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Mahlerian Tonality: Challenges to Classical Foreground Structures in the Music of Gustav Mahler

Ryan Kosseff-Jones

Graduate Center, City University of New York

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MAHLERIAN TONALITY: CHALLENGES TO CLASSICAL FOREGROUND STRUCTURES IN THE MUSIC OF GUSTAV MAHLER

by

RYAN KOSSEFF-JONES

A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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Ryan Kosseff-Jones

This manuscript has been read and accepted for the Graduate Faculty in Music in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Date

L. Poundie Burstein
Chair of Examining Committee

Date

Norman Carey
Executive Officer

Supervisory Committee:

William Rothstein, Advisor

Joseph Straus, First Reader

Poundie Burstein

Kofi Agawu

THE CITY UNIVERSITY OF NEW YORK
ABSTRACT

Mahlerian Tonality:
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Ryan Kosseff-Jones

Advisor: William Rothstein

This dissertation presents a detailed study of harmony and voice leading at local levels of structure in the music of Gustav Mahler. The results are grouped into three domains: cadences, common-tone techniques, and the Mahlerian imaginary continuo. An investigation of Mahler’s cadences reveals an underlying simplicity in the diverse tonal progressions that Mahler uses to execute the tonal close of a phrase. Cadences are shown to derive from two basic types (authentic and plagal) and three basic transformations (tonic intrusion, Phrygian 2, and contrapuntal bass). In a study of common-tone techniques, this dissertation proposes a new system for identifying common-tone harmonies based on their voice-leading distance from a local reference harmony (“applied displacement”). The study then demonstrates how common-tone techniques generate new harmonies/voice-leadings, modulations, and non-structural (“associative”) relationships. A final essay on the Mahlerian imaginary continuo uses the concept of the imaginary continuo to help articulate the dissolution of classical tonality in Mahler’s music.
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I dedicate this dissertation to my wife, Anne Kosseff-Jones, who now knows more about music theory than any untrained person should and whose inspiring mind and limitless soul make love’s growth as reasonable as it is astonishing.
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CHAPTER 1. INTRODUCTION

In this dissertation, I present a theoretical exposition based on close analytic readings of
the music of Gustav Mahler (1860–1911). Focusing on issues of tonality at local levels of
structure, I address two basic issues: 1) the ways in which Mahler’s music departs from
“classical tonality” as defined by Schenkerian theory, and 2) the ways in which these departures
may be integrated into a theory of Mahlerian tonality. In addressing these two issues, my purpose
is to express what it means to hear Mahler’s music as tonal, yet non-classically so.

Mahler is a major composer and a provocative one, but while the musicological
community has written prolifically about him, his compositions have received relatively less
attention from a music theoretic standpoint. Of the theoretical/analytic work that has been
published on Mahler’s music, much has focused on large-scale formal structure. Writing in 1992,
Agawu states that “there is no single comprehensive account of tonality and/or voice leading in
the works of Mahler” (74). Intervening years of scholarship have moved us closer to that goal,
yet a significant distance remains. With its focus on details of harmony and voice leading, this
dissertation seeks to help close that gap.

The theoretical ideas presented in this dissertation are the product of close analysis.
Unlike many studies of Mahler, however, this dissertation does not focus on a single work.
Instead, this dissertation draws from throughout Mahler’s symphonies and songs. There are two
exceptions: I have avoided Das Lied von der Erde because of its uniquely Orientalist influences
and I have largely avoided the Tenth Symphony because of its incomplete state (the first
movement is reasonably complete and I do discuss aspects of it). From the remaining repertoire
of symphonies and songs, I began my research by performing thorough foreground analyses of
two complete movements (Fifth Symphony, mvt. 2 and Second Symphony, mvt. 1) and then I branched out into surveys of other movements and songs and to close analyses of targeted excerpts.

Schenkerian theory serves as a kind of “control” against which I am comparing Mahler’s music, but I have largely avoided using Schenkerian notation to represent my ideas. In part this is because I want to make my ideas as broadly accessible as possible and in part it is because Schenkerian graphs naturally communicate a vast amount of information, whereas my aims are typically more focused. When I do use Schenkerian notation, or discuss things in Schenkerian terms, my focus is entirely on the foreground. I make no claims about background or middleground structure in this dissertation. That is an intentional stance that I adopted at the outset of this study. Strictly speaking, the structural levels are interdependent—one cannot exist without the others. As Carl Schachter wrote, “if one needs to understand the background in order to make sense of the foreground, one also needs to understand the foreground to make sense of the background… one can grasp neither the part without the whole, nor the whole without the part” (1999, 198). Although a full understanding of Mahler’s tonal structures will necessarily require the contemplation of deeper levels, it is my view that the most secure starting point for a hierarchical study of Mahler’s music is through the foreground. An analysis that is limited to deep levels makes significant and potentially dubious assumptions about the hierarchical continuity of lower levels. An analysis that is limited to the foreground, on the other hand, can demonstrate a relatively full basis for hearing the prolongations within its domain. By presenting this study of Mahler’s foreground structures, I hope to have paved the way for a study of deeper structures and the interrelationships among levels.
For ease of reading and to save space, I have created short scores for all of my score examples. Even for songs, where a piano score was available, I have opted to create short scores from the orchestral versions—I find that the expanded resources of the orchestra allow for clearer textures and sometimes even improved basslines.

Example 1.1 raises several of the core questions that this dissertation seeks to address and therefore will serve as a useful introduction. One of the most striking features of this passage is the fact that the melody of measures 81–82 (second staff) occurs here in the key of B♭ major, whereas it originally sounded almost note-for-note in D minor in measures 29–30 (indeed, the few changes actually increase the D-minor quality of the theme, despite the new B♭-major setting). This fixed-pitch reinterpretation is an example of an “associative,” non-structural aspect of Mahler’s musical language, a topic that is explored in Chapter 3 on "Mahler’s Common-Tone Techniques."

Although the melody has been adapted slightly, it nevertheless does not entirely agree with its new setting: it comes to a rest on an A, which, based on the melody alone, seems to be a stable 5 of D minor, yet in context is an unresolved dissonant 7 over a B♭-major tonic triad. This issue of conflicting implications is part of the discussion in Chapter 4 on “The Mahlerian Imaginary Continuo” and the dissolution of classical tonality in Mahler’s music.
Example 1.1. Passage exhibiting a sample of melodic, harmonic, and modulatory techniques explored in this dissertation (Symphony No. 9, i, mm. 77–83)

The playful dialog between D minor and B♭ major is brilliantly supported by the details of Mahler’s harmonization. In measures 80–81, the downbeat expresses a B♭ tonic (major, but colored minor very locally), but then the remaining two harmonies of the measure are characteristically Mahlerian harmonies that make little sense from a purely classical perspective. The harmony of beats two and three is notated as an F-augmented triad—it comprises 5–7–♭3 of both D and B♭ simultaneously. Thus, the bass points to V of B♭, while the D-minor tonic of the previous measures and the fixed-pitch theme point to V of D minor. Similarly, the harmony on beat four is apparently a D-minor triad, which supports the D-minor elements of the music, yet
this same collection of tones functions as a characteristic dominant (5–7–3) in B♭. While not used cadentially in this passage, this phenomenon dominants that have been transformed by what I call “tonic intrusion” is among the topics explored in depth in Chapter 2, “Cadence in Mahler.”

Mahler’s method for bridging these local tonics of D major/minor (mm. 77–79 and before) and B♭ major (mm. 80–83 and after) is a characteristic one: common-tone modulation. In this case, Mahler has folded the common-tone modulation into a process of motivic linkage between the two areas. One of the main motives of the movement, the initial D:♯3–♭2 is stated twice in measures 76–78 before being transformed to D:♯1–♭7 (mm. 78–79). The C♯ is sustained in isolation briefly before a B♭ enters beneath it and the motive is restated, now as B♭: ♭3–♭♭3/#♭2.

This motive then becomes the head interval of the chromatic descending motive in the top voice of measures 82–83. The process of common-tone modulation is one topic explored in Chapter 3, “Mahler’s Common-Tone Techniques.”

This fascinating passage from the Ninth Symphony gives a taste of the theoretical issues and analytical strategies that will be explored in this dissertation, but now it is apposite to give a broad introduction to each chapter.

Chapter 2, “Cadence in Mahler,” presents a theory of Mahlerian cadence based on two cadence types and three common transformations. The two basic types are authentic and plagal cadences, which I argue are both essential to understanding Mahler’s cadences, even though authentic cadences are undoubtedly more common. The three common transformations are tonic intrusion (the presence of an unexpected member of the tonic triad during the penultimate cadential harmony), Phrygian ♯2 (the presence of the lowered form of scale-degree two in the penultimate cadential harmony), and contrapuntal bass (the appearance in the bass of the melodic
descent to tonic typical of the top voice). It is demonstrated that, not only can each type and transformation occur independently, but they also can be employed in combination, thereby creating a diversity of cadential progressions while maintaining an underlying simplicity of compositional technique.

Chapter 3, “Mahler’s Common-Tone Techniques,” shows that common-tone techniques motivate many of Mahler’s non-classical structures. Mahler’s common-tone tonality is explored from three perspectives: 1) local harmony and voice leading, 2) modulation, and 3) associative relationships (discontinuous, non-hierarchical relationships). In exploring local harmony and voice leading, I propose a new system for identifying common-tone harmonies. Termed “common-tone displacement,” this system identifies common-tone harmonies based on their voice-leading displacement from a local reference harmony (displacement is measured by directed semitones for each individual voice of the common-tone harmony). One reason this new system is valuable is that it embraces all kinds of common-tone harmonies, including not only consonant tertian structures, but also dissonant tertian, and even non-tertian structures. This chapter then uses those same three categories to explore Mahler’s practice of common-tone modulation. Going beyond direct, hierarchical relationships, this chapter investigates three types of associative relationships: 1) fixed-pitch reinterpretation (the varied settings of a recurring pitch or series of pitches), 2) the ikonic sonority (a salient, characteristic, and influential sonority for a given work), and 3) tonal pairing (an association between two tonics that can manifest in tonal structure at varying degrees of proximity and significance).

Chapter 4, “The Mahlerian Imaginary Continuo,” uses the concept of an imaginary continuo (a representation of implicit harmony and voice leading) as a window into Mahler’s tonal practice. The chapter begins with a study of the classical imaginary continuo and its use in
Mahler’s music. Turning then to the dissolution of the classical imaginary continuo, the chapter focuses on the non-classical facets of Mahler’s musical language that can be reimagined as part of a Mahlerian imaginary continuo. The chapter concludes by examining occasional aspects of Mahler’s writing that defy the codifiable Mahlerian continuo and are thus deemed part of the “dissolving imaginary continuo.”
CHAPTER 2. CADENCE IN MAHLER

Goals

Gustav Mahler’s music employs a rich cadential practice based on a consistent set of techniques that have yet to be systematically defined in the literature. This chapter seeks to demonstrate this richness and consistency by presenting cadences from throughout Mahler’s works and proposing a simple but robust framework for interpreting them. The study of Mahler’s cadences presented here seeks to answer two broad questions: first, what voice-leading patterns does Mahler commonly employ to achieve tonic-affirming cadences, and second, what conceptualization of these patterns best enables us to recognize and comprehend them? Classical theory holds the “authentic cadence” as the only tonic-affirming cadence, but Mahler’s cadential practice is not restricted to this classical definition. This chapter demonstrates and systematizes the diversity of Mahler’s cadences.

Literature Review

The modern analyst seeking to understand Mahler’s cadences will tend to be informed by any of the three main schools of thought: classical, Riemannian, and Mahlerian. The classical approach defines cadences narrowly according to their use in classical tonality (as modeled by Schenkerian theory). The Riemannian approach applies a dualist functional perspective to the understanding of cadences. The Mahlerian approach is defined not by a shared theoretical perspective, but rather by a shared endeavor to articulate the distinctive patterns of Mahler’s cadences. My own theory can be understood as a synthesis of my ideas and relevant features of
each of these three schools of thought, resulting in an original, systematic, and versatile approach to the understanding of Mahler’s cadences.

**Classical Theory**

Classical tonality (as modeled by Schenkerian theory) accepts only one type of full cadence: the authentic $V^{(7)}\text{–I}$. This view is not limited to Schenkerian theory and is perhaps best articulated by Caplin 2004. Caplin defines the harmonic content of authentic cadences as follows:

> It is thus the role of a cadential progression to confirm a tonal center as such. And it does so by introducing dominant harmony in its most stable form—*in root position*—thus strongly implying a resolution to a stable, *root-position* tonic. In the case of the *authentic* cadential progression, the dominant (which may contain a dissonant seventh to aid in the implication of resolution) actually progresses to tonic. (70)

The classical theory of cadence—which restricts full cadences to the authentic cadence and requires the progression of a root-position dominant triad or seventh chord to a root-position tonic triad—serves well for a wide repertoire of seventeenth-, eighteenth-, and nineteenth-century music. It may be tempting, therefore, to approach Mahler’s music with classical expectations, but to do so obscures the diversity of Mahler’s cadential practice. Although the classical authentic cadence serves as the most influential model for cadence in Mahler’s music, it does not provide a sufficient basis for understanding cadence in Mahler’s music.

**Riemannian Theory**

Whereas the classical theory of cadence acknowledges only authentic cadences, the Riemannian perspective allows both authentic and plagal cadences. By embracing the plagal cadence, this more expansive conception of cadence gives the analyst improved resources for understanding cadence in Mahler. The Riemannian view was notably revived in North American
theory through the work of Daniel Harrison’s 1994 *Harmonic Function in Chromatic Music*. Harrison argues for a “dual network” that comprises both authentic and plagal systems, each including its own cadences. An important qualification of the relationship between authentic and plagal systems is given in Notley 2005, which confirms the importance of the plagal system while emphasizing that it is less prominent than the authentic system and is therefore marked:

The expressive power of plagal idioms comes about through their lesser position within the framework that defines them as other, that is through their difference from “more basic” or “default” idioms. Stated in more concrete terms, the relative infrequency with which plagal harmony plays a nonsubordinate role accounts for its (largely unacknowledged) markedness within the dualistic systems described by Riemann and others. (93)

Notley emphasizes that the “validity” and “inequality” of plagal and authentic structures are not mutually exclusive (2005, 92). Her conception is well suited to Mahler’s music, which embraces plagal cadences while nevertheless using authentic cadences more frequently. A more narrow response to Harrison is Swinden 2005, which argues that not only can a single harmony take on authentic and plagal functions at different times, but one can also have both functions simultaneously. Swinden writes that, “when evaluating harmonic function, two elements must be observed—the bass line, and the component scale steps of the chord in their relations to the Tonic on the Tonnetz” (260), adding that functional mixture is evident “when a characterizing functional bass line conflicts with upper voices that characterize a different function” (260n). I support Swinden’s concept of functional mixture and expand it slightly, by considering not only the bass note, but also the provenance of the bass note (its position in a prolongational structure of composing-out).

**Mahlerian Theory**

The body of literature that is most relevant to Mahler’s cadences is also the least systematic: the diverse Mahlerian literature. Contradictions are not hard to find in this literature,
even on such a basic question as whether Mahler’s cadential practice is or is not conventional. Sheinbaum 2005 takes as a given that Mahler’s cadential practice is anachronistic, conventional, and unproblematic. Tischler 1951, on the other hand, cites Mahler’s “avoidance of the usual classical cadences” as one of five main aspects of his harmonic language (114). The truth is that Mahler’s cadential practice is heterogeneous—sometimes Mahler uses classical cadences and sometimes he uses non-classical cadences. When theorists give minimal attention to the non-classical cadences, they run a couple of different risks. One such risk is to assume, as Hopkins 1990 does, that the classical perfect authentic cadence is the strongest possible cadence (23 and passim). Associating classical cadences with strength and non-classical cadences with weakness causes the analyst to underestimate the potential significance of non-classical cadences.

A second risk of approaching Mahler’s cadences from a purely classical perspective is that non-classical cadences may be either overlooked altogether or subsumed into a murky category of “altered” cadences. In the perceptive formal analyses of Monahan 2008, for example, many non-classical cadences are regarded as classical PACs, “quasi” PACs, or non-cadences. This is particularly true of Monahan’s annotated short score to the Third Symphony, first movement (2008, 441–88). The cadence at measure 118 has no dominant, yet is labeled a “quasi-PAC.” I agree that it is a strong cadence with traces of an authentic progression, but I would like for there to be a more nuanced way of discussing it—as I will demonstrate later in this chapter (pp. 53–54), this cadence employs all three of Mahler’s common cadential transformations simultaneously (tonic intrusion, Phrygian 2, and contrapuntal bass). Similarly, the cadence at measure 362/857 (the EEC/ESC) is labeled as a classical “PAC” even though the bass is

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1 Sheinbaum limits his study to classical authentic cadences and then uses such conventional tonal patterns as a foil for studying Mahler’s innovative orchestrational practices. This does not take away from the value of his attention to discontinuities of orchestration, but his concept of cadence is far too limited from a tonal perspective.
contrapuntal and 3 substitutes for 2. Again, I agree with the gist of Monahan’s label, but I seek to provide a more nuanced theory for cadences like these. One non-classical cadence does throw Monahan off, in my view—that is the modal half-cadence at measure 177/696. Rather than a “quasi-PAC” in A minor, I think this cadence is best understood as a half cadence to an open-fifths dominant in D minor (in part because the trombone solo has descended to 2 and is still seeking 1 at this point). The classical theory of cadence lets Monahan down, I believe, for the final cadence of the movement (m. 867). Here, Mahler uses a plagal cadence with Phrygian and contrapuntal transformations, but Monahan does not even identify the moment as a cadence. Monahan describes the moment as imparting a sense of playful capriciousness—I agree with that assessment, but rather than regard it as a non-cadence, I regard this event as a momentous, non-classical cadence.

Numerous theorists have engaged with non-classical aspects of Mahler’s cadences. Tischler 1951 cites Mahler’s use of the “inverted cadence V–IV–I” and the “short cadence II–I” (114). In my view, when the IV results from a 6/4–5/3 motion over the tonic, the V–IV–I progression can be understood as an embellished classical V–I progression and therefore does not require a non-classical explanation. Extrapolating from his observation of Mahler’s “avoidance of the usual classical cadences” (114), Tischler astutely points to three effects: 1) fewer functional harmonies within the phrase, 2) modulation without transition, and 3) rare cadences. Williamson 1997 critiques Tischler’s statement about Mahler’s “avoidance of the usual classical cadences,” writing that, “this is an exaggeration, of course; it would be better to say that Mahler conceals the normal cadence forms through elision and suspended neighbor notes” (254). Williamson argues that Tischler’s II–I is often actually V/V–I with an elision of V. I cannot confirm V/V–I as a more common cadence than the diatonic II–I (which is itself
relatively infrequent, though notable). Williamson also says that Tischler’s V–IV–I is often actually V–IV₆/₅–I.” I think Tischler is right to observe V–IV–I as a notable cadence in Mahler, and I think Williamson’s V–IV₆/₅–I is a separate phenomenon. Tischler’s is an embellished authentic cadence, whereas Williamson’s is a plagal cadence and (as demonstrated by Williamson’s example) does not require the V. Williamson highlights a couple of additional non-classical cadential techniques, focusing especially on the suspended sixth in the dominant, which produces “an augmented triad” as dominant (253), while also mentioning a “curious” cadence where the dominant is a minor seventh chord (267)—I find the former to be relatively common and the latter to be exceedingly rare.

Agawu 1997 writes that, “While Mahler often writes fairly conventional cadences… he also punctuates less mechanically, deploying some of his more imaginative strokes at points of syntax that carry considerable traditional expectation” (222). He gives four examples of what he calls “cadential enrichment,” with the main enrichments being these: 1) an unresolved suspension over the dominant, 2) a seven-note chord made intelligible by the bass, 3) an ambiguous resolution, and 4) a resolution to a tonic harmony made dissonant (222–25). Of these four types of enrichment, I develop the first extensively as part of my concept of “tonic intrusion.” Agawu states that, “a separate paper would be required to discuss Mahler’s cadential practice in detail” (222).

While not explicitly about cadences, Darcy 2001 contains useful insights about Mahler’s cadential practice. He cites two instances of a “Wagnerian plagal cadence,” defined as a plagal cadence “in which the subdominant inflects to minor” (67). In his example 15, he reads a plagal cadence as support for ₂, creating a IV⁺₆. In a footnote, he observes that bⅡ.shows a common harmony in Mahler’s music: “Mahler frequently uses a chord that combines the root-
position Neapolitan with the leading tone as a dominant substitute; because it contains the same tritone as the dominant-seventh chord \([\hat{4} \text{ and } \hat{7}]\), it can resolve to the tonic chord” (59n18).

Although the passage that raised Darcy’s observation does not proceed directly from \(\triangledown \text{II}^{\text{Aug6}}\) to the tonic, we will see that this is, indeed, a favored progression for Mahler’s cadences.

Though not focused on Mahler, Day-O’Connell 2002 touches on Mahler and addresses topics that are relevant to the composer. He observes that plagal cadences are strengthened by the use of the “plagal leading tone,” creating a top-voice ascent of \(\overset{6}{\equiv} \overset{8}{\equiv}\) (58). As an implicit example of this, he cites the Fifth Symphony’s opening solo trumpet passage (arriving on A with the entrance of the full orchestra), a passage that I study in the “Mahlerian Imaginary Continuo” section of Chapter 4 (see pp. 188–92). Though less common than IV–I, Day-O’Connell notes that \(\overset{6}{\equiv} \overset{8}{\equiv}\) also can be harmonized by \(\text{II}^{\text{add6}} \text{–I}\). I agree with this notion and include added-sixth chords in my model of the plagal cadence, below. Placing \(\overset{2}{\equiv}\) in the bass, he cites the progressions II–I and II\text{7}–I, which he says are “increasingly common in the nineteenth century” (58). The idea that II and II\text{7} can be thought of as inverted added-sixth chords falls within my concept of the “contrapuntal bass” transformation, discussed below.

Nixon 2008 offers a study of closure and cadence in Mahler’s Ninth Symphony and Das Lied von der Erde. Some of Nixon’s observations include the following: the absence of the leading tone (96), the use of “whole-tone dominants” (112–19), focusing on dominants with diminished fifths and/or minor sixths), “V–VI–I cadential sequences” (119–26), dominant modification (126–28, focusing on \(\triangledown \text{VII}_7\) and minor V), chord interpolation (129–30), and dominant omission (131–32, focusing on \(\text{II}_7 \text{–I}\) and \(\triangledown \text{II} \text{–I}\)). I view some of these techniques as quite rare in Mahler’s music generally (such as diminished V, minor V, and \(\triangledown \text{VII}_7\)) and in my theoretical approach I avoid notions of interpolation and omission, but I agree that Mahler
frequently omits the leading tone in authentic cadences and I include dominants with minor sixth as part of my theory of “tonic intrusion.”

Overview of Theory

Focusing exclusively on tonic-affirming cadences, I argue that a basic distinction between authentic and plagal cadences is appropriate for Mahler’s music and that each of these basic types may be transformed in three ways: (1) **tonic intrusion**, where one or more unexpected elements of the tonic triad appear in the penultimate harmony, either as displacements or additions, (2) **Phrygian**, where the tonic note is approached by stepwise descent from the lowered supertonic, and (3) **contrapuntal bass**, where the melodic descent to the tonic (typical of a structural top voice) occurs in the lowest voice. Neither the types nor the transformations are mutually exclusive—indeed, the richness of Mahler’s cadential practice comes in part from combinations of these elements. We will examine the transformations independently, but we will also see that Mahler combines them in creative and powerful ways. Similarly, we will see that Mahler uses authentic and plagal cadences independently, but he also engages elements of both cadence types simultaneously, creating a mixed authentic-plagal cadence.²

Two Cadence Types

An initial distinction to make when studying Mahler’s cadences is that between two basic types of cadence: authentic and plagal. Each type serves as the basis for a family of cadences, created through Mahler’s three typical transformations (presented below). As Notley 2005

² This dissertation explores a small fragment of the history of musical composition (Mahler). In saying that Mahler employs authentic and plagal cadences, and that he also transforms them in several characteristic ways, I am not arguing that he is the first composer to do so. I seek to present a theory of cadence that is well suited to the challenges of Mahler’s music—that some of these ideas apply to other composers, as well, is a topic which may be explored in future research.
emphasizes, the two types are not equal—authentic cadences are far more common than plagal cadences in Mahler’s music. To study Mahler’s music without the concept of a plagal cadence, however, is to be deprived. Although Mahler uses plagal cadences less frequently, he nevertheless does use them. A theory of Mahler’s cadences should give the analyst resources for understanding Mahler’s plagal cadences as well as his authentic ones. Furthermore, we will see that the plagal family offers richer and more diverse possibilities than is often understood to offer. Authentic and plagal cadences are defined, demonstrated, and discussed below.

**Authentic Cadence**

I take the classical authentic cadence to require the progression of a root-position dominant triad or seventh chord to a root-position tonic triad, as modeled in Example 2.1.³

![Example 2.1. Authentic cadence (five-voice models in C major and C minor)](image)

The classical authentic cadence appears throughout Mahler’s oeuvre. It serves as Mahler’s primary cadence type, but, in contrast to its use in classical tonality, the authentic cadence is not the exclusive tonic-affirming cadential progression in Mahler’s music. Given the array of cadential progressions discussed in this chapter, Mahler is necessarily selective in choosing which cadence type or transformation to use in any given compositional situation. At times the classical authentic cadence seems to serve as the default, or least-marked, cadential option for Mahler, but at other times it seems to be marked as a kind of tongue-in-cheek classical

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³ This is the familiar definition used by, for example, Caplin 2004.
parody, while at still other times it is transformed (through tonic intrusion, a Phrygian 2, and/or a contrapuntal bass) or superseded (by a plagal cadence, which itself may be transformed).

It is worth noting that, even at his most classical, Mahler rarely adopts a fully classical language. The main goal of this chapter is to demonstrate the breadth of Mahler’s non-classical cadential progressions, but before moving to that demonstration, it will be interesting to note some subtleties of Mahler’s tendencies when using a straightforward classical authentic cadence.

**Avoidance of the Leading Tone.** The leading tone, an integral part of the classical authentic cadence, is often absent from Mahler’s authentic cadences.\(^4\) It seems that Mahler relies primarily on a two-voice framework where the authentic cadence is satisfied by the outer-voice convergence to the tonic by a descending fifth in the bass and a stepwise descent in the top voice.

\(V^9\). Whereas classical tonality tends to regard all ninths as non-harmonic dissonances reducible to an octave, the dominant ninth chord is prominent enough in Mahler that it deserves recognition as genuine harmonic entity.\(^5\)

**Cadential 9/6/4.** The classical cadential six-four chord is quite common and important in Mahler’s use of authentic cadences, but of particular interest here is the Mahlerian practice of adding a ninth to the cadential six-four.\(^6\) In the cadential six-four chord, the 2 and 7 of the dominant are temporarily displaced by the tones directly above them (3 and 1); in the cadential nine-six-four, the additional displacement of 5 by 6 creates a situation wherein every tone of the

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\(^5\) For the implications of ninth chords for the dissolution of the classical imaginary continuo, see Chapter 4, pp. 177–78.

\(^6\) Pace Meyer 1992, which claims that the cadential six-four chord in Mahler’s music is “occasionally chosen… but in such cases the progression usually served some special purpose… [for example] chosen not primarily because of its syntactic function… [but] to comment on the text” (250).
dominant triad is stated in an upper voice and is initially displaced by step from above (before resolving down by step to the proper dominant).  

**Expanded Dominant: Harmonic Progression within the Dominant.** The arrival of a cadential, dominant scale-degree in the bass voice does not always coincide with the inception of dominant harmony—Mahler sometimes treats this dominant bass note as a pedal tone over which he creates a distinct harmonic progression. Of all the progressions possible over a dominant pedal, I am particularly interested in Mahler’s use of the following three: predominant–dominant (PD–D), tonic–predominant–dominant (T–PD–D), and tonic–dominant (T–D).

In the predominant–dominant progression over a dominant pedal, there is an inherent potential for harmonic ambiguities whose clarification depends on context. One of these ambiguities is that the presence of $\hat{2}$, $\hat{4}$, and $\hat{6}$ over a dominant pedal can be understood as either 1) the superposition of a supertonic triad over a dominant pedal, or 2) a dominant ninth chord with omitted leading tone (which, as discussed above, is not unusual for Mahler). My hearing tends toward a II$\rightarrow$V progression if the upper voices move in such a way as to suggest a change of harmony (if they do not move, then a V$^9$ chord will tend to seem more compelling). That issue can be somewhat confounded by a second ambiguity: a II$^7$--V$^7$ or IV--V$^7$ progression can also be heard as a single dominant harmony embellished by a double suspension (9–8 and 4–3).  

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7 If some theorists regard the cadential six-four chord as a I–V progression over a dominant pedal, then they could similarly regard the cadential nine-six-four as a VI–V progression over a dominant pedal. In my view, VI does not have any significance here, however. I regard it as a voice-leading sonority created by the desire for appoggiaturas to every note of the dominant triad.

8 This ambiguity is related to a longstanding issue: the emergence of II–V progression can be related to the older M6–P8 cadence, which, when introduced by a 7–6 suspension over $\hat{2}$, produced what might be considered the forerunner of a II$^7$–V progression (here inverted as II$^7$–V$^{4\slash 3}$).
While the PD–D progression intersects with interesting theoretical ambiguities, the other two progressions (T–PD–D and T–D) potentially create situations of greater complexity and structural significance. Since they start on the tonic triad, these upper-voice progressions can compose-out the tonic triad through complete harmonic and linear progressions—the bass, meanwhile, suggests merely a V–I progression. There is an apparent conflict, therefore, between the unfolding of the upper voices and that of the bass.

Such a conflict can be seen in Example 2.2, which presents a passage from the first movement of the Ninth Symphony. Given that the passage has a cadential function and starts on a six-four chord over a dominant bass tone, the classical expectation here would be that this passage articulates an elaborated V–I progression. The bass supports this classical reading. The upper voices, however, are less classically designed. It is possible to hear the upper voices express a T–PD–D–T harmonic progression and tonic-prolongational linear progression: specifically, I–II\(^7\)–V\(^7\)+3–I coordinated with 3–2–1, where 2 arrives with the II\(^7\) and then an escape-tone 3 occupies the duration of V\(^7\). The 3 over V is interesting and is characteristic of Mahler—but since the 2 has already been established in this instance, the 3 can be understood through classical theory as an escape tone. Much harder to assimilate with classical theory is the idea that the initial 3 of measure 44 bears greater structural import than the 2 of the following measure, even though the bass suggests a structural dominant throughout. In classical theory, the 3 would be subordinate to the 2, but this is not always the case in Mahler.

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9 The closest classical analog would be V\(^{\text{Cad6/4}}\)–V\(^7\)–I. Agawu 1997 provides a reading similar to this classical model.
10 The structural arrival of the melodic goal, 1, occurs at the downbeat of m. 47, but it is delayed for five beats by a 9–8 suspension over the tonic.
11 Agawu 1997 cites this as an example of a V\(^7\)sus6. Whereas he hears the 2 as a complete lower neighbor, I hear it as part of a melodic descent to the tonic with the return to 3 functioning as an escape tone.
Example 2.2. Harmonic progression within the dominant (Symphony No. 9, i, 40–44)

Schenker engages with this issue peripherally in *Free Composition* through his analysis of a cadenza by C.P.E. Bach. The relevant section of *Free Composition* argues that Schenker’s background structures can be, and commonly are, transferred to the foreground. At the foreground (as at the background) these structures create a “self-contained structure within which the upper and lower voices delimit a single [tonal] space” (87). Beyond his explicit focus on the transference of background structures, Schenker extends his discussion to include 1) the

\[\text{Example 2.2. Harmonic progression within the dominant (Symphony No. 9, i, 40–44)}\]

\(\text{\textsuperscript{12}}\text{Free composition, fig. 109/e6 of the musical supplement and Part III, Chapter 3, Section 1 of the text. I am grateful to William Rothstein for pointing me to this example.}\)
transference of middleground structures to the foreground (fig. 109/d), and 2) the implicit presence of such multi-voice structures at all times, even during single-voice passages of music (fig. 109/e).

