

So You Want to Write a Chord Progression?:

Teaching Core Music Theory Using the Phrase Model Handout¹

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The Phrase Model Handout (PMH) is a useful tool for teaching the following topics:²

- | | | |
|------------------------|--------------------------|------------------------|
| ● tonic expansions | ● voice leading | ● cadential bass lines |
| ● non-tonic expansions | ● secondary chord usage | ● cadence types |
| ● harmonic function | ● chromatic predominants | ● evaded cadences |
| ● harmonic syntax | ● phrase model (T-PD-D) | |

Its effectiveness is due to the amount of core theory knowledge built into a single-page handout, allowing finer details of harmony and voice leading to be studied in the context of the whole phrase. This handout summarizes the information found in multiple textbook chapters, helping students overcome the intimidation of learning from a thick text and providing a meaningful framework (the phrase) into which they can fit and organize their learning.³ Though the PMH is not without its limitations, it can be a valuable resource for undergraduate students, advanced high school students, and other musicians learning to compose, improvise, and analyze musical phrases in a tonal idiom.⁴

¹ I am grateful for the helpful suggestions made by William Wheeler and three anonymous reviewers, which have improved both this article and the handout that it accompanies.

² The Phrase Model Handout is a one-page resource hosted on *Music Theory Pedagogy Online*. Its full title is: “So You Want to Write a Chord Progression?: The Phrase Model Handout.”

³ The approach to harmonic expansions found in the PMH is similar to the presentations of harmony found in Steven G. Laitz, *The Complete Musician: An Integrated Approach to Tonal Theory, Analysis, and Listening*, 3rd ed. (New York: Oxford University Press, 2011); Edward Aldwell and Carl Schachter, *Harmony and Voice Leading*, 4th ed. (Boston: Schirmer, 2011); and William E. Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998). However, the handout was developed as a supplement to textbooks with less of an emphasis on harmonic idioms and should work well with most class materials.

⁴ Not every diatonic harmony is covered (including the mediant and subtonic in minor) and its emphasis on harmonic prolongation precludes covering harmonic sequences and other linear intervallic patterns. The handout does not exhaust every conceivable harmonic expansion and cadence type found in tonal music. To understand the PMH, musicians must have knowledge of music theory fundamentals including spelling and identifying chords, Roman numerals, and figured-bass symbols.

The first several sections of this article (pp. 3–22) explain the concepts of the phrase, harmonic expansions, and syntax in terms that will be familiar to readers acquainted with Caplin's *Classical Form* and Aldwell and Schachter's *Harmony and Voice Leading*, cited in note 3. In particular, the PMH's emphasis on harmonic expansions is closely aligned with the approach to tonal harmony found in Laitz's *The Complete Musician*. Readers familiar with these texts can comfortably skip to p. 22, where I begin discussing strategies for implementation. Teachers whose textbooks emphasize a chordal, vertical approach to tonal harmony may benefit from the explanation of the PMH provided below. For all the affinities between Laitz's approach and my own, there are nevertheless several unique aspects to the layout of the PMH, which I point out here and explain below. First, the PMH integrates diatonic and chromatic harmonies into a single design. Although chromatic harmonies are usually taught after diatonic ones, placing these harmonies side by side allows me to show voice-leading and functional relationships. For instance, in the pedal-bass tonic expansions, the PMH handout shows the inverse voice-leading relationship between the neighbor IV_4^6 and the ct^0 . Elsewhere, the inclusion of the N^6 and applied chords (e.g. V/V) within the predominant (PD) function helps students create placeholders for these harmonies long before the teacher formally presents them. Once learned, students can readily see the voice-leading relationships that connect these chords to their diatonic counterparts. Finally, the tonic expansions on the PMH handout provide a solid foundation for learning secondary chords, especially as they serve to expand non-tonic harmonies.

The Phrase Model and Harmonic Idioms

The overarching framework of the PMH is the phrase itself, organized according to the standard phrase-harmonic functions of tonic, predominant, and dominant (T, PD, D). Within the phrase model, chord progressions are understood as directed motion toward a form-defining cadence (AC or HC).⁵ Within each phrase function (T, PD, and D), idiomatic harmonic expansions and embellishments provide means to expand simple progressions like I – ii⁶ – V – I into lengthier harmonic progressions while maintaining coherence and direction (see Fig. 1).

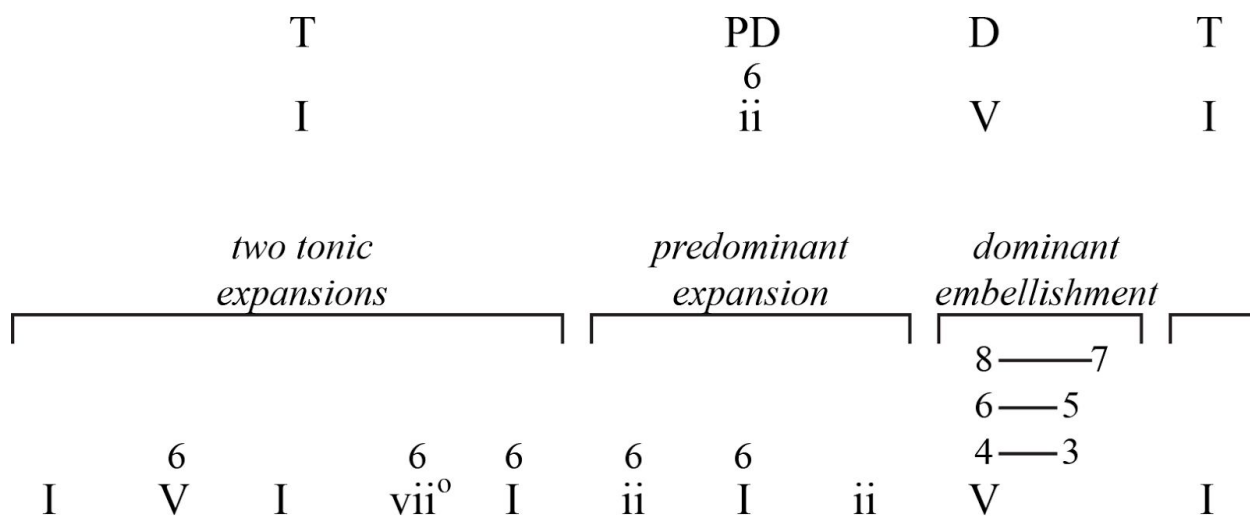


Figure 1 Chord Progression Generated Using PMH Harmonic Expansions

Fig. 1 makes an important distinction between the local harmonic function of a chord as it relates to the tonic and the function of a chord within the phrase. The harmonic function is labeled with Roman numerals, which provide the relationship of the chordal root to the tonic and the quality

⁵ Form-defining cadences are those that provide harmonic closure to a phrase. In this document, form-defining cadences are considered to be half cadences and authentic cadences only. Deceptive cadences (cadential V to vi) are considered a type of evaded cadence, *i.e.* a cadence has been suggested but ultimately avoided. Plagal cadences that occur at the end of a piece often function as post-cadential tonic expansions. Plagal cadences that end medial phrases in Bach chorales are both rare and exemplary; they provide a weaker phrase ending than the form-defining cadences Bach employs most often. These plagal cadences are often motivated by the melody, making them akin to a contrapuntal cadence rather than a substitute for a form-defining cadence.

of the chord.⁶ The function of a chord within the phrase is labeled with T, PD, or D. In Fig. 1, the first five chords should all be considered tonic functioning because they expand the tonic part of the phrase, impressing tonic on the listener's ear through contrapuntal expansion. Likewise, the I⁶ chord that expands the supertonic is considered to be of predominant function in relation to the phrase as a whole. Its status as a passing chord highlights that it is not tonic-functioning with respect to the phrase, despite the Roman numeral label the chord would receive in a strictly vertical analysis. The dominant chord is itself embellished through the cadential V⁶₄ and passing 8–7 above the dominant tone in the bass.

One way to differentiate between functional and non-functional Roman numerals in analysis and harmonic dictation is to place expanding harmonies (like the V⁶, vii^{o6}, and I⁶ in Fig. 2) in parentheses and indicate the phrase function (T-PD-D) underneath. Alternatively, analysts can use a two-layer Roman numeral analysis in which the harmony being expanded is provided below the chordal labels.⁷ Examples of both options are provided in Fig. 2.

The PMH organizes the tonic expansions by their bass lines; the non-tonic expansions are associated with the tonic-expanding model to which they relate. By grouping the expansions according to their bass lines, the PMH emphasizes the bass's role in articulating phrase structure and equips students to readily interpret phrase structure.

The first tonic-expansion type is the **Do-Mi bass**, which is produced by the inversion of the tonic triad from root position to first inversion.⁸ The move from I to I⁶ invites two different contrapuntal settings, the first involving a voice exchange between the tonic and mediant and the

⁶ This document follows this common practice of using upper- and lower-case Roman numerals to designate major/augmented and minor/diminished quality, respectively.

⁷ Students who already add T, PD, and D labels to their analyses may find this second option redundant.

⁸ The simple repetition of the tonic triad is the most basic type of tonic expansion. Inverting the tonic enhances the repetition by adding movement in the bass, creating the contrapuntal implications discussed.

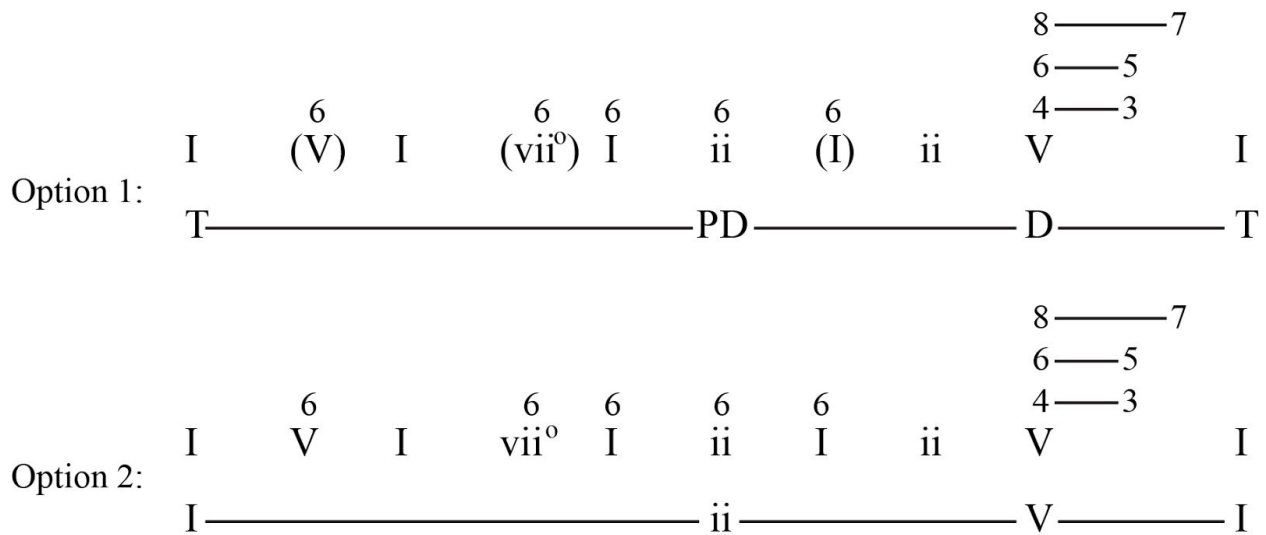


Figure 2 Two Ways of Creating a Two-layer Harmonic Analysis

second involving a parallel 10th structure. The skips in the bass and upper voices found in both of these settings create the possibility for the distinct Do-Mi sub-types that are so common in tonal compositions. These sub-types include the Do-Re-Mi, Do-La-Mi, Do-Fa-Mi, and the hybrid Do-Sol-Mi bass progressions.⁹

Pedal-bass expansions, the second type, include an array of common contrapuntal expansions over a tonic pedal. On the first row, the PMH groups the neighbor IV⁶₄ expansion together with the tonic-expanding common-tone diminished seventh (ct^{o7}) due to the inversionsal relation of their voice leading. Even though the chromatic ct^{o7} is usually covered later in the core sequence, its inclusion on the PMH creates a placeholder for this harmony within the context of the phrase. Students who relate the voice leading and function of the ct^{o7} to the neighbor IV⁶₄ will

⁹ A note on the PMH points out the exceptional resolution (up by step) of a chordal seventh found in one of the Do-Re-Mi progressions: I V⁶₄ I⁶. Teachers may wish to reinforce this point by explaining how the linear intervallic pattern and passing status of the harmony override the contrapuntal tendency of this dissonance to resolve down by step. The Do-Sol-Mi hybrid progression is found on the PMH under the fifth-related bass progressions.

more readily learn how to use the harmony appropriately. The voices of the first two pedal-bass expansions are rearranged to form two of the neighbor-bass tonic expansions.

