their core curriculum.¹² In many curricula, jazz and rock examples that fit the harmonic paradigms under study are simply plugged in as appropriate. In others, the core may include a short unit on jazz harmony. World music is more of a challenge, however, because it does not share the same paradigms. Three schools surveyed took a more radical approach, offering alternatives within the core. In one institution, all jazz majors replace semesters 4-5 of the core with a two-semester jazz theory sequence. In another school, any student may opt to replace semester 4 of the core (chromaticism and large forms) with either jazz theory, popular music theory, electronic music, or world music theory. In another, all students take a required fifth semester core course in global musicianship, which includes comparative

world music analysis and transcription skills. These innovations show a new openness to music outside the traditional canon, which is likely to continue.

In closing, let me return to the opening questions. What is the function of the core curriculum in music theory and what basic core knowledge should all students acquire? The function, in short, is to develop music literacy and musicianship; all undergraduates should be able to read, write, and perform music with understanding. We want our students' understanding to inform their musicianship skills, to enable them to learn new works rapidly and with fluency. We aim for more than reading notes off a page, however; we want students to understand the melodic, harmonic, and formal context in which those notes are heard. We want students to internalize musical structure through study of masterworks, through style composition and improvisation, by speaking and writing about music, and through performance; and we want their structural understanding to translate into performance decisions that influence interpretation and foster ever greater artistry.

¹¹ Among the textbooks that include structured improvisation exercises are Robert Ottman and Nancy Rogers, *Music for Sight Singing* 8th ed. (Pearson, 2011); Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening*, 3rd ed. (Oxford University Press, 2011); and Joel Phillips, Paul Murphy, Elizabeth West Marvin, and Jane Piper Clendinning, *The Musician's Guide to Aural Skills*, 2nd ed. (W.W. Norton, 2011). Others are in development and are likely to appear in print soon.

¹² Whether to incorporate music beyond the common-practice canon evokes strong reactions from some faculty on both sides of the question. At the 2011 meeting of the Society for Music Theory (Minneapolis, MN), an evening special session grappled with this question in the form of a debate entitled "The Great Theory Debate: Be it resolved....Common practice period repertoire no longer speaks to our students; it's time to fire a cannon at the canon." Participants included Brenda Ravenscroft (Queen's University), Moderator; Poundie Burstein (Hunter College and Graduate Center CUNY); Justin London (Carleton College); Peter Schubert (McGill University); and Heather Laurel (The City College of New York, CUNY).



Noteflight as a Web 2.0 Tool for Music Theory Pedagogy

BY BRENDAN MCCONVILLE

The term Web 2.0 has played a significant role in the evolution of technology worldwide during the past decade. Tim O'Reilly, founder and CEO of O'Reilly Media, and co-founder of the annual Web 2.0 Summit,¹ has pointed to the "bursting of the dot-com bubble in the autumn of 2001" as a "turning point for the web."² He has stated, "bubbles and consequent shakeouts" often "mark the point at which an ascendant technology is ready to take its place at center stage."³ In 2005 he defined Web 2.0 as:

...the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences.⁴

He has also identified examples of web resources that demonstrate the migration from Web 1.0 to Web 2.0, such as "Ofoto à Flickr" and "Britannica Online à Wikipedia."⁵ Corporations, media outlets, and

¹For more information regarding this event see "About Web 2.0 Summit" at <http://www.web2summit.com/web2011/public/content/about>.

²Tim O'Reilly, "What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software," *International Journal of Digital Economics* 65 (2007): 17.

³Ibid, 17.

⁴Tim O'Reilly, "Web 2.0: Compact Definition?" *O'Reilly Radar - Insight, Analysis, and Research about Emerging Technologies* (web log), October 1, 2005. Accessed July 1, 2011. <http://radar.oreilly.com/archives/2005/10/web-20-compact-definition.html>.

⁵Tim O'Reilly, "What Is Web 2.0: Design Patterns and Business

popular culture have all explored the potential advantages of using Web 2.0 applications to facilitate improved communication with and among audiences. Music teachers have begun to do the same.⁶

For theory instructors, the following question might arise: "Is there a relatively uncomplicated method of utilizing interactive musical notation within the Web 2.0 network?" Consider the following scenarios:

- You are teaching a Freshman counterpoint class of 30 students. You would like to post a cantus firmus to a website where your students could: access it; add counterpoint to it and re-post a new version; save successive versions of it, and; collaborate with other students to write species exercises against it.
- You are teaching a chromatic harmony course with 25 students. You would like to embed a student-modifiable part-writing template right into your learning management system (LMS) blog.
- You are teaching an undergraduate aural skills course of 27 students. You would like to provide your students with an online location for accessing hearable melodies that you feel they need to practice to sharpen their sight-singing skills.

Models for the Next Generation of Software," *International Journal of Digital Economics* 65 (2007): 18.

⁶For some examples of scholarly literature on music educators' pursuits in using Web 2.0 technologies, see Mikka Salavuo, "Social Media as an Opportunity for Pedagogical Change in Music Education," *Journal of Music, Technology and Education* 1, no. 2-3 (2008): 121-36; Steve Cooper, Crispin Dale, and Steve Spencer, "A Tutor in Your Back Pocket: Reflections on the Use of iPods and Podcasting in an Undergraduate Popular Music Programme," *British Journal of Music Education* 26, no. 1 (2009): 85-97; and Eddy K. M. Chong, "Blogging Transforming Music Learning and Teaching: Reflections of a Teacher-researcher," *Journal of Music, Technology and Education* 3, no. 2-3 (2011): 167-82.