It is during this later discussion that Schenker introduces his interpretation of the Bach cadenza—see Example 2.3 for Schenker’s analysis and Example 2.4 for a score excerpt. Schenker writes, “Even the so-called elaborated cadenza (at a fermata) has a structure of its own… In order to gain an understanding of such a passage and its bass, it is necessary temporarily to disregard the bass tone which underlies the cadenza, usually V 6/4–5/3.” By temporarily disregarding the bass of this cadenza, Schenker finds a I–IV–V–I progression in the upper voices, where we would expect to find only a V\(^{6/4\rightarrow 5/3}\)–I progression. Regarding the structural top voice, Schenker argues that 3 does not resolve to 2 (as we would expect it to do when the cadential six-four resolves to the dominant proper), but rather 3 is a stable starting point for a 3–2–1 linear progression. By arguing for the presence of a I–V–I bass arpeggiation coordinated with a 3–2–1 linear progression, Schenker is arguing that this entire passage constitutes a composing-out of the tonic triad. The cadential six-four, therefore, would seem to be an illusory element in Schenker’s analysis—yet it is of special interest here that he gives structural weight to the initial dominant even as he argues for a closed tonic prolongation.

\[\begin{align*}
\text{I} & \rightarrow \text{IV} \\
\text{IV} & \rightarrow \text{V} \\
\text{V} & \rightarrow \text{I} \\
\end{align*}\]

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13 Schenker’s demonstrations here are closely related to the imaginary continuo. For a fuller discussion of the classical imaginary continuo and its dissolution in Mahler’s music, see chapter four of this dissertation.

14 It is interesting to note that we can use this same example to apply Schenker’s argument at an even more local level of structure than the one he discussed. Within the initial tonic of Schenker’s I–IV–V–I progression, this excerpt contains an embedded I–IV–II–V–I progression, which prolongs the initial 3 through its upper neighbor (which Schenker marks as such).
Example 2.3. Schenker 1935 [1979 ed.], fig. 109/e6

Example 2.4. C.P.E. Bach, Wq. 63, Sonata No. 2 in D Minor, ii, 12–15

Schenker’s analysis, though it introduces a provocative and productive idea, does not satisfactorily interpret this particular passage of music, in my opinion. The opening 3 of this passage has been prepared as a consonance, but is dissonant by the moment of Schenker’s interest, and in my view, that dissonance behaves classically. It is the main top-voice tone of the preceding measures—treated first as the melodic arrival in an imperfect authentic cadence that is
evaded by the deceptive resolution through $V^{6/5}/VI$ to VI, and then made dissonant by its implicit presence in the $VII^7/V$ that immediately precedes the passage under discussion. In Schenker’s example, I would argue that the cadential six-four truly is dissonant and resolves classically, despite Bach’s creative expansion of this resolution. The progression that Schenker identifies as I–IV–V over the dominant is an expansion of the $6/4–5/3$ resolution. This is not a true I chord. Nor is the linear progression that Schenker identified a true linear progression. It imitates a linear progression, but this $\hat{3}$ is a dissonant suspension, not a stable point of departure. It resolves to the $\hat{2}$, which is the superordinate top-voice tone of this cadenza (rather than $\hat{3}$).

Although I disagree with his analysis of this particular passage, I think Schenker’s idea is of general interest and applies to the music of Mahler. As Schenker slurs the $\hat{3}$ to the $\hat{1}$, he indicates that it is both a cadential $6/4$ and a transference of the form of the Ursatz to the foreground. This corresponds to a complexity that I find in the meaning of $\hat{3}$ over the dominant in Mahler: sometimes it is subordinate to $\hat{2}$ at some level, but sometimes it seems to be a structural $\hat{3}$ despite occurring over a structural dominant.

$V–IV–I$. Mahler sometimes prepares an authentic cadence and then inserts a subdominant chord between the dominant and the tonic. Tischler 1951 cites this progression as one of Mahler’s characteristic cadences (114). I would not elevate its importance to the level Tischler does, but I agree that it is a notable progression in Mahler’s music (and generally one with a classical $V–I$ underpinning, as discussed on p. 12).

_Tonic, Open-Fifths._ A striking feature of the tonic triads in Mahler’s authentic cadences is that they often sound as open-fifth dyads, lacking the chordal third. At times, this thirdlessness provides a degree of modal ambiguity and may participate in a shift between parallel major and minor tonics.
**Tonic, Added Sixth.** As is discussed in detail in Chapter 4 (see pp. 156–65), an added-sixth chord can function as a tonic harmony.

**Plagal Cadence**

Whereas Mahler’s basic authentic cadence is recognized by classical theory, and thus this dissertation refers to a “classical” authentic cadence, the situation with the plagal cadence is more complex. Since classical theory does not recognize plagal cadences (as modeled by Schenkerian theory, classical theory recognizes plagal neighboring prolongations, but without cadential function), there is no “classical” plagal cadence in that sense. The concept of a plagal cadence is productive, however, for the analysis of Mahler’s music. We therefore must draw from beyond classical theory to establish a definition of the plagal cadence that can help the Mahlerian analyst. The term “plagal cadence” has widespread currency outside of classical theory, yet neither of the two most prominent definitions is adequate for the analysis of Mahler’s music. After reviewing these two definitions, they will be combined and expanded into new definition, proposed below as a more suitable model for Mahler’s untransformed plagal cadences.

The default modern understanding is that the harmonic content of a plagal cadence is a IV–I progression in a major or minor key (possibly involving modal mixture). In that conception, the plagal cadence is limited to harmonic consonance—it presents a succession of two consonant triads, without the potential for chordal dissonance. It has often been observed that, in practice, a plagal cadence might include an ascending motion from 1 to 3 through a passing, non-harmonic 2. The presence of 2 brings us closer to a model that is suitable for Mahler’s music. It also brings us closer to a secondary understanding of plagal cadences—one based on the ideas of Rameau.
Although classical theory does not recognize plagal cadences in eighteenth-century music, the concept of a plagal cadence has important roots in the writings of Rameau, an eighteenth-century theorist. It would be anachronistic to say that Rameau theorized our plagal cadence—he applied the term “cadence” to harmonic progressions in general, rather than only to those that help create a sense of formal closure. Nevertheless, his “irregular cadence” (or “imperfect cadence”) can be taken as a model for the harmonic content of a plagal cadence. He defined it as the progression from an added-sixth chord to the triad whose root lies a fifth above. In this progression, Rameau emphasized that this added-sixth chord is not the inversion of a seventh chord, but rather it is the (non-tertian) composite of a major or minor root-position triad and a dissonant major sixth. The added major sixth is the characteristic dissonance of Rameau’s subdominant harmony and he assumes its implicit presence, regardless of whether the music otherwise would seem to imply it. Such a progression can be rendered in modern Roman numerals as IV\textsuperscript{add6}–I in both major and minor keys. As a dissonance, this added sixth (2) must resolve—Rameau requires an ascending resolution to 3. Rameau’s “irregular cadence” can be thought of as a model for the basic harmonic content Mahler’s plagal cadences, but it does not model his voice leading—in Mahler’s plagal cadences, 2 may descend to the tonic.

This dissertation defines the basic model of a Mahlerian plagal cadence as drawing from three closely related progressions: IV–I, II\textsuperscript{6}–I, and their aggregate, IV\textsuperscript{add6}–I. Expressed as scale-degrees, this penultimate cadential sonority is the confluence of 4, 6, and either 1 or 2 or both.

\footnote{Rameau’s definition/application of the term “irregular cadence” is inconsistent. For a fuller discussion, see Christensen 1993, 117–20.}
Example 2.5. Plagal cadence (five-voice models in C major and C minor)

Compared to the conventional IV–I definition of plagal cadences, the inclusion of 5 can be heard to satisfy two compositional desires: 1) a stepwise approach to the tonic, and 2) chordal dissonance. A stepwise approach to the tonic is precluded by the conventional IV–I definition of the plagal cadence, but a stepwise descent can be reconciled with plagal cadences through the inclusion of 5 in the penultimate harmony, as in II\(^6\)–I and IV\(^{add6}\)–I. Chordal dissonance is also precluded by the conventional IV–I definition, yet the presence and resolution of dissonance can be a useful means of articulating a cadence. The authentic cadence demonstrates this through its own two forms: V–I and V\(^7\)–I. Combining 5 and 5 in the penultimate harmony, as in a IV\(^{add6}\)–I progression, allows the plagal cadence to embrace the use of dissonance as a harmonic, and not only contrapuntal, phenomenon. Compared to Rameau’s “imperfect” progression, the plagal cadence promoted here is truer to experience—plagal cadences are not always dissonant (explicitly or implicitly) and 5 may descend to the tonic.\(^{16}\)

\(^{16}\) An early precedent for regarding II\(^6\)–I as a plagal progression comes in one of the earliest discussions of the modern term “plagal cadence”—Catel’s 1802 *Traité d’harmonie* (cited by Lester 1994, 116). Catel defines the *cadence plagale* as taking either of two forms: IV–I or II\(^6\)–I (34; shown in both major and minor keys).

Catel does not mention Rameau’s added-sixth chord as a possibility. Yet when Catel’s treatise was disseminated in the U.S. in an 1832 English translation with “additional notes and explanation” by the translator (Lowell Mason), readers were given a different understanding of plagal cadence—one filtered through the ideas of Rameau. This edition translates Catel’s “accord de sixte,” not as “chord of the sixth,” but rather as “added-sixth chord.” It also takes the liberty to say that the plagal cadence may also be called the “imperfect cadence”—it seems clear that this earliest English translation allowed Rameauian thinking to distort Catel’s ideas. A later English translation (1854, London) stays true to Catel’s meaning and terminology.
Example 2.6 presents what is perhaps the strongest plagal cadence in Mahler’s music—a IV\(^{add6}\)–I cadence from the Seventh Symphony. Strong cadences are marked, in part, by the succession of perfect intervals in the outer voices. In the PAC, this is paradigmatically P5–P8 (\(\hat{2}\)–\(\hat{1}\) over \(\hat{5}\)–\(\hat{1}\)), and is sometimes expressed as antiparallel octaves (\(\hat{5}\)–\(\hat{1}\) in contrary motion). In plagal cadences this may be antiparallel P8–P8 (\(\hat{4}\)–\(\hat{1}\) in contrary motion) or P5–P5 (\(\hat{1}\)–\(\hat{5}\) over \(\hat{4}\)–\(\hat{1}\)). The weaker M3–P8 progression occurs in authentic cadences as \(\hat{7}\)–\(\hat{1}\) over \(\hat{5}\)–\(\hat{1}\) and in plagal cadences as \(\hat{6}\)–\(\hat{8}\) over \(\hat{4}\)–\(\hat{1}\).

Example 2.6. Plagal Cadence. Symphony No. 7, i, 515–23

**Three Transformations**

A theory of cadence that is limited to authentic cadences is not sufficient for Mahler’s music; allowing for plagal cadences is a step in the right direction, but even so, one is left with a theory of cadence that fails to appreciate countless cadences in Mahler’s music. When analysts encounter a cadence that does not fit the classical model, they might therefore understand it to be a weak cadence, a quasi-cadence, or even no cadence at all. Yet Mahler’s non-classical cadences
are important. So that the patterned diversity of Mahler’s cadences may be better appreciated, I present three primary techniques by which Mahler transforms the basic authentic and plagal prototypes.

**Tonic Intrusion**

The first transformation I would like to introduce is the “tonic intrusion.” In this transformation, one or more unexpected tones of the tonic triad sound during the penultimate harmony (in a non-classical manner). In the context of an authentic cadence, $\hat{5}$ is to be expected in the penultimate harmony, but a non-classical use of $\hat{3}$ or $\hat{1}$ (or both) would constitute tonic intrusion. Similarly, in a plagal cadence we expect $\hat{1}$, but tonic intrusion can introduce a non-classical use of $\hat{3}$ or $\hat{5}$ (or both).

Tonic intrusion will not be invoked in situations of simple melodic ornamentation, such as a classical escape tone or anticipation; such melodic ornaments often occur in Mahler, but they are already well explained by classical theory.\(^{17}\) Instead, “tonic intrusion” is reserved for occasions when an unexpected tone of the tonic triad either 1) completely displaces an expected tone of the penultimate harmony, or 2) exists in addition to an already complete penultimate harmony. The presence of the intruding tone (or tones) may be heard as an unresolved suspension/appoggiatura or an extreme anticipation (or even both, in succession). The idea is simple, and profoundly Mahlerian—both in its frequency of use and in its relation to Mahler’s broader tonal practice, which often emphasizes common tones and embraces conflicts between structural levels.

\(^{17}\) Such ornaments are, however, the classical analog to the non-classical “tonic intrusion” and there may be a historical/compositional, rather than exclusively theoretical, connection between these two phenomena.
**Tonic intrusion in authentic cadences.** Example 2.7 shows the piano’s conclusion of “Liebst du um Schönheit.” The final cadence employs an authentic cadence that is transformed by the insistence of $\hat{3}$ throughout the dominant. Earlier in the song, a similar cadential $\hat{3}$ resolves to the expected $\hat{2}$ over the dominant; but in this final cadence, Mahler retains $\hat{3}$ until the dominant releases onto the final tonic, at which point $\hat{3}$ leaps directly to $\hat{1}$. The $\hat{3}$ of this example is made to sound particularly stubborn over the V, not only because of the expected resolution of the cadential six-four chord, but also because we expect the $\frac{4}{3}$ and $\hat{3}$ of measure 32 to converge onto $\hat{2}$ and because we expect the $\hat{3}$ at the end of measure 33 to move in parallel motion with the inner voices, rather than stay rigidly in place.\(^{18}\) If this were an isolated example, it would be sufficient to hear it is an unresolved suspension without needing recourse to a broader category of “tonic intrusion”—but tonic intrusion happens so frequently in Mahler, and influences so many aspects of his musical language, that I think the broader category is both musically appropriate and analytically revealing.

\[^{18}\text{Harrison shows a V}_8\text{sus6 (tonic intrusion of }\hat{3}\text{) and calls it a “weakening anticipation of the discharge” (2004, ex. 3.14). I disagree that the cadence is weakened through this process.}\]

\[^{19}\text{It is interesting to note that the }8–7\text{ motion of measure 33 is paired with a }10–9\text{ motion. This seventh and ninth can be heard as chord tones or not. Either way, they are passing. In Example}\]
When authentic cadences are transformed by tonic intrusion, the tonic element is usually ³. It may be prepared or unprepared, accented or unaccented. The presence of a structural ³ throughout a dominant harmony ensures a conceptual dissonance, given the hierarchical conflict between tonic and dominant prolongations. In a major key, when ³ displaces ² the resulting sonority is consonant, whereas in a minor key, the result will be an augmented triad. In major keys, especially, Mahler often intensifies the conceptual dissonance with an intervallic dissonance by including a chordal seventh—the presence of ⁴ makes the intrusion of ³ especially salient. Mahler sometimes embraces the intervallic dissonance created by simultaneously sounding both the tonic-intrusion tone and the tone that it would seem to be replacing; for example, in an authentic cadence, ³ might grate against not only ⁴, but also ².

Agawu 1997 cites an example of V⁷sus⁶, shown here in Example 2.8. I agree that this is an important phenomenon in Mahler (as part of a more general category of tonic intrusion), but I disagree with the particular example. I hear this example present a structural motion ³–², followed by an escape tone ³. The ² arrives in measure 45 (with a neighboring predominant harmony) and then the escape-tone ³ arrives early, coterminus with the V chord of measure 46. Since the ³ displaces the ² during the eventual V, this is tonic intrusion at the surface; but since ² has, in my view, already been achieved in measure 45, the ³ is an escape tone rather than a prolongation from a previous ³. This passage invokes an important sonority of tonic intrusion, but can be interpreted in a classical way, whereas in this dissertation I aim to focus on examples where the tonic intrusion is so thorough as to be non-classical.

2.7 I have shown them as accented passing tones because the sound of ⁶/⁴–⁵/³ resolutions is characteristic of this song and is what I hear as the underlying structure here.
The tonic intrusion of $\hat{I}$ is a less common occurrence in Mahler’s authentic cadences. A wonderful use of this technique, however, is shown in Example 2.9. The cadence is not fulfilled, so this is a transformation of an expected, rather than an actual, authentic cadence, but the tonic intrusion is clear. Here it is presented as an unresolved 4–3 suspension, leaving $\hat{I}$ to be sustained throughout the dominant and retained into the subsequent section as a common-tone.\(^{20}\) Although the “tonic intrusion” of $\hat{I}$ is rare at cadences, it is actually a fairly characteristic sound in Mahler’s musical language more generally, because he frequently presents tonic and dominant harmonies simultaneously.\(^{21}\)

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\(^{20}\) Common-tone modulations are explored more fully in Chapter 3.

\(^{21}\) More specifically, he tends to combine their open-fifth dyads to create a I+V trichord. See Chapter 4 for further discussion of this phenomenon.
Slightly more common at cadences is the transformation in which both $\hat{1}$ and $\hat{3}$ intrude on the dominant (which thus resembles an unresolved cadential six-four), as shown in Example 2.10. We can think of this as a “bass gesture” cadence, since it is the $\hat{5} - \hat{1}$ motion of the bass that produces the cadential effect.

Another example of this dual tonic intrusion is shown in Example 2.11, excerpted from Monahan 2008. Monahan’s “quasi-PAC” at measure 394 is interesting because there is no classical dominant involved. Instead, there is a release of structural tension as the total voice leading gradually settles on a D-minor tonic triad (with a lingering appoggiatura $\#7$). The notes of the D-minor tonic arrive in measure 387, but with $\hat{5}$ in the bass. This moment can be heard as a classical cadential six-four chord, but its continuation proves to be non-classical: the bass arpeggiates downward $\hat{5} - \hat{3} - \hat{1}$ while the notes of the tonic triad remain. The ostensibly dissonant notes of the six-four chord turn out to be the more stable elements—if this is a cadential
dominant, as I am inclined to hear it, then the upper voices are an example of the tonic intrusion of both $\tilde{1}$ and $\tilde{3}$ in the upper voices. These tonic voices do not give way to dominant harmony, but rather the dominant bass yields to the deeper stability of the tonic, arpeggiating down to $\tilde{1}$ (therefore this cadence also has an element of the contrapuntal bass transformation, discussed below).^{22}

Example 2.11. Monahan 2008, annotated short score of Symphony No, 3, i, 380–95

^{22} Note that this passage is a recomposition of the cadence given in Example 2.24. There, the $6$ in the bass does not proceed to $5$, but rather arpeggiates plagally ($6\rightarrow 4\rightarrow b2$) and releases onto $\tilde{1}$. I therefore hear that example as a plagal cadence (emphasis on $6$, $4$, and $b2$ in the bass) with all three transformations (the tonic intrusion of $\tilde{1}$, a Phrygian $2$, and a contrapuntal bass), whereas I hear the present cadence as an authentic cadence (emphasis on $5$ in the bass) transformed through the tonic intrusion of $\tilde{1}$ and $\tilde{3}$ and a contrapuntal bass.
A final point to make with regard to authentic cadences and tonic intrusion is that they often produce what some theorists refer to as $V^{13}$ chords. I do not think Mahler’s music is well served by concepts like $V^{13}$ or $V^{11}$, because the harmonies that these labels seek to explain are not formed as stacks of thirds—indeed, they frequently do not even have a seventh, much less a ninth. Rather, these harmonies arise through tonic intrusion. Perhaps the most stack-like dominant in Mahler’s music is that shown in Example 2.12. In measure 327, we find a seven-tone stack of thirds that many people would surely regard as a $V^{13}$ chord.

On closer inspection, by paying attention to the linear structure of each voice, it is evident that the final dissonant structure has a contrapuntal origin. As shown in Example 2.13, we can parse the upper voices into two layers, both of which contain instances of $\hat{1}$ and $\hat{3}$. In the middle register, these tones resolve down by step in measure 327 (creating a $V^9$ harmony between those voices and the bass). In the upper register, $\hat{1}$ and $\hat{3}$ stubbornly persist—$\hat{1}$ resolves a measure later, while $\hat{3}$ never resolves. The unresolved $\hat{3}$ is an example of tonic intrusion. This staggering and withholding of the resolution in different voices is, I believe, the best way to understand the
apparent $V^{13}$ harmony of measure 328. Some people understand $V^{13}$ to mean essentially the same thing that I mean by tonic intrusion, rather than a stack of thirds. In this case, our difference is one of terminology. I do not say “just” terminology, however, because I think that the concept of tonic intrusion offers benefits for the understanding of Mahler’s music more generally, not just with regard to this isolated topic. As we will see, it is a pervasive influence on Mahler’s cadences, not only on his root-position dominants.

![Example 2.13. Analytic model for previous excerpt.](image)

**Tonic intrusion in plagal cadences.** In a plagal cadence, tonic intrusion requires the inclusion of $\hat{3}$ or $\hat{5}$ (or both) as part of the penultimate cadential harmony. Example 2.14 presents the final two cadences of the Ninth Symphony (mvt. 4, mm. 160–75). The first is an imperfect authentic cadence (completed in m. 164); the second is a plagal cadence with the tonic intrusion of $\hat{5}$ and eventually $\hat{3}$ (completed in m. 173). Classical theory would allow the authentic cadence to have great structural significance, while severely limiting the significance of the plagal cadence. In my view, however, this plagal cadence does not merely confirm an already achieved tonal goal. Rather, it is through this plagal cadence that the movement achieves its final tonal state: the conclusiveness of a tonic triad, but with the inconclusiveness of emphasizing $\hat{5}$ and $\hat{3}$ in the upper voices, rather than $\hat{1}$. Even without considering background structure, it is clear that
Mahler has created a very open structure here—resolved, yet seemingly infinite. This sense of the infinite is achieved through the structure of the upper voices, as the following analysis will demonstrate.

For maximal closure, we would expect a cadence in which the top voice achieves ī. Toward the end of the Ninth Symphony, this is precisely what Mahler avoids. He leads us to expect such a cadence in the previous passage, which Christopher Lewis reads as producing the onset of the coda (1984, 115). In his example 5.20, Lewis shows an implied ī in the top voice over the tonic at measure 148. Such tonic-attainment certainly would have helped to make the following measures serve as a conventional coda, but the expected perfect authentic cadence is undermined by the failure of ī to reach ū. The ī is extended into the tonic harmony, where it becomes dissonant and begins a slow, chromatic descent: ī (m. 148), ū (m. 149), ū (mm. 150–52), ū (mm. 153–159, transferred to the bass in m. 155), and finally ū (from m. 160), which serves as the bass of the next cadence. This brings the music to the authentic and plagal cadences shown in Example 2.14.

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23 In this way, it resembles the conclusion of Das Lied von der Erde, where an added-sixth chord serves as final sonority. For further discussion of the conclusion of Das Lied, see Chapter 4.  
24 In his discussion of the subsequent measures, Lewis acknowledges that ī is still present, but he does not engage with its effect on the success of the cadence. Although it is possible for a final structural cadence to present simultaneously a deep resolution and a surface dissonance, I do not think that is a satisfying analysis of what happens here. I believe this cadence has been deeply undermined.
Example 2.14. Tonic Intrusion (Plagal). Symphony No. 9, iv, 162–75

As stated above, the classical expectation would be that the authentic resolution of measure 164 provides structural closure for the movement while the plagal resolution of measure 173 merely confirms this already achieved closure. In my hearing, that is not how this passage works. From a classical perspective, the problem might be that this is an imperfect authentic cadence (top voice on 3), but taking this movement on its own terms, the issue is that the top voice continues to do linear “work.” Rather than find closure on 3 in measure 164, the top voice pursues a series of reachings-over until it attains 5 in measure 173 (each of the following tones is approached from its upper neighbor: 3 in m. 164, 4 in m. 165, 5 in m. 166, 6 in m. 167–70, and 5 in m. 171–end). The attainment of 5 prepares what I regard as the moment of structural “closure” for the movement: measure 173, where the final tonic triad is reached through a plagal cadence.

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25 Lewis regards both cadences as mere extensions of the earlier cadence that we just discussed as deeply undermined: “Beginning in m. 148, the coda is given tonal impetus by a series of harmonic implications overlaid as conflicting elements above one authentic and one plagal extension of the cadential resolution to D-flat in mm. 145–48” (1984, 115).
with tonic intrusion of $\hat{5}$ and $\hat{3}$. The remainder of the movement is a coda that sustains the tonic triad while confirming the permanence of $\hat{5}$ and $\hat{3}$ in the upper voices—a state that was achieved through the plagal cadence.

**Phrygian $\hat{2}$**

A second significant and characteristic way that Mahler transforms cadences is to use the Phrygian $\hat{2}$. In a Phrygian transformation, the penultimate harmony includes the lowered supertonic note, leading to $\hat{1}$. This transformation creates a variety of different harmonies in the authentic and plagal cadence families. The lowered note may occur in any voice (including the bass, when combined with the “contrapuntal” transformation, discussed below).

A note about terminology: the term “Phrygian” is used in this dissertation because it seems preferable to the alternatives, such as “$b\hat{2}$” (which often awkwardly contradicts the actual accidental required) and “Neapolitan $\hat{2}$” (which suggests a specific harmony, whereas Mahler uses this transformation in numerous different harmonic contexts). While the “Phrygian cadence” of classical theory is a IV$^6$–V half cadence in a minor key, in the present theory, “Phrygian” refers to the use of a lowered $\hat{2}$ in any voice.

**Phrygian $\hat{2}$ in authentic cadences.** Applied to authentic cadences, the Phrygian $\hat{2}$ transformation creates a dominant harmony with a lowered fifth. Mahler typically uses a seventh (or ninth) chord in these situations, rather than a triad. The label “V$^{7/5}$” can be perfectly accurate in such situations (whereas the term “altered dominant” is too general), but the concept of a Phrygian $\hat{2}$ transformation gives the analyst a broader perspective on this phenomenon—the Phrygian $\hat{2}$ transformation applies to both authentic and plagal cadence types and frequently is combined with other transformations (to be discussed, below).
Example 2.15 presents an excerpt from the first song of the *Kindertotenlieder*, “Nun will die Sonn’ so hell aufgehn.” The authentic cadence at the end of this excerpt demonstrates a Phrygian transformation of a dominant ninth chord. The transformation and voicing creates subtle parallel perfect fifths as the $\text{b}^2$ (voice) and $\hat{6}$ (violin or piano) resolve down by step. Although the idea of engulfing something in eternal light (“ins ew’ge Licht versenken”) might not seem like the most likely poetic line to be set with the darkening effect of a Phrygian transformation, Mahler’s choice here is deeply expressive of the song’s underlying tension: the protagonist’s efforts at hope cannot overcome the dark reality of having lost a child.

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26 Monahan 2015 identifies this as a “phrygian-mode cadence,” presumably referring to the presence of $\text{b}^2$ (77). Since pre-tonal music in the Phrygian mode would not use this cadence, and since the Phrygian collection does not include the leading tone (which is implied, though not present; cf. mm. 19 or 81), I think the concept of a “Phrygian transformation” is preferable.

27 Mahler often makes a point to either emphasize or avoid parallel perfect consonances, but in the current example, I regard them as relatively unremarkable since the initial perfect fifth is unstable (being above a flatted fifth, rather than a root). For a further discussion of Mahler’s counterpoint, including the use of parallels, see Chapter 4.
Example 2.15. Phrygian \( \hat{2} \) (Authentic). Kindertotenlieder, “Nun will die Sonn’ so hell aufgeh’n,”
mm. 52–59

This cadence (m. 59) is the only time in the song that the voice reaches a stable tonic
from \( \hat{b}2 \) (we will explore the immediate repercussion of this below), yet the sound of a melodic
\( \hat{b}2 \hat{1} \) motion is deeply ingrained in the song. For example, most proximately we have just heard
a \( \hat{b}2 \hat{1} \) motion in the previous three measures: \( \hat{b}2 \) is introduced by a dominantization of the tonic
triad (m. 55), whose minor ninth becomes consonant in the \( \hat{b}\II^6 \) (m. 56) before proceeding to \( \hat{1} \) in
the cadential six-four chord (m. 57).\(^{28}\) Furthermore, the phrase-ending motive in which this \( \hat{b}2 \hat{1} \)
takes part (the \( \hat{5} \hat{4} \hat{b}2 \hat{1} \) of mm. 58–59) is a rhythmic augmentation of the motive that concluded
the vocal part of the first stanza (mm. 18–19) and will return at the end of the last stanza (mm.

\(^{28}\) Mahler’s omission of the leading tone in the dominant is characteristic, as discussed in section
2.B, but I hear an implied \( \hat{1} \hat{7} \) motion in the imaginary continuo.
Lastly, in a more subtle yet pervasive way, the E♭–D melodic motion is embedded in the instrumental introductory material that is developed at the start of each stanza (see the E♭–D motion of mm. 2, 22/23, 41/43, and 65/67).

Returning to the bigger picture, Mahler uses the authentic cadence with Phrygian 2 (shown in Example 2.15) to introduce a passage that carries great significance for the song and for the song cycle. This passage is shown in Example 2.16. Monahan 2015 regards this subsequent section as part of the rotational form, corresponding to what he calls the Abgesang of the basic rotation of each stanza (76–77). In my view, however, this passage gains meaning precisely because it falls outside of the song’s otherwise very regular strophic form. Example 2.17 provides my formal analysis of the song. The passage in question (mm. 59–63) is an instrumental interpolation between the second and third stanzas. It thus falls between the cracks of both the strophic form of the song and the poetic structure of the text. Although it is an instrumental passage, it carries great narrative weight. It is the outbreak of a deeply repressed truth—a representation of the protagonist’s uncontrolled emotions about the incomprehensibility of the death of a child. I agree with Monahan’s assessment that it is a “nightmarish contrapuntal interlude, providing the song’s expressive climax” (2015, 77). It is an exceptionally non-classical passage from the perspective of harmonic progression and the contrapuntal relations are

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29 In these stanzas, the  b2–♭1 participates in a predominant–dominant progression, rather than the dominant–tonic progression that we have seen conclude the third stanza. That is partly why measure 59 is the only time  b2 leads to a stable tonic.

30 Where I differ from Monahan is that he takes measures 52–59 to correspond simply to what I have marked as the “B” phrase of each stanza. During that passage, however, Mahler incorporates not only the B-phrase material, but also the codetta material. In my view, Mahler has compressed the B-phrase and the codetta into this single phrase. The subsequent passage therefore can be understood as occurring between stanzas, rather than as participating in a stanza. Monahan reads this passage as a statement of what I am calling the codetta, but this material more closely resembles the B-phrase material (e.g., the accompaniment from mm. 11–15 and the melody of m. 14).
expressed through a registral attack on coherent voice-leading. In my interpretation, the tonic at beginning and end represent the protagonist’s departure from, and return to, a livable state of repression about the child’s fate. This passage’s outburst of the repressed emotion about the death of a child is a foreshadowing of the protagonist’s emotional fate that we hear unfold in the remaining songs of the cycle.

Example 2.16. Kindertotenlieder, “Nun will die Sonn’ so hell aufgeh’n,” mm. 58–67
Phrygian 2 in plagal cadences. As applied to plagal cadences, the Phrygian 2 transformation tends to employ a ♭II6–I progression. Other penultimate harmonies are theoretically possible (e.g., the Phrygian transformation of II6 in major or of IVadd6 in major or minor), but I have encountered these harmonies more often in non-cadential situations than in cadential ones. Later in this chapter, we will see that the Phrygian 2 transformation may be combined with the contrapuntal bass transformation to produce ♭II–I (see pp. 50–52) and that this combination may be applied to a mixed authentic-plagal cadence to produce ♭IIaug6–I (see p. 55).

Example 2.18 presents two successive plagal cadences in a passage from the first movement of Mahler’s Seventh Symphony. The first is a basic IV–I plagal cadence in A major.
(mm. 367–68) with the outer voices emphasizing 4–1 through antiparallel octaves. In the second plagal cadence, a Phrygian transformation creates a bII6–I progression in E major (mm. 372–73) with the top voice ascending by step from 4 to 5.