The remaining pedal-bass expansions provide a sample of the ways in which composers expand the tonic harmony in a distinctly contrapuntal manner.¹⁰ Depending on the curricular context within which these expansions taught, teachers may wish to have students identify the pedal tones in the bass as non-chord tones and provide Roman numeral chord labels to the notes in the upper voices. Taking this approach, the chord progressions on the second line would be identified as $I - V^7 - I$ and $I - vii^{o7} - I$. Alternatively, teachers could explain that the contrapuntal dissonances created by these pedal-bass expansions are ornamental: they decorate the underlying tonic chord, which persists throughout the expansion and could be expressed with a single Roman numeral. To remain neutral to both interpretive options, the PMH provides only the figured-bass symbols, which indicate the intervals above the bass.

On the third line are two pedal-bass expansions that mark out a T-PD-D-T harmonic pattern. The first of these opens the Prelude and Sarabande of Bach's Suite for Solo Violoncello in G major (Fig. 3), and the second is exemplified by Mozart in his Sonata in F Major, K. 332 (Fig. 4).

Last is the 5–6 expansion, which frequently occurs both explicitly and by implication in the common practice (see Fig. 5). In regard to Fig. 5(b) and 5(c), teachers may wish explain that the bass note on beat 1 persists throughout the measure and that the 5 is implicit as a member of the root-position tonic triad. While it is acceptable to analyze the 6 chord as vi^6 , the analysis shown on the PMH interprets this voice-leading motion as a contrapuntal expansion of tonic.

¹⁰ In fact, all the expansions on the PMH balance harmony and counterpoint and are thus contrapuntal expansions.

Finally, the hybrid progression ($I - ii^4_2 - V^6_5 - I$), a contrapuntal expansion featuring static and lower-neighbor bass motion, is identical to the opening of Bach's C major Prelude from book I of *The Well-Tempered Clavier* (not shown).

a. Prelude, mm. 1–4

5 6 7 8
3 4 4 3
G: I IV V I
I —————

b. Sarabande, mm. 1–2

5 6 7 8
3 4 4 3
G: I IV V I
I —————

Figure 3 J.S. Bach, Suite for Solo Violoncello in G major: Opening of Prelude and Sarabande

8 b7 6 b7 8
5 5 4 4 5
3 3 2 3
I V/IV IV vii° I
I —————

Figure 4 Mozart, Piano Sonata in F major, K. 332, i, mm. 1–5

a. Mozart, Piano Sonata in B $\flat$ major, K.333, i, m. 1: explicit 5–6 motion



B $\flat$:

I

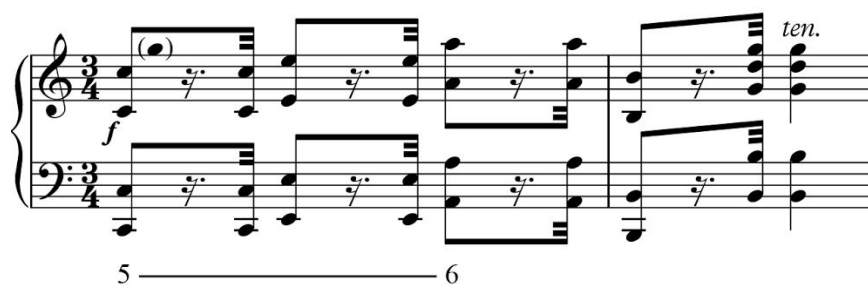
b. Mozart, Piano Sonata in F major, K.332, i, mm. 1–5: implicit 5–6 expansion, with implied 5 shown in parentheses



F:

I

c. Mozart, Symphony in C major, K.425 (“Linz”), i, mm. 1–2.2: implicit 5–6 expansion, with implied 5 shown in parentheses



C: I

Figure 5 Explicit and Implicit 5–6 tonic expansions

The third expansion type, **the neighbor-bass expansion**, is most often used to prolong the tonic triad in either root position or first inversion. These expansions are organized by column according to neighbor chord (V , V^7 , vii^o , vii^{o7}) and by row according to bass line ($Do - Ti - Do$, $Do - Re - Do$, $Mi - Fa - Mi$). Teachers may wish to point out that the V^6_4 and vii^{o6} are not typically used to create neighbor-bass expansions, despite their inclusion on the PMH. Also, the vii^{o6}_5 is not normally used to create a $Do - Re - Do$ neighbor-bass expansion because of incorrect resolution of a contrapuntal dissonance that would result (see note 11). Finally, teachers may also point out that voices within a progression can be switched to create other expansions within the same column. For instance, if the alto and bass of the first $I - V^6 - I$ progression swapped places, the second progression in that column would result. At the bottom of this category are the two neighbor-bass expansions produced by inverting the voices of the first two pedal-bass expansions. Inverting the pedal-bass ct^{o7} creates a fourth neighbor-bass line possibility: $Mi - Ri - Mi$. And last, the PMH gives single example of a double-neighbor bass tonic expansion, showing how the internal dominant chord is itself expanded through inversion and voice-exchange to create the double-neighbor bass figuration.

The final expansion type on the PMH is the **fifth-related bass**. The position of these commonplace progressions within the larger category of tonic expansions allows teachers to emphasize that not all root-position $V - I$ progressions are cadential. Students who recognize the potential confusion that tonic-expanding root-position V chords may cause will better appreciate one of the reasons why composers use these chords in inversion: to lessen the weight of non-cadential dominants. Similarly, the use of IV to expand tonic is distinct from its role as predominant. Fifth-related expansions can each be expanded via bass arpeggiations that outline

the tonic or subdominant harmonies. When used to expand tonic, $I - vi - IV$ can be nested within other tonic expansions as in the following progression: $I - vi - IV - V^4_2 - I^6$. This progression nests the arpeggiated fifth-related bass progression within a Do-Fa-Mi tonic expansion, using the bass note “Fa” shared between the IV and V^4_2 as a point of linear connection (the entire bass line being Do – La – Fa – Fa – Mi).

The **non-tonic expansions** on the PMH are organized by the functional harmony they prolong. Most of the non-tonic expansions follow the voice leading models found in the tonic expansions; students should be able to easily relate the tonic and non-tonic expansions by comparing their bass lines. These progressions can be used to expand the PD and D chords in the phrase, as occurs in Fig. 1. They can also be nested within tonic expansions to prolong the middle chord. For example, a La – Sol – Fa subdominant expansion (the retrograde of the first non-tonic expansion on the handout) is nested within a Do – La – Fa tonic expansion in the following progression: $I - IV^6 - I^6_4 - IV - I^6$. While this set of non-tonic expansions is not exhaustive, it does include a variety of common diatonic progressions such as $IV^6 - I^6_4 - ii^6_5$ and two progressions involving chromatic voice exchanges, allowing teachers to highlight some of the interesting ways that non-tonic chords can be manipulated through prolongation.

As pointed out in the PMH’s key, most of the tonic expansions discussed above can be used in either direction, forward or backward; only those expansions marked with a forward-pointing arrow are one-directional. In particular, all of the Do – Re – Mi progressions are two-directional *except* the one using vii^{o6}_5 , which contains a contrapuntally dissonant °5 above the bass that would not resolve correctly were the direction reversed.¹¹ As demonstrated in

¹¹ The movement from diminished 5th to perfect 5th (or vice versa) is called “unequal fifths” and is distinct from “parallel fifths,” which involve two consecutive perfect 5ths. Diminished 5ths may resolve to perfect 5ths except

the progression in Fig. 1, which joins a neighbor bass with a Do – Re – Mi expansion, the tonic expansions on the PMH can be combined to form lengthy harmonic progressions. The PMH suggests that the expansions can be combined using various linkage techniques:

- **Elision**, the most common linkage technique, occurs when the final tonic chord of one expansion is simultaneously the first chord of the next, thereby eliminating, or “eliding,” one chord from the progression. See Fig. 6 for examples of elision.
- **Nesting** refers to the process of prolonging one chord of a harmonic expansion with its own expansion, such as in the progression that begins the second movement of Beethoven’s Sonata in C minor, Op. 13 (the “Pathétique” sonata): $I - V^4_2 - I^6 - V^6 - I$. In this progression, the Do – Fa – Mi expansion prolongs the tonic chord that begins the neighbor-bass $I - V^6 - I$ expansion.
- **Segmentation** involves combining parts of different expansions to create new tonic-expanding progressions, such as in the following progression: $I - V - V^4_2 - I^6$.

By memorizing the tonic expanding progressions and bass lines, students are better prepared to recognize how tonal pieces employ these expansions to construct a phrase. For instance, the first movement of Mozart’s Sonata in C major, K. 545, begins with a lengthy set of tonic expansions, linked together by elision, followed by a clearly articulated predominant and an expanded cadential dominant (see Fig. 6).

when the dissonant interval occurs above the bass, as it does in the vii^{o6}_5 . Given this contrapuntal dissonance, the vii^{o6}_5 can only resolve to I^6 , restricting the direction of this passing chord to $I - vii^{o6}_5 - I^6$.

Allegro

Exp: Neighbor (Do-Re-Do) Neighbor (Do-Ti-Do)

Type: Pedal Do-Fa-Mi

T

6 7 8

Mi-Re-Do 7 6

T

9 10 11 HC/C 12

8

pedal exp. of V

PD D

Figure 6 Mozart Sonata in C major, K. 545, I, mm. 1–12: Analysis of Harmonic Expansions, Phrase Functions, and Cadence Type

The final tonic expansion in mm. 6–8 is embellished with a 7-6 suspension. Students who recognize from the Mi – Re – Do bass line that m. 7 is tonic expanding are more likely to label the entire measure a first-inversion vii^{o6} rather than a $ii^7 - vii^{o6}$. In my own classes, it has been rewarding to see the “aha” expression appear on students’ faces when they first recognize the tonic expanding models as organizing more elaborate surface features.