If the above strategies seem like attractive pedagogical options, you may wish to consider Noteflight (hereafter "Nf") as a tool for theory instruction.

This review provides a critical evaluation of the online music notation software Nf (www.noteflight.com), a web application that acutely seeks to harness the power of the "network as a platform." Nf is a subscription and cloud-based notation editor where students can join a community of users to create, edit, store, and share musical scores (note: the term "cloud" will be discussed in detail in a moment). They can also access, edit, and comment on their classmates' scores within the community. Most specifically, this review will assess Nf as a tool for music theory pedagogy in higher education.

Nf President Joe Berkovitz and his team maintain that their vision for the software grew from frustration with expensive notation applications such as Finale and Sibelius.⁷ In 2007, Berkovitz, a New England Conservatory-trained musician, also felt that musicians needed notation software fully online in order to successfully evolve the "reason music notation was developed in the first place," which is, "to efficiently communicate musical ideas."⁸ They also explain that most notation software "treats the Internet as an afterthought."⁹ In the pages that follow, I will first discuss the software's functionality within the context of practical theory teaching situations. Second, I will report on research from our School of Music's recent use of Nf in graduate and undergraduate courses. Finally, I will provide conclusions about the software, which are based on both teacher and student evaluations.

WHAT IS NF AND WHAT CAN IT OFFER IN THEORY TEACHING SITUATIONS?

I will begin by describing four principal characteristics of Nf's business model and Web 2.0 architecture. I will consider beneficial and problematic aspects of each characteristic, as well as envision how each might affect theory-teaching situations. Although a

⁷Elizabeth Gazda, VP of Business Development, telephone interview by author, June 21, 2011.

⁸Ibid.

⁹For more information regarding the origins of Nf, see "About Nf: the Story of Nf," at <http://www.noteflight.com/info/about>.

comprehensive list of possible Nf uses in music theory pedagogy would be both impossible and impractical, each characteristic's section will conclude with a suggestion or two, I hope stimulating the reader's imagination.

1. A REVISED APPROACH TO NOTATION SOFTWARE PRICING

One of Berkovitz's initial frustrations with notation software was that its expense deterred many musicians from ever having their own copy of a usable program. Thus, Nf redesigned pricing models for notation software. Before considering the helpful and problematic aspects of the models for higher education, I must first outline Nf's account categories with pricing.¹⁰

- **Individual:** The two individual account categories are the "Basic" (free) and "Crescendo" (pay; \$7.95/month, \$49/year) options. Basic accounts restrict more advanced software features such as unlimited score saving, direct MIDI note entry, and use of the full SONiVOX-sampled library of sounds.¹¹ Though most instructors will opt for Nf Campus accounts (below), Basic accounts are a nice way for instructors to preview Nf's design and functionality before purchasing. Basic and Crescendo accounts also allow users to access the global Nf community of shared scores amassed on the site's servers, found in the "Browse" menu of an account.
- **Higher Education:** At Nf-adopted institutions, student accounts reside in the Nf Campus version of the full software. Campus adoption has two models: university-pay and student-pay options. With either option, a private community is set up for the institution accounts to share and save all of their own scores to their own partition of the Nf servers. In the university-pay option, the school pays \$30 per year per account within the community, while in the student-pay option each student pays \$49 per year or \$7.95 per month for accounts. Nf Campus

¹⁰For Nf's descriptions of account categories see http://www.noteflight.com/info/learn_more. Though category names and prices are subject to change, these details were current at press time.

¹¹For more information on SONiVOX products and sample technology, see <http://www.sonivoxmi.com/>.

also allows institutions to link Nf-generated content with their school's LMS. For this reason, Nf charges a one-time setup fee for adopting institutions; the price of this fee is based on the size of the school.

- **K-12 Education:** K-12 educational settings use versions of the software called Nf Classroom and Nf District. Like Campus, Classroom can connect to a school's LMS, such as Haiku. For K-12 institutions that do not use a LMS, Classroom provides a private Nf website that offers the same community setting of a LMS. Classroom costs \$195 per year for up to 250 users on one private site. A District community is designed for larger enrollments (i.e. school districts) and administrators must contact Nf for a price quote. Finally, the new Nf Teacher edition costs \$295 per year and allows a single user to maintain 5 private sites with up to 75 users per site.
- **Private Instruction:** Nf Studio uses the same private website design as Classroom, but costs \$150 per year and allows for up to 75 users per site.