Example 2.18. Phrygian 2 (Plagal Cadence). Symphony No. 7, i, 365–73

Considering the passage as a whole, we can hear the second cadence as a rewriting of the first. In this rewriting, the tonal structure becomes considerably more complex. The first phrase uses a relatively simple tonal structure: there is some harmonic chromaticism (the major VI chord) and Mahler’s development of the movement’s fourths-motive brings a prevalence of double-neighbor figures and appoggiaturas (some of which, like the G♯ of m. 366, resolve at a remarkable delay), but in retrospect the phrase can easily be heard to use a tonally closed, plagal prolongation of the A-major triad. The second phrase begins with notable parallelism, including
a bass motion in descending thirds from A to D; but whereas the arrival of D had originally marked the IV chord of a plagal cadence in A, in the second phrase it is reharmonized as part of a fully diminished seventh chord. Rather than function as VII\(^7\) of A minor, this diminished seventh chord is instead interpreted as an applied chord resolving to a cadential six-four chord in F major (mm. 370–71). The sense of an F-major tonic is sudden, but strong—its strength derives in part from the emphatic arpeggiation motive, a rhythmically augmented transposition of the A-major arpeggiation heard in measures 368–69. To a degree, this F-major harmony was prepared by the second phrase’s use of modal mixture, rewriting the F\# harmony of the first phrase as an F harmony in the second phrase.\(^{31}\) The cadential six-four chord does not resolve as expected, however—Mahler redirects it by dropping the bass to the third of what is now heard as a stable, first-inversion F-major harmony. This is the \(\flat\)II\(^6\) of the plagal cadence that leads to E major. This F-major six-three chord can be heard as a common-tone transformation of the A-major triad of the first phrase; the tone A serves as the goal of the first plagal cadence and the penultimate bass of the second one as Mahler takes us on a remarkable journey to E major.\(^{32}\)

**Contrapuntal Bass**

The third and final transformation employed in this theory is the “contrapuntal bass” transformation. In this transformation the melodic descent to the tonic, typical of the top voice, occurs in the bass (thus replacing the classical leap of a fifth or fourth for authentic or plagal cadences, respectively).

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\(^{31}\) Note, however, that the upper voices are slow to accommodate this F-major chord—they continue to unfold the A-major triad until the final triplet eighth note before the arrival of the diminished seventh chord over D (m. 370). This creates an instance of the “split-scale degree” (here, \(\flat\)3/C\# vs. \(\flat\)3/C), discussed in Chapter 4.

\(^{32}\) The plagal cadences of these two phrases are echoed in the local plagal-pentatonic melodic gestures in the upper voices: the 6–8 motion, expressed first as F\#–A (m. 368–70) and then as D–F (mm. 370–71).
The contrapuntal transformation can be thought of as a basic authentic or plagal cadence whose voices have been rearranged through invertible counterpoint, so that the typical melodic descent occurs in the bass (note, however, that the normative bass voice typically is not necessarily transferred to an upper voice in this scenario). The contrapuntal transformation of an authentic or plagal cadence will typically place 2 in the bass (remember that the plagal family includes 2). It is theoretically possible for there to be a contrapuntal transformation that creates an ascending voice-leading in the bass from the penultimate harmony to the tonic, but this is not a significant practice in Mahler’s music, so such a cadence would be seen as a novelty from the perspective of this theory. It is also theoretically possible for a contrapuntal plagal cadence to take the tonic note for the bass of the penultimate harmony, but this, too, is not a significant aspect of Mahler’s cadential practice. When combined with the Phrygian 2 transformation, the bass of a contrapuntally transformed cadence (authentic or plagal) will be the lowered supertonic (as discussed in the designated section, below).

**Contrapuntal bass in authentic cadences.** Though theoretically possible, the contrapuntal transformation of authentic cadences is not, as an isolated transformation, a remarkable aspect of Mahler’s music. Applied to the authentic cadence, the contrapuntal bass transformation would alter the dominant by inverting it to a V<sup>4/(3)</sup> position (or possibly V<sup>6/(5)</sup>). Although Mahler does not find much use for the authentic cadence transformed solely by the contrapuntal bass, he does apply this transformation to authentic cadences when combining it with the Phrygian or tonic-intrusion transformations. In that way, Mahler is able to include an additional element of acoustic or structural tension leading up to the tonic arrival.
**Contrapuntal bass in authentic cadences.** Since our plagal family embraces the potential inclusion of 2 in the penultimate cadential harmony, the contrapuntal transformation inverts the cadential II₆ or IV₇ into a II or II₇ chord.\(^{33}\) Example 2.19 presents two plagal cadences, each with the contrapuntal-bass transformation creating a II₇–I (or an inverted IV₇–I) progression. In each of the two phrases, the bass gradually unfolds the II harmony over the course of the phrase before releasing into the tonic.

![Example 2.19. Contrapuntal (Plagal). Symphony No. 7, v, 31–45 (sketch)](image)

**Combined Transformations**

As has been suggested above, the three transformations are not mutually exclusive—they often work together in creative and powerful ways. All combinations are possible (including the combination of all three transformations) and may be applied to both authentic and plagal cadences. As seen above, the possibilities are not equally significant—some transformations or combinations will pertain more to either authentic or plagal cadences.

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\(^{33}\) Though unfamiliar from a classical perspective, recall that Day-O’Connell cited the increasing use of both of these cadential harmonies in the nineteenth century (2002, 58) and that Tischler cited II–I as one of Mahler’s characteristic cadences (1951, 114).
Tonic Intrusion & Contrapuntal Bass

The cadence in Example 2.20 combines the tonic-intrusion and contrapuntal-bass transformations in part of an authentic cadence from the Third Symphony, first movement. The contrapuntal transformation allows the melodic descent to occur in the bass. The tonic intrusion causes the bass descent never to reach \( \frac{2}{3} \)—instead, \( \frac{3}{2} \) persists in the dominant harmony and carries into the tonic triad. From the perspective of classical tonality, this is just a somewhat odd cadence, and we might be tempted to regard it as inherently weakened thereby, or to ignore either the cadence’s non-classical features or even its very existence—but seen within the context of Mahler’s cadential practice, this combination of tonic intrusion and the contrapuntal bass is a particularly Mahlerian phenomenon and is no less strong than a traditional authentic cadence.

Example 2.20. Tonic Intrusion + Contrapuntal (Authentic). Symphony No. 3 i, 359–62

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34 In his annotated score, Monahan 2008 identifies this as a PAC. My goal here is to demonstrate that instead of using a classical perfect authentic cadence, Mahler has transformed it through two of his characteristic techniques.
Tonic Intrusion & Phrygian ₂

A plagal cadence exhibiting the Phrygian-₂ and tonic-intrusion transformations is shown in Example 2.21.³⁵ The presence of ₅ could lead us to call this a mixed authentic-plagal cadence, but I think the ₅ here is an element of tonic intrusion, rather than a foundational element of the cadence. I hear it arise as the result of a conflict of levels: while the inner voices are working their way there through a plagal cadence, the locally governing G#-minor triad has already taken hold in the top voice and uses ₅ to evoke a parody of an authentic gesture, without carrying the implication of dominant harmony. The result is a local plagal cadence to G# minor with a Phrygian ₂ and the tonic intrusion of ₅.

Example 2.21. Tonic Intrusion + Phrygian (Plagal). Symphony No. 5, i, 245–54

³⁵ From the perspective of deeper tonal structure, this is a tonicized half cadence; it is articulated locally, however, as a plagal cadence.
Phrygian 2 & Contrapuntal

The application of Phrygian and contrapuntal transformations to a plagal cadence is shown in Example 2.22, taken from the Fifth Symphony’s second movement. This cadence marks the end of a section in E minor (mm. 352–92). For the final closure in that key, Mahler begins with a strong IV chord (it has been tonicized by the preceding measure) and then drives it to the tonic by transforming the harmony into a bII chord and by placing the b2–I melodic progression in the bass.

Example 2.22. Phrygian and Contrapuntal (Plagal). Symphony No. 5, ii, 388–92 (short score and analytic model)

Comparing three successive versions of this passage reveals that Mahler made changes of structure and emphasis. Originally, Mahler used a Phrygian transformation without the
contrapuntal bass. As shown in parentheses in the analytic model, the penultimate bass note of the cadence was originally $\hat{4}$, rather than $\flat 2$. In most of the bass doublings, the A returns in the same register, leaving a trace of F as the lowest tone; but in the tuba, the A–F–A pattern descends throughout—thus the final A is the lowest tone and true bass, solidly overriding the F. In a second version, we find that Mahler has added the contrapuntal transformation by omitting the penultimate measure’s return to A, replacing it with a measure of rest and leaving the previous measure’s F to remain in effect. In a third version, we find that the F of the A–F bassline has been strengthened, sounding for five quarter notes, instead of only two. Briefly put, Mahler revised the A–F–A bassline to an A–F bassline, while simultaneously revising the orchestration to strengthen the F and weaken the preceding A, leaving us with a plagal cadence with both Phrygian and contrapuntal transformations.

Although I have focused on examples where the cadential transformations are combined simultaneously, I would like to demonstrate that they also can be used in succession. Example 2.23 presents a voice-leading summary of the final cadence of the Third Symphony’s first

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36 This A–F–A bassline is used in the 1903 autograph manuscript (Morgan Library online: http://www.themorgan.org/music/manuscript/115214), the 1904 Peters study score (plates 9015), and the 1904 Peters conducting score (plates 8951).
37 This A–F bassline is used in the 1919 Peters conducting score (plates 8951). Although the 1991 Dover edition claims to be a reproduction of a 1904 Peters score, it seems instead to be a reproduction of the 1919 edition.
38 This strengthened A–F bassline is used in the 1964 Peters conducting score (plates 8951) edited by Ratz as well as the 2002 critical edition edited by Kubik.
39 A tonal detail shown in Example 2.22 that calls for explanation is that in the second half of measure 390, the triplet figure gives a double-neighbor decoration of E while the other voices present an F-major triad. This E is a stubborn holdover from the A-minor triad of the previous measures. Indeed, I hear it as a pedal tone throughout the passage: the chordal fifth of the A-minor triad, a non-chord tone during the F-major triad, and the root of the goal E-minor triad. At the foreground, it does not “belong” during the F harmony—I experience it as arising from a deeper level of structure, one that Mahler has superimposed on the foreground structure of the passage.
movement. Mahler’s harmonic progression here – $\flatII^6-\flatII^F-I$ – is decidedly not that of a conventional cadence, but in my view it would be a mistake to conclude that this therefore is not a cadence.\textsuperscript{40} This moment provides significant formal and tonal closure. Not only is it the final cadence of the movement, but it also is made necessary by the immediate and dramatic undermining of the previous cadence (with a PL progression in m. 857, shown in Example 2.20). The full progression, then, is: I–$\flatVI^6$–$\flatII^6$–$\flatII^F$I. The final melodic motion is an ascent from $\flat6$ to $\hat1$, something that Jeremy Day-O’Connell 2002 has emphasized is a common way to strengthen the top-voice motion of plagal cadences.

This is an unusually playful cadence: the harmonic progression defies norms, but quickly reestabishes stability; the voice leading uses prominent parallel perfect fifths during the final three chords; and the $\flatII^F$ is orchestrated with a flippant trill. Indeed, the playful orchestration makes the continuity of the bass voice of this passage ambiguous. A sense of descending thirds is created by a combination of root motion and bass movement, but the low register of $\flat4$ (bass of $\flatII^6$) is abandoned during the $\flatII^F$ chord before returning for the goal tonic. If the listener focuses on following the $\flat4$ as an abstract voice, it is easy to hear it ascend chromatically to $\#4$; but if the listener focuses on the root of the $\flatII^F$ chord, then it is easy to hear the bass voice descend from $\flat4$ to $\hat2$. I think the best hearing, therefore, is that this is a plagal cadence that has been transformed by Phrygian and contrapuntal transformations.

\textsuperscript{40} Monahan 2008’s annotated score marks the $\flatII^6$ chord as a “pre-cadential Neapolitan,” but finds that there is no cadence in this passage, because there is “no cadential V.”
Example 2.23. Phrygian + Contrapuntal (Plagal). Symphony No. 3, i, 863–67 (sketch)

Combination of All Three Transformations

The combination of all three transformations is a possibility demonstrated in Example 2.24, showing a plagal cadence from the Third Symphony, first movement (in an annotated short score taken from Monahan’s dissertation). It is a plagal cadence because it emphasizes $\hat{2}$, $\hat{4}$, and $\hat{6}$, unfolding in descending thirds from $\hat{6}$ down to $\hat{2}$ while thoroughly avoiding $\hat{5}$ and $\hat{7}$ as harmonic actors. It demonstrates the contrapuntal transformation because the final bass motion is stepwise. Since that bass tone is $\hat{2}$, the cadence also demonstrates the Phrygian transformation—indeed, the bass voice of this passage arpeggiates the $\text{bII}$ triad, with each tone taken as the root of a chord. The tonic intrusion transformation results from the presence of the D (I)—it was a consonant member of the VI and IV chords, but above the $\text{bII}$ chord, its origin is tonic intrusion. The tonic intrusion is also functioning as part of a fixed-pitch motive (C#–D), which can be heard to create a trace of $\text{bII}^{\text{Aug6}}$, though I do not think that is the structural harmony here.
Example 2.24. Monahan 2008 annotated short score of Symphony No. 3, i, 110–24

**Mixed Type: Authentic & Plagal**

Thus far in this study, there has been a strict distinction between authentic and plagal cadence types, but Mahler sometimes mixes these cadence types. It will be worth reviewing how authentic and plagal cadences have been differentiated in this study. Each cadence type consists of a family of voice-leading patterns. Since they both resolve to the tonic triad, we can focus on the network of scale degrees that forms the penultimate cadential sonority. Both authentic and plagal cadence types can contain ₂, ₄, and ₆. This is because Mahler’s authentic cadences often involve a dominant ninth chord (therefore adding ₆ to the standard ₂ and ₄), and his plagal cadences often involve an added-sixth chord or a subset of it (therefore adding ₂ to the standard...
and $\hat{6}$). $\hat{7}$ is not typical of either cadence type, though Mahler may incorporate it through the tonic-intrusion transformation. $\hat{7}$, which seems so typical of the dominant, is actually often absent from Mahler’s authentic cadences and is a possible member of plagal cadences (e.g., $\text{VII}\text{I}^6/4$). 41 This leaves what are, for me, the two main scale degrees that differentiate authentic and plagal cadences: authentic cadences typically can take $\hat{5}$, whereas plagal cadences typically cannot; and plagal cadences typically can take $\hat{1}$, whereas authentic cadences typically cannot.

When these scale degrees are introduced into the other cadence type, it is usually quite clearly an example of tonic intrusion.

The determination of whether a cadence is authentic, plagal, or mixed is often influenced by how the cadence has developed—it is possible for a $\text{bIII}$ chord, for example, to arise as a soft transformation of IV, making it likely to sound plagal, but it is also possible for that $\text{bIII}$ chord to arise as a chromatic unfolding of V, making it likely to sound authentic. 42 On the other hand, the augmented-sixth chord built on $\text{bII}$ will tend to be a very likely candidate for a mixed harmony.

The French $\text{bII}^\text{aug6}$ is the least plagal, because of the chordal presence of $\hat{5}$, whereas placing $\hat{4}$ in the bass during a $\text{bII}^\text{aug6}$ chord can make it sound plagal. 43 Thus the individual scale degrees contained in the penultimate sonority do not always tell the full story—the context of composing-out can affect whether a cadence is authentic, plagal, or mixed.

41 Harrison 2004 takes his scale-degree “agents” to be determinant of harmonic function in consonant harmonies ($\hat{6} = S, \hat{7} = D$), while allowing dissonant structures to contain mixed function where one function has “circumstantial ascendancy over the other” (70). I embrace Harrison’s attention to the role of individual scale degrees in determining harmonic function, though I disagree with the strength of his “agents” in making this determination.

42 Harrison 1994 takes $\text{bII}$ to be strongly plagal and 2 to be strongly authentic—I disagree with these predetermined categorizations.

43 Swinden 2005 speaks well to this phenomenon of a “collision” of functions between the bass and upper voices.
Mahler’s mixed-type cadences can be structured in two ways. First, the harmony and voice leading may contain elements of both cadence types simultaneously. Second, the harmony and voice leading may contain elements of both types at different structural levels—for example, a deeper plagal progression with authentic passing filler, or vice versa.

The phrase shown in Example 2.25 (an excerpt from the Ninth Symphony, first movement) concludes with a mixed authentic-plagal cadence that also combines the three transformations discussed above. During the first eight measures of the phrase, Mahler prolongs a D-minor tonic triad in a way that is harmonically quite static (mm. 29–36). These measures are nevertheless remarkable for their contrapuntal embellishments, which include extensive chromatic neighboring tones and appoggiaturas (such as the C# of m. 29 and the G# of m. 30), as well as neighboring harmonies (such as the common-tone harmonies on beat four of each measure). Indeed, the contrapuntal embellishments frequently conflict with one another. For example, in measure 36 we simultaneously hear three conflicting voice leadings in different layers of the texture: 1) the D-minor tonic triad is implicitly present from the beginning of the measure and unfolds explicitly in the lowest voices immediately following the downbeat, 2) against the root and fifth of the tonic triad, we hear the chromatic outer neighbors, #7 and b6 (functioning as non-harmonic embellishments and eventually resolving to 1 and 5), and 3) despite the sustained #7 and b6, and despite what I hear as the implicit continuation of the tonic triad, Mahler arpeggiates a common-tone diminished seventh chord (1-3-#5-b6, beat 2) followed by a dominant triad with tonic intrusion (5-#7-3, beat 3) before returning to a tonic triad on beat 4 (now with a passing 7 in the bass). It is possible to hear these conflicts as surface dissonance.

44 For a discussion of the dissolution of the classical imaginary continuo, see Chapter 4.
without an underlying hierarchical conflict (the tonic triad gives way to the arpeggiated harmonies and then returns, while subordinate non-harmonic tones are sustained with minimal structural significance), but the surface complexity is formidable.

Example 2.25. Symphony No. 9, i, 29–39
After this initial tonic prolongation, Mahler initiates a harmonic progression that leads to the phrase-ending cadence. As we get closer to the cadence, we encounter a remarkable divergence in the harmonic implications of different voices: the bass voice suggests a plagal cadence, while the highest voices suggest an authentic one. The conflict emerges in measure 37—leading to this moment, the full texture has been coordinated by a harmonic descending-thirds progression from I to VI to IV, but as the bass reaches the root of the IV chord, the highest voice leaps to 5. If the phrase were to proceed directly to the goal tonic from IV+5, then this would sound like a plagal cadence with tonic intrusion. Instead, the top voice unfolds from 5 up to #7 (m. 38), becoming part of a dominant harmony, rather than an instance of tonic intrusion. This unfolding dominant harmony itself includes a tonic-intrusion of 3, as heard in the upper-voice arpeggios of measure 38. Indeed, it is possible to hear 3 as a pedal tone throughout this excerpt (as a consonance over 1 and 6, then as a tonic intrusion over 4 and b2, and finally as a consonance again over 1).

Beneath those authentic-cadence elements in the higher voices, however, the bass voice and harmonic progression suggest a plagal design. The descending-thirds harmonic progression clearly leads from I to IV, despite the simultaneous arrival of the dominant-functioning 5 in the top voice. After the arrival of IV, we hear an apparent replication of the opening I–VI progression as IV seems to morph into bII (both progressions are marked by a descending major third in the bass, which can be heard as the harmonization of an ascending 5–6 motion above an

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45 Agawu 2008 calls measure 39 a “high point,” but avoids the word “cadence” (258). He reserves “cadence” for measure 47, presumably because of the descending-fifth bass motion present there. Although classical expectations could lead an analyst to disregard the cadence of measure 39, one of my goals in this chapter is to increase the theoretical legitimacy of the diversity of Mahler’s cadences.

46 The use of b5 (rather than 5) as a passing tone in the bass is indicative of the absence of V.
initial, main harmony). That parallelism reinforces the idea that $b\text{II}$ is a subtle outgrowth of IV and is leading to a plagal cadence with Phrygian-$b$ and contrapuntal-bass transformations. When the bass reaches $b\text{II}$, however, it is not met with a root-position triad. As an aggregation of distinct layers, this penultimate cadential harmony combines the $b\text{II}$ of the bass (suggesting $b\text{II}$), the arpeggiated $5-\#7-3$ of the highest voices (suggesting $V^{+3}$), and the sustained $5-\#7-4$ of the mid-range horns (suggesting $V^7$). In contrast to the previous sonority’s unreconciled conflict between IV and $5$, however, the penultimate sonority combines the plagal and authentic elements into a single harmony. This harmony is best understood, in my view, as a $b\text{II}^{Fr6}$ with the tonic intrusion of $3$. I hear it as a mixed-type (authentic-plagal) cadence because, in this particular context, I hear the $b\text{II}$ and $4$ as plagal elements and the $5$ and $\#7$ as authentic ones. In addition to being mixed-type, this cadence also manifests each of the three transformations: tonic intrusion (given the unexpected presence of $3$), Phrygian $b$ (given the presence of $b\text{II}$), and contrapuntal bass (given the linear descent in the lowest voice).

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47 Popular theory might refer to this as an inverted $V^{13/7/5}$, but I think tonic intrusion better explains the presence of $3$ and I think that $b\text{II}^{Fr6}$ chords should sometimes (as in this case) be regarded as root-position harmonies (in other contexts, they may serve as the inversion of an altered dominant). Mahler’s use of $b\text{II}^{Fr6+3}$ in this passage reminds me of the opening progression in Schoenberg’s op. 9 Chamber Symphony. There, the penultimate cadential harmony is also a $b\text{II}^{Fr6+3}$, but it functions within a major key, rather than a minor one (so Schoenberg’s use of tonic intrusion is chromatically inflected—the opening $A\flat$ that eventually reaches $A$). As a whole, this passage reminds me somewhat of the Schoenberg D-minor string quartet passage for which Berg provided an imaginary continuo (see pp. 192–95 of this dissertation).

48 Although I regard this penultimate cadential sonority as a single, coherent harmony, there is an interesting low-level conflict, similar to those discussed with respect to the opening, tonic-prolongation segment of the phrase. The $b\text{II}^{Fr6+3}$ of measure 38 is a distinctly whole-tone sonority (comprising $b\text{II}^{Fr6+3}$)—it is therefore remarkable that, upon the arrival of this whole-tone harmony, the tenor voice is arpeggiating a fully diminished seventh chord ($VII^7$). I hear this arpeggio as a tension-raising way to lead from $G3$ to $G4$, but I do not hear it as having any deeper structural significance than that. This moment has limited significance for our
Principles

The group of cadence types and transformations discussed in this chapter can be seen to be motivated by a number of underlying principles, which are enumerated below. These principles apply in varying configurations and with varying weights in each of the cadences discussed. Furthermore, although this chapter focuses on cadences, these principles are important elements of Mahler’s tonal language, more generally. The top seven principles are as follows:

1) Melodic simplicity, structural complexity. Complexity in Mahler often results despite pointedly diatonic and tuneful material. It is somewhat commonplace in music theory to regard late-nineteenth-century complexity as the result of chromaticism, but this is not always the case. Even relatively simple, diatonic voices can produce complexity through their non-classical relations.

2) Clash of levels on the surface. Mahler’s foreground often embraces one or more notes that belong to deeper levels of structure, creating a striking clash of levels at the foreground. For example, dominant harmony is often overwritten by unexpected elements of I (♯ and/or ♯). This represents a local structure overwritten by deeper one, and it often involves the suppression of the resolution of a dissonance over the dominant.

3) Chromaticism. Chromatically altered scale degrees—notably the Phrygian ♯—facilitate Mahler’s interest in the variation, intensification, and development of his materials.

4) Stepwise descent to tonic & invertible counterpoint (melodic bass). Stepwise descent to tonic is an important element of almost every cadence – many of Mahler’s non-classical cadences adopt a melodic bass.

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analysis of the cadence, but it is an example of the dissolution of the imaginary continuo (in this case, the use of conflicting prolongations and a split-scale degree), discussed in Chapter 4.
5) Essentially a two-voice structure. Mahler’s cadences reveal an emphasis on outer voices, to the extent that 7 often does not appear in authentic cadences.

6) Release of structural tension. Structural tension is created by any difference between two adjacent levels of structure; in this case, the difference between the penultimate harmony and the local controlling tonic triad. Often this tension is combined with a resolution of an intervallic and/or conceptual dissonance presented in the penultimate harmony.

7) Common tones. Mahler’s cadences often emphasize common-tone relationships. This technique takes even greater importance in Mahler’s harmonic progressions, generally, and in his larger structural relations, often providing a link between prolonged tonics.

Conclusion

This chapter has sought to demonstrate the richness and consistency of Mahler’s cadences by proposing an economical, yet broadly applicable, theory for interpreting them. Focusing exclusively on tonic-affirming cadences, I have demonstrated that a basic distinction between authentic and plagal cadences is appropriate for Mahler’s music and that each of these basic types may be transformed in three ways: (1) **tonic intrusion**, where one or more unexpected elements of the tonic triad appear in the penultimate harmony, either as displacements or additions, (2) **Phrygian 2**, where the tonic note is approached by stepwise descent from the lowered supertonic, and (3) **contrapuntal bass**, where the descent to the tonic typical of a structural top voice occurs in the lowest voice. It has been shown that these transformations are not mutually exclusive, but rather can work together in creative and powerful ways. Several compositional principles are given to indicate that these models of cadence types and
transformations apply not only to Mahler’s cadences, but also to his tonal language more generally, as could be demonstrated in further research.

This study of Mahler’s cadences is driven by an interest in tonal structure, but it has significance for areas that fall outside the scope of this dissertation—areas such as form and hermeneutics. A study in form that relies on classical cadences alone, for example, will have significant limitations compared to a study that acknowledges the diversity of Mahler’s cadential practice. It is hoped that that diversity is well treated by the theory presented in this chapter.
CHAPTER 3. MAHLER’S COMMON-TONE TECHNIQUES

Introduction

This chapter presents an introduction to common-tone techniques in the music of Gustav Mahler. I use the term “common-tone techniques” to refer to the means of creating tonal relationships whose coherence derives significantly from the presence of one or more shared pitches, rather than from more classical means. The goal here is twofold: first, to offer a robust conceptual framework for recognizing and understanding the multifaceted nature of Mahler’s common-tone techniques, and second, to demonstrate analytically the great significance of these techniques for Mahler’s music—a significance that I believe to be underappreciated in the literature.

Mahler uses a decidedly heterogeneous musical language. Classical tonality plays an important part in Mahler’s music, but we often encounter passages of his that seem tonal, yet not classically so. Mahler’s common-tone tonality provides one important alternative basis for many such passages. It is characteristic of Mahler’s common-tone tonality that it not only provides passages with an alternative sense of tonal coherence, but Mahler also frequently uses it to emphasize ambiguity or temporary defamiliarization. Mahler’s common-tone tonality is not limited to consonance, triads, or even tertian structures, so one goal of this chapter is to introduce new ways of grappling with the real diversity of Mahler’s common-tone techniques.

This chapter proceeds in three parts. Part 1 surveys some harmonies that often arise through common-tone relationships and introduces an “applied displacement” nomenclature for any harmony. Part 2 studies common-tone modulation as Mahler’s preferred means of introducing new tonal centers and calls attention to the fact that such common-tone modulation may draw on consonant, dissonant (but tertian), and non-tertian resources. Part 3 moves beyond
traditional notions of structure and explores how Mahler’s common-tone techniques can create important associative (non-hierarchical/discontinuous) relationships across the tonal structure of a song or movement. Three such associative techniques will be discussed: 1) fixed-pitch reinterpretation, 2) the ikonic sonority, and 3) tonal pairing.

**Common-Tone Harmony**

**Introduction**

Common-tone techniques often feature as the organizing force behind Mahler’s harmonies and harmonic progressions. In this chapter, we study 1) consonant tertian, 2) dissonant tertian, and 3) non-tertian common-tone harmonies and we group them into families based on their tonal function. The decidedly heterogeneous constitution of Mahler’s common-tone harmonies makes them resistant to established theories, such as classical and neo-Riemannian theories (for reasons discussed below) and therefore has motivated the development in this chapter of a new system for identifying harmonies. The new nomenclature is here termed “applied displacement” and it will be helpful to explain how it works before we properly begin studying Mahler’s common-tone progressions.

**Applied displacement.** “Applied displacement” is a system for identifying any harmony based on its underlying voice-leading distance from a reference harmony.\(^{49}\) Example 3.1 demonstrates the applied displacement nomenclature through a sample of three progressions.\(^{50}\) Arrows point to the reference harmony, which may precede, succeed, or (as in Example 3.1) surround the applied displacement harmony; the arrows therefore may point in either or both

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\(^{49}\) Typically the displacement harmony is adjacent and subordinate to the reference harmony.

\(^{50}\) In the staff notation, open noteheads indicate tones that belong to the reference harmony (when present in the displacement harmony, they therefore represent common tones); closed noteheads indicate tones that are displaced with respect to the reference harmony.
directions, depending on context. The positions within parentheses represent the chord members of the reference harmony, starting with its root—so “(x,y,z)” represents the root, third, and fifth of the reference harmony. The numbers placed in each position represent the semitonal displacement of each voice, as measured from the reference harmony. Common tones are therefore represented as “0,” since they have not been displaced; “+” and “-” indicate upper and lower displacements, respectively. Notice that arrows do not indicate a directed motion in time, but rather identify the reference harmony from which the applied-displacement chord is measured. In this way, the nomenclature is similar to that sometimes used for applied harmonies in traditional tonal theory, where the arrow in “V→V” means “of,” not “to.”

![Example 3.1. Sample progressions, demonstrating “applied displacement” nomenclature](image)

The three progressions of Example 3.1 will serve to demonstrate applied displacement, including some of the subtleties of its notation. In Example 3.1a, “(0,-1,0)” indicates that the root and fifth are not displaced (they are common tones), while the third is displaced to a semitone below the reference tone. By default, the third of the reference harmony is assumed to be major; if the reference harmony has a minor third, then the applied-displacement label will communicate that fact by underlining the position of the chordal third, as shown by the “(-1,0,0)” label of Example 3.1b. In this way, the referential context is embedded within the label itself, so

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51 Displacement by more than two semitones is theoretically impossible. The actual voice leading of a passage may suggest displacement by more than two semitones, but in the underlying voice leading (of the imaginary continuo, for example) it is impossible for any tone to be more than two semitones away from some tone of the reference harmony. When the realized voice leading differs in interesting ways from the idealized voice leading, it can be represented by square brackets, rather than parentheses.
that the exact content of the applied displacement harmony is inferable from the label. Displaced voices are assumed to move by the smallest possible distance to a tone of the reference harmony. It is possible for two voices of the applied-displacement harmony to merge into a single voice of the reference harmony—when this occurs, commas continue to demarcate the chord-member positions of the reference harmony, while the voices of the displacement split are separated by a slash, as in the “(0,-1,0/+2)” of Example 3.1c.

The utility of this labeling system is that any sonority can easily be specified, regardless of whether it is consonant or dissonant, tertian or non-tertian. It need not even be a common-tone sonority, although those are the focus of this chapter. This nomenclature is not proposed here as a stand-alone alternative to other systems; on the contrary, its motivation is as a way to specify common-tone progressions that either do not have a traditional name (e.g., the common-tone added-sixth chord with minor third) or are not uniquely identified by the traditional name (e.g., the common-tone diminished seventh chord).

Types of common-tone harmonies. Moving beyond nomenclature, let’s examine the content of Mahler’s common-tone progressions. Mahler’s common-tone harmonies are quite diverse and can be thought of as comprising three distinct categories: 1) consonant, tertian harmonies, 2) dissonant, tertian harmonies, and 3) non-tertian harmonies. Example 3.2 presents a selection of these, grouped into families based on tonal function and similarity. Each common-tone harmony is identified below the staff as an applied displacement. Alternative names have been provided above the staff—where appropriate, these include Roman numerals, neo-

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52 The organization of this example is not of central importance, but within each family the progressions are ordered based on the following criteria: 1) number of common tones (most to fewest), 2) identity of common tone (root, then fifth, then third), 3) direction of displacement (from below, then from above), and 4) degree of displacement (smallest to largest).
Riemannian transformations, specialized neo-Riemannian transformations (such as Childs 1998’s Cx(y) and Hook 2007’s “cross-type” transformations), and additional names derived from this dissertation.

Example 3.2. Selection of common-tone progressions, labeled as “applied displacements”

Consonant, Tertian Harmonies

Consonant, tertian harmonies constitute the first category of common-tone harmony that we will study. Limited to major and minor triads, this category is highly circumscribed.

Progressions using these harmonies are familiar from both neo-Riemannian and classical
theories, making these by far the most studied common-tone progressions in the theoretical literature.