Finally, most tonic and non-tonic expansions on the PMH are configured with the chordal third of the first chord in the soprano. This configuration is not to be taken as an ideal over other possible voice arrangements: it is intended to simplify the identification of similarities and

differences in voice leading. Only those expansions that begin on a first-inversion chord have a different chord member, the chordal root, in the soprano.¹²

The PMH's emphasis on the phrase and harmonic expansions illustrates two foundational principles of tonal music: (1) the smallest meaningful harmonic entity is not an individual chord but a sequence of chords that work together as a unit, and (2) the smallest complete musical thought or expression is the phrase. Thinking about harmonic relationships under the rubric of the phrase model enables students to overcome strictly vertical and additive approaches to perceiving and understanding harmonies and harmonic progressions.¹³ Unlike individual chords, harmonic idioms consist both of chord construction and voice leading, allowing students to see the idioms' vertical and horizontal organization in relationship to one another. Within each idiomatic progression, counterpoint can be understood as resulting in unique harmonies, while harmonic motion is organized and memorized according to its linear components (especially its bass line).¹⁴ Creating and analyzing music within the framework of the phrase helps students see harmonic progressions holistically as motion toward a goal (the cadence), not merely as an accumulation of harmonies arranged through an additive process. Like the harmonic idioms, the phrase model as a whole also accounts for linear elements, including cadential bass lines (Fa – Sol – Do, Re – Sol – Do, and so on) and types of authentic cadence (PAC or IAC). Seeing chords in the context of idiomatic units and the whole phrase is also essential for developing a musical conception of harmonic syntax.

¹² The similar voice arrangements also make it easier to memorize the voice leading of the expansions.

¹³ Theory curricula that begin with a focus on species counterpoint can help students avoid this fixation on the vertical dimension.

¹⁴ The linear dimension of the tonic expansions is further supported when students study their unique guide-tone line, which will be discussed below.

Harmonic Syntax

The two most common approaches to teaching harmonic syntax involve using simple rules of thumb (*e.g.* “strong progressions are those whose roots move down a 5th, down a 4th, down a 3rd, or up a 2nd”) or more complex flow-charts showing the syntactically acceptable movement of every tonal harmony.¹⁵ While these approaches can be helpful, both treat harmonic progressions as consisting of individual, discrete chords, thereby lending support to the additive approach to constructing progressions common among music students. Further, neither approach tends to produce the desired result: musicians who understand the harmonic language well enough to write chord progressions that coherently direct a phrase both linearly and harmonically toward a cadence.

In contrast, learning harmonic syntax by absorbing and memorizing harmonic idioms allows students to encounter harmonies in the contexts in which they are most commonly used. Students with a thorough knowledge of harmonic idioms should not have to think long about the proper use of chords, especially those with limited usage (*e.g.* leading-tone and second-inversion triads). Students who memorize the harmonic expansions and the structure of the phrase as a whole thus acquire a comprehensive knowledge of harmonic syntax, which will allow them to write harmonic progressions that are both syntactically correct and characterized by strong harmonic structure and bass line.

Developing a thorough knowledge of idiomatic harmonic expansions takes effort, but the early investment of time and energy spent memorizing expansions builds a rich intellectual and

¹⁵ The rule of thumb given here is included in the notes on the PMH to help students create strong progressions in contexts not covered on the handout.

experiential harmonic foundation. This will help students perceive, appreciate, and contextualize more subtle points of tonal harmony.

Cadential Bass Lines, Predominants, Dominant Figurations, and Cadence Types

The PMH groups predominants and cadences by their cadential bass lines. The handout covers the four most common cadential bass lines:

- Fa – Sol – Do
- Fi – Sol – Do
- Re – Sol – Do
- Le – Sol – Do.

The PMH also highlights the bass lines produced by common evaded cadences: Fa – Sol – Le/La and Fa – Sol – Mi.¹⁶ Teachers should point out that some phrases do not employ a predominant harmony but move directly from tonic and non-tonic expansions into the cadential dominant. Thus, not every phrase will employ the cadential bass lines covered by the PMH.

Every common predominant harmony – diatonic, secondary, and chromatic – is covered by the PMH. The voice leading connecting each predominant to various dominant figurations is given. Most predominants can resolve to any cadential dominant figuration. A well-known exception—the resolution of the Gr^{+6} to a cadential 6_4 to avoid parallel 5ths—is indicated on the handout by an arrow. The bII^6_3 (i.e. the Neapolitan sixth, or N^6) resolves directly to V; it can also pass through one or both of the following intermediate harmonies shown on the handout: vii^{o7}/V and the cadential 6_4 . Finally, the elided resolution of the applied leading tone in the V^7/V down a

¹⁶ Due to space limitations, the PMH does not include the commonly interpolated applied (V^6_5/vi) and passing (V^4_2) chords that often precede (respectively) vi and I^6 at evaded cadences. In my classes, I like to focus on concerto cadenzas when exploring the many ways composers evade cadential closure.

chromatic half step to the chordal seventh of the cadential V is pointed out with an arrow. These special voice-leading connections between predominants and cadential dominants deserve careful study. The PMH helps students contextualize these chromatic predominants by locating them within the phrase and by showing the cadential bass lines on which they are built.

The PMH provides common figurations of the cadential dominant, including the added 7th, the passing 8–7, the cadential V_4^6 , and the 4-3 suspension. Aside from these cadential figurations, the cadential dominant can also be prolonged by one of the dominant expansions given on the handout or by an expansion involving an applied dominant functioning chord. In large-scale pieces such as sonatas and rondos, the music often “stands on the dominant” for a number of measures. These dominant prolongations – which typically occur before the medial caesura in the exposition and recapitulation, and during retransitions at the end of sonata developments and before the return of the primary theme in rondos – often involve one of the dominant expansions or a transposition (to V) of the neighbor or fifth-related bass tonic expansions found on the PMH.¹⁷

The PMH employs a narrow definition of cadences, in which form-defining cadences (*i.e.* those that unambiguously provide harmonic closure to a phrase) are created by root-position V

¹⁷ The phrase “standing on the dominant” is taken from William E. Caplin, *Classical Form*. Medial caesuras are the rhetorical breaks that occur between the end of the transition and beginning of the secondary zone in some sonata-form works. The concept and function of the medial caesura has been developed by James Hepokoski and Warren Darcy most notably in *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth-Century Sonata* (New York: Oxford University Press, 2006). For an example of a medial caesura, please see m. 12 of Mozart’s K. 545 Sonata, shown in Fig. 4.

and I chords.¹⁸ Under this strict definition, there exist only two form-defining cadences:

- Half Cadence – phrase ends on a root-position V
- Authentic Cadence – phrase ends with a root-position V or V⁷ moving to a root-position I

Any harmonic pattern that deviates from these two possibilities is thought either to evade or to substantially weaken cadential closure. Because cadences in tonal music are created through the interaction of harmony, melody, and rhythm, there do exist phrase endings that exhibit weak harmonic closure but strong enough melodic and/or rhythmic closure to warrant being considered a cadence. In other words, students should remember that while strict definitions are useful in their wide application, there are moments in music that require a more flexible, open-minded application of theoretical concepts.¹⁹

The Phrygian half cadence also has a place on the PMH. Following the Phrygian cadence are the three common augmented-sixth chords. Teachers may wish to highlight the voice-leading connections that allow the augmented-sixth chords to follow the iv⁶ and compare these to other predominant to dominant resolutions. The progression of iv⁶ through any augmented sixth places Fa – Fi – Sol in the soprano (or another upper voice), with the mixture of the submediant placed in the bass. These two chromatic alterations open the possibility of the double chromatic voice exchange included under the non-tonic expansions: IV – I⁶₄ – It⁺⁶.

¹⁸ Cadence definitions are an area where teachers will need to explain the extent to which the PMH supports or contradicts the position taken by the course textbook, assignments, and instructor.

¹⁹ For example, the fourth measure of Mozart's Sonata in C major, K. 545, i, has a cadential character, despite the fact that the V⁷ chord is used in first inversion. Because the cadential status of m. 4 is ambiguous, and because the linear structure of mm. 5–8 seems to repeat, and thus continue, that of mm. 3–4, many listeners might not catch that the music has moved into a transition in m. 5. Only when the clearly articulated medial caesura occurs in m. 12 might listeners look back and realize that m. 4 may have been a cadence, however weak.

Building on the Phrase Model Handout: Secondary Chords

The PMH provides a starting point for exploring two other central topics in tonal theory: secondary chords and mixture. The only secondary chords featured on the handout are found in the predominant category, where the secondary dominant-functioning (V and vii^o) chords of V are shown as alterations of diatonic predominant harmonies. These altered predominants intensify the move to the cadential dominant by including the applied leading tone, the raised fourth scale degree. This raised subdominant creates the possibility of a chromatic passing tone in the bass (Fa – Fi – Sol; see m. 10 in Fig. 6) and also chromatic voice exchanges involving the IV and ii chords, as shown in the non-tonic expansions. After studying the secondary chords featured on the handout, students should understand how these chromatic chords are created by altering diatonic harmonies and how they tonicize non-tonic diatonic harmonies by applying their own leading tone.

While many students are able to grasp the concept and spelling of secondary chords, they often struggle to incorporate them into a phrase. The PMH provides an effective solution to this problem, since the tonic expanding models that employ dominant-functioning chords can all be transposed to expand non-tonic harmonies using secondary chords. In other words, students who have memorized the tonic expansions already have at their fingertips a store of syntactically correct secondary chord usages. Students who learn that almost any chord in a diatonic progression can be expanded using a transposed tonic expansion can readily produce progressions employing secondary chords like the ones given in Fig. 7.

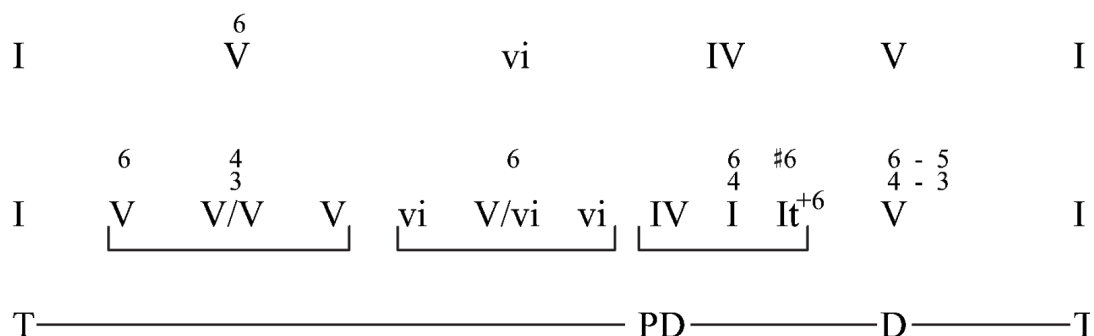


Figure 7 Non-tonic Expansions using Secondary Chords

Further, the fact that the longer chord progression is produced via prolongation of underlying diatonic harmonies allows students to more readily apply the phrase function labels T, P, and D. Approaching secondary chord usage by building directly off the phrase model and tonic expansions provides students a simple, dependable way to incorporate secondary chords into their compositions and improvisations and to recognize their function in real pieces. For example, consider the passage from Mozart’s Symphony in C major, K. 425 (“Linz”) provided in Fig. 8. This phrase begins with a tonic-substitute opening and two non-tonic expansions before reaching a PAC in the local tonic (G major). Students accustomed to thinking about harmonic prolongation should correctly identify this passage as a single phrase in G major.