It is evident that Nf has disrupted the normal methodology for purchasing school notation software. Institutions are faced with the task of reexamining how and where they want their students to use the software, as well as who should pay for it. With Nf, there are no seat licenses for a lab, rather, there are accounts floating in a "cloud" that are required of each student. Schools using the university-pay model must purchase individual student copies annually. This is somewhat different than purchasing shared and stationary seat licenses. Comparing the university-pay price of Nf to Finale and Sibelius lab licenses is thus like comparing apples to oranges. Even though a single license (account) for Nf is cheaper than a Finale or Sibelius seat license, in many cases an institution will have to purchase more of them. Consider the following: should your department's theory/composition area make use of (1) a lab with 30 licenses of Finale at \$130 per seat (plus \$65 annually for license upgrades), (2) a lab with 30 licenses of Sibelius at \$145 per seat (plus \$70 for periodic license upgrades, which come about every 2-3 years), or (3) 100 online licenses of Nf at \$30 per year for each individual student enrolled in theory/composition courses

(all upgrades are included in price)?¹² Depending on a department's enrollment and usage, it might be more expensive for an institution to budget (in the university-pay model) for Nf than it would be for Finale or Sibelius. In the above example, over a 10-year time frame a school would pay \$21,450 in license fees for Finale, and \$30,000 for Nf accounts.¹³ Not only should institutions weigh average enrollments with prices, but they should also *carefully* consider their precise agenda for class use of notation software. Nf could end up being cheaper—or more expensive—than other software, but it should ultimately fit the department's needs. The question is: what exactly does Nf offer that Finale and Sibelius do not? The remaining three sub-sections of this section hope to answer this question.

The student-pay price model is another redesigned approach to institutional adoption of notation software.¹⁴ Nf affirms that approximately two thirds of their client institutions in higher education currently use this option.¹⁵ The company's approach here is to make the software a "textbook fee" for students and

¹²Finale and Sibelius prices listed here are quotes only, and readers are encouraged to contact a reseller for precise license fees for their institutions. Though the comparison here uses an estimation of 100 Nf licenses (i.e. students taking theory / comp courses), this will vary greatly from school to school. Finale and Sibelius licenses are *stationary*, or installed on only one computer at a time. Since Nf is a web-based application with "cloud" storage it can be accessed anywhere. For this reason, departments adopting Nf must count the number of total student users requiring a notation editor, rather than the total lab computers available for notation editor installation.

¹³These figures are based on the following rationale: Finale: YR1 = (\$130 × 30 licenses) and YRs2-10 = (\$65 × 30 licenses); YR1 = \$3,900 and YRs2-10 each = \$1,950; [\$3,900 + (\$1,950 × 9 years)] = \$21,450. Nf: YRs1-10 = \$30 × 100 accounts each year; YRs1-10 = \$3,000 × 10 years = \$30,000. These figures do not consider additional required hardware costs or price changes that may arise. Here I selected to specifically compare Nf to Finale because our institution has recently used both of these programs.

¹⁴I acknowledge that some institutions might already require students to purchase individual copies of Finale or Sibelius, though few require the full version of these (Finale and Sibelius educational copies are \$350 and \$295, respectively).

¹⁵Elizabeth Gazda, VP Business Development, Nf.

remove an institutional software expense (and perhaps making it more attractive for adoption). In a positive sense, this option relieves the school from paying up-front costs for software based on projected enrollments in future years. Yet this alternative might be problematic for many institutions, as it has the potential to place a financial burden on the student, especially if a standard textbook is still required for their course.

2. AN ONLINE MUSIC NOTATION PROGRAM

Nf currently uses Adobe Flash technology to deliver its program completely online, which generates two very valuable aspects of the software for theory instructors. First, just as Nf certifies, "all your instructional materials are accessible from any online computer from the moment they're created. Students can access and work with scores wherever they happen to be — in the classroom, in a computer lab, in a dorm room or at home."¹⁶ The full software has the ability to "appear" at any Flash, Internet connected location; indeed, "the lab" is made mobile. Consequently, students using Nf in a written skills course who might be expected to complete a short project are not able to use the excuses "the lab was closed," or, "my computer is broken" at deadlines. Multiple computer locations can work. The lab's "mobility" can also cut down on the common excuse, "I couldn't print my homework," as Nf allows you to print from anywhere. Second, since Nf resides online, it is also possible to connect music created and stored in the software to other locations on the Internet, such as LMSs (e.g. Blackboard, Moodle) and private websites. Users can embed their notated music into other locations or paste links into websites that take students back into Nf for examples. Campus accounts permit Nf to integrate with LMSs that are Basic LTI (Learning Tools Interoperability) enabled, which includes systems such as Blackboard 9, Desire2Learn, and Moodle.¹⁷ The company has posted several convenient tutorial videos on the Nf website that demonstrate the program's ability to

¹⁶See http://www.noteflight.com/info/learn_more_highered.

¹⁷For more information on Basic LTI and the IMS Global Learning Consortium's standards for connecting remote tools such as Nf to LMSs, see <http://www.imsglobal.org/liti/index.html>; for a list of Basic LTI compliant products see <http://www.imsglobal.org/cc/statuschart.cfm>.

integrate with LMSs.¹⁸

The benefits of fully online music notation software are not without drawbacks. First, students must have an Internet connection in order to do their work. Even in today's Internet-saturated environment there are plenty of students who do not have an Internet connection in their homes (though they could use campus locations). Second, even though many portable devices such as the Android tablet support Adobe Flash, a very important one does not: Apple. At present, students who wish to edit their Nf scores from their iPad, iPhone, or iPod will need to wait for an Apple supported mobile application. Thankfully, Nf says that one is under construction.¹⁹ In fact, in May 2012 Nf announced their plan to move their entire platform to the Apple-compatible HTML5 language.²⁰ With this announcement came the new ability for users to view and play back their scores on their iOS devices, though, they will need to wait for Nf's completed migration in order to access the full editor from these devices. Third, despite being a very usable notation editor, Nf's current Flash platform simply does not enable the same kind of power and capabilities that software such as Finale and Sibelius can deliver. Its single-license price properly reflects this discrepancy in functionality. Nf's traditional features include inputting (via a mouse, keyboard shortcuts, or a MIDI controller), editing, printing, and saving one's music.²¹ Beyond this, Nf's offerings trail those from the leaders in notation software. For instance, Nf has 32 score templates to choose from as users begin

¹⁸ See http://www.noteflight.com/info/learn_more_highered to view these videos.