The neo-Riemannian tradition has given prominence to the consonant, tertian operations P, L, and R (e.g., Lewin 1987, Hyer 1989, and Cohn 1996). These operations maintain two common-tones (the P5, m3, and M3 dyads, respectively) while moving the third voice by semitone (in P and L) or whole tone (in R) to produce a consonant triad of the opposite mode. Since these operations are involutions, their resulting root motion toggles by P1, M3, and m3, respectively. If thought of as contextual inversions (around the fixed dyads mentioned above), then the two common-tones are not literally maintained, but rather they map onto each other— nevertheless the operations relate harmonies that share common-tones. Whereas P, L, and R create progressions that share two common tones, neo-Riemannian theorists have also promoted progressions that share a single common tone. Lewin 1987’s DOM, SUBD, and SLIDE each produce such a harmony, retaining the original harmony’s root, fifth, and third, respectively.53 Kopp 2002 promotes chromatic mediant relationships, producing them through M (↓M3), m (↓m3), M⁻¹ (↑M3), and m⁻¹ (↑m3) operations. Lewin and Kopp’s direct, single-common-tone relationships can also be produced through a combination of L, P, and R progressions.

All of the neo-Riemannian progressions mentioned above are relevant to Mahler’s music and most are shown in Example 3.2. See, for example, P and SLIDE in Family A; L, DOM, and SUBD in Families B and C; and Kopp’s chromatic mediants in Family D (this family could easily show diatonic mediants, as well).54

53 DOM and SUBD use transposition, whereas SLIDE inverts around the chordal third.
54 It is worth emphasizing that neo-Riemannian operations are motions from one chord to another, whereas my interest in this chapter is in being able to identify all CT harmonies with respect to a reference harmony. My simple arrow (‘→’ and ‘←’), stands for “of” — as is familiar
Classical theory also provides us with models for consonant, tertian common-tone progressions. In the descending fifths sequence, for example, the root of one triad becomes the fifth of the next. In the rarer ascending fifths sequence, the fifth becomes the root. While descending and ascending fifth progressions maintain a single common tone, root motion by descending diatonic third creates progressions with two common tones—root and third become third and fifth, respectively. In rarer ascending diatonic third progressions, third and fifth become root and third. Additional common-tone possibilities are introduced by the use of modal mixture. Mixture can produce, for example, chromatic mediant progressions with one common tone and parallel progressions with two common tones. Such progressions can be produced more generally through the use of chromatic passing and neighboring motions in combination with one or more common-tone voices.

All of the classical progressions mentioned above are relevant to Mahler’s music and can be seen in Example 3.2. See, for example, the parallel mixture in the first example of Family A; the authentic and plagal progressions in Families B and C, respectively; the chromatic mediants of Family D; and the triadic example of Family E.

To be sure, not every progression that shares common tones is a notable example of a common-tone tonality. When Mahler uses a classical authentic cadence or a descending fifths sequence, for example, by default I regard it as an instance of classical tonality, rather than common-tone tonality. Nevertheless, it is possible for such progressions to emphasize common-tone coherence. Context is paramount. Furthermore, there is not always an either/or determination to be made between classical and common-tone tonalities—one goal of this

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from applied chords—rather than “to/becomes.” When I want to show a process of becoming, I will use a double-lined arrow (“⇒”).
chapter is to demonstrate the reach of common-tone tonality into progressions that are already familiar from classical tonality.

A famous motive of the Sixth Symphony is shown in Example 3.3. Commonly referred to as the “fate motive” or as the major-minor motto (Bekker 1921) or seal (Floros 1985), this common-tone progression leads from an A-major triad to its parallel minor. In the context of the pervasive A-minor tonic of this movement (and three of the four movements of the symphony overall) the major triad of this motive stands out as a temporary transformation of the tonic triad.

![Example 3.3. Common-tone motive. Symphony No. 6, i, 57–60](image)

Another prominent common-tone motive appears in the Third Symphony. Like that of the Sixth Symphony discussed above, this motive is used cyclically (though much less extensively than that of the Sixth). Example 3.4 shows the motive as used during its second appearance in the fourth movement, a setting of the “Midnight Song” from Nietzsche’s *Also sprach Zarathustra*. The focal point of the music here is the tone A in the vocal part, which serves as a common-tone through two submediant–tonic progressions: first F–Am, then F♯m–A (neo-Riemannian L and R, respectively).\(^{55}\) Whereas the major-minor motto of the Sixth Symphony is a common-tone progression that easily falls within the paradigm of classical tonality, the

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\(^{55}\) Each of these progressions contains two common tones, but the principal common tone is undoubtedly the A of the vocal part.
common-tone motive of the Third Symphony resists classical interpretation. To be sure, the submediant–tonic progression can be thought of as an incomplete neighboring progression to the tonic, offering up a late-nineteenth-century submediant in place of a classical subdominant. Nevertheless, it is evident that in this passage Mahler’s interest is in exploring and juxtaposing different settings of a single tone. Structurally, we hear the juxtaposition of different submediant–tonic progressions, as well as the slightly deeper parallel progression between the superordinate A-minor and A-major triads. In an associative capacity (discussed below in Part IV), the juxtaposition of the F major and F♯ minor triads gives this passage a trace of Lewin’s common-tone SLIDE progression.56

Example 3.4. Common-tone motive. Symphony No. 3, iv, 82–86

SLIDE progressions in Mahler’s music tend to occur either somewhat below the surface or in associative ways, but a direct slide progression can be seen in Example 3.5. In this D-major passage from the third movement of the Seventh Symphony, 5 serves as a common tone while the harmonic progression seems to express a palindromic I–III6/4–III6/4–I with a SLIDE

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56 This presentation of the common-tone motive is harmonically identical to that presented at the opening of the first movement; at the opening of the fourth movement, the progression terminates with an A-minor triad. I have selected the A-major ending for its theoretical simplicity and because I believe it is Mahler’s “ideal” version of the motive.
progression relating the F⁷m and F harmonizations of A. Although that triadic reading is a literal representation of the accompaniment, a different interpretation emerges from a consideration of the complete texture in light of Mahler’s characteristic tonal patterns. The violin melody expresses a linear progression 5–4–3 from beat two of measure 55 into the following downbeat. Combining that linear progression with the 7 (C#) of the bass and the common-tone 5 (A), beat three takes on a strong dominant function. The presence of 3 (F#) seems to confound this analysis, until we recall that dominant harmony with tonic intrusion is a characteristic feature of Mahler’s music. I hear beat three of measure 55 as a clear instance of an inverted dominant seventh chord with tonic intrusion (3 replacing 2).⁵⁷ A SLIDE progression therefore leads to the III, but not from it (though SLIDE voice-leading remains a subset of the progression to the inverted V⁷⁺³).

Example 3.5. Symphony No. 7, iii, 54–57

The stability of consonant, tertian harmonies makes them well suited to creating larger common-tone expansions within a section. Example 3.6 offers an example of two consonant,

⁵⁷ Retrospectively, this influences my hearing of the second harmony of this passage. Instead of a III⁶⁴, I hear it as a V⁶ with tonic intrusion of 3. This distinction has limited consequence, perhaps, since the scale-degree content is the same, but I do think the dominant with tonic intrusion is a more apt interpretation.
tertian common-tone expansions from an excerpt of the song “Wer hat dies Liedlein erdacht?” from *Des Knaben Wunderhorn*. After cadencing in the home key of F major, Mahler makes two chromatic-mediant excursions: first to III♭ or \((-1,0,+1)\) of F in measures 47–51 and then to \(b\)VI or \((0,-1,+1)\) of F in measures 55–59. Each of these expansions is itself expanded by a local common-tone \(b\)VI\(^6\)/\(4\) or \((0,-1,+1)\).59

Example 3.6. “Wer hat dies Liedlein erdacht?,” mm. 46–67 (analytic model)

**Dissonant, Tertian Harmonies**

The second type of common-tone harmony—dissonant, tertian harmonies—includes classically structured dissonances that are given common-tone resolutions, such as occurs when dominant seventh chords (see Family E), fully diminished seventh chords (Family F) or augmented sixth chords (Family G) are treated as common-tone, rather than functional, harmonies. Whereas common-tone relations among consonant triads are prominent in classical

58 These excursions are symmetrical around the tonic, with root motion by ascending M3 and descending M3. Koop 2002 would call these M\(^1\) and M transformations, respectively. Tymoczko 2011 notes that major triads transposed by major thirds will connect with “particularly efficient voice leading,” writing that, “nearly even three-note chords are very close to their four- and eight- semitone transpositions” (97). The efficiency of the voice leading can be seen in my applied-displacement nomenclature, which shows two voices displaced by a semitone in opposite directions while one voice maintains a common tone.

59 Though not relevant to this section on consonant, tertian common-tone harmonies, it is interesting to note that this passage returns to the tonic by transforming the common-tone \(b\)VI chord (D\(^b\) major) into a common-tone augmented sixth chord that resolves to I.
and neo-Riemannian theories, these theories have less to say about common-tone relations involving dissonant tertian harmonies.

The explanation from classical theory is perhaps best represented by Aldwell/Schachter 2011, which regards the common-tone diminished seventh chord as a “contrapuntal decoration” derived from upper-voice neighbor tones (602–8). While I find Aldwell/Schachter’s decorative explanation to be satisfying in many cases, it places the common-tone harmonies in an extremely subordinate, essentially non-harmonic, position, which I find is not always the case. Another issue with the classical approach is that it does not specify the harmony or voice leading precisely, whereas my applied-displacement nomenclature does. For example, in Families E, F, and G, the applied-displacement label specifies which voice has the common tone and how the other voices move.

Neo-Riemannian theorists, aware of the limitations of dealing only in consonant triads, have sought to expand the neo-Riemannian harmonic vocabulary in various ways. Particularly relevant to the progressions of Family E, for example, is Childs 1998. Childs explores relations among chords of set class (0258), which includes dominant and half-diminished seventh chords. He proposes a new nomenclature: Sx(y) and Cx(y), where x is the pitch-class interval between the pair of common tones, y is the pitch-class interval between the pair of moving voices, and the contrapuntal motion between the moving voices is identified as S for “similar” or C for “contrary.” His nomenclature therefore applies well to a subset of what I call the “OctaDom” progressions (discussed below). Hook 2007 addresses a different limitation of conventional neo-Riemannian theory (and thereby applies to a different subset of Example 3.2) by presenting “cross-type” transformations between triads and seventh chords. Hook promotes an “inclusion

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60 For an examination of dissonant, tertian common-tone harmonies in the history of theory, see “Notes” document.
transformation, which maps any major or minor triad to the unique dominant or half-diminished seventh chord that contains it” (Hook 2007, 4; see also Hook’s 2002 dissertation). Combined with the neo-Riemannian transformations P, L, and R, this inclusion transformation produces P’, L’, and R’, which can be seen in Families A, G, and E, respectively. Another solution to the problem of cross-type transformations is to simply ignore the sevenths of the seventh chords (see, for example, Kopp 2002). These approaches are effective within their limitations, but given the diversity of Mahler’s common-tone progressions, it is valuable to have a system for identifying all of them with precision and uniformity.

Let us now explore some examples of tertian, dissonant common-tone harmonies, starting with the OctaDom progressions (Family E). “OctaDom” is my name for any progression drawing from the four dominant seventh chords that occur in an octatonic system. It therefore deals in dominant triads, seventh chords, and ninth chords whose roots are related by either a minor third or diminished fifth (3 or 6 semitones). These progressions are already familiar from such sources as the dominant-seventh omnibus progression and theorists interested in parsimonious voice leading among seventh chords (such as Childs 1998, discussed above).

Example 3.7 shows the opening of the Ninth Symphony’s third movement. At the cadence into measure 7, Mahler uses a $b\text{II}_6$–I progression. That is a common cadential progression for Mahler and its classical basis has been discussed in Chapter 2, but if we consider the complete three-chord progression, we seem to have $b\text{IV}–b\text{II}_6$–I. To be sure, $b\text{IV}$ does not make sense in classical tonality, and respelling the progression as $\#\text{III}–b\text{II}_6$–I does not make the passage any more classical or coherent. The best explanation, to my mind, is that common-tone tonality has superseded classical tonality momentarily, as Mahler approaches the
penultimate harmony through an OctaDom progression. Specifically, he uses a (-2,-1,0,0)→♭II\textsuperscript{Aug6} progression, approaching the ♭II\textsuperscript{Aug6} from the major triad whose root lies three semitones above. Mahler uses the same strategy in the preceding measures (mm. 3–4), but there he extends the OctaDom progression backward even further, engaging chords built on three of the four possible roots in that OctaDom group. Whereas the OctaDom progression of the cadence draws from the 1,2 (C♯,D) octatonic collection, the earlier three-chord OctaDom progression draws from the 0,2 collection; extending this octatonic hearing back even further reveals that the opening measures draw from the only other octatonic collection, 1,2 (with the notable exception of the B).

This emphasis on common-tone coherence in place of classical coherence causes a momentary rupture in the scale-degree basis of the music. No enharmonic respellings can resolve the internal scale-degree conflicts. As the melody ascends through a melodic minor scale (mm. 3–7), the melodic pitches are spelled with classical scale-degree sense while the accompaniment is forced to choose between spellings that give consonant support to the given melodic tone or spellings that make sense in the key and is unable to reconcile these competing aims (e.g., the ♭1 and ♭4 in the bass of mm. 4 and 6, respectively). The common-tone OctaDom progressions create a sense of tonal coherence while the passage as a whole avoids classical tonality. By preceding ♭II\textsuperscript{Aug6} it with an OctaDom progression, Mahler has created the distinctive cadential motto for this movement.
Example 3.7. Common-tone OctaDom progressions in Symphony No. 9, iii, 1–7

An even more remarkable OctaDom passage can be seen in Example 3.8, which presents the voice part and an imaginary continuo part for two corresponding passages of “Oft denk’ ich” from the Kindertotenlieder. In the opening stanza, Mahler presents a fairly straightforward harmonic plan: 1) the entrance of the voice produces a minor tonic, which, after 2) a neighboring dominant, leads 3) through a series of descending fifths to bIII, and then 4) onward directly to the cadential dominant.

In the second stanza, Mahler interpolates an OctaDom passage between bIII and V. The OctaDom passage begins with a bVII\(^9\) that sounds initially like a V\(^9\) of bIII. This bVII\(^9\) and the eventual V\(^7\) belong to the same OctaDom family, but rather than proceed directly between them, Mahler expands the progression by interposing yet another harmony from the same family. Whereas Example 3.7 emphasizes OctaDom progressions by descending minor third, the present example uses an ascending minor third, leading from bVII\(^9\) to bII\(_5\row_7^{\text{Aug6}}\). Since the first harmony is a ninth chord, Mahler’s ascending third OctaDom motion gives Mahler three common tones to work with (Ab, Cb, and Eb). Indeed, these common tones are used in a fixed-pitch motive while the OctaDom progression creates a sense of surprise and wonder, underscored by the change of dynamics in the piano score (pp, with a crescendo up to f and back...
down) and a change of instrumentation in the orchestral score (appearance of the harp; motive transferred from strings to winds).

The exit from $b\,II^{7/}\text{Aug6}$ is just as remarkable as its approach. The harmonic goal is a $V^7$, another OctaDom transformation. Adding to the experience, however, is the fact that the $V^7$ is delayed by upper-voice embellishments. These embellishments take the form of what we might call a cadential six-four of a cadential six-four, creating the apparent progression, $IV–I–VII^{7}/V–V^7$. Part of the wonder of this passage is the fact that the $b\,II^{7/}\text{Aug6}$ chord not only participates in a three-chord OctaDom passage, but it also functions as a German augmented sixth chord of IV, the initial harmony of the dominant embellishment. Based on the first stanza, we know that this interpolated passage is tonally unnecessary—it serves both to create a sense of wonder in its harmonic transformations and to give a fresh preparation for the dominant and its remarkable embellishment.

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61 Everett 1999 defines a “double-plagal cadence” as “the descent of two successive perfect fourths in roots moving to the tonic, $b\,VII–IV–I$, allowing both the interior anticipations of roots and stepwise descending resolutions in upper voices” (316). In a sense, Mahler has employed a similar “double-plagal” progression, but here it drives to the dominant: $IV–I–V^7$. 

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Example 3.8. Common-tone OctaDom interpolation in “Oft denk’ ich,” mm. 5–19 and 31–36 (voice and imaginary continuo, in lieu of short score)

A passage using two common-tone diminished harmonies (Family F) is modeled in Example 3.9. Occurring at the end of the Sixth Symphony’s Scherzo, this passage makes extensive use of the symphony’s major-minor motto progression. The motto progression occurs sequentially, starting on the tonic and repeating on VII and VI of A minor. This suggests a descending tetrachord from I to V, but the V does not materialize. Instead, the sequence is broken as the minor VI becomes a common-tone fully diminished seventh chord: \((0,0,-1/+2)\) of VI\(^b\). Maintaining the root as a common tone, Mahler returns to major VI and then progresses
again to the fully diminished seventh chord. Mahler again uses it as a common-tone harmony, but rather than progress to VI, this time Mahler progresses to bII, treating the diminished seventh chord as a \((+1/-2,0,0)\) displacement, rather than a \((0,0,-1/+2)\). For listeners expecting a descending tetrachord from I to V, this bII can be heard as a tritone substitute for the V. The bII progresses down by step to the tonic for another statement of the motto progression. The overall progression then is I–VII–VI–bII–I, and it is a fully diminished seventh chord that provides the common-tone portal from VI to bII.

Example 3.9. Common-tone fully diminished seventh chords in Symphony No. 6, Scherzo, 419–34 (analytic model)

A sample use of a common-tone augmented sixth chord (Family G) is shown in Example 3.10, an annotated short score of a passage from “Der Schildwache Nachlied.” This passage uses Mahler’s most frequent common-tone augmented sixth chord—the one that displaces a major triad and maintains its root as a common tone: \((0,-1,-1/+1)\).\(^62\) In this passage, the common-tone augmented sixth chord serves as a local neighboring harmony to the tonic triad.

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\(^62\) Whitworth 2002 approaches this type of progression in functional terms and concludes that it is an unusual and drastically abbreviated resolution of the traditional augmented-sixth chord (261–62), but I think a common-tone approach makes the progression’s coherence clear and relatively uncomplicated.
Example 3.10. Common-tone augmented sixth chords in “Der Schildwache Nachtlied,” mm. 99–103

The common-tone augmented sixth chord is a prominent and perhaps often misunderstood harmony in the finale of the Sixth Symphony. It is the first harmony of the movement and serves as the basis for an introductory passage, which leads directly to the major-minor motto progression. This sequence of augmented-sixth introductory material followed by the major-minor motto progression returns twice over the course of the movement. Example 3.11 presents an analytic model of each of these occurrences, showing the initial augmented-sixth harmony and its common-tone resolution into the major-minor motto progression.

The harmonic meaning of these progressions is clarified by studying them as a group. The first progression is the most challenging and the challenge that it poses—how to understand the opening sonority and its relationship to the major-minor motto progression that follows—is taken up by the later progressions. It will be easiest to understand the three examples in reverse order. In example c, the major-minor motto progression produces the goal tonic of A minor. The introductory F dominant seventh chord functions clearly as a common-tone augmented-sixth

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63 The introductory material also returns in measure 229, but there the harmony is a minor seventh chord and it does not lead to the major-minor motto progression.
chord (the D♯ is spelled enharmonically as E♭, but nevertheless ascends to E). I take this to be a fairly prototypical example of a common-tone augmented-sixth chord applied to A minor. In example b, we find the same harmonic progression, transposed to C minor. Here the common-tone augmented-sixth chord is evident without enharmonic respelling. The bass tone is shown in parentheses because Mahler has made two tonics overlap here: a cadence to D minor is immediately undermined by the appearance of the common-tone augmented-sixth chord applied to C minor. Despite this tonal overlap, the relationship between examples B and C is clear.

Example A presents a generative tonal conflict: the goal tonic is A minor, but the common-tone augmented-sixth chord suggests it will be C minor, instead. Examples B and C present two competing responses to this conflict. Example B gives the “wrong” solution: to maintain the pitch level of the common-tone augmented-sixth chord and have the goal tonic yield to that key, C minor. Example C provides the correction: the common-tone augmented-sixth chord is transposed to produce the “right” (global) tonic of A minor. The progression of example A therefore poses a problem that will be worked-out over the course of the movement, with the recompositions of this particular passage appearing more than five hundred and seven hundred measures later, as shown.

Example 3.11. Common-tone augmented sixth chords in Symphony No. 6, iv (analytic models)
While presenting a tonal conflict between its two halves (as discussed above), example A also presents an unusual common-tone relationship. To be sure, there is no direct common tone maintained as the augmented-sixth chord progresses to the major triad of the major-minor motto. The major triad is fleeting, however, and clearly subordinate to the minor triad that displaces it. Supporting the demotion of the major triad is the fact that the melody entirely disregards it and instead begins by unfolding a minor triad. Just below the surface of the music, therefore, this augmented sixth chord is a (-1,0,-1/+2) applied displacement of the target A minor. Part of the strangeness of this progression derives from the fact that it contains a (-1,0,-1)→Am SLIDE subprogression.64

Additional examples of common-tone augmented sixth chords are scattered throughout this chapter. A small-scale neighboring example can be seen in the penultimate measures of each system in Example 3.69, from “Verlore Müh’.” An example with greater structural importance can be seen in the final progression of Example 3.6, from “Wer hat dies Liedlein erdacht?” A common-tone augmented sixth chord is analyzed as the “ikonic sonority” of the song “Nun she’ ich wohl” later in this chapter (see pp. 134–36).

64 I hope to have provided a rich understanding of this common-tone augmented-sixth chord. Previous analysts have given varied levels of attention to it. Some analysts assert that the opening is “in C minor,” without explaining how it expresses that tonic or key (e.g., Samuels 1995, 70 and Mitchell 2002, 373). Bekker 1921 (trans. 2012) is content to call the opening harmony “a darkly murmuring altered four-three chord above C in a strange, dusky coloration” (519). Some analysts call the opening harmony an augmented-sixth chord, without explaining that it is a common-tone, rather than functional, augmented-sixth chord (e.g., Brown 2003, 656 and Monahan 2008, 257). Redlich 1968 tacitly indicates that it is a common-tone augmented-sixth chord by drawing a parallel between this “chord of chaos” and the opening of Schubert’s “Am Meer” (ix). Oechsle 1997 describes it as a C-minor triad with divided fifths, A b/F# (175; cited in Grange vol. 3, 833n145).
Non-Tertian Harmonies

The third type of common-tone harmony—non-tertian harmonies—is of particular interest to this study, since it is not often included in tonal common-tone studies. Non-tertian common-tone harmonies tend to arise in either of two ways: conflicting levels or conflicting prolongations. In a conflict of levels, one or more tones from a deeper level of structure seep through to the surface, where they clash with the local harmony to create a non-tertian structure. In Family A, the added-sixth chord with minor third demonstrates such a clash by simultaneously employing the chordal fifth and its subordinate upper neighbor. Families B and C contain examples where classical V–I or IV–I progressions are transformed by “tonic intrusion.” Unlike conflicting levels, conflicting prolongations arise from an irreducible prolongational conflict at the same level of structure. This can produce acoustically consonant non-tertian trichords that embody an enharmonic/scale-degree conflict, such as the “false mediants” shown in Family A (the are acoustically consonant because they are the enharmonic equivalent of triads). It also can produce the added-sixth (or minor-seventh) chord common in tonal pairing (discussed as an “Associative Technique,” below).

An example of a non-tertian common-tone harmony that has not been widely recognized is the “added-sixth chord with minor third” (for lack of a better name). As indicated in the applied displacement notation (0,-1,0/+2), this harmony maintains the root and fifth as common tones while employing two neighboring tones: a chromatic lower neighbor to the third and a whole-tone upper neighbor to the fifth. The fifth has thus been split into two voices—itsel and its subordinate upper neighbor. Given this conflict of levels, the harmony can alternatively be regarded as a common-tone diminished triad (0,-1,+2) with tonic intrusion (5). Example 3.12

65 For further discussion of tonic-intrusion harmonies, see Chapter 2, “Cadence.”
presents a short-score excerpt from the Tenth Symphony, while Example 3.13 gives an annotated analytic model of the same passage. Although we could acknowledge that it is a neighboring harmony without specifying what harmony it is, the fact that this is a recurring structure in Mahler’s music makes me want to be more precise and to give it a name. Example 3.14 and Example 3.15 present an example of the common-tone added-sixth chord as used in a passage from Mahler’s Second Symphony.

Example 3.12. Common-tone added-sixth chord in Symphony No. 10, i, 16–18

Example 3.13. Common-tone added-sixth chord in Symphony No. 10, i, 16–18 (imaginary chorale)

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66 A note about the enharmonicism of the second measure: Mahler spelled the F as a G in one sketch (Österreichische Nationalbibliothek, Mus.Hs.41000/6, p. 6 recto), and even in sketches with the F#, it originally descended back to F (its theoretical goal) rather than ascending to A (an inner voice). I have spelled it as a G in my analytic model because I believe it is the bass of a dominant harmony with the contrapuntal and Phrygian transformations (for more on these transformations, see Chapter 2 on cadence).

Example 3.15. Common-tone added-sixth chord in Symphony 2, iii, 316–28 (analytic model)

Sometimes neighboring voice leading can produce non-tertian common-tone harmonies that are enharmonically equivalent to triads. The non-tertian status of such sonorities is based on

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Note: this model removes the non-harmonic ninth (F#) that occurs during the tonic triad.
the scale degrees that they contain. In the Sixth Symphony, the first statement of the major-minor motto progression is immediately followed by a chorale theme, characterized by efficient voice leading and prominent common tones. Many of these common tones derive from classical root motion by descending fifth, but I would like to call attention to a non-classical, common-tone moment. As shown in Example 3.16, both phrases of this sixteen-measure period begin with a 5–6–5 melodic motion, but in the consequent phrase, the 5–6–5 is simultaneously mirrored by 7–7–7 while the major form of 3 is held as an inner-voice pedal. The resulting neighboring sonority thus has elements of subdominant (6), dominant (7), and tonic (3) scale-degree functions. Given an enharmonic equivalence (taking 6 as #5), one could hear this as a chromatic mediant progression (Am: I6–III6–I5)—note, however, that the triadic consonance of the enharmonic hearing is at odds with the non-tertian, conceptual dissonance of the scale-degree hearing.

Example 3.16. Symphony No. 6, i, 61–62 & 69–70 (short score, excluding string pizz.)

That paradigm—holding 3 as a common tone while displacing 1 and 5 by their outer semitonal neighbors—was applied to a major tonic in the previous example; in the example that follows, it is applied to a minor tonic. Example 3.17 shows a passage from the Second Symphony, first movement. In measures 418 and 419, Mahler sounds a powerful C-minor triad, which tapers off into our common-tone harmony: E♭ is held as a common tone while the outer
members of the triad expand to their semitone neighbors, A♭ and B♭. This progression has special meaning for this movement, since it was used in measures 45–46 to motivate the move away from a C-minor tonic toward what would become an E-major tonic (conjured in the exposition; reified in the recapitulation; neutralized in the coda).

Example 3.17. Common-tone progression in Symphony No. 2, i, 418–20

A similar rupturing of tertian scale-degree agreement occurs in the song, “Lied des Verfolgten im Turm.” Example 3.18 includes the harmonic progression bII–x–V7/b³, where x sounds like the major triad whose root is a whole step above ♯5, yet it also clearly supports ♭♯2 in the vocal line, thus the harmony also sounds like the major triad a major third below ♭♯2. These two scale-degree hearings—VI♭ vs. ♭♭VII—are incompatible. I think the most appropriate hearing is to recognize this as a non-tertian common-tone chord: the goal is to maintain ♭♯2 throughout the progression while using a major-triad sonority to connect the OctaDom-related bII and V7/b³. The intermediate chord is thus an “apparent” major triad.
Example 3.18. “Lied des Verfolgten im Turm,” mm. 8–9 (imaginary chorale)

Example 3.19 shows that later in the song Mahler uses the same fixed-pitch harmonic progression (Gm–Eb–B/Cb) in a new tonal context, G minor, creating I–VI–x–V7–I.\(^\text{68}\) Here the x chord seems to make its root a minor third below 5 (suggesting III\(^b\)), yet it simultaneously supports 6 in the melody (suggesting bIV). Again, a non-tertian common-tone hearing (and fixed-pitch associative hearing) provides a more satisfying alternative than forcing a choice between incompatible tertian hearings.

Example 3.19. “Lied des Verfolgten im Turm,” mm. 51–54 (imaginary chorale)

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\(^{68}\) Fixed-pitch associative relationships are discussed more fully later in this chapter.
Common-Tone Modulation

Introduction

Common-tone tonality pervades Mahler’s modulatory procedures. Indeed, a common tone often features as the explicit focal point as Mahler progresses from one local tonic to another. Note that this is not a discussion of abstracted relationships between key areas, but rather this study addresses common-tone modulations as foreground processes. In particular, this study concentrates on modulations that rely on scale-degree reinterpretation in a non-functional way—classical pivot chords are not pertinent here. In examining Mahler’s common-tone modulations, I use the three-part distinction that was introduced above regarding common-tone harmony: 1) settings of the common tone that are consonant, 2) those that are dissonant (but tertian), and 3) those that are non-tertian.

The modulatory processes that are studied below involve scale-degree reinterpretation at the foreground. A pivot tone serves as the link between two local key areas: heard initially as a scale degree in one key, it becomes heard as a scale degree in a different key. To notate this process of becoming, I have adopted the double-lined right arrow used by William Caplin and Janet Schmalfeldt. If, for example, a C serves as a pivot tone leading from the tonic of A minor to the tonic of F minor, I will notate this modulatory process as Am:3⇒Fm:5. I prefer this economical notation to the notation used by Rings 2011 (as shown, e.g., in Example 3.20), which focuses attention on what he calls the “pivot interval” (the change in scale degree).

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69 Caplin 1998 thanks Schmalfeldt for recommending the double-lined arrow to him (265n46), as Schmalfeldt 2011 observes (261n27).
Example 3.20. Rings 2011, fig. 2.14, showing “a ‘pivot 4th’ from I in C major to IV in G major”

**Consonant, Tertian Settings**

Consonant, texturally isolated pivot tones are a recurring feature throughout Mahler’s works. In the first movement of his Second Symphony, for example, Mahler plays with scale-degree ambiguity at critical moments. In a foreshadowing of the modulatory procedures that are to be employed throughout the movement, the opening tremolo Gs of Example 3.21 make scale-degree interpretation a salient issue from the start, presenting ambiguity as to whether the isolated Gs are tonic or dominant (even knowing that they are 5, there is an initial harmonic ambiguity as to whether 5 is a root or fifth). In an analytical shorthand, this stage of key/scale-degree ambiguity and the process of clarification can be represented through the following notation: ??:Cm:5.

Example 3.21. Scale-degree interpretation in Symphony No. 2, i, 1–5

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70 In some works, the pivot tone is so salient as to become almost motivic. See, for example, Symphony No. 2, i; Symphony No. 5, i; Symphony No. 5, iii; Symphony No. 6, Scherzo; and Symphony No. 6, Andante.
In the corresponding passage at the start of the recapitulation, shown in Example 3.22, the isolated Gs have largely lost their ambiguity, since they emerge from a massive cadence in C minor. The limited ambiguity that arises during the isolated tremolo of this passage can be represented through the notation Cm: 5 ⇒ Cm: 5, where the confirmation of our initial understanding is itself a process.

Example 3.22. Symphony No. 2, i, 328–32

In Example 3.23, the isolated tremolo Gs return in a modulatory capacity, taking us from a definitive PAC in E♭ minor through an ambiguous passage to a strong C-minor tonic. During the shift from E♭ minor to C minor, the G♭ initially sounds like a major 3, yet through association with the opening measure it also takes on the eventually confirmed sound of scale-degree 5 of C minor. In other words, E♭m: 1 ⇒ E♭: 1 and then E♭: 3 ⇒ Cm: 5.
Example 3.23. Scale-degree interpretation (modulation) in Symphony No. 2, i, 59–65

Even more complex is the corresponding common-tone modulation from the recapitulation, shown in Example 3.24, where our sense of the sounding tonic triad shifts from E major to E minor and then shockingly to Eb major before turning to C minor. These successive stages of key and scale-degree interpretation can be represented as E:\hat{1} \Rightarrow \text{Em:}\hat{1} followed by Em:3 \Rightarrow Eb:3 and then Eb:3/\hat{1} \Rightarrow Cm:5/3.

Example 3.24. Scale-degree interpretation (modulation) in Symphony 2, i, 384–93
While isolated pivot tones are a notable technique in his music, it is also true that Mahler commonly engages the pivot tone in a direct harmonic progression. Example 3.25 is striking in part because Mahler harshly juxtaposes the two adjacent tonics by briefly overlapping them in a dissonant sonority. Mahler’s consonant common-tone modulations can be heard on a continuum between these two extremes of the isolated pitch and the superimposed tonics.