Two more uses of secondary chords can be abstracted from the PMH: secondary chords as parenthetical insertions and as harmonizations of chromatic bass lines. Both of these uses are modeled in the use and resolution of secondary dominants. In a parenthetical insertion, a secondary chord is inserted between two harmonies in a syntactically correct diatonic chord progression. For example, the V^6_5/V on the PMH could be parenthetically inserted between the first cadential progression IV – V as follows: IV – V^6_5/V – V.²⁰ So long as the bass line’s

²⁰ The arrangement of voices in the V^6_5/V would have to be modified to achieve good voice leading and proper resolution to the cadential V.

(PAC/G)

71 72 73 74

f

G: | vi V/vi vi V/vi vi V/vi

Neighbor Exp. of vi

T , T (sub.)

75 76 77 78 79

p

PAC/G

vi IV V/IV IV V - 5# I

Exp. of vi nested in subdominant bass arpeggio

PD D T

Figure 8 Mozart Symphony in C major, K. 425 ("Linz"), i, mm. 71–79

structure is not weakened and awkward voice leading predicaments (such as cross relations) are avoided, secondary dominants can be parenthetically inserted before any harmony in a diatonic progression.

A similar progression on the PMH ($ii^6 - V^6_5/V - V$) illustrates the second use of secondary dominant chords as harmonizations of ascending chromatic bass lines. This use reframes the idea of secondary chords as parenthetical insertions in linear terms. Chord progressions with whole-step ascents in the bass provide the opportunity to use a chromatic passing tone that can be harmonized as an applied leading tone to the subsequent chord in the

progression, assuming the subsequent chord is in root position. Composers often place such applied leading tones in the bass to maximize their audibility and expressive impact and to enhance the bass line with chromaticism.²¹

While other uses of secondary chords are possible, the four uses discussed above provide students with a practical assortment of approaches to using and analyzing secondary chords in the context of the phrase. By building this knowledge directly onto progressions with which they are already acquainted, students gain a more integrated understanding of the materials of tonal harmony.

Building on the Phrase Model Handout: Mixture

Mixture involves the use of notes from one mode (major or minor) in the context of the other.²² The most commonly mixed scale-degree is the submediant in a major mode, which is often lowered from La to Le to create fully-diminished vii^{o7} chords. The instances of vii^{o7} chords on the PMH each feature this mixed tone. Other major-mode chords that feature the lowered submediant are the minor iv⁶, the bVI, and the augmented sixth chords. The Gr⁺⁶ also features a mixed third scale degree, and the N⁶ includes mixed second and sixth scale degrees.

Once students understand mixture, teachers can use the PMH to discuss other places that mixture commonly occurs, such as mixing the third or sixth scale degrees to produce poignant and expressive minor tonic and subdominant chords. The same two mixed notes can be used at

²¹ Closely related to this usage is using secondary dominants to create descending diminished leaps in the bass. (*N.B.*: augmented leaps in the bass should be avoided.) For example, the progression I – V⁶₅/V – V features a descending °5th in the bass between the first two chords. This usage is not illustrated by any of the progressions on the PMH.

²² Mixed chords are also referred to as borrowed chords, as if a diatonic phrase reaches into the parallel mode to borrow a chord not found within its diatonic set of harmonies. Like the altered secondary dominant chords discussed earlier, mixture represents another type of chromatic harmony. The definition of mixture given above is adapted from Aldwell and Schachter, *Harmony and Voice Leading*, 391.

deceptive cadences to substitute the minor vi with the major bVI, the latter of which is shown on the PMH. Also, the mixed submediant is commonly used to turn a minor predominant ii⁶ into the diminished ii^{o6}, a chord that rivals the minor subdominant in poignancy, especially when used in a major context. Finally, the mixed chords discussed above can be combined to produce tonic expansions rich in chromaticism and expressivity, such as in the following progression: I – bVI – iv – ii^{o6} – V – I. As students begin to adopt mixture into their chord progressions, they should be reminded that (1) using mixture can create dissonances that require correct resolution and (2) mixing a note can limit the way it resolves. For example, La can move to Ti, but Le should not move to Ti because of the linear augmented interval this move creates. Using mixture can also lead to cross relations, which should generally be avoided.²³

Implementing the PMH in the Classroom

The PMH can be introduced early in the first semester of study in most theory curricula. The only prerequisite to understanding most of the material on the PMH is knowledge of Roman numeral and figured-bass symbols.²⁴ More advanced topics like voice leading and syntax rules can be taught using the PMH, which models idiomatic voice leading and harmonic progressions. Although not strictly necessary, students who have previously studied counterpoint (either species or 18th-century) before encountering the PMH will more readily understand the contrapuntal origin of the middle chords in the harmonic expansions and recognize how these linear chords elaborate and prolong underlying harmonies. Because the harmonic expansions

²³ A cross relation occurs when a chromatic half step is split between two different voices.

²⁴ Knowledge of theory fundamentals like naming notes, key signatures, solfege, and spelling chords is also assumed.

model both vertical and linear relationships, students without a background in counterpoint can learn many basic principles through careful study of the harmonic expansions themselves.

Ideally, students should employ the PMH in both written and aural skills courses so that their learning can be reinforced across the curriculum. In a written theory class, activities based on the PMH could include memorization games and quizzes, keyboard activities, composition assignments, and improvisation exercises. In an aural skills class, the phrase model and harmonic expansions can be drilled by dictating harmonic idioms and phrase-length progressions, listening activities involving real pieces, and improvisation exercises.

At every stage of the learning process in both written theory and aural skills, learning the PMH should be accompanied by extensive and focused listening across a wide range of styles (historical and contemporary) and genres. The harmonic idioms on the handout are ubiquitous in tonal music; the examples provided in Appendix 1 are but a tiny sample of those to be found through regular listening. If students are to apply what they learn in theory to everyday listening and performing experiences, teachers must regularly provide activities, such that listening critically within the framework of the PMH becomes habitual. For example, teachers may ask students to keep a journal or listening diary where they could post URLs to recordings and time points marking the harmonic expansions and phrase endings that they hear. Teachers could also post several listening examples each week and ask students to answer short quiz questions about the harmonic expansions found within them.²⁵ However it occurs, sustained and habitual critical listening is necessary throughout the learning process. Without it, the process of memorizing and

²⁵ Course management systems like Sakai, Canvas, and Blackboard offer user-friendly quiz applications that allow faculty to see how students are doing with the material before the beginning of class.

composing with harmonic idioms can become a dry exercise disconnected from the musical experiences that motivate and inspire our students.

Activities and Materials for Written Theory

The practice of developing and improvising harmonic progressions and elaborate figurations over unfigured bass lines is a pedagogical tradition at least as old as the 18th-century *partimento*. The pedagogical method outlined below follows in this tradition, as students move from learning and internalizing harmonizations of given bass lines, realizing these progressions with idiomatic voice-leading patterns, and finally improvising and composing music based on these harmonic and contrapuntal models.²⁶ In my written theory courses, students begin by memorizing the Roman numerals and figured-bass symbols (RNFB) that harmonize the following selected tonic- and non-tonic-expanding bass lines:

- all ten Do – Mi subtypes,
- the first pedal-bass expansion ($I - IV_4^6 - I$),
- all three Do – Ti – Do neighbor expansions,
- all three fifth-related bass progressions ($I - V - I$, $I - V^7 - I$, and $I - IV - I$),
- two non-tonic expansions ($IV - I_4^6 - IV^6$ and $V - I_4^6 - V$)

For most of my students, memorizing nineteen harmonic patterns stretches their memories while remaining comfortably within the realm of possibility. I have selected these particular nineteen expansions because of the large number of harmonic and voice-leading patterns shared between them. The two non-tonic expansions are included because of their voice-leading correspondence

²⁶ Composing phrases based on learned harmonic and voice-leading models has similarly well-established roots in the schema tradition, thoroughly described in Robert O. Gjerdingen, *Music in the Galant Style* (New York: Oxford University Press, 200).

to two tonic expansions and because they expand the usages of second-inversion triads that students are expected to learn during the first year (passing, neighbor, and cadential). The quiz sheet I use is provided in Appendix 2. Grading is all-or-nothing: either the RNFB for each expansion is entirely correct or it is counted wrong. The point of memorizing idioms is to learn them fluently as discrete wholes, so it is important that the idioms are graded that way.²⁷

Because the tonic expansions clearly begin and end on I or I⁶ chords, the primary effort students make at this stage is memorizing the tonic-prolonging middle chords. To this end, it is helpful to point out to students some of the patterns (and exceptions to patterns) found in the RNFB. For instance, the middle chords of all the Do – Re – Mi and Do – Ti – Do patterns are dominant functioning. Because there are four Do – Re – Mi patterns to be memorized, students need only to remember the figures for second-inversion dominant (V) triads and seventh chords and first-inversion leading tone (vii^o) triads and seventh chords. By grouping these chords together through the memorization process, students learn the elements of a surprisingly useful category: the RNFB for dominant-functioning chords with Re in the bass.²⁸ Unlike the Do – Re – Mi progressions, there are only three Do – Ti – Do progressions; students must memorize that a root-position vii^o triad is not used to expand the tonic. Other patterns include the fact that the Do – La – Mi progressions do not involve any tonic-expanding chords; rather the bass note La could

²⁷ In my courses, I use an outcomes-based grading system in which students have all semester to pass fundamental outcomes like memorizing harmonic idioms' RNFB and voice leading. This grading system makes it easy for me to set a high bar for passing the memorization quizzes, which students can retake until they have mastered the outcome. For information on implementing outcomes-based grading (also called standards-based grading), see Philip Duker, "Setting up a standards-based gradebook," accessed January 2, 2015, <http://www.hackingmusictheory.com/duker.html>. For more information about standards-based grading, see D. Royce Sadler, "Interpretations of criteria-based assessment and grading in higher education" *Assessment & Evaluation in Higher Education* 30/2 (2005): 175–194; and Robert J. Marzano, *Formative Assessment & Standards Based Grading* (Bloomington, IN: Marzano Research Laboratory, 2010).

²⁸ By memorizing the Do – Ti – Do progressions, students will learn another useful category: the RNFB for dominant-functioning chords with Ti in the bass.

be the root of a vi or the chordal third of a IV⁶. At this first stage, pattern recognition is critical: students who readily see patterns do well; those who do not, struggle.

The second stage of memorization is to become fluent in the voice leading for each pattern. The voice-leading quiz is provided in Appendix 3. The quiz builds on the first one: students are required to write both the RNFB and the voice leading for each expansion, exactly as they are found on the PMH. Students are taught to memorize the voice leading in a linear fashion (*e.g.* the I – V₄⁶ – I⁶ progression involves a Do – Re – Mi bass, Mi – Re – Do soprano, and inner voices Sol – Sol – Sol and Do – Ti – Do). Accordingly, I grade the quizzes by checking that each voice – not each chord – is correct. I typically subtract one point for each incorrect voice and set the passing bar at 85%, leaving some room for students who may not be able to fully absorb the voice leading of every expansion in the course of the first semester.