¹⁹ Elizabeth Gazda, VP Business Development, Nf.

²⁰ See "Mobile, HTML5, Flash, and Noteflight," at <http://blog.noteflight.com/2012/05/17/mobile-html5-flash-and-noteflight/>.

²¹ Incidentally, its saving/exporting features are actually stronger than those from some programs. Users can not only save music to Nf's servers, but they can export it as MIDI or MusicXML files—the latter being a format that allows other notation software (e.g. Finale and Sibelius) to open the file. Sibelius has not always offered MusicXML. Sibelius 6, for instance, reads MusicXML files yet requires a Dolet 5 plug-in to export them, which costs about \$200. Sibelius 7 now includes full MusicXML export capability. Readers should be warned that not all notation programs offer MusicXML exporting, as some require a plug-in. For more information on MusicXML technology and software that supports it, see <http://www.recordare.com/musicxml>.

a new score and approximately 65 instrument types for playback. These provide a respectable number of options, but not as many as offered by Finale and Sibelius. The leading programs also provide larger vocabularies of staff and system lines, more document layout options, scanned-music importing (i.e. Finale's SmartScore and Sibelius's PhotoScore), and more plug-ins than Nf.²² Yet the team at Nf pays careful attention to customer feedback regarding problems and requests concerning their software; updates could one day close this gap of functionality between Nf and the larger notation products.²³

It is easy to envision specific examples where the theory classroom might benefit from online notation software. One such case is the ease of linking assignments for a written skills class to the course LMS. Teachers can build part-writing or short composition assignments in Nf and embed them directly into their LMS assignment board. Then, all of the student's assignment materials can be placed in one central location. Teachers can also make changes to assignments without uploading a new score to their LMS; the embedded content always changes with the saved Nf score. In addition, writing assignment templates that are placed online in the LMS enable students to *hear* their part-writing exercises as they work on them. This capability could likewise allow teachers to embed hearable musical examples into a blog or discussion board section (e.g. class notes) of the LMS.

Aural skills classes can take advantage of the "mobile" account functionality of Nf to support instruction. For instance, teachers can post hearable singing exercises to Nf so that students can practice with them from various private locations outside of the lab. Nf's capacity to connect with other Internet access points, as well as its account mobility, spawn attractive pedagogical possibilities.

²² Sibelius and Finale both offer an assortment of plug-ins. Plug-ins range from composing, arranging, and analytical tools to proofreading. See www.sibelius.com and www.finale.com for more information on current plug-ins.

²³ See Nf's Facebook page for constant user questions, feedback, and requests for the company, which is found at <https://www.facebook.com/noteflight>.

3. A “CLOUD” BASED INFRASTRUCTURE

Before engaging this characteristic of Nf, “cloud” computing first requires a proper definition. The National Institute of Standards and Technology has offered the following: “Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”²⁴ In other words, a “cloud” server is an Internet self-storage facility; users rent space to amass their files. Popular “cloud” service websites such as Dropbox, Just Cloud, and Mozy also allow you to share the keys to your storage unit with others.

Content built within Nf likewise makes use of “cloud” storage and file sharing technology, engendering several benefits for theory instructors. First, the “cloud” facilitates smoother score passage between students and instructors. All work is saved online to the user’s own depository of scores within their larger Nf community. The menu for accessing a personal storage area is called “Home” in Campus and Basic/Crescendo accounts. The saved work in the “cloud” can then be accessed by or shared with others, depending on the user’s share setting for the score. Nf furnishes five options for sharing scores from the “Sharing” drop-tab.²⁵

- (1) Keep the score private. This option makes the score only accessible from the original user’s “Home” menu.
- (2) Share with individuals. This setting shares the score with specified Nf user names. The person sharing the score must also designate the level of shared access: “view only,” “view and comment,” or “make any change.”
- (3) Site members can view this score. In Campus, this setting enables the entire school community to view but not edit the score. In individual accounts, the community

becomes the global network of Nf users. Community shared scores are accessed from the “Browse” menu.

- (4) Site members can view and comment on this score. This choice allows members of the community to post comments to scores using the speech bubble option, which is discussed in Web 2.0 Communities and Social Media below.
- (5) Site members can make any change to this score. This option authorizes anyone in the community to alter their score. There is no option for password in Nf.

Students who wish to share their work with only the instructor would select option two above. The design removes the intermediate steps of uploading a file to a server on one end and downloading it on another end. Students no longer need to email or even print up their scores for instructors: once it is saved it is accessible. Second, users need not worry about losing their saved work, since it is stored safely in the “cloud.” Third, since work is constantly saved to Nf’s servers, all versions of the working score are cataloged in the “Versions” drop-tab within the program. The cataloged versions are listed chronologically by the date and time of each save. Instructors are familiar with students who say they have started a homework assignment yet not finished it. Those who use Nf can verify this in the “cloud” server!