Example 3.25. Common-tone modulation (consonant CT) in Symphony No. 7, v, 50–57

Dissonant, Tertian Settings

Although consonant triadic progressions underlie many of Mahler’s common-tone modulations, it is perhaps of greater theoretical interest that Mahler frequently gives the pivot tone a dissonant harmonization, either tertian or non-tertian. Dissonant tertian settings of pivot
tones principally take the form of common-tone diminished-seventh and augmented-sixth chords. In Example 3.26, B♭ minor becomes A major, mediated by an A fully diminished seventh chord. This ˚7 chord is first used functionally (m. 42) to resolve to B♭ minor, and then used as a common-tone harmony (m. 43) to resolve to A major. Thus we hear B♭ m: ˚7⇒A:1.

Indirectly, this passage has executed a SLIDE progression, as is emphasized by the minimally altered melody shown in the top staff. This SLIDE relationship is heard as B♭ m: ˚7⇒A:1.


Mahler also uses augmented sixth chords in his common-tone modulations. Typically these use the (0,-1,-1/+1) augmented sixth. Example 3.27 takes up the isolated tremolo modulations from the Second Symphony, discussed earlier, but here envelopes the pivot tone in a gradually unfolding common-tone augmented-sixth chord to lead from B major to E♭ minor. The example shows a passage coming to rest on its tonic triad, B major (mm. 236–41). The root of that tonic is sustained in the isolated timpani (mm. 242–43) until eventually the triad’s third

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71 For an extensive discussion of common-tone diminished seventh chords in a single movement, see the analysis of the Fifth Symphony’s second movement under “Ikonic Sonority,” below.
and fifth are reintroduced above it (m. 244, spelled enharmonically as E♭ and G♭). The scalar environment for these pitches includes a D and F and thereby communicates a shift in orientation from E♭ minor to B major. The isolated pivot tone can be expressed here as B:♯E♭♭. The eventual confirmation of E♭ minor as local tonic is executed through a common-tone progression: the C♭ major triad (m. 244) becomes a German augmented-sixth chord (m. 246) which then resolves as a common-tone harmony to the E♭-minor tonic (arriving in stages, with the B♭ m. 246, the root-fifth leap of m. 248, and finally the root-position stability of m. 256).

Example 3.27. Symphony No. 2, i, 236–54

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**Non-Tertian Settings**

Mahler’s dissonant settings of the pivot tone sometimes take a non-tertian form. Whereas in dissonant tertian settings the common tone is often one of the more stable elements of the dissonant harmony, in non-tertian settings the common tone is often a dissonant element that becomes reinterpreted as a consonance.

This is accomplished, for example, when a dominant harmony that has been transformed through tonic intrusion resolves to an unexpected tonic while maintaining the tonic intrusion tone as a common tone to the new tonic. When the dominant harmony is a triad with tonic intrusion of 3 taking the place of 2, the resulting sonority is a non-tertian 5–7–3 structure (where 7 indicates the leading tone). In minor keys, this creates an augmented triad (which I regard as non-tertian because its root position is not built in thirds, but is rather a six-three sonority). Given the enharmonically symmetrical intervallic structure (like the fully diminished seventh chord, discussed above), this harmony is ripe for scale-degree reinterpretation. A clear example of a dominant triad with tonic intrusion being reinterpreted for a modulation can be seen in Example 3.28 from the Seventh Symphony. The harmony in question is introduced as a transformed dominant of E minor, but the tonic intrusion (G) is reinterpreted as the root of a dominant of C major. Em:3⇒C:5.
Example 3.28. Common-tone modulation (aug 5) in Symphony No. 7, i, 114–20

With that model in mind, we are well prepared to better understand a detail at the end of Example 3.29 (we will revisit this passage in Example 3.68). The antecedent phrase ends with an apparent half cadence in C that dissolves into a half cadence a third lower, in A minor. Something subtler, yet similar, happens at the end of the consequent phrase. The consequent ends on dominant of A minor, with a suspended C♯ that stubbornly moves to C♯♮ instead of the expected B over the dominant. If Mahler then returned to A minor, then this C could be heard as a tonic intrusion. What follows is instead a rather abrupt move to F major (the “Alma” theme). In retrospect, however, this move to F can be heard as the reason for Mahler’s use of the stubborn C♯♮ in the previous measure. Similar to the earlier half cadence in C that had transformed into a half cadence in A minor, here tonic intrusion allows an active dominant in A minor to be retrospectively reinterpreted as the dominant a major third lower, in F major. The C, conveniently, is a common tone to both the tonic triad and tonic-intrusion dominant in both A minor and F major.
In Example 3.30, a dominant with tonic intrusion is again used for modulation, but this time the dominant is a seventh chord. This makes the substitution of $\frac{3}{2}$ for $\frac{2}{2}$ all the more dissonant, yet the tonic intrusion note nevertheless functions as the pivot tone in the common-tone modulation. Leading up to the first fermata, the goal tone, A, seems likely to arrive as a stable pitch, as in measure 414. At the fermata, however, an unexpected reharmonization leads to F major, while the note A is treated as what we might call a “stable dissonance”—dissonant as a tonic intrusion on the dominant, yet stable on either side of that dominant. This is a dissonance that has been treated as the stable pivot of a modulation. The arrival of a stable F-major tonic triad (which quickly turns minor) is effectively delayed until measure 427–29, where it is decorated by a neighboring common-tone diminished seventh chord.
Example 3.30. Common-tone modulation in Symphony No. 5, iii, 411–31 (short score and analytic model)

When tonic intrusion transforms a dominant triad with $\hat{1}$, instead of $\hat{3}$, the resulting sonority is an open-fifths V+I trichord. This common-tone sonority can result from overlapping tonics, as well—the first sonority does not have to carry a dominant charge, as long as the progression imitates a V–I root motion. Example 3.31 demonstrates a modulation using this sonority in a passage from the First Symphony, first movement. The introduction explores A minor (with prominent Phrygian $\hat{2}$) and leads to the exposition in D major. Rather than convert the A-minor tonic into a classical dominant to reach D major, Mahler avoids the leading tone altogether. Mahler achieves the modulation instead by using the common-tone trichord that
combines the root-fifth dyads of A minor and D major. The resulting sonority (A–D–E) is like a \( V^{\text{sus}4} \) where the suspended fourth anticipates the coming tonic.

Example 3.31. Modulation from Am to D via trichordal combination. Symphony 1, i, 57–64

This modulatory process forms the basis of one of Mahler’s most radical modulations, the approach to the exposition of the Seventh Symphony, first movement, shown in Example 3.32.

Here the modulation is from B minor to E minor, and again Mahler avoids the classical option of turning B minor into an active dominant. Instead, Mahler begins just like the process shown in the previous example, with the B-minor root-fifth dyad being joined by the E-minor root-fifth dyad in measure 46. This tonic intrusion of \( \hat{1} \) creates a \( V+I \) trichord in E minor. What makes this passage extraordinary is not these first two measures, but rather the next measure, where Mahler extends the root-fifth dyads one fourth “too far.” This introduces one new note, A, which does not belong to either of the overlapping tonics—indeed, it is the only “foreign” voice of the entire passage and it serves to intensify the dissonance of the passage and the consequent sense of tonal release at the common-tone resolution. It is also notable that this A is \( \hat{4} \) of the goal tonic and can therefore be heard as the chordal seventh of the initial B harmony. So whereas our previous example used a \( V^{\text{sus}4} \) harmony, this passage has so far built a \( V^{7\text{sus}4} \) harmony. With the goal of E
minor, the A could resolve down by step to G; but given Mahler’s characteristic avoidance of the leading-tone, and given that the A is participating in a motivic set of fourths, there is nothing to motivate that descent—instead, the A ascends to A♯, clearly indicating its goal as B. Before the A♯ resolves to B, Mahler adds a G through tonic intrusion. With the F♯ having dropped out, we now have the tonic intrusion of a complete E-minor triad, with the only remaining necessary action being the resolution of A♯ to B and the appearance of a strong root in the bass, two steps that happen as we move into measure 50. The stack of motivic fourths provides a sonic thrill in this passage, and Mahler was surely having fun with it. But in the context of Mahler’s compositional practice, we can recognize an underlying Mahlerian structure: the progression from one tonic to another via their overlapping/intersecting root-fifth dyads (here, B–F♯ giving way to E–B).

Example 3.32. Symphony No. 7, i, 45–50 (short score and analytic model)
Case Study: Sixth Symphony, Andante moderato

A study of the Andante moderato of the Sixth Symphony will serve to demonstrate how common-tone modulations can permeate a movement. Mahler uses common-tone techniques here for two vastly different purposes: 1) they control the movement’s overall tonal structure, and 2) they create a sense of tonal wonder in the movement’s details.

In his first move away from the tonic (modeled in Example 3.33), Mahler uses a common-tone dyad to provide continuity—and a moment of mystery—as he changes the tonal focus from $E_b$ major to $G$ minor. Mahler’s begins this process by removing the root of the $E_b$ tonic triad (m. 21), thus exposing the remaining dyad, $G–B_b$. After allowing this dyad to float in the flutes for a measure, Mahler beings a new melody on $D$, thus reinterpreting the dyad with a new tonic, $G$ minor. In other words, Mahler has led us from $E_b$ to $G$ minor through the dyad that they share. The withdrawal of $E_b$ from the bass at measure 21 is made especially remarkable by the fact that the bass effectively had been on an $E_b$ pedal for the previous ten measures. The common-tone aspect of this modulation is emphasized not only by the duration of the exposed dyad (a full measure), but also by the orchestration: the flutes’ common-tone dyad is joined by open fifths in the strings to create the $E_b$ triad, whereas it is joined by a melodic fifth in the English horn to create the $G$-minor triad. As the example shows, the $E_b$-major tonic had itself been introduced through a common-tone augmented sixth chord.
The G-minor section is quite short-lived—after only six measures, Mahler has returned to the main theme in E\textsubscript{b} (m. 28). Whereas the progression from E\textsubscript{b} to G minor was a model of consonance and voice-leading simplicity, Mahler momentarily increases the harmonic and hierarchical tension to get back to E\textsubscript{b}. As shown in Example 3.34, common tones are again at the core of the progression, but here Mahler creates a common-tone structure involving three layers: 1) most prominently, the top voice reaches G in measure 26 and retains this G as a common tone into the E\textsubscript{b} return; 2) the common-tone G is subtly partnered by a lower third, E\textsubscript{b}, in measure 27—this E\textsubscript{b} is not a common tone between the local tonics, but instead functions as an anticipation of the E\textsubscript{b} return; and 3) the anticipatory E\textsubscript{b} of the melody is actually folded into a subordinate progression in the inner voices—what might sound briefly like a Phrygian augmented-sixth chord in G minor (A\textsubscript{b}–C–E\textsubscript{b}–F\#) turns out to function as a common-tone augmented sixth chord, resolving to the E\textsubscript{b} tonic triad for the return of the theme.
Example 3.34. Gm–Eb: CT pedal (G) with local CT augmented sixth chord [Symphony No. 6, Andante]

Notice that Mahler has employed two common-tone techniques here: at the deepest level, G is retained as a common tone between G minor and Eb major, while at a subordinate level, Mahler introduces an anticipatory Eb and has it participate in a subordinate common-tone augmented sixth chord resolving to Eb. (Notice also that the potential deep-level common-tone, Bb, is not employed here, but rather it gives way to the common-tone augmented sixth chord.) The combination of the common-tone G with the common-tone augmented sixth chord on Ab simultaneously produces two flavors of “tonic intrusion”: from the deeper perspective, the Eb sounds like a tonic intrusion, since it arrives one measure before the Eb tonic, but from a more local perspective, the G sounds like a tonic intrusion, since it refuses to give way to the local common-tone augmented sixth chord.

After serving prominently in the Eb–Gm and Gm–Eb modulations, the G pedal tone takes even greater prominence in the next modulation (see Example 3.35), where Mahler isolates it for two measures in string harmonics. This time, the G serves as the common third in a chromatic progression from Eb major to E minor (Lewin’s SLIDE). Mahler uses the common-
tone G here to provide structural continuity, but he also defamiliarizes it by supporting it in such an unexpected way. Classical tonality clearly does not govern this passage; common-tone tonality does.

Example 3.35. $E_b$–Em: CT pedal (G), now made strange (SLIDE) [Symphony No. 6, Andante]

Although common-tone modulations are the focus of this discussion, it is worth observing that common-tone techniques have significance in other ways in this movement. Notice, for example, that all of the examples presented so far have included a common-tone augmented-sixth chord: the $C_b$ augmented-sixth chord of measures 19 and 49, and the $A_b$ augmented-sixth chord of measure 27 (each of which resolves to an $E_b$ tonic triad, with $E_b$ serving as a common tone).

After the otherworldly transition from $E_b$ major to E minor, Mahler eventually introduces a further surprise: E major (see Example 3.36). Instead of a direct, common-tone progression from E minor to E major, Mahler employs a functional dominant (m. 81, an activation of the minor V from m. 72). But in addition to harnessing the tonal tension of the dominant ninth chord, Mahler goes out of his way to interpolate a local, common-tone progression: the upper voices of the dominant ninth chord (which are equivalent to a fully diminished seventh chord on D#) do not discharge directly to E major, but instead they slide up,
one voice at a time, to a fully diminished seventh chord on E, while the dominant pedal remains in the bass. Instead of the dominant ninth chord (classical tonality), it is this E diminished seventh chord (common-tone tonality) that resolves directly to E major.

Example 3.36. Em–E: Interpolated CT °7 chord [Symphony No. 6, Andante]

Now that he has progressed to E major, Mahler has lost all direct common-tone possibilities for the coming return to E♭. In lieu of a direct common-tone pedal, therefore, Mahler employs a subordinate common-tone progression wherein the functional V7 of E disintegrates into a common-tone diminished seventh of E♭ (see Example 3.37). Although Mahler initially navigated from E♭ to E (via E minor) without enharmonic reinterpretation, notice that this move back to E♭ does require it, as E:7⇒E♭:1.

Example 3.37. E–E♭: Reinterprets V7 (of E) as a CT °7 chord of E♭ [Symphony No. 6, Andante]
Having returned to the main key at the midpoint of the movement (m. 100 of 201), Mahler does not stay there long. He restates the main theme, rounds it off with a PAC (m. 108), and then, in the middle of the next phrase, heads in a new direction. This passage plays on the hierarchical status of a dissonantly harmonized $\ddot{3}$. Mahler presents it three times, each time as part of an applied chord to V (marked by asterisks in Example 3.38). In its first two appearances, the dissonant $\ddot{3}$ (G, then G$\flat$) resolves to $\ddot{2}$ as part of a V$^7$ of E$\flat$. The third time begins just like the first, but instead of resolving the dissonant $\ddot{3}$, Mahler treats it as a structural common tone leading the music to an unexpected C major.

Example 3.38. E$\flat$–C: Reinterprets VII$^7$/V as CT $\ddot{7}$; transforms it into a CT Aug 6 chord [Symphony No. 6, Andante]

The surprise common-tone progression is intensified through a remarkable harmony: D$\flat$–B–E$\flat$–G (see the end of m. 114 in Example 3.38). The augmented triad of the upper voices is common in Mahler’s cadences, typically the result of tonic intrusion ($\ddot{3}$ displacing $\ddot{2}$ in the dominant), but the resolution to C major makes this E$\flat$ sound like a D$\#$ (and thus a true augmented dominant); Mahler’s cadences also often feature a Phrygian $\ddot{2}$ and a contrapuntal bass, both of which we hear in the D$\flat$ bass note. The combination of $\flat\ddot{2}$–$\dot{1}$ and $\#\ddot{2}$–$\ddot{3}$ constitutes a split scale-degree, creating nearly maximally chromatic voice leading (all voices move by

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semitone except the common-tone, G). The arrival on C major is marked “Misterioso,” and Mahler seems to have sought a common-tone progression worthy of the term.

For the next three changes of tonic, Mahler uses direct common-tone progressions from one tonic triad to the next: C–A–Am–Cm (see Example 3.39). Although it is an isolated A (again involving string harmonics) that is explicitly sustained during the progression from A major to A minor, it is notable that all four local tonics have E as a common tone. Since Mahler incorporated tonics of E minor and E major earlier in the movement, he has now treated E as the root, third, and fifth of tonic triads in both major and minor keys—that is, every possible tonic that contains E has now appeared. All of this in a movement that seeks E♭ as its tonic!

Example 3.39. C–A, A–Am, Am–C♭m: Direct CT modulations [Symphony No. 6, Andante]

Example 3.40 shows the final common-tone modulation, reestablishing E♭ as tonic. It recalls the material that led away from E♭ at the middle of the movement, thus it is fitting that the material should return for the passage that re-establishes E♭ for the final time. And in a movement that made such extensive use of common-tone augmented sixth chords, it is fitting that this final common-tone progression rely on one, as well.

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72 One significant tonic is not incorporated into this discussion: the B-major return of the theme, which is approached by descending fifths (C♭–F♭–B), rather than a notable common-tone progression.
Example 3.40. Return to E♭: CT augmented sixth [Symphony No. 6, Andante]

A summary of the movement’s common-tone modulations is shown in Example 3.41. In this example, ties highlight common tones that are explicitly held during the establishment of a local tonic (whole notes here are limited to the notes of local tonics). Almost all of the movement’s significant tonics are included here. Note that even when Mahler modulates between tonics that share no common tones, he frequently composes an intervening common-tone structure to execute the modulation.

Example 3.41. Summary of common-tone modulations in Symphony No. 6, Andante

Although it is not a structural middleground graph, Example 3.41 raises the question of large-scale coherence. In my view, what holds this movement together is common-tone tonality, rather than a Schenkerian process of composing-out. Darcy 2001 offers a Schenkerian reading, as can be seen in Example 3.42 and Example 3.43. In Example 3.42, we see that Darcy hears the

73 The one exception is the B-major statement of the theme starting at measure 163. That local tonic is approached through descending fifths and therefore does contain a common tone, but it is too classical of an approach for me to include it in this example.
movement cohere through a large-scale arpeggiation of the tonic triad in the top voice, leading to
the arrival of the Kopfton in the final measures of the movement. The absence of a middleground
bass voice here is telling, as we will see, but focusing on the top voice we might still remark that
the two incomplete upper-neighbor-note motions are quite unusual: #5–#5 and #1–#1.

Example 3.42. Darcy 2001, ex. 2: “Arpeggiation to the Kopfton (all sections)”

Example 3.43. Darcy 2001, ex. 3: “Arpeggiation to the Kopfton (moderately detailed)”

Darcy fills more detail, including in the bass voice, in his graph shown in Example 3.43. Here,
my interest is in understanding the dotted slurs that connect each Eb of the bass. How are these
bass tones prolonged? Darcy’s graph is largely mute on the subject. It shows intervening notes,
but without showing how they serve to prolong Eb. Instead of a classical composing-out the Eb
triad, I believe that Mahler here pursues a coherence based on common tones, as I have already
shown. It falls outside of the scope of this dissertation to examine deep middleground and background structures in Mahler’s music, but I think the preceding analysis points to a legitimate skepticism about how cleanly standard Schenkerian theory can be used to guide the hearing of Mahler’s deeper structures.

**Associative Techniques**

Mahler’s use of common-tone techniques extends beyond traditional notions of continuous or hierarchical structure: common-tone techniques can create important associative relationships, both locally and across the span of a song or movement (or even symphony). Although these techniques can be used structurally, my focus here is on drawing connections that might be lost in purely hierarchical analysis. The following sections explore the associative meanings created by three such devices: fixed-pitch reinterpretation, ikonic sonorities, and tonal pairing.

**Fixed-Pitch Reinterpretation**

Fixed-pitch reinterpretation is a fairly literal term—the idea is to isolate a specific voice, which remains fixed, and to explore diverse settings of that voice. In short, it is the reharmonization of a tone or melodic segment. Every common-tone progression involves fixed-pitch reinterpretation and we have already explored its structural use in local progressions, both tonally closed and modulating. But the associative use of this phenomenon—where a tone or series of tones is set in different ways at different moments in a work—is also of great interest to Mahler. It allows him to create a sense of exploration and defamiliarization. Furthermore, for a composer who embraced rotational thematic structures, yet abhorred exact repetition, fixed-pitch reinterpretation offers a way to find new experiences in familiar material.
An example of fixed-pitch reinterpretation at the four-bar level is shown in Example 3.44. Taken from the third movement of the Fifth Symphony, this excerpt presents a the same fully diminished seventh chord in three statements, each with a different resolution. The fact that two of the resolutions are themselves common-tone resolutions certainly adds to the common-tone tonality of the passage, but those are structural common-tone resolutions, whereas the associative common-tone relationships under discussion here are the result of the recurring, fixed-pitch diminished seventh chord and its diverse resolutions. The fixed-pitch aspect is further emphasized by the recurring melodic figure, only the last pitch of which changes to conform to the various resolutions of the diminished seventh chord. Focusing on the first pitch of the melodic figure (D♭/C♯), we have the following associative common-tone reinterpretations:

\[ D♭: \hat{1} \Rightarrow Dm:\#7 \Rightarrow F♭: 6 \]. It is interesting to note that the one functional resolution (statement #2) produces a common-tone SLIDE relationship between the first two resolutions.
Example 3.44. Fixed-pitch reinterpretation in Symphony No. 5, iii, 448–59

Fixed-pitch reinterpretation takes on local and global significance in Example 3.45 and Example 3.46, which show the opening measures of the Third Symphony’s first and fourth movements, respectively. The common-tone material that links these movements appears on the second system of each example. The local structural harmonic progressions of the common-tone “O Mensch” motive were discussed above (see Example 3.4), but two distinct levels of associative relationships come into play here, as well. First, we hear a juxtaposition of the F-major and F♯-minor harmonizations of the tone A—there is no structural slide progression in the music here (neither direct, nor at a deeper level), but there is an associative one. Second, we hear a large-scale associative progression across the boundaries of the movements: in the first movement, the “O Mensch” progression ends with an A-major triad, but in the fourth movement it first ends with a surprising A minor triad, then in a later statement ends with the A-major triad.
again; focusing exclusively on the end of the motivic “O Mensch” progression, we therefore can
hear a large-scale associative progression spanning much of the symphony: A–Am–A.  

\[ \text{Example 3.45. Fixed-pitch reinterpretation in Symphony No. 3, i, 1–21} \]

In the measures that follow the “O Mensch” progression, we find an oscillation between
the tones A and B in the top voice—each return to A is harmonized in the same way (open fifths
in the first movement, an A-minor triad in the fourth), but each intervening B is harmonized

\[ \text{Example 3.46. Fixed-pitch reinterpretation in Symphony No. 3, iv, 1–17} \]

\[ \text{This echoes the first movement’s low-level structural progression from the A minor chord of measure 12 to the A major chord of measure 14.} \]
differently. The various settings of B do not constitute a structural common-tone progression, but their associative juxtaposition plays an important role in the music.\textsuperscript{75}

As we have seen, fixed-pitch reinterpretation can occur at the widest range of levels, from the narrowest proximity of a local harmonic progression to the widest span across entire songs and movements (and even between movements).\textsuperscript{76} This cyclic use of fixed-pitch reinterpretation is especially well suited to strophic songs and rotational symphonic movements, where each cycle through a set of material offers a new opportunities for reinterpretation.

**Ikonic Sonority**

I would like to introduce a concept by David Lewin that I find particularly well suited to some of Mahler’s music—the concept of an “ikonic sonority.” As Lewin 2005 writes, an ikonic sonority is “a musical Ding an sich, referential as a point of departure and arrival, not necessarily dependent on other sonorities for whatever meaning we sense in it” (146). In order to help give a sense of what Lewin means, let’s examine a few of his examples. Example 3.47 reproduces Lewin’s presentation of five ikonic sonorities. The first is Wagner’s *Tristan* chord, which, Lewin writes, is “almost certainly the first such ikonic sonority of substantial influence on the European canon” (146). The remaining ikonic sonorities are all drawn from the post-tonal repertoire: (b) the *Augures printaniers* from Stravinsky’s *Rite of Spring*, (c) Schoenberg’s op. 16/3, (d) Act 1, scene 2 from Berg’s *Wozzeck*, and (e) Berg’s op. 5/4.

\textsuperscript{75} Note also that the concluding A–G–A of the oscillation figure is harmonized in the first movement by Am–C–Am triads and in the fourth movement by F–Cm–F triads.

\textsuperscript{76} Since associative relationships are non-structural by definition, the metaphor of breadth is used here intentionally, rather than the Schenkerian metaphor of depth.
Lewin’s focus, however, is to use the concept of an ikonic sonority to provide insights into Mahler’s music. Example 3.48 presents what Lewin takes to be an ikonic sonority in Mahler’s Adagietto. Imagine the note C, then A, played first by the violas, then arpeggiated in the harp. This distinctive opening is, for Lewin, an “ikonic sonority” for the movement.

Lewin pursues this ikonic sonority through the first two phrases in Example 3.49, where he highlights how the notes C and A unfold within each phrase and even between them (see m. 9, where Lewin hears a half cadence on C, and m. 19, a full cadence in A minor).
Example 3.49. Lewin: Analysis of ikonic sonority at opening of the Adagietto (Lewin’s exx. 24–25)

Fifth Symphony, second movement. For a fuller understanding of the concept of ikonic sonority, let’s take as a case study the second movement of Mahler’s Fifth Symphony. This dramatic movement is characterized, in part, by its opening harmony: a fully diminished seventh chord. Indeed, the sound of the fully diminished seventh chord is one of the most salient features of this movement—not only is it stated emphatically in the opening measures, but it also recurs markedly at crucial moments in the movement’s formal and tonal design. So the first feature of the fully diminished seventh chord to point out here is its very existence as the characteristic sonority of the movement. As we seek to understand the significance of this harmony to this movement, we will need to consider two additional features: first, the treatment of the fully
diminished seventh chord locally at the main structural junctures of the movement; and second, the relationship of this harmony to the movement’s large-scale tonal structure. In considering both the local and global elements, we will find that Mahler explores both the specific pitch level of A \(^7\) as the ikonic sonority and a transposition, drawing on the generalized sonority of common-tone resolutions of fully diminished seventh chords.

As shown in Example 3.51, the movement begins with an emphatic fully diminished seventh chord, the bass of which is A. As the introductory material gives way to the primary theme (m. 9ff), we discover that the diminished sonority functions not as a leading tone chord, but as a common-tone chord—the A of the diminished seventh chord turns out to be the root of the primary theme’s initial tonic triad (see Example 3.50). This explains Mahler’s spelling of the \(^7(0)\) chord: A and C are held into the tonic triad as common tones, while D# resolves up to E and the F# splits—one continuation ascending to A through G#, the other descending to E through F-natural (the distinctive appoggiatura element of the primary theme, m. 9). Mahler thereby establishes the initial tonic with a common-tone resolution of an ikonic fully diminished seventh chord.\(^7\)

\(^7\) A note about this labeling system for diminished seventh chords: given that we are dealing with common-tone diminished seventh chords, the traditional labeling system does not apply—“A \(^7\)” will be used here to indicate a fully diminished seventh chord that contains the note A and retains it as a common tone in relation to a chord whose root is A. In this usage, “A \(^7\)” does not imply a particular spelling of the diminished seventh chord, nor does it imply a leading-tone function. In addition to the letter-name labels that emphasize contextual common-tone relationships, diminished seventh chords will also be identified here by absolute labels based on pitch-class content. Given enharmonic equivalence, there are, of course, only three possible fully diminished seventh chords. I will identify these as \(^7(0)\), \(^7(1)\), and \(^7(2)\), where the last number (the subscript) represents a pitch class contained in the chord, from which the remaining pitch classes can be inferred.
Example 3.50. CT resolution of ikonic °7 to establish Am (Introduction→Primary Theme)

Example 3.51. Symphony No. 5, ii, 1–10 (reference for previous ex.)

We have just seen how Mahler establishes the tonic of the primary theme through a common-tone resolution of the ikonic fully diminished seventh chord. This tonal procedure is emblematic of the movement, which persistently uses the ikonic sonority both to establish tonal centers and to evade tonal closure. The primary theme zone is a case in point: not only does Mahler introduce this section through an ikonic diminished seventh chord, but he also uses the ikonic sonority to exit the zone. After confirming the tonality of A minor through internal cadences (mm. 31 and 37), Mahler initiates what seems to be a drive toward a final cadence to close the A-minor section; but each of the anticipated chances as such closure is negated—first by a fairly traditional deceptive cadence (m. 54), and then by a remarkably unconventional
cadence which lands on a tonic six-four chord (m. 59). From this moment of withheld closure, Mahler proceeds to the most dramatic event yet by reaching the tonic note in the top voice and then suddenly flatting it (mm. 65–66), as shown in Example 3.52. Significantly, this arrival on the flatted tonic note is accompanied by a transposition of the original diminished seventh chord, sounding now as −7(2). The ikonic sonority is emphasized both by the trumpets’ motive of a diminished fifth (mm. 65–66; an ikonic transformation of the primary theme) and by the winds’ chromatic runs through the diminished seventh chord (mm. 67–72). Just as the introductory ikonic chord (−7(0)) resolved through its common-tone relationship with the tonic of the primary theme zone (A minor), here the transition’s ikonic chord (−7(2) of m. 66) resolves through its common-tone relationship to the tonic of the secondary theme zone (F minor; see mm. 74 and 79). Comparing Example 3.50 and Example 3.52, we see that the ikonic sonority of each example (marked with an asterisk) progresses through a common-tone progression to the respective tonic.

Example 3.52. CT resolution of ikonic −7 to establish Fm (Primary→Secondary Theme)
Example 3.53. Symphony No. 5, ii, 51–81 (reference for previous ex.)
Thus far in the movement, we have seen Mahler use common-tone resolutions of the ikonic sonority to introduce both tonal areas of the exposition; we also saw that Mahler avoided tonal closure for the A-minor zone, in part by landing on a tonic six-four chord. He avoids tonal closure for the F-minor zone in a similar way, as is shown in Example 3.54. The F-minor six-four chord (of m. 133) is preceded by a classical augmented sixth chord, leading us to expect this six-four to function cadentially, but it is instead transformed into an E°7 chord (mm. 135–140). Mahler thereby denies tonal closure to the F-minor area just as he had done for the A-minor section. In the F-minor section as a whole, the ikonic diminished seventh sonority participates in a palindromic common-tone structure, serving as a gateway both for entering the secondary theme zone (F°7–Fm 6/4–Fm) and for exiting it (Fm–Fm 6/4–E°7). Mahler is draws on this continuum of stability (ikonic °7 – tonic 6/4 – tonic 5/3) throughout the movement. We can even hear it briefly encapsulated in the opening measures, where the ikonic °7 of the opening leads first to a tonic 6/4 in m. 9 and then to a root position tonic in m. 10.

Example 3.54. CT resolution of ikonic °7 to E♭, a tritone from Am (Secondary Theme ➔ Development: Primary Theme)
Example 3.55. Symphony No. 5, ii, 129–54 (reference for previous ex.)
The development section begins as though it were a repeat of the exposition.\textsuperscript{78} It therefore restates the ikonic $\text{I}_7(0)$ chord of the opening measures (see Example 3.54, m. 141). At the start of the development section, however, Mahler avoids a resolution of the $\text{I}_7(0)$ chord to A minor; instead, he resolves it to an E\textsubscript{b} chord (m. 153)—this is still a common-tone resolution, but it brings us a tritone away from the tonic! Even the E\textsubscript{b} chord is quickly undermined (becoming E diminished) and the development section soon arrives at a restatement of the flatted-tonic passage from the exposition’s transition (compare mm. 175–76 with mm. 65–66). Mahler has now transposed the material so as to bring about an E\textsubscript{b} $\text{I}_7$ chord, as shown in Example 3.56. Note the enharmonic equivalence here: E\textsubscript{b} $\text{I}_7$ is actually a pitch-class equivalent of the A\textsuperscript{7} sonority that opens both the exposition and the development (in other words, E\textsubscript{b} $\text{I}_7$ and A\textsuperscript{7} are enharmonic forms of $\text{I}_7(0)$). In keeping with the common-tone progressions of the exposition, the E\textsubscript{b} $\text{I}_7$ chord resolves to E\textsubscript{b} minor while retaining two common tones. An important tonal goal of the development section therefore derives from Mahler’s focus on the ikonic diminished seventh chord and the polar common-tone resolutions that it makes possible.