As intimidating as this quiz may seem, there are numerous voice-leading patterns that repeat throughout the idioms, making them fairly easy to memorize. Conversely, students who fail to learn the patterns are generally unable to pass the voice-leading quiz. Below are some of the most helpful patterns to point out to students, some of which are included on the PMH, and many of which are equally useful in identifying these idioms in an aural skills context. NB: these patterns pertain only to the nineteen tonic expansions identified above for inclusion on the quizzes.

- All tonic expansions start with Mi in the soprano, Do in the alto, and Sol in the tenor;
- All the selected pedal-bass, neighbor-bass, and fifth-related bass tonic expansions are symmetrical around the middle chord; the voice leading from the first to second chord is simply reversed from the second to third;

- Do – Ti – Do in upper or bass voice: occurs in all tonic expansions with a dominant-functioning middle chord;
- Sol – Sol – Sol in upper voice: occurs in all I – V – I tonic expansions;
- Sol – Le – Sol in upper voice: occurs in all tonic expansions with a vii^{o7} in any inversion;
- Sol – Fa – Sol in upper voice: occurs in all tonic expansions with a vii^o in any inversion;²⁹
- Mi – Fa – Mi in top voice: occurs in all symmetrical progressions involving I – IV – I or I – V⁷ – I;
- All upper-voices in the pedal-bass I – IV⁶₄ – I and fifth-related bass I – IV – I expansions are identical (only the bass line is different);
- Top-voice Mi – Fa – Sol: used in two Do – Re – Mi progressions (both involving seventh chords) and the Do – La – Mi and Do – Fa – Mi progressions that use IV chords;

After several weeks of memorizing the voice leading of tonic expansions as found on the PMH, my students begin drilling the tonic expansions with different upper-voice configurations. Given how hard the students have worked to memorize the expansions, I lighten things up at this stage by giving the students group-based drills and games to play in class. Drills take the form of being given a tonic expansion and new starting soprano pitch (Do or Sol) and having students write the expansion with reconfigured upper voices. This activity can be made into a game to be played within small groups or between them at the blackboard. Within groups, the game is played by passing around a sheet of staff paper and having each group member add one more layer of information, beginning with the RNFB and bass line, and ending with the upper

²⁹ Listening for the Le or Fa in tonic expansions can help students distinguish leading-tone triads and seventh chords by ear.

voices_until the expansion is complete. If a group member recognizes a mistake, his or her turn is spent correcting the previous mistake. Groups can compete against one another or attempt to beat their own best time.

A variation on this activity involves singing the lines rather than writing them; because this variation involves music making and hearing the progressions, it is both preferable to and more difficult than the written version. One approach is to have the students work in groups of four or five players. Player 1 begins by choosing and singing one of the tonic expanding bass lines using solfege syllables.³⁰ When player 1 begins, all group members should be conducting, which helps keep the group together and forces players to think in time. To demonstrate, imagine that player 1 sings, “Do – Fa – Mi.” As player 1 sings, player 2 thinks of an expansion that fits player 1’s bass, decides what chord member to begin with, and sings the voice leading pattern that begins on that member: “Do – Ti – Do.” As player 2 sings, player 3 completes a similar thought process, now taking into account the two lines already being sung. Perhaps player 3 knows the tonic expansions well enough to remember that the two Do – Fa – Mi expansions with a dominant-functioning middle chord share the same soprano line, and correctly sings, “Mi – Re – Sol.” Player 4’s job is to complete the idiom, which can also involve deciding what idiom is being sung or, in some cases, deciding between two possibilities. In this case, two possible final lines could be added, one that makes the middle chord a V^4_2 and the other a vii^{o4}_3 . Player 4 chooses the latter and sings, “Sol – Le – Sol.” At this point, player 5 or player 1 (or perhaps whichever player can say it most quickly) calls out the RNFB of the progression the group has just sung. After each round, the students can rotate roles and begin again.

³⁰ I recommend that students sing in a slow (quarter note = 40-50) common time using a quarter-quarter-half rhythm.

Not all students will succeed at these games at first, and some may become frustrated before reaching the level of fluency at which the games become fun. I recommend grouping students with similar ability levels and instructing groups to limit the number of idioms they are practicing until they feel comfortable adding more. I remind students that the entire activity is for practice; the stakes are set low so that students do not have to worry about not succeeding right away. In fact, the experience of struggling may awaken some students' minds to the necessity of further, smarter study. Working in small groups often adds an element of social pressure that is difficult for teachers to replicate, and students often learn material better when it is taught and reinforced by a peer rather than by the instructor. Finally, having students work on challenging material in small groups gives teachers a valuable opportunity to walk around the classroom and assess how individual students are doing. In turn, students get individualized feedback that can benefit every member of the group.

One way to keep the above activity fun and spontaneous is to begin by “inviting” professional artists to the class to demonstrate their skills.³¹ In a recent episode of *The Tonight Show*, host Jimmy Fallon and guest Billy Joel demonstrated how to use an iPad app called “Loopy” (<https://loopyapp.com/>) to form a two-man Doo-Wop group.³² They proceeded to perform “The Lion Sleeps Tonight,” using the app’s title feature to build a simple phrase using a I – IV – I tonic expansion followed by a cadential dominant and half cadence. Fallon starts the activity by singing the bass line, and Joel continues by adding the very soprano voice found on

³¹ Even when guests will not be physically present, I like to build students’ interest by saying that I have invited a special guest to come present.

³² Jimmy Fallon and Billy Joel, “Billy Joel and Jimmy Fallon Form 2-Man Doo-Wop Group Using iPad App,” YouTube Video, 4:19, from an interview on *The Tonight Show* televised by NBC on March 20, 2014, posted by “The Tonight Show Starring Jimmy Fallon,” on March 20, 2014, <https://www.youtube.com/watch?v=cU-eAzNp5Hw>.

the PMH. Before long, Fallon and Joel have layered a fully harmonized progression, over which they delight in performing the song and improvising. To see these artists performing the class's activity before a national audience underlines the musical relevance of the practice and energizes the students to engage the tonic expansions. As they get started, I encourage them to use the Doo-Wop rhythm and syllables, channeling their inner Fallon and Joel, and freely improvising over the progressions their group creates. On these days, it is not unusual to hear tonic expansions resonating through the department's halls long after theory class has ended.

Depending on class size and classroom resources, teachers may also consider incorporating work at the keyboard into the process of learning the harmonic expansions on the PMH. For some students, feeling the voice leading of each progression in the hand at the keyboard will help them learn the expansions much more readily and securely. Teachers may elect to give students the option of playing the expansions at the keyboard rather than writing them on paper. The more assessment techniques are adapted to the learning styles and musical aptitudes of students, the more these techniques stand to reveal what our students can truly achieve. Provided the course outcomes are clearly defined and are not compromised by offering different means of assessment, great flexibility in this area is encouraged.

By the end of the first semester of written theory, the time invested in memorizing and practicing harmonic expansions pays off. As students begin learning part writing in four voices, they already know how the voices will move to connect most of the chords. For many students, the guidelines for part writing using different triad inversions summarize what they already know through experience. The process of learning to write in four parts provides an opportunity to

explain details that may have been ignored during the process of memorizing the PMH, such as doubling rules, spacing rules, and voice leading prohibitions.

In the second and third semesters of the written theory sequence, students continue to use the PMH as a foundation for composition and improvisation projects. Sample improvisation projects include:

- Monophonic embellished chord progression using two tonic expansions, predominant, dominant and tonic: similar to mm. 1–4 of Bach’s Prelude from the Suite for Solo Violoncello in D minor, though extended to form a complete phrase;
- Improvised fantasy: over a given bass, students improvise figures and figuration;
- Improvised prelude: students improvise on a phrase-length harmonic progression that they create using a variety of patterns;
- Improvised concerto cadenza: students compose a chord progression that includes an evaded cadence, tonic and non-tonic prolongations, a concluding dominant prolongation, and a PAC. They then improvise their cadenza using this harmonic and linear framework and a variety of melodic figurations.

These improvisations give students a hands-on experience with compositional issues of the styles and genres involved in each assignment. Generally, students perform their improvisations on their own instrument, which encourages them to connect the way they think about music in theory with the music they experience as a performer. Improvisation also benefits the students by helping them see composition as a dynamic process that is best worked out using their ears, minds, and bodies, as opposed to a more static, product-focused activity – an approach that occurs when composition is reduced to typing notes onto a computer screen.

The experience of improvisation in the first semester becomes the basis for learning style-study composition in later semesters. It is important to emphasize that successful composition involves a process as dynamic and fluid as improvisation. In all the assignments mentioned below, students submit work in incremental stages, and each stage involves at least 2–3 different possible compositional solutions. Only when students have identified the best solutions and satisfactorily edited their work are they given permission to work on final drafts.

Sample composition assignments include:

- Chorale bass lines (in the style of Bach)
- Waltz (in the style of Schubert)
- Minuet (in the style of Bach or Mozart)
- Song accompaniment (in the style of Schubert, using a given melody and text punctuation, the latter for helping students identify cadence points without disclosing the song itself)
- Recitative (in the style of Handel)
- Popular song lead sheet, with introduction, verse, and chorus (in the style of their favorite popular artist)

Each of these composition assignments is built on the PMH, and students are expected to identify which expansions they use in the commentary and analysis submitted with their compositions' final drafts. In composition assignments in which the melody is provided (*e.g.* chorale bass lines and song accompaniment), the upper voices of the expansions can be used to identify possible harmonizations. For instance, if a chorale melody begins Mi – Fa – Sol, students simply identify tonic expansions that feature this pattern in any upper voice to find excellent bass lines and

harmonizations for this melodic fragment. Students quickly discover that harmonizing a melody often requires little decision making; after choosing a workable cadence, predominant, and tonic expansion, they often have only one or two more melodic tones for which to write counterpoint in the bass, and filling in the small gap between the tonic expansion and predominant tones is often straightforward.

Activities for Aural Skills

Learning the PMH can be supported in unique and important ways through the aural skills sequence. Obviously, the materials on the handout provide the basis for dozens of idiom- and phrase-length harmonic dictations. Students who encounter the same harmonic expansions in both classes will benefit greatly from knowing the expansions both aurally and notationally. Perhaps less obvious are the connections between how students learn the PMH in written theory and aural skills, and the implications these connections have for teaching harmonic dictations and listening skills for understanding real pieces.

The best way for students to organize, learn, and memorize the harmonic expansions on the PMH is by their linear components. It follows that students should learn to recognize harmonic expansions aurally by listening primarily to linear relationships rather than to vertical, chordal ones. There are four linear threads that course through harmonic progressions that can help students identify chordal function using RNFB during harmonic dictations of individual harmonic expansions, idioms, and phrases:³³

³³ Teaching students how to hear these linear threads is the topic of a longer article currently in progress; here, I present a summary of its main ideas.