Nf’s use of the “cloud,” however, has a few drawbacks. First, the Internet requirement for the software means that students without connections cannot access their saved scores. This can again be a disadvantage for students who wish to continue their work at home. One possible way to circumvent this problem—though not without a bit of hassle—is to save a Nf score to a local disk as a MusicXML file and work with it offline in other software such as Finale NotePad or MuseScore (both are free). MusicXML files can then be moved back into Nf when the user is able to access an Internet connection. A second problem, and related to the first, is that users never really have their own copy of a native Nf file to save to their local disk or computer. There is no Nf file extension name; users can only transport files locally as MIDI and MusicXML types. True, these file types can be reopened in Nf, but there is

²⁴U.S. Department of Commerce, National Institute of Standards and Technology, *The NIST Definition of Cloud Computing*, by Peter Mell and Timothy Grance, (Gaithersburg: Computer Security Division, 2011): 2.

²⁵For options 3-5 below, the words “site members” are replaced by “anyone” in individual accounts (Basic/Crescendo).

always a degree of re-editing in this process.²⁶ Though the security of work saved in the “cloud” is comforting, some users still want a native, physical copy in hand. It is not known if Nf is working on an additional offline version of their software or even a native way to save files.

Music theory assignment strategies can often unfold in a manner that enables students to comprehend topics as they grow from one to the next; or as Michael Rogers has written, “each new achieved goal becomes a springboard for additional study.”²⁷ In this regard, Nf’s “Versions” tab can simplify assignment strategies that require constant revisions or expansions. For example, a fundamentals assignment sequence might include having students first build a major scale and later revise and annotate their scores to illustrate all of the diatonic intervals. Or, in a more advanced assignment sequence, students might compose a short melody and then subject it to subsequent compositional procedures such as harmonization, etc.. Other instances for using Nf might be for completing tasks with a given cantus firmus, ranging from species counterpoint, to figured and unfigured basses, outer-voice counterpoint settings, and melody harmonization. Instructors can post a cantus firmus template to the LMS and use it for multiple assignments. Student work is automatically saved to their student account on the Campus page and linked to their instructor’s template. A cantus firmus assignment strategy can allow students to enter their account and review their assignments to study and observe musical growth from one assignment to the next.

4. WEB 2.0 COMMUNITIES AND SOCIAL MEDIA

Nf’s various communities facilitate two practices that can potentially strengthen music theory instruction: collaboration and communication. First, since score sharing is an integral part of the Nf Web 2.0 community, there are favorable settings for theory student collaboration. Nf Campus gathers community-shared work by all

²⁶I found that simple scores usually retained their appearance when exported, saved locally as a Music XML file, and then imported back into another Nf account. More complex scores were somewhat distorted, and score text was often misplaced in the imported scores or deleted altogether.

²⁷Michael Rogers, *Teaching Approaches in Music Theory: an Overview of Pedagogical Philosophies*. Second ed. (Carbondale: Southern Illinois University Press, 2004), 40.

members of a music department into the “Browse” menu of an institutional account (within Nf’s page, not in the LMS). The open forum of scores not only makes group projects within individual theory classes easy to execute and supervise, but it also fosters the unfettered exchange of musical ideas among students within a department. Students can (1) browse for their group’s current project or share working scores privately with their collaborators, (2) compare their work with other student groups saved to the community, or (3) peruse any works from other students within the institution that are saved to the community. Of course, a school’s LMS can certainly establish a sense of community on its own. One could wonder if instructors or students might just as well scan their scores and post them to their LMS for free. But scanned versions would not allow other users to edit the scores, which in turn could impede the exchange of musical ideas. Meanwhile, instructors can peek in on openly shared scores to track the progress of student collaborations.

Second, Nf communities are venues for social interaction, thanks to several tools that the program provides. Speech bubble tabs found above scores allow students and teachers to comment on the music, thereby creating work-specific dialogs. All speech bubble correspondence appears in this dedicated tab and not near a specific “floating” spot in the score (unfortunately). Users also have the option of marking their “Favorite” scores from the “heart tab” found in the menu options—a tool somewhat analogous to Facebook’s “Like” button. The tool is useful in that it collates favorite scores into a special tab in the user’s “Home” catalog of their account, which saves them time when they wish to return to a specific score. In late 2011, Nf introduced the “Forums” menu to the software. This menu assembles topical, blog-style discussion boards in either global or educational (e.g. Campus) communities. Having used social media in theory courses over the past several years, I have witnessed that students are very adept in utilizing this type of technology, and that it can enhance communication among them. For instance, my students often acknowledge that our class Facebook groups help them observe many contending analytical perspectives.²⁸ I remind them that not everything posted to the Internet is correct or constitutes a successful analysis; while at the

²⁸In certain classes I set up Facebook groups as discussion forums outside of the standard LMS. I do not advocate such groups in all classes, however the forums are very popular in twentieth-century analysis courses and particular graduate seminars.

same time I value their critical assessment of numerous analytical interpretations. In many situations the students effectively teach each other, whether it is by way of examining their peers' clever *or* problematic contributions. Though Finale and Sibelius each include an online community connected to their software (Showcase and SibeliusMusic, respectively), Nf presently has a much greater ability to create a true communal online environment. Showcase is usable, but the community is not integrated into the software and users must upload and download scores to a server to share them. SibeliusMusic, which in 2012 has been redirected to ScoreExchange.com, is more of an online marketplace for buying and selling music.