Example 3.56. Delayed CT resolution of ikonic $\text{I}_7$ to E\textsubscript{b} m (Development: Primary $\rightarrow$ Secondary Theme)

\textsuperscript{78} Indeed, Mahler originally had a repeat sign for the exposition, as can be seen in his autograph manuscript and in the first published score of the symphony, a 1904 Peters study score.
Example 3.57. Symphony No. 5, ii, 175–214 (reference for previous ex.)
The ikonic sonority returns to prominence for the preparation of the recapitulation (see Example 3.58). An Aº7 chord bursts forth in m. 316 and resolves immediately to an A major chord. It seems as though the tonal narrative has broken away from A minor. The next few measures manipulate the ikonic diminished seventh twice: first ³7(2) resolves to a B minor chord, then suddenly we are back on the Aº7 chord, this time accompanied by the winds’ chromatic runs through the diminished harmony and by motivic material from the movements introductory measures. With the common-tone resolution to A minor in measures 333–34 we find ourselves immersed in the minor-key recapitulation that the A-major triad of measure 317 had seemed to evade.

Example 3.58. Several CT resolutions of ikonic ³7, including suggestion of A major (Development→Recapitulation)
Example 3.59. Symphony No. 5, ii, 314–34 (reference for previous ex.)
The major-chord resolution was not without significance, however. After more than a
hundred measures of recapitulation, our ikonic A°7 chord reappears. So far, we have heard this
ikonic °7(0) sonority resolve to A minor in the exposition, E♭ minor in the development, and A
major-reverted-to-minor in the recapitulation. In resolving °7(0) to A minor, A and C were held as
common tones; in resolving to E♭ minor, the common tones were E♭ and G♭; now Mahler will
give it a new resolution. Emphasizing A and F♯ as the common tones, Mahler brings the music
to a radiant D major (see Example 3.60, mm. 463–64). With this chorale, Mahler gives a hint of
the symphony’s triumphant, joyous tonal goal, seemingly worlds away from the opening of the
second movement. Yet as Mahler demonstrates here, even D major bears a direct, common-tone
relationship to the ikonic A°7 sonority.

Example 3.60. CT resolutions of ikonic °7 incorporated into D-major chorale (Recapitulation:
Chorale)
It seems as though the movement has made a decisive shift to D major, the real tonic of the symphony—but with the slip of another ikonic fully diminished seventh chord (Example 3.62, m. 520), D major is negated by D minor and we are thrust into another rotation through the primary-zone material. Notice that this ikonic sonority—º7—is enharmonically equivalent to the Fº7 that flanked secondary theme zone of the exposition. We find a similar treatment in this

Example 3.61. Symphony No. 5, ii, 459–65 and 491–500 (reference for previous ex.)

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79 Hepokoski/Darcy’s concept of rotation is strongly applicable to this movement.
D-minor section: not only is this section entered through a D⁷ chord (m. 520), it is also departed through that same ikonic sonority (m. 551), thus preventing a D-minor conclusion.

Example 3.62. CT resolution of ikonic °7 negates D, initiates Dm (Coda: Primary Theme)
At this point, Mahler has a final resolution of the ikonic sonority in store. As shown in Example 3.64, the $7(2)$ chord of measure 551 is reinterpreted from $D^7$ to $G#^7$, and through this $G#^7$, we move from D minor back to the movement’s tonic of A minor. The underlying
progression here, from G♯7 to A minor, is actually a functional use of the ikonic diminished seventh chord. It is mediated, however, by a common-tone passage: the resolution occurs in measure 557, with the F in the bass creating an F major chord, though the F is none other than the appoggiatura note of the main theme, leading down through an A-minor triad. And so the movement ends.

Example 3.64. Ikonic ˚7 interrupts Dm, leads (functionally) to Am (Coda: post-climax conclusion)

Example 3.65. Symphony No. 5, ii, 550–60 (reference for previous ex.)
I have used the term “ikonic sonority” here in an effort to call attention to the unique significance to this movement of the diminished seventh chord built on A. Mahler has drawn on the sound of this chord at crucial junctures throughout the movement. It is without a doubt “referential as a point of departure and arrival, not necessarily dependent on other sonorities for whatever meaning we may sense in it.” But in addition to serving as a referential harmony and a structural marker, the ikonic diminished seventh chord is integral to this movement’s local modulatory techniques: none of the key areas we have discussed is either opened or closed by an authentic cadence—instead the ikonic diminished seventh chord serves as a nexus for common-tone modulations. In addition to the local execution of common-tone modulations, even the large-scale structure of this movement is linked profoundly to the structure of the ikonic sonority: the main key of the exposition (Am) and the main key of the development (E♭) are a tritone apart, which not only mimics the structure of the ikonic sonority, but is derived from the opening instance of it (since both A and E♭ are contained in the opening ˚7(0)). Mahler further develops the ikonic sonority by emulating its opening common-tone resolution at different pitch levels, drawing on ˚7(2) to produce both the secondary key area of the exposition (Fm) and the aspirational key area of the breakthrough (D).

“Nun seh’ ich wohl, warum so dunkle Flammen.” A brief second analysis will help sketch a picture of what an ikonic sonority is and how the concept can be used in analysis. In the opening measures, the closing measures, and numerous moments along the way, the augmented-sixth chord is a pointedly salient feature of the Kindertotenlied, “Nun seh’ ich wohl, warum so dunkle Flammen.” When it is introduced as the first harmony of the song, the augmented-sixth chord is marked by a brutally dissonant appoggiatura. The ascending semitone of this
appoggiatura is part of the ikonic sonority of this movement. For Lewin, the archetype for the ikonic sonority is Wagner’s *Tristan* chord—it is possible that Mahler’s ikonic sonority in this song might have been a conscious homage to that seminal ikonic sonority, but rather than take off on the *Tristan* chord itself, Mahler has adapted the end of the *Tristan* progression: the combination of a dominant seventh chord (sonically equivalent to our augmented sixth chord) and the ascending semitone appoggiatura. Mahler uses this ikonic sonority in diverse ways in this song, including functional and common-tone resolutions of Aug 6, $\flat I^{\text{Aug}6}$, and $V^7$ harmonies.  

The augmented-sixth chord appears throughout the song, but a few crucial moments are highlighted in Example 3.66 (the score is given in Error! Reference source not found.). First, the augmented-sixth chord serves as the opening harmony and resolves as a common-tone harmony to G minor. Second, a dominant seventh chord is transformed through an OctaDom progression into a functional $\flat I^{\text{Aug}6}$ chord that resolves to an unexpected C major. Third, a dominant seventh chord progresses to that same functional $\flat I^{\text{Aug}6}$ chord, which this time is transformed via an OctaDom progression into a German augmented-sixth chord that functions in an unexpected D major. Fourth, that same progression is taken up again, but this time the $\flat I^{\text{Aug}6}$ chord resolves functionally to the C minor tonic. Just as the first stable harmony of the song was preceded by a common-tone augmented-sixth chord, this final tonic is decorated by a common-tone augmented-sixth chord, as well. This survey of a few key moments in the song’s design reveals the significance of the augmented-sixth chord as an ikonic sonority for this song.

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80 Mahler experiments with different versions of this progression in his sketches (held at the Morgan library in New York).
Example 3.66. Ikonic sonority in “Nun seh’ ich wohl” (analytic model)

Tonal Pairing

The terms “tonal pairing” and “double-tonic complex” originate with Robert Bailey, who uses them to discuss non-classical tonal structures in nineteenth-century music. Writing about Wagner’s *Tristan und Isolde*, Bailey cites the emergence of a new method of large-scale organization based on the shared control of a pair of tonics, typically related by minor third and combining to an added-sixth chord:

The pairing together of two tonalities a minor 3rd apart in such a way as to form a ‘double tonic’ complex… The two elements are linked together in such a way that either triad can serve as the local representative of the tonic complex. Within that complex itself, however, one of the two elements is at any moment in the primary position while the other remains subordinate to it…. The harmonic embodiment of this double-tonic complex is a… major triad with added 6th.  

81 Bailey emphasizes that, “These two tonalities are not really set in opposition to each other… rather, they are co-existent” (1978, quoted in Lewis 1994, 4).
Kinderman explains tonal pairing similarly, saying that it “entails the juxtaposition of two key areas which together comprise the tonal center for an extensive musical unit” (106n102). Lewis 1984 proposes five ways that the double-tonic complex may be realized:

1. Juxtaposition of musical fragments implying the two tonics in succession or alternation.
2. Mixture of the two tonalities, exploiting ambiguous and common harmonic functions.
3. Use of a tonic sonority created by conflation of the two tonic triads.
4. Superposition of lines or textures in one key upon those in another.
5. Some combination of the above. (6)

The terms “tonal pairing” and “double-tonic complex” are used synonymously by some scholars. Krebs 1996 does so explicitly, writing that, “The term ‘tonal pairing,’ along with the synonymous term ‘double-tonic complex,’ originates with Robert Bailey, who applies these terms to situations where two keys simultaneously occupy the highest position in a tonal hierarchy” (17). Other scholars, however, have sought to define tonal pairing and the double-tonic complex as related, but distinguishable concepts. BaileyShea 2007 defines three relevant categories, proceeding from the relatively common to the exceptionally rare/dubious: 1) tonal pairing (when there is consistent vacillation between two keys), 2) motivic double-tonic complexes (when a tonal pairing is realized motivically), and 3) structural double-tonic complexes (when a tonal pairing is structurally prolonged).

The conceptualization that most closely resembles my own is given in Smith 2013. Smith regards the double-tonic complex and directional tonality to be types of tonal pairing, which he takes as the more general category. He regards tonal pairing as “the tendency for nineteenth-century composers to organize extended passages around an interaction between two (usually third-related) tonal areas, as an alternative to the unitary tonal hierarchy of the eighteenth century” (77) and he emphasizes that “tonal pairing embraces a continuum of phenomena, a continuum that includes clearly monotononal compositions in which one key area forges a unique
relationship with the tonic as well as the more commonly discussed type in which tonal dialectics pose a challenge to the monotonal hierarchy” (79).

Example 3.67 presents a mild example of tonal pairing from Mahler’s Second Symphony, third movement. The sense of this passage is that of a parallel period in F major, where the antecedent and consequent phrases offer up their cadences in the wrong key—D minor. Regarding the structural voice leading of the passage, the tone A stands out: apart from two neighboring six-four chords, the tone A is maintained through the entire passage and serves as the common tone uniting I, III♭, and VI. In a broad associative sense, we are struck with the tonal pairing here between relative keys.

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82 This movement is based on Mahler’s song “Des Antonius von Padua Fischpredigt.” The melody that appears here in mm. 113–16 does not appear in the song, which has a less tuneful melody at this point.
A similar form of tonal pairing can be heard in the chorale theme of Mahler’s Sixth Symphony, first movement (shown in Example 3.68). The pairing is again between relative keys, but here the primary tonic is minor. Again we find that at the end of the antecedent phrase (this example takes the form of a period, as well), we have arrived at a half cadence in the “wrong” key. In this case, it is not such a surprise, since the relative major has been in control already for the previous four measures. What does come as a surprise, however, is that the half cadence in C major immediately dissolves into a half cadence in A minor (see the two HC markings in m. 68 of the example). The consequent phrase pushes toward C major again, but only temporarily—the
theme ends on the dominant of A minor with tonic intrusion in the form of a suspended C. (As an interesting aside, we might note that this augmented dominant is used as a pivot harmony, becoming reinterpreted as the V of F major.)

Example 3.68. Tonal pairing in Symphony No. 6, i, 61–76 (short score excludes string pizz.)

In Example 3.69, the tonal pairing occurs through conflicting prolongations. Two passages are compared here. The initial statement (shown in the first system) offers a rather stable, though modally mixed, tonic of A. (Note the CT Added Sixth chord and Augmented Sixth chord.) The later statement begins similarly, but modulates to C major by transforming the E dominant with tonic intrusion into a stable tonic of C. The tonal pairing results from the fact that the bass begins its prolongation of C major even while the melody continues to unfold A minor.

As Mahler modulates from A to C, the C-major added-sixth chord that results from the clash of these conflicting prolongations can be heard as a local double-tonic sonority.

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Example 3.69. Tonal Pairing in “Verlorene Müh’,” mm. 7–15 & 40–48 (short score & analytic model)
The double-tonic sonority is embraced even more directly in Example 3.70, our final example. In modulating from B♭ major to G minor and then back to B♭ major, Mahler arpeggiates the sonority that results from the combination of these two tonic triads. The double-tonic sonority here serves as a kind of portal between the two tonics.

Example 3.70. Tonal pairing in “Lied des Verfolgten im Turm,” mm. 45–48 & 54–57 (annotated short score)
Conclusion

In this chapter we have seen that Mahler frequently alters or usurps classical tonality with his own idiom of common-tone tonality. This chapter has introduced a new nomenclature for identifying any common-tone harmony as an “applied displacement.” And by exploring varied domains of common-tone influence—from harmony and voice leading to modulation to associative techniques—this chapter has introduced a framework for understanding common-tone techniques as an integral, indeed central and pervasive, component of Mahler’s musical language.
CHAPTER 4. THE MAHLERIAN IMAGINARY CONTINUO

Introduction

While coining the term “imaginary continuo,” William Rothstein argues that, “this latent chordal texture… underlies every piece of tonal music—regardless of scoring, texture, or date of composition” (1990, 94). If the imaginary continuo is a given in tonal music, and I agree that it normally is, then its study can offer a window into the changing compositional practices leading away from classical tonality. This chapter uses the concept of the imaginary continuo to explore aspects of the dissolution of classical tonality in the music of Gustav Mahler and their reconstitution into a Mahlerian imaginary continuo. The chapter is structured in three parts: 1) a definition and demonstration of the classical imaginary continuo, 2) an exposition on the Mahlerian imaginary continuo (as the concretization of certain features of the dissolution of the classical imaginary continuo), and 3) the “dissolving imaginary continuo” (which challenges even the Mahlerian continuo).

The Classical Imaginary Continuo

Since the classical imaginary continuo serves in this chapter as a testing ground for the dissolution of classical tonality, it will be useful to first establish an understanding of what the classical imaginary continuo is. This section presents a definition of the classical imaginary continuo, demonstrates its use in the history of music theory, and concludes with two examples that prepare the discussion of the dissolution of the imaginary continuo in Part II.

The imaginary continuo is an analytical model of harmony and voice leading expressed with precise durational relations. In what follows, a few preliminary distinctions and a study of more core elements should help to clarify the nature of the imaginary continuo.
Three Preliminary Distinctions

Distinction #1: Real vs. Imaginary Continuos

The value of the imaginary continuo as a model of tonal music derives in large part from its adoption of two ideals embodied in the traditional continuo: harmonic completeness (the ideal of maintaining a relatively full texture) and contrapuntal strictness (the ideal of maintaining stylistically appropriate counterpoint). Those principles lie at the heart of the analogy between the imaginary continuo and the traditional continuo. In other regards, however, the imaginary continuo and the traditional continuo are quite different and it is pertinent here to clarify some of those subtle and important differences.

The concept of “realization” takes a new meaning in the context of the imaginary continuo: to realize an imaginary continuo is to move from music to a model of the music. In the realization of a traditional continuo, upper voices are added to a given bass part (figured or unfigured) to create an accompaniment that participates in the music; but in the realization of an imaginary continuo, all voices must be inferred from a given composition to create an analytical model that comments on the music. Thus, whereas the voices of the traditional continuo may be improvised somewhat freely, the voices of the imaginary continuo are modeled closely on the score (this is emphatically true for the outer voices, but less true for the inner voices). Unlike in the traditional continuo, the bass of the imaginary continuo is not given, but is instead inferred like other voices.

Distinction #2: Unrealized vs. Realized States of the Imaginary Continuo

The imaginary continuo exists in two states: unrealized and realized. The unrealized state encompasses all voices that are theoretically possible in a given context; the realized state comprises a specified subset of those voices. In their degree of specificity, the unrealized state is
analogous to a figured bass, while the realized state is analogous to a realization of a figured bass. Both states are a product of theory and analysis, but they have different emphases and functions. The unrealized imaginary continuo delimits possibilities—the analyst considers the music’s harmonic, voice-leading, and tonal-rhythmic structure, and determines a network of all potential voices that are suggested by the music.\(^{83}\) The realized imaginary continuo specifies an interpretation—the analyst develops and notates an explicit model of the music’s harmonic, voice-leading, and tonal-rhythmic structure. Given the manifold nature of the unrealized state (multiple registers of tones with multiple voice-leading paths through the given harmonies), many distinct realizations of the imaginary continuo are possible. The value of a realization will depend not only on the integrity of its representation of the music, but also on the interests and knowledge of the analyst and the reader.

The distinction between unrealized and realized states of the imaginary continuo has not been articulated explicitly in the literature, but it is implicit there. The unrealized imaginary continuo is central to Rothstein 1991’s discussion of implied tones, for example, since it is the unrealized imaginary continuo that makes implied tones available (or unavailable). The realized imaginary continuo is more widely discussed and often serves as a resource for the pedagogy of analysis.

Since the imaginary continuo is a mental construct, it necessarily requires a degree of “realization” in order to exist. If an imaginary continuo were completely unrealized (i.e., the analyst had made no progress in the process of moving from music to model), then it would not be an imaginary continuo, it would simply be the music. The unrealized state of the imaginary continuo

\(^{83}\) Straus 2014’s concept of “total voice leading” is analogous to the unrealized imaginary continuo; the main difference is that “total voice leading” is astylistic—it is not concerned with voice-leading norms, whereas the imaginary continuo is concerned with such norms.
continuo is that state wherein an analyst’s provisional judgments about the musical structure create a network of available tones and voice leadings.

Distinction #3: Imaginary Continuo vs. Imaginary Chorale

Treating the traditional continuo as an analog for the imaginary continuo implies certain textural norms. It is assumed that the imaginary continuo will be playable by a keyboardist and that it will adopt a continuo-style keyboard texture where a bass voice is taken by the left hand and multiple upper voices fall under the right hand. In the case of the traditional continuo, there are practical considerations that make this texture especially convenient. The imaginary continuo, however, is not inherently constrained by those same practical considerations: as a model of the music, it is not necessary that the imaginary continuo be performed on a keyboard instrument or that it be performed by only one person—or even that it be performed. The analyst must decide what textural norms are best suited to her or his goals.

In general, the analyst will choose between two possibilities: a continuo-style keyboard texture or a freer texture that resembles a chorale-style or orchestral texture. The main advantage of the continuo texture is playability—more than any other texture, the continuo texture enables both the analyst and the reader to play the analytical model, giving it a sonic life that can serve both as a testing ground for the analysis and as a means of communicating it. The main advantage of the chorale-style or orchestral texture is the freedom that it provides for the construction of the inner voices—whereas the continuo texture may require inner voices to be reduced to a kind of chordal filler, the freer spacing enabled by a chorale-style texture allows inner voices to retain their melodic integrity. In that sense, the chorale texture will sometimes enable a more authentic model of a musical texture than will a continuo texture. Such added complexity may not always be desirable, however—it is up to the analyst to determine what
texture is best suited to her or his analytical goals. Although the “imaginary chorale” might often be expressed in four voices with SATB spacing, neither of those elements is required; the imaginary chorale is characterized in part by the flexibility that it offers for the number and spacing of voices. Continuo and chorale textures have both been employed fruitfully in the history of theory and analysis.  

The imaginary continuo is an analytical model of harmony and voice leading expressed with precise durational relations. What follows below is a summary of the basic musical elements that are captured by the imaginary continuo.

**Elements of the Classical Imaginary Continuo**

**Harmony**

Harmony is central among the musical features modeled in the imaginary continuo. The imaginary continuo, therefore, is only relevant to music that uses a well-defined harmonic vocabulary and that employs harmony constantly, though the active harmony at any given moment may be disguised by subordinate tones and rhythmic displacement. In classical tonality, the harmonic vocabulary consists of triads and seventh chords. These harmonic conditions dictate that the unrealized classical imaginary continuo will contain representatives of at least three pitch classes at all times. The realized imaginary continuo will have these tones available to it, but it will not require every triad and seventh chord to be stated as a complete harmony—in analytical models, as in compositions, linear considerations may sometimes outweigh the desire

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84 For example, Kirnberger/Schulz 1773 and Rothstein 1990/1991 employ a continuo texture, while Czerny c.1849 and Forte 1982 employ continuo and chorale textures.
85 This summary draws especially on the discussions of the imaginary continuo found in Rothstein 1990 and 1991.
86 The set of all available chord tones at any given moment is termed a “chordal scale” in Rothstein 1991, expanding on a related concept by Fred Lerdahl (296).
for complete harmonies. In accordance with my formulation given above, the complete harmonies are always contained in the unrealized continuo, but not necessarily in the realized continuo. Nevertheless, complete harmonies generally are desirable in the realized imaginary continuo and for that reason the realized imaginary continuo will need to maintain at least three voices.

Melody, Counterpoint, and Voice Leading

Melodic, contrapuntal, and voice-leading structures are essential to the imaginary continuo. The imaginary continuo therefore requires music to employ well-defined conventions in those domains. In classical tonality, these conventions encompass the treatment of dissonance (which must resolve), imperfect consonance (which may be used freely), perfect consonance (which is restricted, especially regarding parallel motion), and a preference for melodic fluency. “Melodic fluency” (Schenker’s *fliessender Gesang*) refers to the underlying, predominantly stepwise motion that informs our understanding of complex melodic contours, helping to ensure that distinct voices progress coherently within and between harmonies.

The unrealized imaginary continuo encompasses all voices implied by these melodic, contrapuntal, and voice-leading conventions (i.e., every linear motion that is stylistically consistent with the music). The unrealized imaginary continuo therefore constitutes a very full texture. This texture is greatly reduced in a realized imaginary continuo, which shows only those

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87 Rothstein 1990 writes, “the number of voices may range freely from three upward. (Three is the minimum because, in tonal music, triads are implicit even in textures that apparently consist of only one or two voices)” (101–2).
88 Rothstein 1990 writes that the imaginary continuo “clarifies the voice leading of the music” (94).
89 Rothstein 1991 writes, “Voice leading is implied chiefly by rules governing the preparation and resolution of dissonances, the resolution of leading notes, and the progression of perfect consonances” (295).
90 “Parsimonious voice leading” is a type of melodic fluency that deals exclusively with direct relations between chords.
voices that are deemed essential for modeling the musical structure. The realized imaginary continuo is particularly well suited to capturing these melodic, contrapuntal, and voice-leading conventions.91

**Durational Relations**

The imaginary continuo models not only the harmony and voice leading of the music, but also the underlying temporal structure of those tones. To derive this underlying temporal structure, the analyst engages in a process of rhythmic normalization to determine a temporal starting point and duration for each harmony, pitch (in a realized imaginary continuo), or pitch class (in an unrealized imaginary continuo). An important aspect of this process is the concept of rhythmic normalization, which Rothstein 1981 describes as “the opposite of rhythmic displacement.... when a rhythm is normalized, any displaced tones are shifted back to their normal positions” (75).92

**Implied Tones**

Analysis is a creative act—to model tonal structure through an imaginary continuo is to create a structural analog that, it is hoped, will provoke valuable insights about the music being studied. As a structural analog, rather than a simple transcription, the imaginary continuo necessarily requires the analyst to create a model that differs from the music in ways that are analytically valuable. Sometimes this analytic creativity manifests in the omission of some element of the music that does not seem pertinent to the analyst’s interpretive point (octave doublings, for example, will often seem superfluous and consequently will be omitted from an

91 Rothgeb 1981’s observation about the traditional continuo applies equally well to the imaginary continuo: “the voice-leading rules of strict counterpoint often apply to figured-bass practice in a more direct way than they apply to the surface of a composition” (145).
92 The concept of rhythmic normalization is also presented in Rothstein 1990.
imaginary continuo; similarly, a great deal of information about timbre, dynamics, tempo, articulation, expression, etc. will tend to be omitted from an imaginary continuo). On the other hand, sometimes the analytic creativity that produces an imaginary continuo will manifest in the addition of some musical element that helps to promote a particular understanding of the music.

Implied tones are an important type of analytical addition that can contribute to the value of an imaginary continuo. Rothstein 1991 describes implied tones as “tones that, while literally absent, are present in some sense because their existence is indicated by surrounding events” (289). Rothstein demonstrates implied tones in the context of dissonance (its origin and its resolution), melodic fluency, and the completion of contrapuntal and harmonic patterns.

The Imaginary Continuo and Schenkerian Analysis

Although the imaginary continuo predates Schenkerian analysis, the two forms of analysis have enough in common that it will be useful to compare them. A salient difference is the use of notation: whereas Schenkerian graphs use hierarchical notation, the imaginary continuo retains the durational meanings of traditional musical symbols. Because of this notational difference, the complexity of hierarchical relationships depicted in a single Schenkerian graph cannot be captured in a single imaginary continuo. Nonetheless, the realization of an imaginary continuo typically does involve decisions based on tonal hierarchy and these will be understood through a comparison with the music. The imaginary continuo can be used to model any level of structure; it is commonly used at the foreground, but it is not limited to that level.93 Since it is possible to realize the imaginary continuo at multiple levels of structure, it is possible to communicate complex hierarchical relationships through the vertical

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93 At even moderately deeper levels, the durational values employed in the imaginary continuo become unwieldy and, if they are to be used rigorously, need to be proportionally reduced. See the discussion of “durational reduction” in Schachter 1980.
alignment of multiple levels of the imaginary continuo. Nevertheless, for the purposes of this dissertation, we will remain firmly at the foreground.

A further difference between Schenkerian analysis and the imaginary continuo has to do with fullness of texture. Schenkerian analysts sometimes depict exclusively the outer-voice structure of the music, leaving the presence of inner voices to be implied by Roman numerals and figured bass symbols. This two-voice structure traditionally is expected at the deepest levels of tonal structure, but it often is seen at levels closer to the surface of the music, as well. By contrast, inner voices are integral to the imaginary continuo, which derives a relatively full texture from the music.

Summary

The imaginary continuo is a “latent chordal texture” that “clarifies the voice leading of the music” (Rothstein 1990, 94). It thus embodies both vertical and horizontal dimensions of musical structure. The harmonic dimension, at its simplest, constitutes what Rothstein terms a “chordal scale”—the set of all chord tones. The melodic-contrapuntal dimension, at its simplest, constitutes a parsimonious connection between successive chordal scales, while adhering to the voice-leading norms of classical tonality. The temporal dimension represents tonal durations. This pan-registral network of harmony and voice leading in measured time constitutes the unrealized imaginary continuo; the realized imaginary continuo draws its voices from the unrealized continuo in order to propose a model of the music being analyzed. The unrealized imaginary continuo is the source that makes implied tones available (and unavailable). The realized continuo expresses at least three voices at all times (since classical tonality deals in

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94 Conversely, it is interesting to note that although Schenkerian graphs sacrifice temporal specificity in favor of hierarchical meanings, it is nevertheless true that they communicate temporal information (through, for example, the horizontal placement of tones and the vertical alignment of levels).
triads and seventh chords), and need not be limited to four. The realized continuo is not, in fact, limited to a continuo texture, but instead may be realized as an imaginary chorale whenever the analyst seeks the analytic benefits of that texture.

**An Example of the Classical Imaginary Continuo in Mahler**

Although the focus of this chapter is to examine the dissolution of the classical imaginary continuo in Mahler’s music, I would like to establish that he could and sometimes did compose classically. Example 4.1 provides the score and an imaginary continuo for the opening measures of Mahler’s Second Symphony, second movement. After a gradual arpeggiation in the upper voices, Mahler has the bass pass through a descending tetrachord from I to a tonicized V (termed a “modulating Prinner” in Gjerdingen 2007, 52ff).

A)  

**Andante moderato.** Sehr gemächlich. *Nie eilen.*

B)  

Example 4.1. A) A passage exhibiting classical tonality (Symphony No. 2, ii, 1–8) and B) a classical imaginary continuo for this passage
The Mahlerian Imaginary Continuo

Regarding the intrinsic existence of an imaginary continuo for all tonal music, Rothstein writes that,

The possibility of abstracting an imaginary continuo part – one that follows the rules of chord construction and voice leading typical of thoroughbass – may be considered a necessary, though not a sufficient, condition for describing a piece of music as tonal. (1991, 297)

The link between the imaginary continuo and the tonal status of a work is also expressed by John Rothgeb, who states that figured bass is “an implicit component of any free composition in the triadic tonal language (whether from the ‘Thoroughbass Era’ or not)” (1981, 145). Indeed, theorists have long used the imaginary continuo to demonstrate the tonal matter of a work. In the following discussion, however, the imaginary continuo will be used to demonstrate specific ways in which classical tonality fails to model Mahler’s music. The dissolution of the classical imaginary continuo here is an expression of the dissolution of classical tonality. The dissolution is not purely destructive, however. As we will see, a kind of Mahlerian imaginary continuo takes its place. The following discussion focuses on three interrelated domains of the Mahlerian imaginary continuo: 1) harmonic vocabulary, 2) contrapuntal norms, and 3) increased ambiguity.

Harmony

Of central importance to the dissolution of the classical imaginary continuo in Mahler’s music is his use of a non-classical harmonic vocabulary. Whereas the classical imaginary continuo assumes a harmonic vocabulary consisting exclusively of triads and seventh chords (to which all other sonorities are regarded as subordinate, with limited structural status), Mahler’s harmonic vocabulary is more expansive. In addition to the triads and seventh chords of classical tonality, Mahler gives structural significance to harmonies that are non-classical in their
intervallic structure (non-tertian) and their cardinality (chords comprising fewer than three or more than four notes).  

**Added-Sixth Chords**

*Introduction.* The added-sixth chord is one of the main non-classical harmonies in Mahler’s music. The following discussion seeks to demonstrate five significant and distinct tonal functions (harmonic/contrapuntal uses) that Mahler gives to added-sixth chords. Before discussing these five functions, it will be helpful to define the chordal structure of added-sixth chords and to explain their non-classical status.

From the relatively neutral/uninterpreted perspective of intervallic structure, added-sixth chords consist of the following intervals above the bass: major or minor third, perfect fifth, and major sixth. These are two different sonorities, yet they share enough in common that it will be useful to consider them under the single concept, “added-sixth chord”; we will also see, however, that these two structures do not execute every added-sixth-chord function in the same way—the following discussion will be attentive to both their similarities and differences.

In classical tonality, if all of these tones are to be understood as chord tones, then the harmony must be a first-inversion seventh chord and therefore the fifth above the bass is a dissonance to be resolved. This classical treatment features in Mahler’s works, but Mahler also explores non-classical treatments such that the harmony in question does not function like a classical seventh chord. These non-classical treatments are our focus below.

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95 This opening section focuses narrowly on “harmonic vocabulary,” rather than on “harmony,” in general. The broader issues that “harmony” can embrace—such as tonal hierarchy (structural levels), syntax, and voice leading—are here reserved for later sections.

96 We will also see that there are a few other, closely related intervallic structures that can be understood to function as added-sixth chords. These are discussed below, when relevant.
As tonic. When classical tonality would lead us to expect a tonic triad, Mahler occasionally uses an added-sixth chord, thwarting classical expectations and yet satisfying tonic function in a way. From a classical perspective, the added-sixth chord faces clear hurdles in seeking to attain tonic status: it is neither a classical harmony (triad or seventh chord) nor a consonant sonority (the sixth is consonant with the bass, but dissonant with the fifth). Since the idea of a tonic added-sixth chord defies classical tonality, it demands attention that Mahler sometimes gives added-sixth chords both chordal status and tonic function.

Although the existence of a tonic added-sixth chord might seem to indicate that the classical definition of consonance and dissonance has been superseded, we will see that this is not entirely the case. The tonic added-sixth chord can have diverse meanings—in some situations its meaning seems to depend on classical expectations, while in others, non-classical meanings can emerge.