1. **The Do–Ti line.** The Do–Ti line refers to the melodic configuration of guide-tones Do and Ti that corresponds to the harmonic progression.³⁴ To discover the Do–Ti line, students sing “Do” as they listen and move to “Ti” only during harmonies that contain the leading tone. The Do–Ti line enables students to distinguish “Do chords” and “Ti chords,” *i.e.* those chords that are consonant with Do or Ti. In a major-key progression of diatonic harmonies, “Ti chords” are V, vii^o, or iii, and “Do chords” are I, vi, IV, and ii. By combining the Do–Ti line with knowledge of chord quality and function (T, PD, D), students can quickly and accurately identify each chord with a Roman numeral. The tonic expansions on the PMH can also be grouped by their unique guide-tone lines, their “Do–Ti thumbprints.” If a tonic expansion has a “Do – Ti – Do” guide tone line, the middle chord must be V or vii^o, since no harmonic expansion contains iii. Applying the guide tone method to whole phrases also enables students to identify the predominant and dominant location and type. With only one exception, every predominant harmony is consonant with Do; only the N⁶ contains a different guide tone, Ra. By hearing the guide tone figuration (Ti or Do–Ti) that occurs above the cadential dominant tone in the bass, students can identify whether or not the cadential dominant is prolonged or embellished with a cadential ⁶₄ or 4–3 suspension. Importantly, students who first perceive chordal function using the Do–Ti line, chord quality, and function are more likely to hear the bass note correctly.³⁵

³⁴ The guide tone method was first summarized in Jay Rahn and James R. McKay, “The Guide-Tone Method: An Approach to Harmonic Dictation,” *Journal of Music Theory Pedagogy* 2 (1988): 101–111.

³⁵ This method turns the conventional method of dictating the outer voices and deducing chordal function on its head. One problem with this conventional approach is that if students incorrectly dictate the outer voices, they have almost no hope of recognizing the chords. Another problem is that the entire thought process is atomistic and deductive: students first focus on individual elements, then deduce their knowledge of the whole. Hearing the Do–Ti

2. **The bass line.** Hearing the bass line is essential for students to correctly identify harmonic expansion types, chord inversion, and cadences. Instead of notating the bass and soprano lines of harmonic dictations, teachers might consider asking students to dictate the bass and Do-Ti lines. In harmonic dictation, the soprano line is less important, except for distinguishing between PACs and IACs, which most students can do by ear without having to dictate every melodic pitch.
3. **The Sol line.** This melodic thread is primarily useful for distinguishing between V, V⁷, vii^o, vii^{o7}, and between the fully- and half-diminished leading-tone sevenths. The Sol line includes neighboring pitches Fa, La, and Le, whose presence (or absence) helps students identify the precise dominant-functioning chord in use. The expressive melodic thread Sol – Le – Sol is particularly useful: it helps students immediately identify the fully-diminished vii^{o7}. Students commonly listen for Fa (or a passing Sol – Fa) to identify the V⁷. Equally important, hearing Sol – Fa – Sol can help students identify the passing vii^{o6}. Ironically, the line most often overlooked is Sol – Sol – Sol, a melodic thread that appears in all I – V – I expansions, providing a sense of stability. Students should learn to listen for this line, as its static quality tends to make it inaudible. While distinguishing between dominant-functioning chords may not be as important as other harmonic distinctions, learning to hear the Sol line reinforces the linear approach to harmonic listening.
4. **The melodic line.** Hearing the melody is essential for identifying cadence type and can be useful for identifying harmonic expansions. It is debatable whether notating the upper

line, chord quality, and function are together oriented toward a holistic hearing. By first understanding harmonies as a whole, students are more readily able to perceive their individual elements.

voice of a complete dictation is of general benefit to students, especially given that the melody of real pieces typically does not move with the underlying harmonies. An alternative to focusing on notating the soprano voice is to have students provide the bass line, Do-Ti line, and cadence type. Further attention to the melody can be given when listening to real pieces, where identifying phrase structure, motivic ideas, closing gestures, and cadence type and rhetoric depend on hearing the melody.

The four melodic lines described above are useful for ascertaining chord function in typical harmonic dictations. In addition to providing RNFB, students can further develop a holistic understanding of the phrase by labeling harmonic function of the chords (T-PD-D). Because focusing on linear relationships and phrase function is also useful to hearing real pieces, approaching harmonic dictation using these four linear threads makes the acquired skills transferable beyond phrase-length chord progressions. The PMH, which coordinates the linear and vertical dimensions of harmony, offers teachers and students an ideal starting point for creating and listening to harmonic dictations as well as a bridge into hearing full pieces of music.

It is critical that students learn how to apply skills developed through harmonic dictations to music heard outside of aural skills class.³⁶ Because pieces like songs and sonatas only provide one or two passes over musical material and do not afford long pauses to figure out what has just been heard, students must first learn that they will not be able to hear all the details they capture in a harmonic dictation during normal listening experiences. When listening to full pieces, it is impossible for most musicians to identify every RNFB, and were it possible, it would be of little

³⁶ On the tension between abstractions such as idiomatic harmonic expansions and experiencing these in the context of real pieces of music, see Roger Mathew Grant, "Formalism in the Music Theory Classroom," *Journal of Music Theory Pedagogy* 26 (2012): 7–26.

value in understanding their larger tonal design. Instead, students need to be able to perceive larger features like phrases, cadence location and type, modulations, large-scale harmonic expansions, thematic/motivic repetition, and overall formal structure in order to grasp the musical design of pieces while listening.³⁷ The linear approach to harmonic dictations lends itself well to the first four of these essential skills.

Tracking the Do–Ti line all the way through a composition helps students identify harmonic expansions, cadential dominants, cadence location and type, the location of modulations, and even the new tonal area established by a modulation. Harmonic expansions are often identifiable by the unique Do–Ti patterns and the way these patterns are supported rhythmically and metrically. For instance, a diatonic progression that features a Do – Ti – Do line in which the Do’s receive durational and/or metric emphasis is almost certainly tonic expanding. When the end of a phrase approaches (often after a periodic set of 4, 8, or 16 bars, and accompanied by closing gestures and a predominant harmony), a Ti (or Do–Ti figuration) supported by Sol in the bass signals the arrival of the cadential dominant.³⁸ Students quickly learn that phrases that end on Ti are HC’s, while those that end on Ti – Do (with the required bass support) are AC’s. Singing or audiating the guide tone also helps students distinguish between PAC’s and IAC’s, which they do by comparing the final melodic tone to the guide tone they are singing.

The beginning of the fourth movement of Beethoven’s Fifth Symphony, shown in Fig. 9, demonstrates each of these applications. The movement begins with a lengthy series of harmonic

³⁷ Brian Alegant offers useful pedagogical ideas and assignments for hearing full sonata-form pieces in Alegant, “Listen Up!: Thoughts on iPods, Sonata Form, and Analysis without Score,” *Journal of Music Theory Pedagogy* 22 (2008): 149–176.

³⁸ For students who have difficulty hearing the bass, simply hearing the Ti at a cadence point will help their ears identify the dominant tone in the bass.

expansions used to prolong both tonic and dominant. While listeners could conceivably learn to sing a new guide tone with every change of harmony (shown at level 1), it is preferable for a longer-range hearing of the music to track the guide tones as shown at level 2. At fast tempos like the one used in this movement, listeners may prefer to sustain Do through faster expansions (*i.e.* those that involve quarter-note durations) or move to Ti only at the cadential dominant. When sung in this manner, the sustained guide tone Do captures in sound the idea that these harmonic expansions prolong the tonic.

The analytical markings in Fig. 9 are fairly basic; they contain none of the Roman numerals or figured-bass symbols normally required in harmonic dictation.³⁹ Yet, these markings represent the thoughts that we might expect an undergraduate student to be able to develop while listening to real pieces. Despite their apparent simplicity, the guide tones and harmonic expansions hold an analytical richness: they allow listeners to develop an understanding of a large section of music in a single hearing that might remain inaccessible were they to approach this passage chord-by-chord. Insights available to listeners who listen for the Do-Ti line and harmonic expansions might include:

- Expansions in mm. 1–6 all involve the dominant. The fifth-related expansions in mm. 1–4 are nested within a larger fifth-related expansion marked by the chords in mm. 1, 5, and 6, creating an ambiguous hypermetric structure. All of the V triads in mm. 2–3 occur on weak metric beats, entraining listeners to hear the larger-scale V of m. 5 as signaling a

³⁹ Even though RNFB are not explicitly part of the analytical markings (and the musical thoughts they symbolize), the guide tones, harmonic expansions, and the cadence type all imply different RNFB symbols, as these markings are defined in terms of harmonic function.



Exp. Type: Fifth-related bass Do-La-Mi
 Level 1: Do Ti Do Ti Do Ti Do Ti Do (+bass arp.)
 Level 2: Do ————— Ti ————— Do —————



Exp. Type: Mi-Do Do-La-Mi (+bass arp.) Mi-Do Do-La-Mi (+bass arp.) Mi-Do
 Level 1: Do —————
 Level 2: Do —————



Exp. Type: Neighbor (Do-Ti-Do) (+bass arp) Do-Mi
 Level 1: Ti Do Ti Do Ti Do Ti Do Ti Do
 Level 2: Ti Do Ti Do Ti Do Ti Do Ti Do



Exp. Type: Pedal Exp. of V
 Level 1: Ti Do Ti Do Ti Do Ti Do Ti Do Ti Do
 Level 2: Ti Do Ti Do Ti —————



Exp. Type:
 Level 1: Ti ————— Do
 Level 2: Ti ————— Do

Figure 9 Beethoven Fifth Symphony in C minor, Op. 67, iv, mm. 1–26 (adapted from Liszt's 1865 transcription for solo piano), showing two optional Do-Ti Lines, harmonic expansions, and cadence

weak hypermetric bar. In a normal four-bar hypermeter, m. 5 would be a strong measure.

The conflict between hypermetric expectation and harmonic expansions exposes the complexity of the fourth movement's opening. The hypermetric organization of the opening remains in flux until the arrival of the cadential dominant in m. 18.

- The sustained Do in mm. 8–12 and major chordal quality suggests expansions using the subdominant. The bass arpeggiation and arrival on Mi suggests an embellished Do – La – Mi expansion. The descending bass arpeggiation creates strong contrary motion with the ascending upper line, and the repetitions of this gesture create an expectation for the lines to break beyond their stopping points, which happens in m. 12 when the upper line finally reaches E6, completing the voice exchange with the bass typical Mi – Do expansions.
- In mm. 13–17, the music begins to shift from prolonging the tonic to the dominant. The harmonic expansions are still tonic expanding, but are arranged such that the guide tone Ti is now on metrically strong beats and measures. The closing gestures found in the melodic material (Mi – Re – Do – Ti) suggest movement toward a cadence.
- In m. 18, the cadential dominant arrives, signaled by a downbeat guide-tone Ti supported by Sol in the bass. In mm. 18–25, the cadential dominant is prolonged via a pedal-bass expansion utilizing the neighbor I_4^6 chord.

Singing the Do–Ti line while listening to full pieces can also enable listeners to identify the location and tonal destination of modulations. While applying the guide tone technique to a wide range of modulations is beyond the scope of this article, a single example suffices to demonstrate how guide-tone listening facilitates the perception of a modulation to the dominant.

in mm. 34–45, provided in Fig. 10.