However, there are several shortcomings found when attempting to utilize the Web 2.0 communities and social media experiences. First, overcrowding can develop in Campus communities. If 150 theory students at an institution all share their scores to the "Browse" menu it can be very difficult for students and teachers to find what they are looking for. A simple fix would be to have further classroom-specific subdivisions within the Campus "Browse" community. Second, there is currently no seamless connection between Nf's global community (accessible from Basic and Crescendo accounts) and the private Campus community. Campus accounts are closed environments and do not permit students or teachers to "cross over" into the global community. Granted, the passage should not necessarily be a two-way street (i.e. global users should not be able to access Campus communities), but it would be helpful for teachers to be able to access the global community scores for use in their classes. If this were possible, Nf could cultivate a shared repository for pedagogical resources and take full advantage of the "cloud." There are presently several Web 2.0 environments that offer shared pedagogical resources, and one of the best examples is YouTube, notably, for its videos that display musical scores along with a recording. A somewhat laborious way to work around this problem is for instructors to: (1) search for a score (e.g. "Mozart sonata") in the global community from an individual account, (2) save it as a Music XML file to their local disk, and (3) import it back into Nf from the Campus account. Third, though Nf has introduced elements of social media into their software, there is still work to do to build a more interactive design. For instance, if a user could connect scores to Facebook or Twitter accounts, receive emails when someone has commented on their scores, or even take part in live chat discussions regarding their work, the experience would

successfully emulate other types of popular social media.

One common in-class activity for written skills courses is to have each of the students contribute to an analysis of a work. Nf is a helpful medium for employing this activity outside of class as well. A collaborative student analysis could be carried out in a few ways. One way would be to embed a Nf score into a LMS and then ask students specific questions about the music in a threaded discussion. Since the score is malleable, an instructor (or student) could then annotate the score in Nf according to student comments. In other words, the score is presented and annotated in a LMS threaded discussion just as it would be through a projector in class. A second way would be to post a score within an institution's Nf community and assign students to either annotate it or add speech bubble comments directly into the program. This example activity is just one way teachers can use Nf to extend classroom activities into cyberspace.

A SMALL STUDY: NF FOR MUSIC THEORY PEDAGOGY

Although I hope my critical assessment of Nf is of value to readers, it is important to also consider the evaluations of students who have recently used the software in music theory courses. It is for this reason that I include the following small study.

Participants, Method, and Data Collection

The primary participants in this small study were 19 graduate students enrolled in a Music Theory Pedagogy (Written Skills) course at the University of Tennessee-Knoxville (UTK) during the spring semester, 2011. At UTK, this graduate course is comprised of first and second-year Master's students (all disciplines) and focuses on preparing them to teach written skills courses in a typical undergraduate music theory sequence at the post-secondary level. Secondary participants were 13 undergraduate students in a Theory III course. At UTK this is a second-year chromatic harmony course designed for music majors. The entire sample is divided into primary and secondary groups because the graduate students used Nf for many projects throughout the semester while the undergraduates used it for only one project at the end of the term. All students then anonymously filled out a questionnaire at the end of the term that provided feedback regarding the software. This

study is not rigorously statistical, rather, it reports on a survey of questions for first-time Nf users in music theory courses.

Our method of utilizing Nf was slightly different than some will find with the Campus edition. At the time of this study and our evaluation of the product, our university was in the process of transitioning from Blackboard 8 to Blackboard 9, which is BasicLTI enabled. Though we were not able to utilize BasicLTI integration for this study, our Nf website and campus community, “UT Music Theory Pedagogy 2011,” had the same internal functionality as any other Campus edition website. Our site was a one-time only, temporary solution for utilizing Nf before our migration to Blackboard 9 was complete.

At the beginning of the term, the pedagogy class was divided into six teams of three students each (one group had four students). They used Nf accounts to complete seven projects; each project had three stages. First, each team collaboratively created an undergraduate theory “assignment” and filled it in with “dummy student,” color-coded responses (with potential errors). The “assignments” were saved to the “Browse” community and were named and coded by the number of the project in the sequence (1 through 7) and the group who built it (e.g. Nf-1, Group 1). Second, fellow student teams accessed, printed, discussed, and graded “assignments.” Each team graded three other “assignments” (one team graded four), or in other words, each student graded one “assignment.” Third, after turning in their graded “assignments,” we projected each of them through a SMART Sympodium system for in-class discussion. Each project provided graduate students experience in not only writing but also grading assignments for various levels of theory instruction. At the end of the term, the students applied final editing to their scores and printed them for inclusion in their course portfolio. Figure 1 provides a description of each project and its potential target course level in an actual undergraduate theory sequence.

Near the end of the semester, the “assignments” in Nf-6 (Fig. 1) were stripped of their “dummy student” responses and were actually assigned to the undergraduate students in the secondary participant group. The undergraduate students completed three Nf-6 assignments each—which helped them study for their final exam—and submitted them back to the shared Nf community. Graduate students ultimately had an opportunity to grade real responses.