Some of the most notable examples of the tonic added-sixth chord are those that serve to begin or conclude a work. Particularly celebrated, in this regard, is the final sonority of Das Lied von der Erde. As “Der Abschied” (the final movement) comes to a close, the flute and oboe’s A4 remains fixed amid the final C-major triad of the strings, trombones, harp, and celeste. Given its structural prominence and non-classical nature, this final sonority tends to provoke commentary from people writing about Das Lied. A sample of the secondary literature demonstrates recurring questions about this ending: Is this final sonority classically unstable or non-classically stable? If stable, what conceptualization makes it so? In answering these questions, authors can be understood to have articulated three nonexclusive interpretive strategies: this final sonority can be regarded as an unresolved dissonance, an ikonic sonority, and a double-tonic sonority.
The unresolved-dissonance interpretation has been expressed since soon after Das Lied’s posthumous premier on November 20, 1911 (Mahler died May 18; he composed Das Lied in 1908–09). “With the unresolved suspension, the movement expires,” writes Wöss in his 1912 “Thematische Analyse” of Das Lied. In the same year, Stefan describes the movement as ending “without having found the peace of a final chord.” Adorno would later refer to the “unresolved final chord” (1996, 151). The unresolved reading has hermeneutic pull in that the vocal line itself had dissolved without coming to a stable conclusion (ending on 2, leaving 1 to our imagination and the orchestra) and this lack of goal-attainment can easily be interpreted as a symbol of the song-symphony’s final, repeated word: “ewig” (“forever”). It is not a universally shared interpretation, however—while some authors interpret the final sonority as unresolved dissonance, others interpret it as a resolution and a contextual consonance. Williamson goes so far as to say that this ending “can hardly be heard as anything other than a resolution” (2011, 210). Cone provides a more ambivalent formulation: “are we now verging on dissonant yet stable finals? Let us call a stable final of this kind a functional tonic” (2009, 43). From the perspective of classical tonality, the sonority is clearly dissonant and the music seeks fulfillment through resolution to a C major triad, yet from a more contextual perspective, the final sonority can be heard as a fulfillment on its own, non-classical terms.

97 Original German: “Mit dem unaufgelösten Vorhalt erlischt der Satz” (38). The translation is mine. I understand “suspension” (Vorhalt) here to indicate a metrically accented dissonance, without the modern English requirement of having to be prepared. The author, Josef Venantius von Wöss, prepared piano arrangements and thematic analyses of several of Mahler’s symphonies, including the posthumous 1911 vocal score of Das Lied.

98 Original German: “ohne den Frieden eines lösenden Schlußakkordes gefunden zu haben” (1912, 142; English version taken from page 124 of the 1913 translation). Note that this English translation omits the German “lösenden,” which can mean “resolving”; regardless, the lack of “peace” implies a lack of resolution.

99 Williamson has also stated that, “when Marshall Brown noted that the final chord of Das Lied von der Erde was dissonant and that the movement ‘refused to come to a rest harmonically,’ my instinct was to wonder if he had really been listening” (2005, 5).
Two such non-classical interpretations of this final sonority can be seen to recur in the literature. I refer to these as “ikonic-sonority” and “double-tonic” interpretations. The concept of an ikonic sonority is discussed in Chapter 3 as an associative common-tone technique (see pp. 116–36). The concept has not, to my knowledge, been applied explicitly to Das Lied von der Erde, but many authors’ interpretations can be represented by it. Also discussed in the previous chapter (see pp. 136–42), the term “double tonic” has gained currency in recent decades through analyses by, or influenced by, Robert Bailey (e.g., Bailey 1985). We will see that this concept was applied to Das Lied before Bailey coined his term, but it also seems to be true that this line of thinking has become more attractive to analysts in recent decades than it was to earlier analysts.

An “ikonic sonority” is a distinctive sonority that is characteristic and referential for a particular work.\(^{100}\) In writings on Das Lied, many authors have interpreted the final sonority as a harmonic representation of the work’s characteristic melodic motive: the pentatonic scale-segment, A–G–E (heard in the opening moments of the first movement and recycled in various transformations throughout the symphony). As Bekker described the ikonic significance of this final sonority, “the earth theme E–G–A, in chordal intertwining, comes to rest upon the mystical foundation of the low C” (Hansen 2012, 770). Adorno similarly describes the ikonic significance of this final sonority by making an evocative reference to Schoenberg’s concept of a Grundgestalt:

> It is above all in Das Lied von der Erde that exoticism provides the thematic principle of construction. Mahler selects the critical tones from the pentatonic scale… This A–G–E motive in its uncounted modifications and transpositions—including inversion, retrograde, and rotation—is a formation midway between a thematic component and a piece of musical vocabulary, in which it is probably the last and most impressive model

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\(^{100}\) For a fuller discussion of the concept of “ikonic sonority” as used in this dissertation, see Chapter 3, “Mahler’s Common-Tone Techniques.”
for the “basic shapes” (*Grundgestalten*) of Schoenberg’s twelve-tone technique. As in the latter, the motive is also simultaneously folded together, as in the unresolved final chord of the work. (1996, 150–51)

Notice that Adorno regards this ikonic sonority to be unresolved, whereas Williamson takes a similar view of the verticalized ikonic sonority but judges it to produce a resolution: “Mahler’s final chord, for all the talk of verticalizing a horizontal motif, can hardly be heard as anything other than a resolution” (2011, 210). An ikonic sonority is important (by definition), but it is not necessarily stable. This particular ikonic sonority has been regarded as stable and unstable by different authors, as we have seen.

Many of the authors who consider the end of *Das Lied* to be stable do so because they interpret the final sonority as part of a “double-tonic complex.”\(^{101}\) There is no definitive definition of this concept, but our interest here is limited to one particular manifestation: “a tonic sonority created by the conflation of the two tonic triads” (Lewis 1984, 6). Bailey applies his double-tonic concept to *Das Lied*, highlighting the role of A minor and C major as tonic triads in this composition and to the union of these triads in the final sonority:

*Das Lied* carries this dimension of tonal language to its logical and inevitable conclusion, so that the final cadence at the end of Part II [“Der Abschied”] employs a full representation of the double-tonic complex, the chord of A–C–E–G, a combination sonority of the A minor and C major triads. To describe this sonority as a major triad with added sixth is perfectly correct, but limited; for we must bear in mind that, since the function of this sonority is to bring A and C together, its arrangement as a kind of seventh chord is equally viable. (1978, quoted in Lewis 1984, 9–10)

Mitchell shares this view, and describes it as a kind of reconciliation between the to tonics:

As we shall see, a has a continuing role to play in the evolution of “Der Abschied.” One would not be exaggerating, indeed, to classify it as the subsidiary tonic of “Der Abscheid,” which makes all the more marvellous the synthesis of both tonics – of a and C – that we encounter the finale’s coda and in which all the conflicts and tensions of *Das

\(^{101}\) For a fuller discussion of the concept of “double-tonic complex” (and the closely related term “tonal pairing”) as used in this dissertation, see Chapter 3, “Mahler’s Common-Tone Techniques.”
Lied are reconciled: the chord of the added-sixth on which the finale expires is a precise vertical realization of that reconciliation. (1985, 381)

Lewis supports the double-tonic interpretation and implies that, though it is a classical dissonance, it should be understood to be a non-classical consonance:

Both Also sprach Zarathustra and Das Lied von der Erde close with a dissonant sonority (the first implicit and the second explicit), and in both cases the source of the dissonance is an expression of two background tonics. … Of course, such a chord [referring now to a precedent in Wagner’s Tristan und Isolde] is "dissonant"—that is, requires resolution—only in common-practice terms. (1987, 30)

Hefling also employs the double-tonic interpretation, depicting it as a volatile fusion of tonics:

The principle tonal centers of the work as a whole are A and C (major or minor: mixture and juxtaposition of mode are stock-in-trade for Mahler). And precisely these two centers are fused into the volatile pentatonic sonority with which “Der Abschied” dissolves on the text “ewig, ewig.” (2000, 81)

A final example serves to demonstrate the ease with which the ikonic-sonority and double-tonic interpretations can coexist:

The pentatonic scale is used no only melodically but also harmonically, especially in No. VI [“Der Abschied’], where Mahler derives from it the chord C–E–G–A. This chord contains both the triad of the main key of the first “part” [A minor] and that of the tonic major of the second one [C major]. Every musical listener perceives the two-fold function of this real “double klang,” at least subconsciously.102 (Tischler 1949, 112)

Through the above discussion of writings about the final sonority of Das Lied, we have seen that this tonic added-sixth sonority can be understood to express the eternal inconclusiveness of an unresolved dissonance, the contextually defined meaning of an ikonic sonority (here the melodic-harmonic unity of a pentatonic motive), and the deep-structural unity of a double-tonic complex (here the opening and closing tonics of the symphony). These categories can help us to interpret other tonic added-sixth sonorities in Mahler’s music.

102 In using the term “double klang” here, Tischler cites Capellen 1908. Capellen used the term “Doppelklang” for a chord that is “the product of two fundamentals” (Bernstein 1993, 88). Capellen applies the term “Doppelklang” in a way that is much broader than Bailey’s “double-tonic complex,” but Tischler’s use here offers an interesting intersection of the two concepts.
The tonic added-sixth sonority of “Ich atmet’ einen linden Duft” offers an interesting comparison to that of Das Lied. Both compositions conclude on a tonic added-sixth chord and in both conclusions the added sixth is not so much an “added” note as it is a frozen passing tone of an interrupted linear progression. In Das Lied, the enduring scale-degree six arises out of the fragmentation of a $\hat{5} \hat{6} \hat{7} \hat{8}$ ascending fourth; in “Ich atmet’ einen linden Duft,” the fragmentation is of a descending fourth, $\hat{8} \hat{7} \hat{6} \hat{5}$ (as one strand of an arpeggiated/polyphonic melody, mm. 34–36; see Example 4.2, third system). A second similarity between these tonic added-sixth chords is that they both sound as ikonic sonorities in works that feature pentatonic melodies—thus we can hear these tonic added-sixth chords as a harmonic manifestation of the pentatonicism (see Example 4.2, particularly mm. 1–4, where a tonic added-sixth chord introduces a pentatonic melody). The pentatonicism of Das Lied is undoubtedly a form of orientalism, but pentatonicism is a common feature of Mahler’s works, whereas orientalism is not. Pentatonicism is one important motivation for Mahler’s added-sixth chords, and although that pentatonicism is closely related to orientalism in Das Lied, in other of Mahler’s works the pentatonicism seems to have other motivations, such as to give the music a pastoral or folk character.

103 Mahler composed “Ich atmet’ einen linden Duft” in 1901 (about seven years before Das Lied). It was first published as an independent song, then republished as part of the Sieben Lieder, and now is primarily known as part of the Rückert-Lieder (a subset of the Sieben Lieder, eliminating the two Wunderhorn-texted songs).

104 This description is aimed at the major pentatonic collection, which Mahler uses with much greater frequency than the minor pentatonic collection.
Example 4.2. Added-sixth chords in the imaginary continuo of “Ich atmet’ einen linden Duft!”
(Rückert-Lieder), A) mm. 1–9, and B) mm. 33–36
In contrast to the pentatonic, major-key context of the tonic added-sixth chord that begins “Ich atmet’ einen linden Duft,” Mahler’s Seventh Symphony begins with a tonic added-sixth chord composed of a minor triad and major sixth. Instead of pentatonic and pastoral associations, we are faced with a sense of stability disturbed, familiarity made strange. The sense of stability and familiarity derives in part from the fact that – apart from the added sixth – this is a remarkably classical opening progression for Mahler. One can easily hear the opening five measures as an adaptation (or even parody, though non-satirical) of a classical model: the composing-out of the tonic triad, from I to I₆, with an intervening passing chord over a stepwise bass (I–VII₆–I₆). Example 4.3 presents these opening measures in short score with an imaginary chorale below. From the perspective of dissonance treatment, notice that the opening added-sixth chord seems to be consonant, whereas the following chord has the same structure, but is clearly subordinate and resolves as a dissonance: this is not a minor IIᵃᵈᵈₑ, but a half-diminished VII⁶.¹⁰⁵ Regarding the voice leading, notice that the progression from the first chord to the second is an exact transposition up a whole tone—it consists, therefore, entirely of parallel motion, including a parallel perfect consonance (P₅) along with the imperfect ones (M₃ and M₆).

¹⁰⁵ A second apparent, as opposed to real, added-sixth chord can be heard on beat 2 of measure 5, where a passing ⁷ over I₆ creates a sonority of an added-sixth chord with a major third. Mahler has saturated this opening with added-sixth chords, from the real added-sixth of the first harmony to the apparent added-sixth chords of the second and third harmonies.
Williamson 1986 presents a detailed Schenkerian analysis of the opening fifty measures of this movement, including this passage, as shown in Example 4.4. In that analysis, Williamson reads the melody as a single voice, so that when the tenor horn arpeggiates from its initial F# down to the low G# (the added sixth), Williamson hears the G# as displacing the F# of the melody, moving the top voice up by step. In my view, the sevenths that are outlined in the melody represent two voices in a polyphonic melody, not a single voice moving up by step. I do not hear Williamson’s reading for two reasons. First, both notes are harmonic—instead of a classical 5–6 motion over a tonic, I hear this as a sustained tonic added-sixth chord (a local ikonic sonority, if you will, stated both harmonically and melodically). Second, I hear the F# of measure 3 and the G# of measure 4 (neither of which appear in Williamson’s sketch) as continuations, respectively, of the F# of measure 2 and the G# of measure 3—in both cases, the top voice does not move up by step until it does so in the original register. One could perhaps mediate Williamson’s and my interpretations by hearing the low G# of the melody as an upper neighbor to the F# (the upper neighbor in this reading is displaced by an octave and happens also
to be a chord tone), but the reading I find most convincing is shown by the voice leading of Example 4.3.

As double tonic. The concept of a double-tonic complex was discussed above with regard to the final sonority of Das Lied von der Erde, which some analysts interpret as a combination of the two principal tonics of the symphony (A minor and C major, joining to form a C-major added-sixth double-tonic). The hierarchical level at which that particular example might function as a double-tonic sonority can only be rather deep—at the foreground, the controlling tonic is unambiguously a C-major triad, while the motivation to hear the final sonority as a double-tonic lies in more remote levels of contemplation.

In some cases, however, the sense of an added-sixth double-tonic sonority is compelled by the foreground. In a complex passage from Mahler’s Second Symphony, two triads are simultaneously prolonged in different voices (see Example 4.5). The flute 1 and solo violin of measures 221–22 outline an Eb-minor tonic triad, while the orchestral violins and clarinets
outline V in C♭ major. The resultant added-sixth chord is, as we have seen, a characteristic non-classical sonority in Mahler’s musical language. I hear the violin/clarinet melody as V of C♭ (rather than I of G♭), not only because of the immediate C♭ tonic goal, but also because this melody is recycled from the second theme (mm. 48–50), where it begins on a local 5. There it arpeggiates I, whereas here it is adapted to arpeggiate V—thus for me the G♭ triad is implicit from the moment the adaptation begins (beat 3 of m. 221). The added-sixth chord of these measures is encapsulated by the cello/bass part, whose first note implies an E♭ tonic, yet whose first downbeat implies a G♭ tonic. Throughout most of this passage, the added-sixth chord is the result of competing prolongations; but at the cadence, the added-sixth chord takes on functional clarity as a dominant triad transformed by tonic intrusion (3) and a contrapuntal bass.
In “Lied des Verfolgten im Turm,” Mahler uses an added-sixth chord as the nexus between to local tonics: he moves from B♭ to G minor via the combination of the two tonics, then returns to B♭ by using the same technique (mm. 46 and 54; see ex. 3.70 on p. 142 for further discussion of this example). As we hear in this example, the added-sixth double-tonic sonority can also be expressed as a minor seventh chord.

As dominant with tonic intrusion. Mahler also uses added-sixth chords as dominant harmonies, in which case the added sixth (here 3) arises from what I call “tonic intrusion.” Whereas the added sixth of tonic added-sixth chords can add an element of instability that classically would be regarded as more surface-level than the triad, the situation with dominant added-sixth chords is paradoxically both similar and reversed. In dominant harmonies, the added
sixth classically is a non-chord tone and a subordinate-level dissonance; but it also anticipates the 3 of the expected tonic harmony and therefore arises from a deeper level of structure than the dominant chord itself. The apparent foreground dissonance is a consonance at a deeper level. As such, it is analogous to the hierarchical status of pedal tones in classical theory. One could say, alternatively, that the tonic intrusion is analogous to the anticipations and suspensions of classical theory—which is to say that the foreground dissonance results from metric displacement, rather than from hierarchical conflict. The metric-displacement interpretation is perhaps the more intuitive one when an example is viewed in isolation and from a classical perspective; but the hierarchical-conflict interpretation strikes me as a meaningful alternative, one that resonates with the kind of surface-level hierarchical conflicts that feature in Mahler’s characteristic tonal language, more generally. Either way, from a Schenkerian perspective, it is quite easy to reduce the dominant added-sixth chord to a classical dominant by interpreting the added sixth as hierarchically subordinate; but I think something important would be lost in doing so. The dominant added-sixth chord (which I will often refer to as a “dominant with tonic intrusion”) features so prominently in Mahler’s music that I am inclined to regard it as an independent sonority. To the extent that we regard V7 as an intrinsic part of the tonal system, distinct from a dominant triad, I think that the dominant added-sixth chord (V+3) deserves similar recognition in Mahler’s music. The focus here has been on dominant added-sixth chords (V+3), but tonic-intrusion can transform any dominant harmony, including V7 and V9.

An example of tonic intrusion creating a dominant added-sixth chord can be heard in the opening of the Adagietto of the Fifth Symphony. Superimposed on the tonally ambiguous opening dyad, we hear a V–I progression leading into the downbeat of measure 3 (see Example 4.6). Again, we hear Mahler bring notes from a deeper structural harmony (the tonic) to the
surface, where they conflict with more a more transient harmony (the dominant). In this example, the surface result is a non-triadic sonority characteristic of Mahler: the addition of a sixth to a major triad, creating an added-sixth chord.\textsuperscript{106}

\textbf{Example 4.6. Fifth Symphony, mvt. 4, mm. 1-3}

\textit{As plagal subdominant.} The added-sixth sonority also appears in Mahler’s music as a plagal subdominant. In this case, the sonority is a major or minor IV triad with added $\hat{2}$. The plagal subdominant added-sixth chord has a prominent place in the history of music theory, notably featuring as a fundamental harmony in Rameau (the “sixte ajoutée”).\textsuperscript{107} Rameau is careful to distinguish between $II^{6/5}$ and $IV^{+2}$ (my nomenclature)—the former is an inverted seventh chord whose fifth above the bass is a dissonance to be resolved down by step (into the

\textsuperscript{106} For further discussion of this family of sonorities in the context of cadences, see “tonic intrusion” in chapter two, “Cadence in Mahler.”

\textsuperscript{107} Rameau was not entirely consistent in his use of the concept in \textit{Traité de l’harmonie} and \textit{Génération harmonique}, but he is nevertheless a principal source for much of its lasting familiarity.
third of a V harmony); the latter is a root-position chord whose added sixth above the bass is a dissonance to be resolved up by step (into the third of a I harmony). Despite its discussion by Rameau (and its later expanded use by Riemann), the added-sixth chord was broadly rejected as non-tertian and is not part of classical theory. Whereas a Rameauian imaginary continuo might read an implied added sixth for every subdominant harmony, a classical imaginary continuo will never read an added sixth over a root-position harmony. The Rameauian and classical subdominants both feature in Mahler’s music, however, and therefore are both relevant to a Mahlerian imaginary continuo.\footnote{For further discussion of IV$^{+2}$ (and the plagal family of sonorities, in general), see chapter two, “Cadence in Mahler.”}

As common-tone neighboring chords. The final type of added-sixth chord that I would like to discuss is of a more embellishing nature: common-tone neighboring chords. The typical structure in this case is that of a minor triad with a major added sixth. This chord tends to serve in a subordinate relationship to a major triad: the added-sixth chord’s root and fifth act as pedals, while its third acts as a lower neighbor and its sixth acts as an upper neighbor. This is an instance of the phenomenon (common in Mahler and discussed periodically in this dissertation) wherein surface conflicts arise from the simultaneous sounding of notes that seem to “belong” to different levels of structure—those levels can be hierarchically consistent (no conflict between levels), yet if the levels sound simultaneously, surface conflicts can arise. In this case, we hear the added sixth as the decorative displacement of the triad’s fifth, yet the triad’s fifth is nevertheless stubbornly sustained, causing the deeper-level fifth and its embellishing sixth to sound simultaneously.
This common-tone added-sixth chord (which I believe to be a new concept) can be seen to belong to a family of more familiar subordinate common-tone chords. If the sustained fifth had moved to the fifth’s chromatic lower neighbor (#4), then instead of a common-tone added-sixth chord, a common-tone fully diminished seventh chord would result (♭5–#4–♭6). And if that chromatic lower neighbor were combined with a chromatic upper neighbor (♭6), then the result would be a common-tone augmented-sixth chord (♭5–#4–♭6). Both of those subordinate common-tone harmonies are well represented in theoretical discourse. The common-tone added-sixth chord (♭5–#4–♭6) belongs to the same family of sonorities and is demonstrated below.

“Verlor’ne Müh’” offers a simple common-tone added-sixth chord with interesting resonance in the song’s larger design (see Example 4.7). During the six-measure introduction, Mahler gradually brings the tonic into focus: E begins as an isolated pitch class, becomes the dominant of A major (m. 3), then of A minor (m. 4), and then finally progresses to A major as tonic triad. This use of modal mixture is immediately taken-up by the voice in measures 7–8, as an A-major triad leads to an A-minor one (the bass drops to the fifth of the chord, which I take to be a consonant arpeggiation). As the orchestra immediately echoes these two measures, there is a subtle change: the A-minor triad arrives with an added F#. This is our added-sixth sonority, and it functions here as a subordinate harmony to the preceding A-major triad—the root and fifth are retained as common tones while the third moves to a chromatic lower neighbor and the fifth

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109 Composed 1892. First published separately, then in a collection called *Humoresken*, and now primarily known as part of the *Des Knaben Wunderhorn* collection.
moves to the added-sixth as upper neighbor. As the common-tone added-sixth chord resolves, there is a surprise extra common-tone involved: C♯ is retained and the returning tonic is now minor. Thus the mixture from measures 4 and 8 is now taken to a deeper structural level. The resolution of the common-tone added-sixth chord is also echoed in the expression of the song’s narrative through its tonal structure: the neighboring E–F♯–E and E–F♯–E motions express the female character’s failed attempts to interest the man, whereas the ascending E–F♯–G♯–A expresses the man’s independence from her (with the F♯–G♯ in measures 45–46 expressing the man’s final rejection of the woman, “No!”).

Example 4.7. “Verlorene Müh’,” mm. 1–16 (short score)

Note that this passage also employs a common-tone augmented-sixth chord (m. 14), whose structural similarities to the common-tone added-sixth chord were discussed above.

Additional examples of the common-tone added-sixth chord are discussed in Chapter 3 on Mahler’s common-tone techniques.
Tonic Intrusion Chords

We have just considered five types of added-sixth chords and their contribution to the dissolution of the classical imaginary continuo in Mahler’s music. In one type, the dominant added-sixth chord ($V^+$), we saw that the added-sixth derives from what I call “tonic intrusion.” If we shift our focus from added-sixth chords to tonic-intrusion chords, we can see that this constitutes a family of non-classical harmonies in Mahler’s music. “Tonic intrusion” occurs when a member of the tonic triad becomes part of a harmony (either through addition or substitution) that classically would not contain it. This compositional technique often creates a rupture of classical tertian expectations, and therefore contributes to the dissolution of the classical imaginary continuo.

This family of harmonies is a subset of a larger family of harmonies that derive from conflicting tonal hierarchy. In addition to the aforementioned $V^+$, some common examples include $V^7+$ (where 3 creates an acute dissonance with 4 and either displaces 2 or clashes with it), the plagal I$^+$ (where 2 acts as a convincing root and 1 functions not as a dissonant seventh, but rather as a member of the tonic triad), and the plagal IV$^5$ (where a IV–I progression already contains 5 during the IV)—those harmonies are all heard in Mahler’s cadences, and are discussed in chapter two, “Cadence in Mahler” (see pp. 28–38 and 48–49).

Conflicting elements of the foreground can arise through the simultaneous attempt by two Stufen to control the notes of a particular passage. In its simplest form, perhaps, we can see this in the dual structural status of a single note. In this case a dissonant, subordinate note of one foreground structure is reinterpreted at the same level as a structurally stable note in a different foreground structure. In Example 4.8, the A of measure 417 is at once an unessential dissonance (with respect to the $V^7$ of F) and a structural consonance (with respect to the preceding prolonged D-
minor triad and the succeeding prolonged F-major triad). The A should resolve to G, but instead serves as a common-tone link as it becomes the main melodic tone of the next phrase (which itself begins with an added-sixth chord, though not through tonic intrusion).

Example 4.8. Symphony No. 5, iii, 409–18 (short score and imaginary continuo)

**I+V Trichord**

The foreground conflict here termed the “I+V trichord” is a notable feature of Mahler’s music and is an example of his use of hierarchical conflict.\(^{112}\) Although full-harmony manifestations occur, this conflict often consists of a pair of open-fifth dyads from I and V, creating a $\hat{1}$-$\hat{5}$-$\hat{2}$ trichord. In the song, “Ablösung im Sommer,” for example, the opening five measures present a combination in A minor of $I^{8/5}+V^{8/5}$, where $V$ is clearly a subordinate composing-out of I. The unfolding melody makes clear that the I is implicitly a minor triad, despite the lack of a third. The third of the $V$ is less stably identified; a classical dominant (major

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\(^{112}\) Other theorists have noticed this feature of Mahler’s music. Tischler 1951, for example, notes “the strong liking for alternations of tonic and dominant led, by way of telescoping, to frequent combinations of both chords” (115), while Hefling 1986 cites an example of "V/I mixture" (132).
third) is most “likely” (minor dominants are rare in Mahler), but that does not mean that this dominant is classical—Mahler carefully avoids the leading tone, even for the strong PAC in measure 13. Mahler often avoids the leading tone in his cadential dominants, but in my view the leading tone still tends to be implied in those situations; but here the musical language is crafted to avoid the leading tone in a more systematic way, so the $V^{8/5}$ might be all that we should assert—the imaginary continuo cannot necessarily read a triad here. This is an issue that Mahler engages throughout the song (cf. the ending of the song, where V does take a leading tone [of contrapuntal origin] and the final tonic is left as a $I^{8/5}$).

In the song, “Wenn dein Mütterlein,” the main motive of the vocal part plays with the sound of a $I+V$ trichord, but it is treated in a classically tonal way ($\hat{1}$ is treated as a dissonance during $V$ and resolves to $\hat{7}$). In measure 40, however, the accompaniment sustains a pedal $I$ dyad underneath the $V$ dyad of the melody (and the inner-voice leading tone is omitted), thus presenting the $I+V$ sonority explicitly.

In the First Symphony’s first movement, the $I+V$ sonority appears in a number of prominent ways: first, during the transition from the introduction to the primary theme, Mahler employs an overlapping $I+V$ trichord that turns out to have motivic significance. The $I+V$ sonority returns in measures 106–10 and features at the start of the development, where $I$ and $V$ are expressed in conflicting motives.

**Augmented Triads**

The augmented triad is another example of a harmony that Mahler elevates to a significant position in his music. In the song, “Ablösung im Summer,” Mahler presents a phrase
in classical tonality, as shown in Example 4.9. When recomposing this passage later in the song, Mahler makes a non-classical substitution of augmented triads (marked with asterisks in Example 4.10).

Example 4.9. Classical continuo in “Ablösung im Summer,” mm. 36–39

Example 4.10. Varied restatement of previous ex., here with augmented triads (*), mm. 51–54
**Common-Tone Harmonies**

Common-tone harmonies are an important part of Mahler’s writing (see Ch. 3, “Mahler’s Common-Tone Techniques,” pp. 64–89), but they do not pose a significant challenge to the classical imaginary continuo. When Mahler uses common-tone harmonies, the voice leading tends to be clear and the counterpoint tends to consist of pedal tones and neighboring tones. The resulting harmonies only a challenge to classical tonality only to the extent that they are regarded as “real” harmonies, rather by byproducts of linear motions—in addition to the common-tone diminished seventh chords and augmented-sixth chords that have been accepted into classical tonality, I would add the common-tone added-sixth chords, common-tone tonic-intrusion chords, and the use of common-tone monads and dyads.

**Monads, Dyads, and Ninth Chords**

Whereas the classical imaginary continuo maintains a minimum of three to four voices at all times, Mahler’s music sometimes reduces to only one or two, where no additional voice or voices seem to be implied. Some ambiguous single-voice textures are explored in the “Dissolving Imaginary Continuo” section of this chapter (see esp. pp. 208–12) as well as in the “Common-Tone Modulation” section of Chapter 3 (pp. 90–102).

The existence of a five-note tertian harmony in Mahler’s harmonic vocabulary creates the potential for voice-leading and hierarchical ambiguity.¹¹³ Not only does it blur the distinction between melodic step and harmonic skip (e.g., , in a V⁹ chord), but it also can create challenging distinctions between which tones are subordinate and which more structural. In the penultimate measure of Example 4.11, the V⁹ is clearly arpeggiated in both directions

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¹¹³ A case could be made for including V⁹ in the classical imaginary continuo, but in this dissertation the classical imaginary continuo is assumed to draw exclusively from three- and four-note harmonies.
simultaneously, leaving little room for ambiguity—the C and D are both harmonic voices and they will resolve in contrary motion to B♭ and E♭. In Example 4.12, however, the situation is more complex—the leading tone is already well established in the bII\textsuperscript{Aug6} chord (where E is spelled enharmonically as F♭), yet it seems to function as an appoggiatura to the ninth over the dominant (in the second half of m. 32).

Example 4.11. Kindertotenlieder, “Oft denk’ ich, sie sind nur ausgegangen,” mm. 36–40 (short score)

Example 4.12. Rückert lieder, “Ich atmet’ einen linden Duft,” mm. 31–33 (piano score)
Counterpoint

Parallel Perfect Consonances

Regarding the use of parallel motion between a pair of voices, classical theory generally makes a clear distinction between the stylistic behaviors of perfect and imperfect consonances. Whereas imperfect consonances (major and minor thirds and sixths) often move in parallel motion, perfect fifths and octaves do not.\(^{114}\) We should be careful not to overstate the latter generalization—“forbidden” parallel perfect fifths and octaves do occur in the classical repertoire, but they are relatively rare. The classical imaginary continuo, therefore, will tend not to use parallel perfect fifths and octaves. Some parallels that occur in the music will disappear from a foreground imaginary continuo, since the notes in question might have different hierarchical significance (e.g., an ornamental tone vs. a more structural tone). At deeper levels, an imaginary continuo will sometimes contain parallels that do not sound on the surface of the music (unless the analyst precludes all parallels, based on an a priori theoretical principle). Despite such nuances, it is safe to say that parallel perfect fifths and octaves are not a featured foreground progression in classical tonality.

Mahler, however, embraces parallel perfect consonances. They are a notable compositional option in his music. The term “option” here is significant—Mahler sometimes features such parallels, but sometimes avoids them. Just as classical tonality has a variety of contrapuntal motions available to it (oblique, parallel, similar, contrary), to be used as desired, Mahler avails himself of additional resources—parallel perfect fifths and octaves—and uses them selectively. It is therefore interesting to notice which compositional situations seem to elicit parallel perfect consonances from Mahler.

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\(^{114}\) A notable exception is that parallel perfect fourths are relatively common between upper voices (though uncommon when involving the bass).
Mahler often chooses to use parallel perfect fifths as part of parallel root-position triads. Parallel root-position triads combine stylistic salience (as occasional, and therefore notable, events) with harmonic strength (as highly stable sonorities). This salience and strength is perhaps what frequently attracts Mahler to use parallel root-position triads as a way to approach a tonal goal. The tonic and dominant triads both serve as common goals in Mahler’s music. When descending to the tonic through parallel root-position triads, one of Mahler’s strategies is to start from the dominant triad, progress down by whole steps to b II, and then release into I through a semitone descent: V–IV–bIII–bII–I (as shown, for example, in Example 4.13). In Mahler, the bII of a bII–I progression often takes on an augmented sixth (resolving to I just as a classical augmented sixth chord would resolve to V), in which case the bII\textsuperscript{Aug6} can be heard as a Phrygian and contrapuntal transformation of the V (with the full chord membership depending on the type of augmented-sixth chord used). The semitone approach to I therefore can be understood as a more “dominant-like” progression than a whole-tone approach, thus making it a stronger way to descend to I. The approach to I in this case is also marked by the disruption of a sequence—after a series of whole-tone descents, the descent by semitone makes the tonic stand out as a place of arrival.\footnote{Sequences are remarkably rare in Mahler’s music (compared to their prominence in classical tonality and in the music of some of Mahler’s late-nineteenth-century peers). The chromatic descending-thirds sequence of the Seventh Symphony and Ninth Symphony is a notable exception.}

\footnote{There will also tend to be parallel octaves in such circumstances, but the octaves can be regarded as doubling, rather than as counterpoint.}
The Split Scale Degree

A small-scale, but interesting, kind of hierarchical conflict arises when Mahler simultaneously uses two chromatic variants of a single scale degree. This “split scale degree” technique can arise in several different ways. It can represent non-conflicting levels, as when the melodic motion $\hat{2} \rightarrow \hat{1}$ is simultaneously filled-in with a subordinate passing motion, $\hat{2} \rightarrow \hat{b} \hat{2} \rightarrow \hat{1}$.\footnote{This phenomenon can be regarded as a form of “heterophonic voice-leading”—a compositional device used by Mahler that has been emphasized by Adler 1908, Mitchell 1985, Williamson 1983 “Veni creator spiritus,” and Roman 1986’s review of Mitchell. The basic idea is that one voice can employ a variant of a simpler, simultaneous voice.} It can represent conflicting structures at the same hierarchical level, as when $\hat{2} \rightarrow \hat{1}$ and $\hat{b} \hat{2} \rightarrow \hat{1}$ sound simultaneously, both with distinct harmonic support. It can arise from extremely chromatic counterpoint, as when $\hat{4} \rightarrow \hat{3}$ occurs at the same time as $\hat{#4} \rightarrow \hat{5}$. Finally, it can result from the simultaneous use of conflicting diatonic scales, as when Mahler uses parallel major and minor scales simultaneously.