Exp. Type: Pedal Exp. of V

C: Guide tones: Do G: Do→Fa (*Mi, Re, Do*) Ti Do Ti

Alternative GT Figuration: Do (*La, Fi*→) Ti



40 IAC/G

Exp. Type: (Pedal Exp. cont.)

G: Guide tones: Do Ti Do

Figure 10 Beethoven, Fifth Symphony in C minor, Op. 67, iv, mm. 34–45 (adapted from Liszt's 1865 transcription), showing Do-Ti Line, harmonic expansions, guide-tone figurations at modulation, and cadence

thus identifying G as the new tonal center.⁴⁰

⁴⁰ The listener presumably understands that this excerpt is transitional and that a modulation to the dominant is expected.

At the point of modulation, listeners must move from the old guide tone to the new. Fig. 10 shows two different ways this can be accomplished. The first is to fill in the diatonic scale space from the previous guide tone to the new one, as shown by the italicized solfege “Mi, Re, Do” filling the space between Fa and Ti. These notes indicate music that listeners may sing or audiate as a way of hearing through the modulation. Alternatively, listeners can develop a toolbox of guide-tone figurations to use at points of modulation. When modulating to the dominant, a more direct path from the old to new guide tone is to arpeggiate through the tones of the dominant-functioning chord itself, singing Do – La – Fi, and then changing solfege from Fi to Ti on the pitch F#. Either way, the key point is that listeners develop the skill to hear through a passage while maintaining their knowledge of the tonal center. Using the guide-tone method fosters the type of linear focus that lends itself to long-range hearing and understanding the large-scale tonal design of full pieces.

The PMH’s emphasis on the linear elements of harmonic expansions fits nicely with the time-tested guide-tone method. The PMH supports holistic hearing of phrases, sections, and entire pieces by teaching students to hear harmonies as prolongational, and bass lines as articulating harmonic function within phrases. Hearing *through* phrases rather than trying to identify each chord atomistically requires that students organize their understanding of harmony around linear elements rather than vertical ones. The guide-tone method provides listeners an easy way to distinguish between harmonies based on their consonance with Do or Ti. The PMH enriches this mode of hearing by coordinating guide tones and the bass line within the framework of the phrase to yield a holistic understanding of harmonic design.

Conclusion

The PMH provides teachers and students an accessible, content-rich starting point for teaching and learning many topics in both written theory and aural skills courses. The handout provides a valuable supplement to course textbooks used in both classes and allows students to better integrate learning that takes place through readings and lectures across the theory curriculum. By situating all elements within the context of the phrase, students learn the importance of the phrase within tonal music, keeping in balance the finer details of harmony and the framework within which these details become meaningful and expressive. The emphasis on harmonic expansions in the PMH helps students to remember the interrelationship of harmony and counterpoint, such that their knowledge of individual chords is always connected to the contrapuntal and harmonic contexts in which they are found. Thinking about harmony as prolongational and hierarchical prepares students for more advanced analytical techniques and modes of hearing. Because of its detailed integration of the harmonic and contrapuntal elements of tonal music, the PMH offers musicians a framework for comprehending the interplay of elements that makes the experience of tonal music so richly satisfying.

Appendix 1 - Examples of Selected Harmonic Expansions

Offered for the convenience of teachers looking for a quick and handy excerpt, the examples below are organized according to expansion type and bass line. Some of the examples are used in widely available textbooks, such as those by Aldwell and Schachter; Clendinning and Marvin; Kostka, Payne, and Almén; and Laitz.⁴¹ Public-domain scores of each piece can be downloaded from <http://www.imslp.org>. At the bottom of the list is a small collection of modern popular songs that feature harmonic expansions found on the PMH.

TONIC EXPANSIONS

Do–Mi bass: Do – Re – Mi

Beethoven, Piano Sonata in F minor, Op. 2, no. 1, mm. 5–7
Beethoven, Piano Sonata in C minor, Op. 13 (“Pathétique”), i, m. 1
Beethoven, Piano Sonata in D minor, Op. 31, no. 2 (“Tempest”), i, mm. 21–30
Beethoven, Symphony No. 5 in C minor, Op. 67, iii, mm. 19–22
Chopin, Nocturne in F# minor, Op. 48, no. 2, mm. 57–59
Clarke, *Trumpet Voluntary* in D major, mm. 2–3
Mozart, String Quartet in Bb major, K. 172, iv, 27–32
Mozart, Piano Sonata in Bb major, K. 281, i, mm. 1–2 (nested within fifth-related expansion)
Mozart, Horn Concerto in Eb major, K. 447, ii, m. 3
Mozart, Piano Sonata in C major, K. 545, i, mm. 6–8
Mozart, Piano Sonata in Bb major, K. 570, iii, mm. 1, 2–3
Schubert, Impromptu in Ab major, D. 935, mm. 1–3
Schubert, “Des Müllers Blumen,” from *Die Schöne Müllerin*, mm. 1–3

Do–Mi bass: Do – Fa – Mi

Beethoven, Piano Sonata in C minor, Op. 13 (“Pathétique”), ii, mm. 1–2
Handel, “Hallelujah!” from *Messiah*, mm. 88–92
Haydn, String Quartet in G minor, Op. 74, no. 3, ii, m. 1 (nested within a neighbor expansion)
Mozart, Piano Sonata in Bb major, K. 333, i, mm. 23–24
Mozart, Piano Sonata in C major, K. 545, i, mm. 4–6
Schubert, Impromptu in Ab major, D. 935, mm. 5–7

⁴¹ Aldwell and Schachter, *Harmony and Voice Leading*; Laitz, *The Complete Musician*; Jane Piper Clendinning and Elizabeth West Marvin, *The Musician’s Guide to Theory and Analysis*, 2nd ed. (New York: W.W. Norton & Company, 2011); and Stefan Kostka, Dorothy Payne, and Byron Almén, *Tonal Harmony with an Introduction to Twentieth-Century Music*, 7th ed. (New York: McGraw-Hill, 2013).

Do–Mi bass: Do – La – Mi

Haydn, Cello Concerto No. 1 in C major, iii, 201–203
Haydn, Symphony No. 101 in D major (“Clock”), iv, mm. 1–2
Mozart, Symphony in C major, K. 425 (“Linz”), i, mm. 95–97
Mozart, Symphony No. 28 in C major, K. 200, i, mm. 28–30
Mozart, String Quartet in Bb major, K. 159, i, mm. 1–2

Pedal bass with IV⁶₄

Brahms, Variations on a Theme by Haydn, Op. 56a, m. 1
Chopin, Etude in Gb major, op. 10 no. 5, mm. 1–2
Mozart, 12 Variations on “Ah vous dirais-je, Maman,” K. 265, mm. 1–4 of theme + some var.
Mozart, Piano Sonata in Bb major, K. 281, i, mm. 8–12
Mozart, Piano Sonata in C major, K. 545, i, mm. 2–3, and ii, mm. 2–4
Mozart, Clarinet Quintet in A major, K. 581, i, mm. 65–67
Schubert, *12 Grazer Walzer*, D. 924, nos. 1, 4, 7, and 9 (opening measures)
Schumann, Five Pieces in Folk Style, Op. 102, v, mm. 1–2

Pedal bass with ct^{ol}

Brahms, “Minnelied,” Op. 71, no. 5, m. 1
Brahms, Symphony No. 3 in F major, Op. 90, mm. 1–3
Mozart, Sonata in C major, K. 545, ii, mm. 2–4 (combined with a Do – Ti – Do expansion)
Rossini, Overture to William Tell, mm. 188–189
Schubert, *Originaltanz*, D. 365, no. 31, mm. 1–10
Schubert, *Valse Sentimentale*, D. 779, no. 12, mm. 1–4

Pedal bass with 5-6 motion

Chopin, Nocturne in C minor, Op. 48, no. 1, m. 1
Mozart Piano Sonata in Bb major, K. 333, i, m. 1; and iii, m. 1
Schubert, “Du bist die Ruh,” D. 776, mm. 1–2 and 8–9
Schubert, Piano Sonata in A major, D. 664, ii, m. 1

Pedal bass: other

Bach, Prelude from the Suite for Solo Violoncello in Eb major, mm. 1–9
Bach, Prelude in C major, from *The Well-Tempered Clavier*, book I, mm. 32–35
Bach, Prelude in C minor, from *The Well-Tempered Clavier*, book I, mm. 1–4 and 34–38
Bach, Fugue in C minor, from *The Well-Tempered Clavier*, book I, mm. 29–31
Beethoven, Piano Sonata in C minor, Op. 13 (“Pathétique”), iii, mm. 1–2
Beethoven, Piano Sonata in D major, Op. 28, i, mm. 1–10
Brahms, “Minnelied,” Op. 71, no. 5, m. 1–5
Chopin, Nocturne in Eb major, Op. 9, no. 2, m. 1
Chopin, Waltz in B minor, Op. 69, no. 2, mm. 5–9
Chopin, Etude in Ab major, Op. 25, no. 1 (“Aeolian Harp”), mm. 1–4
Chopin, Nocturne in F major, Op. 15, no. 1, mm. 1–4
Haydn, Piano Sonata in Eb major, Hob. XVI:52, i, 1–2
Mozart, *Eine Kleine Nachtmusik*, K. 525, i, 5–9

Mozart, Piano Sonata in A minor, K. 310, i, mm. 1–5
 Mozart, Piano Sonata in F major, K. 332, i, mm. 1–5
 Schumann, Five Pieces in Folk Style, Op. 102, i, mm. 1–4

Pedal and neighbor bass hybrid: $I - ii^4_2 - V^6_5 - I$

Bach, Prelude in C major, from *The Well-Tempered Clavier*, book I, mm. 1–4
 Bach, Chaconne from Violin Partita No. 2 in D minor, BWV 1004, mm. 1–3
 Mozart, Clarinet Quintet in A major, K. 581, i, mm. 42–46 (deviates)⁴² and 49–53 (normal)

Neighbor bass: Do – Ti – Do

Bach, Prelude from the Suite for Solo Violoncello in D minor, BWV1008, mm. 1–4
 Bach, Sinfonia in B minor, BWV801, mm. 1–3
 Beethoven, Piano Sonata in F minor, Op. 2, no. 1, mm. 1–5
 Chopin, Etude in F major, Op. 10, no. 8, mm. 1–8
 Chopin, Prelude in C major, Op. 28, mm. 1–3
 Chopin, Nocturne in C minor, Op. 48, no. 1, mm. 1–2
 Clarke, *Trumpet Voluntary* in D major, mm. 1–2
 Haydn, String Quartet in F minor, Op. 20, no. 5, i, mm. 1–3
 Mozart, String Quartet in Bb major, K. 159, iii, mm. 1–3
 Mozart, Horn Concerto in Eb major, K. 447, ii, mm. 1–3
 Mozart, Piano Concerto in F major, K. 459, i, mm. 1–3
 Mozart, “Voi, che sapete,” from *The Marriage of Figaro*, K. 492, Act II, mm. 1–3
 Mozart, Piano Sonata in C major, K. 545, i, mm. 3–4
 Mozart, Piano Sonata in Bb major, K. 570, iii, mm. 1–2, 4

Neighbor bass: Do – Re – Do

Chopin, Waltz in B minor, Op. 69, no. 2, mm. 1–4 (Dbl-neighbor bass; hybrid with Do-Ti-Do)
 Handel, “Hallelujah!” from *Messiah*, m. 2
 Mozart, Piano Sonata in G major, K. 283, i, mm. 1–4 (Dbl-neighbor bass; hybrid with Do-Ti-Do)
 Mozart, Rondo in D major, K. 485, mm. 1–4
 Mozart Sonata in C major, K. 545, i, mm. 1–2; and ii, mm. 1–2, 4–6
 Schubert, “Wasserflut,” from *Winterreise*, mm. 1–3

Neighbor bass: Mi – Fa – Mi

Mozart, Symphony No. 39 in Eb major, K. 543, iii, m. 2; and iv, mm. 1–3
 Mozart Sonata in C major, K. 545, i, mm. 14–16
 Schumann, “Soldier’s March” from *Album for the Young*, Op. 68, no. 2, mm. 1–2 (+Do–Re–Mi)

⁴² This deviation from the fifth-related bass pattern is quite unusual. The chordal seventh of the ii^4_2 in the bass in m. 44 does not resolve down by step as expected. While the move from E2 to F#2 in the bass can be explained as an avoidance of a doubled leading tone in the outer voices and is supported by the parallel, outer-voice 6ths, the progression is surprising all the same. When the expansion is repeated in the parallel minor in mm. 50–52, the melody changes and the expansion unfolds according to the normal voice-leading pattern.