Project	Description	Potential Target Course Level
<i>Nf-1: Intervals</i>	Teams design and “complete” (color-coded) an assignment assessing the comprehension of musical intervals	Theory Fundamentals
<i>Nf-2: Simple Analysis</i>	Teams post a short chorale or popular song for simple harmonic and/or formal analysis	Theory Fundamentals
<i>Nf-3: Species Counterpoint</i>	Teams generate a cantus firmus with “student realized” 4 th species both above and below it	Theory I
<i>Nf-4: Diatonic Part-Writing</i>	Teams design a diatonic figured bass realization exercise and include “student responses”	Theory I
<i>Nf-5: Chromatic Part-Writing</i>	Teams build a chromatic figured bass realization exercise and include “student responses”	Theory II
<i>Nf-6: Modulation / Part-Writing</i>	Teams design a more advanced part-writing exercise (roman numerals given) and include “student responses”	Theory III
<i>Nf-7: Set Theory Analysis</i>	Teams devise an exercise to assess student application of pitch-class set theory analysis; include “student responses”	Theory IV

Figure 1. Seven graduate student projects for UTK’s Music Theory Pedagogy course, spring 2011

RESULTS

The questionnaire responses from all students provided quantitative and qualitative feedback regarding Nf. For most of their responses, the students used a five-point Likert scale to assess their agreement with statements (though the first question was slightly different; see Figures below). Students were also given the option to select “did not use this functionality” if they did not utilize a specific feature they were questioned about. If this option was selected the student’s response did not contribute to the mean values. Figure 2 presents the graduate student questionnaire results to Likert-scale questions, while Figure 3 displays the undergraduate student questionnaire results to similar questions. Figures 4 and 5 include qualitative graduate and undergraduate student feedback, respectively. The comments shown here are representative of the major points the students seemed to make about the software.

All mean values were gathered using a five-point Likert-scale.
 [For question 1: 5 = very experienced, 4 = experienced, 3 = neutral, 2 = inexperienced, 1 = very inexperienced]
 [For questions 2-16:
 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree]

<u>Question</u>	<u>Mean/Std.Dev.</u>
1) How experienced were you with using Nf before taking this course?	.116 / 0.69
2) “Logging into and navigating the Nf class page was very simple and intuitive.”	3.89 / 0.94
3) “With Nf, it was a very simple and intuitive process to build homework assignments and musical examples to look exactly the way I wanted them to look.”	2.11 / 0.88
4) “Inputting musical notation into Nf was very simple and intuitive.”	3.26 / 1.19
5) “Adding text such as directions, name blanks, figured bass accidentals, and roman numerals to the score was very simple and intuitive in Nf.”	2.32 / 1.42
6) “Building a pivot chord modulation was very simple and intuitive in Nf.”	1.72 / 1.13
7) “Outlining a specific pitch by color was very simple and intuitive in Nf.”	4.32 / 0.48
8) “Creating a four voice SATB texture for part-writing examples was very simple and intuitive in Nf.”	3.89 / 0.99
9) “The pop-up edit box and score editing menus in Nf were very easy to use and navigate when building my examples and assignments.”	3.53 / 0.90
10) “Saving my shared work to the ‘Browse’ menu was a very simple process in Nf.”	3.42 / 1.46
11) “Saving my private work to the ‘My Home’ menu was a very simple process in Nf.”	4.12 / 1.17
12) “Sharing my work with other individuals (not to the ‘Browse’ menu) in my group was very simple and intuitive within the Nf platform.” [Note: this is using the Share → “share with individual” menu]	2.94 / 1.51
13) “Commenting on my and other students’ work within the Nf platform was very simple and intuitive.”	3.79 / 1.19
14) “Playback of scores and mixing features were helpful aspects of Nf.”	4.06 / 0.77
15) “Overall, using Nf as a tool for Music Theory Pedagogy greatly enhances the course.”	4.69 / 0.91
16) “I recommend the use of Nf as a notational and collaborative application for a music theory sequence.”	4.19 / 1.12

Figure 2. Graduate Student Questionnaire Results. (Primary participants)

All mean values were gathered using a five-point Likert-scale.
 [For question 1: 5 = very experienced, 4 = experienced, 3 = neutral, 2 = inexperienced, 1 = very inexperienced]
 [For questions 2-17: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree]

Question Mean/Std.Dev.

1) How experienced were you with using Nf before taking this course?	1.00 / 0.00
2) "Logging into and navigating the Nf class page was very simple and intuitive."	2.92 / 1.32
3) "Finding and pulling up my practice assignments was very easy in the Nf class page."	3.77 / 0.83
4) "Inputting musical notation into Nf was very simple and intuitive."	2.38 / 1.04
5) "The pop-up edit box and score editing menus were very easy to use when completing practice assignments."	3.31 / 1.11
6) "Saving my shared work to the 'Browse' menu was very simple in Nf."	3.42 / 1.16
7) "Saving my private work to the 'My Home' menu was very simple in Nf."	3.77 / 1.17
8) "Sharing my work with my professor (not to the 'Browse' menu but directly with her) was very simple within the Nf platform" [Note: this is using the Share → "share with individual" menu]	3.92 / 0.90
9) "Commenting on my and other students' work within the Nf platform was very simple and intuitive."	3.14 / 0.90
10) "Playback of my work is a helpful feature of Nf."	5.00 / 0.00
11) "I would like to have the ability to share ideas on our homework assignments to an open forum such as the Nf 'Browse' page."	3.69 / 1.11
12) "Overall, using Nf as a music theory tool can greatly enhance a theory course."	3.54 / 1.05

Figure 3. Undergraduate Student Questionnaire Results. (Secondary participants)²⁹

²⁹I would like to thank Dr. Barbara Murphy (University of Tennessee-Knoxville) for her assistance in executing assignments and collecting data for the undergraduate portion of this research study.