Fifth-related bass: Do – Sol – Do

Beethoven Sonata in C major, Op. 2, no. 3, i, mm. 1–4
Beethoven Sonata in D minor, Op. 31, no. 2 (“Tempest”), iii, mm. 1–8
Beethoven, Symphony No. 5 in C minor, Op. 67, iv, mm. 1–6
Brahms, Rhapsodie in Eb major, Op. 119, no. 4, mm. 1 and 3 (nested within large I – IV – I exp.)
Chopin, Etude in Ab major, Op. posth., mm. 1–4

Fifth-related bass: Do – Fa – Do

Brahms, Variations on a Theme by Haydn, op. 56a, mm. 1–2
Handel, “Hallelujah!” from *Messiah*, m. 1; mm. 92–94
Mozart, Piano Sonata in Bb major, K. 281, i, mm. 1–3
Mozart, Trio in Eb major, K. 498 (“Kegelstadt”), i, mm. 16–17
Mozart, Symphony No. 39 in Eb major, K. 543, ii, mm. 1–2 and 5–6
Schubert, Piano Sonata in Bb major, D. 960, ii, mm. 1–8

NON-TONIC EXPANSIONS

Predominant (IV and ii) Expansions

Bach, Chorale “Gerne will ich mich bequemen,” from *St. Matthew Passion*, BWV244, m. 2
Bach, Passacaglia in C minor, BWV582, mm. 130–131
Beethoven, Piano Sonata in D major, Op. 28, ii, m. 3 ($ii^4_3 - ii^6_5$)
Beethoven, Piano Sonata in Ab major, Op. 26, i, mm. 5–6
Beethoven, Piano Sonata in D major, Op. 28, i, mm. 23–25 and 31–33
Beethoven, Piano Sonata in D minor, Op. 31, no. 2, i, mm. 4–5
Chopin, Prelude in B Minor, Op. 28, no. 4, mm. 16–18 ($iv^6 - ii^6_5$)
Haydn, String Quartet in Bb major, Op. 64, no. 3, i, m. 41 ($iv - It^{+6}$)
Mozart, Piano Sonata No. 18 in D major, K. 576, i, mm. 5–7 (exp. with applied vii^{06})
Mozart, Clarinet Quintet, K. 581, i, mm. 3 and 5–6 (IV – ii7)
Mozart, Piano Sonata in D major, K. 311, ii, m. 3
Mozart, Symphony No. 36 in C Major, K. 425, i, mm. 150–151 (Chromatic V.E.; $+6$)
Mozart, *Ave Verum Corpus*, K. 618, m. 35 ($IV^6 - V^6_5/V$)
Schumann, *Fünf Stücke im Volkston*, Op. 102, ii, mm. 72–73 (exp. with applied vii^{06})
Mozart, Symphony No. 35 in D major, K. 385, iii, mm. 5–6

Dominant Expansions

Bach, Prelude in D minor, BWV554, m. 2 (Sol – La – Ti)
Bach, Prelude from the Suite for Solo Violoncello in D minor, mm. 44–46 (pedal bass: I^6_4)
Chopin, Nocturne in F# minor, Op. 48, no. 2, mm. 61 and 63
Mozart, Piano Sonata in C major, K. 545, i, mm. 11–12 (pedal bass: I^6_4)
Mozart, Rondo in D major, K. 485, mm. 26–34 (pedal bass: I^6_4)
Schubert, Minuet in D major, D. 41, m. 3 (pedal bass: I^6_4)
Tchaikovsky, “Waltz of the Flowers,” from *The Nutcracker*, Op. 71, mm. 1–8 (pedal bass: ct^{o7})
Sousa, “Semper Fidelis,” mm. 1–4 (pedal bass: ct^{o7})
Mozart, Piano Sonata in A minor, K. 310, i, m. 21–22 (fifth-related: Sol–Do–Sol)
Mozart, Symphony No. 41 in C major, K. 551 (“Jupiter”), i, mm. 19–22 (fifth-related)

HARMONIC EXPANSIONS IN POPULAR SONGS

The Beatles, “Hey Jude” (fifth-related expansions)
The Beatles, “I Saw Her Standing There,” from *Please Please Me* (Do–Mi expansion)
Big Mama Thornton, “Hound Dog” (I – IV – I fifth-related expansion)
Johnny Cash, “I Walk the Line,” from *I Walk the Line* (I – V – I fifth-related expansion)
Carly Rae Jepsen, “Call Me Maybe,” from *Curiosity* (I – IV – I fifth-related expansion)
Billy Joel, “Piano Man” (La – Sol – Fa non-tonic expansion)
John Lennon, “Imagine,” from *Imagine* (pedal-bass expansion)
Mumford and Sons, “I Will Wait,” from *Babel* (Do – La – Mi)
Oasis, “Don’t Look Back in Anger,” from *(What’s the Story) Morning Glory?* (I – IV – I fifth-related expansion, introduction and prechorus, with mixture in the prechorus)
Tom Petty, “Free Fallin’,” from *Full Moon Fever* (I – IV – I fifth-related expansion)
Radiohead, “Fake Plastic Trees,” from *The Bends* (La – Sol – Fa subdominant expansion)
Radiohead, “No Surprises,” from *OK Computer* (I – iv – I fifth-related expansion, with mixture)
Regina Spektor, “Firewood,” from *What We Saw from the Cheap Seats* (*WWSCS*) (pedal-bass I – IV^6_4 – I, Do – Fa – Mi, and a Le – Sol – Fa subdominant expansion with mixture)
Regina Spektor, “The Prayer of François Villon (Molitva),” from *WWSCS* (Do – Ti – Do bass)
Regina Spektor, “Fidelity,” from *Begin to Hope* (I – IV – I fifth-related expansion)
R.E.M., “Losing My Religion,” from *Out of Time* (i – v – i, with minor dominant)
Talking Heads, “Once in a Lifetime,” from *Remain in Light* (I – IV – I fifth-related expansion)
U2, “Mysterious Ways,” from *Achtung Baby* (pedal-bass and I – IV – I fifth-related expansions)

Appendix 2 – Quiz Sheet for Memorizing Harmonic Expansion RNFB

On the following page is a quiz sheet that can be reproduced for use in class. As explained in the document above, I generally limit the number of expansions that students are required to memorize, which is why the quiz does not contain every possible tonic and non-tonic expansion. (NB: in this article, I state my requirement that students learn nineteen (19) of the harmonic expansions by memory. However, the RNFB for two of the Do – Re – Mi progressions is identical, so students only have eighteen (18) RNFB patterns to write on this quiz.) Also, students find it helpful to be reminded how many sets of RNFB they are expected to provide for each bass line. Students are normally able to finish this quiz in between 5–10 minutes. Before reproducing and distributing, teachers should write the time limit in the quiz instructions. Two quizzes are provided per sheet to reduce the number of printouts required.

Harmonic Expansions Quiz No. 1

Name: _____

Roman Numerals and Figured-Bass Symbols [RNFB]

Instructions: Under each measure, write the required RNFB used to harmonize the given bass line and create tonic, dominant, or subdominant expansions. Above each bass line is indicated the number of RNFB progressions that you are expected to provide. Each measure contains a single expansion type (*i.e.* no expansion covers multiple measures). You will have ____ minutes to complete this quiz.



Harmonic Expansions Quiz No. 1

Name: _____

Roman Numerals and Figured-Bass Symbols [RNFB]

Instructions: Under each measure, write the required RNFB used to harmonize the given bass line and create tonic, dominant, or subdominant expansions. Above each bass line is indicated the number of RNFB progressions that you are expected to provide. Each measure contains a single expansion type (*i.e.* no expansion covers multiple measures). You will have ____ minutes to complete this quiz.



Appendix 3 – Quiz Sheets for Memorizing Harmonic Expansion Voice Leading and RNFB

On the following pages are quiz sheets that can be reproduced for use in class. This quiz covers the same expansions found on the first quiz in Appendix 2, but includes an extra Do – Re – Mi bass for the alternate voicing of the passing vii^{o6}_5 progression.

Most students are able to finish this quiz in 15 minutes (RNFB provided) or 25 minutes (RNFB not provided). Before reproducing and distributing, teachers should write the time limit for their class in the quiz instructions. Before giving the quiz in class, teachers may wish to provide worksheets or homework so that students who complete the quiz early will have something to fill the time. Also, teachers may wish to distribute paper and digital copies of this quiz sheet several weeks in advance so that students know exactly what they are preparing for as they study. (NB: if the quiz sheets are distributed ahead of time for practice, I recommend placing a small mark on the in-class quiz sheets to discourage students from submitting a quiz sheet that they filled out before class.)

Harmonic Expansions Quiz No. 2

Name: _____

Voice Leading and RNFB

Instructions: On the staves below, bass lines for each of the required harmonic expansions are provided, with a single expansion per measure. Under each bass line, provide the RNFB for one of the required associated harmonic expansions, and then realize the RNFB using the voice leading found on the Phrase Model Handout. Each measure should contain a single expansion (*i.e.* no expansion should cover multiple measures). You will have ____ minutes to complete this quiz.



non-tonic expansions:



Harmonic Expansions Quiz No. 2

Name: _____

Voice Leading

Instructions: On the staves below, bass lines and RNFB for each of the required harmonic expansions are provided, with a single expansion per measure. Realize the RNFB using the voice leading found on the Phrase Model Handout. Each measure should contain a single expansion (*i.e.* no expansion should cover multiple measures). You will have _____ minutes to complete this quiz.

I $\frac{6}{4}$ V I I vii° I I $\frac{b5}{6}$ vii° I I $\frac{4}{3}$ V I I $\frac{b5}{6}$ vii° I

I $\frac{4}{2}$ V I I $\frac{b3}{4}$ vii° I I IV I I 6 IV I I vi I

I $\frac{6}{4}$ IV I I 6 V I I $\frac{6}{5}$ V I I $b7$ vii° I

non-tonic expansions:

I V I I 7 V I I IV I V $\frac{6}{4}$ I V IV $\frac{6}{4}$ I IV