1) What specific aspects of Nf aided your learning process?

- "I think that the idea of Nf is great. It's good to be able to work on a score at the same time with the other members of your group without being in the same location."
- "It was helpful that Nf was online and I could do the assignments from home (vs. having to go to a lab to use Finale)."
- "Nf is not initially overwhelming because you are presented with a small, accessible score."
- "The ease of sharing files with the class aided my learning process. It made class discussions easier and more engaging."
- "I thought it was a good way of sharing our homework assignments. Once we figured out how to share our assignments so everyone could see them, it was easy to see everything. We didn't have to print out tons of copies for everyone, as we would have had to do if we used Finale or Sibelius, and we didn't have to either buy an expensive program or come to a computer lab to use it. We could just use it from the convenience of our own homes."
- "I really liked using this tool in the classroom. It was very helpful with the group projects because students could access the same information online and add comments to the document about changes that were made or questions that they had."

Figure 4. Graduate student comments. (Primary participants)

2) What specific aspects of Nf detracted from your learning process?

- “The fact that Nf caused confusion for group work. In this, I mean the various “versions” of Nf files. Quite frequently group members and I would be working on assignments unaware that someone else was working a different version of the same assignment and then trying to bring all the versions together was quite challenging.”
- “There are complications when trying to work together on an assignment because the program continues to save multiple versions of the same score and oftentimes the program doesn’t keep the scores updated with the latest changes.”
- “The platform wasn’t that easy to use, especially when coming from a program like Finale.”
- “It was very basic and limited.”
- “It was hard to get analysis aspects, for example Roman numerals and figured bass symbols, to work logically.”
- “Trying to input directions/blanks/text in general into the assignments was kind of a pain. It would have been nice if there was a font sizing option for the individual text boxes.”

Figure 4. (continued) Graduate student comments. (Primary participants)

1) What specific aspects of Nf aided your learning process?

- “I like being able to neatly input my work.”
- “Playing the music and hearing the pitches as I put them in; and saving paper.”
- “Hearing your part-writing played back was cool.”

2) What specific aspects of Nf detracted from your learning process?

- “The tools to input the notes were slightly difficult to use.”
- “Having trouble with making the tails [stems] of the notes go up or down.”
- “The input tools took a bit to adjust to.”

Figure 5. Undergraduate student comments. (Secondary participants)

OVERALL CONCLUSIONS

Although there are beneficial and problematic aspects of Nf, I compiled my observations and research into this review because I believe the product illustrates an important leap forward in music notation software. The four characteristics of Nf described above (i.e. the pricing model, online platform, “cloud” technology, and Web 2.0 characteristics) are all bold advancements for music notation software and bring online score sharing successfully into the Web 2.0 environment of today. After considering the whole of my students’ and my own observations, the largest problems that currently exist for theory teachers and students include (1) design features for inputting music, and to an even greater degree, text and analytical annotations³⁰, (2) overall limitations with the editor, (3) certain characteristics of community score sharing, and (4) the required Internet connection. However, the first three of these problems are very fixable and the fourth already has maneuvers around its detrimental effects. I perceive these problems as temporary roadblocks for online notation software. In further consideration of my students’ and my reflections of the software, Nf’s greatest strengths for theory teachers and students are (1) its ability to be accessed from a web browser at various locations, (2) its capability of communicating with a “cloud” for rapid access and sharing of music files, (3) its potential to facilitate collaboration through its online infrastructure, and (4) its capacity to make any theory assignment heard. These and the many other benefits of Nf are outstanding features and in my opinion far outweigh its weaknesses.

³⁰Note: encourage your students to read Nf’s “help section,” found at: <http://www.noteflight.com/info/help>. Some of the problems the students had regarding text input could have been avoided by carefully reading this page.

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Brendan McConville is an Assistant Professor of Music Theory at the University of Tennessee-Knoxville and holds a PhD in Music Theory/Composition from Rutgers University. His areas of research include twentieth-century music analysis and the use of emerging technologies in theory pedagogy. He is co-author of the textbook *MusicTheory Foundations: an Interactive eBook* and his writings appear in *Theory and Practice*, *Tempo*, and *ISCI: The Composer's Perspective*.

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Mark Richards completed a doctorate in music theory at the University of Toronto in 2011 and is currently on faculty at the University of Lethbridge. His research deals with issues of form and style in music of the classical period, especially Beethoven, and is beginning to explore analytical techniques for music in films. He has been published in *Theory and Practice* and *Intersections: Canadian Journal of Music*, and has articles forthcoming in *Music Theory Spectrum* and *Music Analysis*.

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GUIDELINES FOR CONTRIBUTORS

1. Articles on any aspect of teaching or learning music theory will be welcome. Contributions will be judged on originality, relevance, interest to a diverse audience, and clarity of writing.
2. Manuscripts should be sent electronically, in .pdf format, to: Dr. Alice Lanning at alanning@ou.edu. Submissions should be in 12-point type, double-spaced (including footnotes, references, and quotations), with at least one-inch margins. Footnotes, tables, figures, musical examples, and other material should be inline with the text. Long musical examples and complex diagrams or charts should be avoided when possible.
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7. Other correspondence may be addressed to:

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The JMTP staff will send guidelines for style and electronic manuscripts to anyone requesting this information. On most matters of form and style, JMTP follows *The Chicago Manual of Style*.