We hear the split scale degree, for example, in the Ninth Symphony, finale, measure 9. Here G ascends to A$\flat$ ($\#4 \rightarrow \hat{5}$), while G$\flat$ descends to F ($\hat{4} \rightarrow \hat{3}$; this motion is embellished). It is possible (perhaps even a default reading) to view this as an inverted G$\flat$ triad with a renegade G

\footnote{This phenomenon can be regarded as a form of “heterophonic voice-leading”—a compositional device used by Mahler that has been emphasized by Adler 1908, Mitchell 1985, Williamson 1983 “Veni creator spiritus,” and Roman 1986’s review of Mitchell. The basic idea is that one voice can employ a variant of a simpler, simultaneous voice.}
(see Lewin 2005), but it is interesting to explore the fact that it is coming from a B♭♭ triad, and thus the G can be heard in some sense as an augmented sixth. The fact that B♭♭ gives way to B♭ before arriving on A♭ makes it resemble an inner voice of the progression bII6–VIIº7/V–V.

Another interesting example of the split scale degree occurs in the Eighth Symphony, Part II (108). Here, #2 and b♯ coexist due to the combination of an augmented-dominant harmony and a Phrygian melodic descent.\footnote{Although #♯ passes from ♯, it was also present in the previous chord as b♯—a similar split scale degree occurs during the opening progression of Schoenberg’s Op. 9 Chamber Symphony.}

**Unresolved Dissonance**

In classical theory, every dissonant tone can be understood as taking a subordinate position within a more stable structure. The conservative prescription for dissonant tones is that they have a consonant point of origin, a consonant point of resolution, and do not engage in disjunct motion. The degree to which the musical surface corresponds to this prescription varies widely, but the imaginary continuo can concretize an underlying simplicity that confirms the conservative prescription’s relevancy and draws expressive significance from it.

In general, a dissonant tone’s origin is not as compelling a concern as its resolution. Classical tonality might leap to a dissonance—and a composition might even start with a dissonance—but once introduced, the dissonance assuredly will resolve and even in complex textures the imaginary continuo will demonstrate an analytically convincing, non-disjunct resolution (the dissonant tone will hold or move by step).

Mahler relies on this classical sense of dissonance treatment, but he also sometimes challenges it. One such challenge comes from Mahler’s expanded harmonic vocabulary—we
have seen in this chapter how Mahler’s use of added-sixth chords can sometimes confound classical expectations of resolution and pitch hierarchy. Another challenge arises through Mahler’s common-tone techniques—we have seen in the previous chapter how these can lead to non-classical dissonance treatment, such as non-resolving suspensions and unconventional pedal tones. A subtler challenge comes in Mahler’s orchestration, which often creates a timbral disjunction even while classical pitch hierarchies are maintained (think of the fragmented “Ewig” at the end of Das Lied, for example, or any dissonant note whose resolution is taken by a different instrument). Subtler still are the extremely local details of string technique, where an open-string grace note might theoretically clash with the chord, yet acoustically have an effect analogous to non-pitched percussion. More substantial challenges arise from Mahler’s use of conflicting prolongations and his adoption of a technique wherein “familiarization favors freer usage” (Schoenberg 2010, 332), as discussed at the conclusion of this chapter (see pp. 196–98).

**Increased Ambiguity (Resolvable)**

*Introduction*

A significant way that Mahler challenges the classical imaginary continuo is through his use of tonal ambiguity. Whereas the classical imaginary continuo requires clarity of harmony and counterpoint, Mahler’s music sometimes embraces ambiguity in those domains. Such ambiguity can arise in two loosely distinguishable ways. First, there is ambiguity that arises as an inevitable byproduct of Mahler’s expanded compositional language in the domains of harmony and counterpoint (relative to those encompassed by the classical imaginary continuo). This kind of ambiguity is perhaps incidental and only indirectly related to Mahler’s compositional aims, but it nevertheless exists (and influences the experience of some listeners/performers). In such cases,
the ambiguity seems to proceed from classical tonality’s inaptness or insufficiency for clarifying
the passage’s harmony and counterpoint. Second, there is ambiguity that seems to arise not as a
compositional byproduct, but rather as a compositional goal. Such passages seem to be designed
to provoke competing hearings—they elicit in the listener’s imagination an artistic exploration of
ambiguity.

**Harmonic Ambiguity**

A degree of harmonic ambiguity is the direct result of Mahler’s expanded harmonic
vocabulary. The question of which tones are chord tones becomes more potentially ambiguous
given that Mahler uses some non-tertian chord structures in addition to the tertian structures of
classical tonality (see section II.A, above). Similarly, the question of how many voices are
present at a given moment becomes more potentially ambiguous because Mahler uses chords
with fewer than three or greater than four pitch classes (see the same section). This harmonic
variability can lead to uncertainty about the structure and cardinality of a harmony. One
challenge that results from this is that it disrupts our ability to infer implied tones. For example,
in classical tonality a phrase that cadences with a melodic 2–1 can be securely read as implying a
normative V–I harmonic progression (creating an implied PAC, even in the absence of voices
other than the melody). But with the increased relevance of the plagal family of cadences in
Mahler’s music (including IV+2, II, and VII6/4), the implications of a melodic 2–1 close are not so
definitive. We also examined relevant ambiguities in chapter two—including the idea that
common-tone transitions involving a single tone or dyad can draw on a sense of ambiguity for
artistic effect, and the idea that the common-tone associative technique of fixed-pitch
reinterpretation (indirect reharmonization) can enrich the listener’s sense of harmonic
possibilities.
It should be noted that an increased potential for ambiguity does not imply that ambiguity is always present. The availability of added-sixth chords in Mahler’s harmonic vocabulary, for example, does not imply that all triads are ambiguous or that all added-sixth sonorities are necessarily true harmonies. Analytic judgment is always required. For example, in the opening passage of the Ninth Symphony, Mahler employs a static harmonic framework consisting of one chord—the tonic. But that tonic is decorated in such a way that it rarely sounds on its own. The opening sonority is built through an additive process: starting with a pedal 5, Mahler adds 3, then 6 (as a metrically weak neighbor to 5), and finally 1, before eventually having the principal melody take 3 to 2 while the accompanying horns take 5 to 6. From the perspective of classical tonality, this automatically would be assumed to be a tonic triad with subordinate neighboring dissonances. Knowing that Mahler has started other works on a tonic added-sixth chord, however, I think we must consider that option here—and reject it. In my view, there is a correct reading here and it happens to coincide with classical tonality: the movement opens on a tonic triad and the sixth is a non-harmonic dissonance. But in the world of the post-classical imaginary continuo, that reading is no longer automatic—alternative harmonies must be considered even if, as in this case, they are to be dismissed because of contextual cues (the strong dissonance–resolution model employed by the melody, for example, suggests that the 2 and 6 are not chord notes).

**Contrapuntal Ambiguity**

Mahler’s non-classical contrapuntal practices also contribute to an increased potential for ambiguity. The avoidance of parallel perfect fifths and octaves is a reliable norm in classical tonality, but in Mahler’s music this stylistic convention is sometimes relevant and sometimes not, which creates a degree of uncertainty about expectations and underlying models. Similarly
ambiguous are those dissonances in Mahler that do not derive from classical models—
classically, one might expect a note to resolve, but in a Mahlerian context, one considers other
options, as well. Mahler’s use of pentatonic melodies can lead to ambiguity for the
polyphonically listening analyst: a pentatonic third can be heard as a step within one voice or as
a leap between two. A similar ambiguity arises through Mahler’s use of $V^9$ chords, where the
melodic motion $\hat{5}–\hat{6}$ can be heard as a step (one voice) or a leap (two voices).

_Ambiguity, Resolved: A Solo-Voice Exploration_

Mahler sometimes creates such ambiguity through the use of a single-voice melody. The
first moments of a composition are a particularly fruitful time for this use of ambiguity. We will
see two examples of introductory solo voice ambiguity—one where the ambiguity can be seen as
incidental (the introduction to the Fifth Symphony) and one where the ambiguity can be seen as
an essential compositional goal (the introduction to the unfinished Tenth Symphony). To set
these examples in relief, we will first examine a solo-voice melody by Mozart to demonstrate
what implications can be realized by the classical imaginary continuo.

_Preparatory example: a sketch fragment by Mozart._ The solo-voice texture has been
used in the history of theory as a kind of proving ground for the imaginary continuo.\(^{119}\) Example
4.14 provides a transcription of the opening measures of a sketch fragment by Mozart for a
clarinet quintet in A (presumably the famous Clarinet Quintet in A, though it did not end up
there). For the vast majority of the sketch, Mozart notated only the melody. Nevertheless, given
Mozart’s use of classical tonality, the underlying harmony and voice leading are substantially

\(^{119}\) See, for example, Kirnberger/Schulz 1773’s treatment of fugue (including the solo subject)
and Rothstein 1991’s treatment of solo violin music.
discernable. From this isolated melody (even ignoring the opening measure of accompaniment) we can realize an imaginary continuo with a relatively high degree of fullness and accuracy.\(^{120}\)

![Example 4.14. Mozart’s fragmentary sketch for Clarinet Quintet, K. 581a (mm. 1–14)](image)

This example is particularly interesting because Mozart did use this melody in a completed work—the aria, “Ah lo veggio,” from *Cosi fan tutte*. Example 4.15 provides Mozart’s sketch fragment in the highest staff, a rudimentary realization of the imaginary continuo in the middle two staves, and, in the lowest staff, a figured bass of Mozart’s setting from *Cosi*. The chronological relationship between the Clarinet Quintet fragment and the completed aria has been debated, but is not of interest here. The argument here is that, to an analyst with some level of fluency in Mozart’s style, the melody strongly implies a fairly robust imaginary continuo. The continuo that I have chosen to provide here is decidedly basic—indeed, it resembles a fundamental bass—yet it comes relatively close to Mozart’s setting. From the melody alone, almost all of the harmonies are implied. The difference between the two is a matter of Mozartean drama, and a sensitive continuo imaginer (one who did not seek the most basic reading, as was provided here) could provide the deceptive cadence and contrapuntal bass that bring Mozart’s setting to life.

\(^{120}\) Readers are invited to imagine their own realization now, before continuing reading.
Example 4.15. Mozart’s melody (sketch), a rudimentary imaginary continuo (mine), and Mozart’s own bass (from “Ah, lo veggio,” transposed to A) with my figures

 Mahler’s Fifth Symphony, first movement. Example 4.16 presents Jeremy Day-O’Connell’s analysis of an excerpt from the opening trumpet solo of Mahler’s Fifth Symphony.

Notice that at the moment just before the arrival on the big A-major chord, Day-O’Connell’s reading of the unrealized imaginary continuo is “(IV).” From a classical perspective, this reading is logical and even inevitable, since the following chord is I and since the melody approaches I from Œ. I will argue that in the context of Mahler’s tonal practice, this moment presents ambiguity. Day-O’Connell’s point here is to highlight the “rise of Œ,” and he aptly maintains that focus, rather than detour into the details of harmony and voice leading that surround this moment. Those details are the focus here, however.
Example 4.17 provides three hypothetical realizations of the imaginary continuo for this passage. Each seeks to capture a different part of the ambiguity of Mahler’s tonal structure. The first eight measures of all three readings understand there to be a gradual arpeggiation of a C♯ minor tonic triad. In measures 9–14, the readings diverge. Following Day-O’Connell, the big A-major chord is interpreted as a local tonic in each reading. At an only slightly deeper level, this A-major triad is VI, but it seems to be tonicized, so our readings will treat it as a local I.

The first ambiguity highlighted in these three realizations has to do with the leaping ascent of measure 11 (F♯–A–C♯–E). In the first realization, the harmony here is taken at face value as arpeggio of an F♯ minor seventh chord, and the bass is read conservatively as having remained on the previous measures’ C♯. This reading is straightforward, but it poses a challenge for understanding the subsequent progression to A major. If the high E is a dissonant chordal seventh, then why does it not resolve? The progression here is read as VI7–I, with the dissonant seventh of VI retained as the fifth of I.122

121 Notice that measure 9 serves as a somewhat independent variable from measure 11, which is our focus. Measure 9 could be heard as a C♯-minor triad (sustaining the tonic of the previous measures), an A-major triad with or without added sixth (anticipating the local tonic triad of m. 13), an F♯ minor seventh chord (anticipating the arpeggio of m. 11), or a D-major triad (as part of a plagal cadence to A).
122 If the high E is part of an F♯7 chord, then a classical continuation could interpret this harmony as a minor seventh chord in a descending fifths sequence en route to the tonic: ii7–V7–I (in E), vi7–ii7–V7–I (in A), or iii7–vi–ii–V7–I (in D).
The second realization, in contrast, provides a resolution of this chordal seventh by hearing a chord change in measure 12, before progressing to the local A-major tonic. In this reading, the VI\(^7\) is effectively heard as a 7–6 suspension (paired with a 5–6 motion), while the main harmony is heard as IV. The resolution of the (now non-chordal) seventh is left to an unsounded inner voice, since the melody continues its ascent to \(\hat{1}\). In this realization, the bass can be imagined to provide a plagal \(\hat{4}\)–\(\hat{1}\) motion.

The third realization hears measure 11 to contain no dissonant seventh, but rather a chord change. Thus the high E is made consonant as a 5 of A, supported by V. It is now free to ascend, but its approach to A major is through a melodic 6—so between the V and the I, this reading hears a plagal motion. This example demonstrates a plagal added-sixth chord (IV\(^{+2}\)), since Mahler uses a range of plagal formations in his music and this is relatively easy to hear in this particular example.

These three realizations demonstrate that the classical imaginary continuo can not as reliably be drawn from Mahler’s solo melody as it can be drawn from, say, one by Mozart. The stylistic diversity of Mahler’s compositional language means that there are more options, and a certain ambiguity can result.\(^{123}\) In what follows, however, I will propose that the ambiguity can be resolved in favor of a Mahlerian continuo.

\(^{123}\) Additional realizations have been suggested to me by various people, including that the high F\(^\#\) is part of a V\(^9\) chord and, by contrast, that it is merely a monad with no harmonic implication.
Example 4.17. Symphony No. 5, i, 1–14. Three realizations of the imaginary continuo

In Example 4.17, I raised the possibility of an added-sixth chord being implied as support for $\hat{6}$ during the $\hat{6}$–$\hat{8}$ ascent to A major. The added-sixth chord was not a certainty, but given Mahler’s harmonic language, it was a necessary consideration. Example 4.18 gives strong support for that reading. Taken from a later, varied restatement of the opening trumpet solo, this passage includes a $\hat{6}$–$\hat{8}$ ascent in the key of B major, but this time the $\hat{6}$ is accompanied by a full texture expressing none other than a IV$^{add6}$ chord.
In closing this section I would like to highlight a precedent for attempting a non-classical imaginary continuo: an analysis by Berg from his essay, “Why is Schoenberg’s Music So Difficult to Understand?” (1924). In his essay, Berg offers the reader an imaginary continuo analysis of the opening of Schoenberg’s op. 7, String Quartet in D minor. Of his analysis, Berg writes that,

This passage in Chorale style is not the chordal basis [akkordliche Grundlage] of the far-flung arches of an Adagio—which one could well imagine. No; it is merely the harmonic skeleton [harmonische Skelett] of the much discussed beginning of this Quartet. (197)

Example 4.19 reproduces his analysis.
Example 4.19. Berg 1924’s analysis of Schoenberg (reproduced from Reich 1965)

In Example 4.20, I have aligned Berg’s analysis with Schoenberg’s music to facilitate a comparison of the two. Berg states that the richness of the music is “nothing other than the result of... polyphony” (196). In creating his imaginary chorale, Berg tends to use a half note to represent a quarter note of Schoenberg’s score, but certain theoretical situations cause Berg to deviate drastically from this regularity—I have added small asterisks below Berg’s model to mark places where he uses half notes to represent eighth or even sixteenth notes, thus creating remarkable contortions of the tonal rhythm of Schoenberg’s music. Ten measures of Schoenberg’s music become not twenty, but twenty-seven measures in Berg’s analysis. It is
reminiscent of Kirnberger's B-minor fugue analysis in that Berg tries to represent almost every appoggiatura as somehow chordal. Unlike Kirnberger, however, Berg restricts himself to a very narrow range of note values, so appoggiaturas become blown out of proportion, creating the awkward contortions of tonal rhythm.

The two large asterisks are Berg’s and indicate whole-tone chords (see mm. 21 and 23). These moments offer fascinating insights into how Berg understood Schoenberg’s harmonic language. First, they are whole-tone hexachords, which reveals something about Berg’s understanding of Schoenberg’s harmonic vocabulary (Berg otherwise uses mostly triads and seventh chords). Second, they treat the passing tones of the quintuplets as chord tones, which is indicative of Berg’s desire to treat nearly every note of the music as a harmonic event.
Example 4.20. Schoenberg, op. 7, mm. 1–10 and Berg’s imaginary continuo (my alignment)  

The heterogeneity of Mahler’s harmonic language and the increased independence of Mahler’s contrapuntal voices sometimes leave the imaginary continuo on questionable ground, yet it would be wrong to characterize the dissolution of the imaginary continuo in Mahler’s music as a purely destructive phenomenon. On the contrary, the very elements that contribute to the dissolution of the classical imaginary continuo can point to a contextual imaginary continuo. Sensitivity to Mahler’s music can point to a specifically Mahlerian approach to the imaginary continuo—in other words, I submit that we should sometimes make Mahlerian inferences about the underlying structure even when a classical continuo would be possible.

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124 In Berg’s final, parenthetical measure (which explicates the previous one), I have corrected the English edition’s B♭3 to A3 (the original German ed. is ambiguous).
The Dissolving Imaginary Continuo

Using the classical imaginary continuo as a lens, the final contribution of this dissertation has been to discuss the emergence of a Mahlerian imaginary continuo from the partial dissolution of classical tonality in Mahler’s music. More broadly, this chapter uses three types of imaginary continuo to describe Mahler’s tonal practice: 1) the classical imaginary continuo, 2) the Mahlerian imaginary continuo, and 3) the dissolving imaginary continuo. Mahler’s use of classical tonality (as understood in the Schenkerian tradition) has been demonstrated through the relative ease of creating classical imaginary continuos for passages that manifest classical norms of harmony and voice leading. Mahler frequently departs from classical tonality, however, while remaining in close dialog with it. This practice is here described through the Mahlerian imaginary continuo and is marked by its departure from classical norms of counterpoint and harmony in limited ways, as defined in the previous section. The Mahlerian imaginary continuo constitutes the initial phase of the dissolution of the classical imaginary continuo and it is our principal focus. In rarer circumstances, a fuller dissolution of the classical imaginary continuo can be heard in passages that do not conform even to the Mahlerian imaginary continuo. Such passages are the focus below.

“Familiarization Favors Freer Usage”

It is a recurring observation in the literature that Mahler’s counterpoint sometimes frustrates classical understanding. Writing on the Third Symphony, Nadine Sine claims that, “in the enormous first movement, dominated by non-pitched percussion, brass, and winds, the polyphony defies tonal analysis” (1992, 122). Bekker makes a similar observation about the independence of Mahler’s polyphony, citing “the unfettered singing out of voices” and stating that, “Mahler’s musical conception is far less harmonically determined than that of most of his
contemporaries and predecessors. The melodic and the linear predominates” (Hansen 2012, 77). In discussing the Ninth Symphony’s Rondo-Burleske, Lewis echoes this sense of a non-harmonic counterpoint, citing a “complex chromatic contrapuntal foreground which gives the movement such a strong sense of non-triadic modernity” (1984, 70).

If some of Mahler’s counterpoint does not make sense from a classical perspective, then how does it make sense? One answer to this question comes from Schoenberg’s 1911 Harmony (dedicated to the recently deceased Mahler). As a preface to that discussion, it should be reiterated that, in classical counterpoint, multiple voices are coordinated in definable ways. The treatment of perfect consonances, imperfect consonances, and dissonances has been modeled well by species counterpoint and principles related to it.125 Theorists such as Schenker have demonstrated the authority of such models for tonal music regardless of chromatic, rhythmic, and textural complexities. Yet classical theory must contend with countervailing tendencies—melodic, harmonic, contrapuntal, and rhythmic desires often do not coincide. The desire for complete harmonies, for example, may be incompatible with the desire for melodic fluency or the resolution of dissonance (e.g., when 7 of V7 leaps in an inner voice to the 5 of I, completing the tonic triad, but abandoning the melodic and contrapuntal pull to 1). Similarly, the desire for an even rhythmic profile might conflict with the desire for the timely resolution of dissonance (e.g., metrically accented dissonances can often be understood to result from this conflict).

Nevertheless, in classical tonality, motives are expected to adapt in a changing harmonic context (e.g., the intervallic modification of “tonal” answers in some fugue expositions).

It contributes to the dissolution of the classical imaginary continuo, therefore, if the tonal structure of a melodic line does not conform to its tonal environment. Schoenberg identifies this

125 Some concepts, such as anticipation, are not a standard element of modern species counterpoint pedagogy, but they theoretically could be incorporated.
nonconformity as a feature of Mahler’s music and he seeks to explain why the listener can accept such it with relative ease. Citing motive-based free counterpoint as a Mahlerian (and Straussian) trait, Schoenberg explains that, “familiarization favors freer usage”:

The familiar effect of certain established, cliché-like figures, whose satisfying resolution is promised by the memory and anticipated by the ear, makes possible the fulfillment of necessity outside the excessively narrow rules… Any well-defined motive that appears in a piece often enough can on occasion be set with a dissonance, if only the final tone clearly gives the satisfying, consonant resolution. Such a form appears frequently in the counterpoint of Mahler and Strauss. (2010, 332)

Schoenberg’s explanation is pertinent to the remaining examples in this chapter, as we will see.

**Harmony**

Although some combinations of harmonies (such as the added-sixth chord or I+V trichord) are an integral part of the Mahlerian imaginary continuo, other examples of combined harmonies are heard to produce a conflict that does not result in an essential harmony from Mahler’s harmonic vocabulary. An example of this sonic conflict between hierarchical layers can be seen in Example 4.21. When Mahler adds a countermelody to his minor-mode “Frère Jacques” canon, he creates a succession of parallel ninths. These ninths are not simply “an extreme instance of parallel dissonant intervals” (Piston 1987, 479)—they are the result of two melodic lines composing-out different harmonies. The folk tune expresses tonic harmony throughout (with dominant-tinged passing harmonies), yet Mahler creates a sense of larger tonal structure here by composing a countermelody that comes to rest on an implied dominant harmony (the end of the 5–4–3–2 in m. 22). Thus we hear the simultaneous prolongation of I and V in different voices, creating a surface conflict—but the dominant is subordinate to the tonic at a deeper level, thus it is as if we are hearing two hierarchically consistent levels of structure at the same time.
Example 4.21. Symphony No. 1, iii, 21–22. Short score and slightly reduced continuo

A more drastic and more fully realized combination of conflicting harmonies occurs in the Sixth Symphony, when Mahler superimposes dominant seventh chords built on E and B♭.\(^{126}\)

Although this pair of seventh chords are drawn from the same OctaDom family and resolve to another member of that family in the following measure (G\(^9\), whose major ninth falls outside the collection; the progression is preceded by the remaining member of this OctaDom family, D♭\(^7\), in m. 385), in subsequent measures Mahler provides no such coherent resolution.

\(^{126}\) Tischler 1951 writes that of passage that, “while [Mahler] never employed polytonality, many passages produce a similar impression” (115).
Quartal harmony offers another rare instance where Mahler overthrows the classical imaginary continuo and even the norms of his own redefined imaginary continuo. Typically when Mahler uses quartal sonorities, they can be understood within the tertian system. The most common quartal sonority in Mahler’s music is probably the I+V trichord, mentioned above. While I regard that harmony as part of the Mahlerian imaginary continuo, the Seventh Symphony famously embraces quartal structures in a more extreme way. I regard these structures as anomalies in Mahler’s music, but they do defy the imaginary continuo. Example 4.23 presents an extreme quartal passage in short score with underlying voice leading.

Example 4.22. Conflicting dominant seventh chords on E and B♭ in Symphony No. 6, iv, 385–87 (short score taken from Monahan 2008)

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127 Since the I+V trichord consists of interlocking open fifths (1–5 and 5–2), one could regard it as a truly quintal harmony (rather than quartal), but it sounds like a clash of incomplete triads—the tertian system is still in control. At times, this I+V trichord can be heard as a single triad with an unresolved, suspended fourth (the “Sus4” of jazz and pop theory); if the fourth were to resolve (e.g., V⁴→³), the occasion would be unremarkable from the perspective of classical theory and therefore not of interest to us here.
The interval of a descending perfect fourth is introduced before this passage, intensified during this passage, and stated firmly with the arrival of the E-minor theme (m. 50); is one of the main motivic units in this movement. This motivic descending fourth has a clear tertian derivation: it arpeggiates the root and fifth of a triad. We are aware that Mahler uses an interlocking of two such dyads in his I+V trichord. Example 4.23 shows that a similar compositional process is at work in this quartal passage from the Seventh Symphony. The passage leads from a tonic of B minor to a tonic of E minor. The B-minor tonic is expressed by the motivic dyad, both harmonically and melodically. Mahler sustains the B-minor tonic dyad into the following measure, but destabilizes it by adding the dyad a fourth above. As the union of B-minor and E-minor dyads, the quartal trichord of measure 46 represents a kind of double-tonic complex. In B minor, it sounds like I+IV; in E minor, it sounds like V+I. Mahler then extends this process, adding the dyad a fourth higher. Whereas the quartal trichord of measure 46 is not unusual for Mahler, the quartal tetrachord of measure 47 is—it presents the E-minor tonic dyad, flanked by the dyads a fourth above and below. The origin (B-minor) dyad drops out in measure 48, as the IV dyad of E minor is chromaticized by #4. The energy of the passage now resides in the clear striving of #4 to reach 5; the E-minor dyad now sounds like it is “too early”—a tonic
intrusion. The tonic intrusion is completed in measure 49 by the anticipation of $\hat{3}$. This aggregation then releases into the E-minor tonic triad of measure 50.

A similarly coherent voice leading with incoherent harmony can be seen in Example 4.24. The harmonies marked by an exclamation point are remarkable for their defiance of classical harmonic syntax. In the first example, Mahler even incorporates a split scale degree of A and A♭. The challenge to the imaginary continuo in this passage is emphasized by Mahler’s dramatic changes of register, ripping at the fabric of the voice leading.

Example 4.24. Dissolution of harmonic syntax in *Kindertotenlieder*, "Nun will die Sonn' so hell aufgeh'n," 59–63

**Counterpoint**

Motivic forces can be understood to motivate many of the above harmonies, such as the stacked perfect fourths in the Seventh Symphony. They can also produce a great deal of tension
among discrete motivic layers of a contrapuntal texture. In the introduction of the First Symphony, for example, the descending sequence of the “Nature” theme is well established and grates inconsiderately against a rising bass line with its own motivic drive. A more complex example is shown in Example 4.25, taken from the first movement of the Ninth Symphony. As the analytic staves reveal, there is a remarkable distance between the surface of the music and the underlying imaginary continuo. While I find that the Mahlerian continuo has significance for much of this passage, there are details that push beyond the Mahlerian continuo and, more generally, the extraordinary freedom of the voices with respect to one another tips this passage into the realm of the dissolving continuo.

The relative freedom of the voices can be heard from the outset of the passage. After a powerful authentic cadence with tonic intrusion ($\hat{3}$), the lowest voices present a pedal tonic triad (mm. 374–75) while the highest three voices articulate a more surface progression that is itself complicated by a remarkable degree of contrapuntal independence. The passing harmony on the downbeat of measure 375, for example, progresses directly to the tonic triad on beat 2 in the lowest continuo model, but on the surface of the music the upper voices employ a striking heterophony as the melodic progression $B^\flat\rightarrow A$ occurs by beat 2 in the inner voice, yet is delayed until beat 4 in the top voice (see the clarification of this heterophonic relationship shown in the middle staves).
Example 4.25. Extraordinary distance between the surface of the music (uppermost three staves) and an ostensible Mahlerian imaginary continuo (lowest two staves), with mediating explanation (middle three staves) in Symphony No. 9, i, 374–91

A different challenge to the Mahlerian continuo comes in measures 378–80, when an underlying functional progression from VII\(^7\) to I is filled-out at the surface by unsupportive details. The VII\(^7\) on the downbeat of measure 378 becomes a VII\(^7\) with a perfect fifth and tonic intrusion (3 subbing for 2) by the end of measure 379 (passing through a purely contrapuntal harmony on the intervening downbeat). While the Mahlerian imaginary continuo could embrace this altered VII as a passing harmony, it has no answer for the trilled G\# of measure 378 or G of
measure 379—each of these tones engages in a semitonal conflict with a chord tone of the harmonic progression. The arrival of I in measure 380 is obscured by a double-appoggiatura figure (C–B♭–A), while the structural top voice is the much delayed high D.

Measure 383 takes two of Mahler’s cadential transformations and applies them to local, non-tonic harmonies. Thus we have a V/II that has been transformed through the Phrygian ² and a V/V that has been transformed though the intrusion of ⁵ and ⁷ (the root and third of the goal harmony). We also encounter heterophony in the upper voices as this measure leads to the next. Measure 385 brings a return of challenging cross-relations, with he B♭ of the inner voice conflicting with the B of the top voice. I hear the B♭ as part of a double appoggiatura leading to G.
(Example 4.25, cont’d)
Measure 388 begins with a $V^7/IV$ and ends with the transformation of that applied dominant into an applied intrusion chord (in this case introducing 4 and 6). The expected arrival of IV on the downbeat of measure 389 is displaced instead by a common-tone diminished seventh harmony that nevertheless seems to have the function of IV. This harmony resolves temporarily to a tonic triad in measure 390 before returning to IV on beat 4, this time as a IV added-sixth chord that resolves Plagally into the final tonic of the passage on the next downbeat.
Throughout this extended example (mm. 374–91), the Mahlerian imaginary continuo has much to tell us about the music’s structure; but as one compares the imaginary continuo to the surface of the music, it becomes evident that the imaginary continuo exists at a great distance from the musical surface. This distance contributes to the dissolving nature of the continuo’s explanatory power.

**Increased Ambiguity (Unresolvable)**

It was noted above the Mahlerian imaginary continuo—because of its expanded harmonic and contrapuntal language—embraces a higher degree of ambiguity than does the classical imaginary continuo, but that the ambiguities were resolvable. In the following example, the ambiguities are overwhelming.
Example 4.26 presents Bergquist’s analysis of the opening of Mahler’s unfinished Tenth Symphony, showing his foreground and middleground analyses. In Example 4.27, I have attempted to tease-out the imaginary continuo that is implied by his analysis. Perhaps the greatest difficulty I have with Bergquist’s reading is the simplicity with which he seems to hear it express F♯ major throughout. On a more technical level, notice that Bergquist leaves some notes uninterpreted. In measure 1, for example, the succession of G–F♯–E♯ is shown in standard notation, without interpretation. Notice, also, that Bergquist frequently abandons the third voice, leaving only a dyad—see, for example, the moments marked “dyad” in Example 4.27. In measure 7, he seems to read a full triad, but the fact that it is an augmented triad is not addressed.
Example 4.26. Symphony No. 10, i, 1–16. Three levels of analysis presented in Bergquist 1980 (taken from his exx. 2 and 4)
Example 4.27. Symphony No. 10, i, 1–16. Opening viola solo and the imaginary continuo implied by Bergquist’s analysis (as shown in Example 4.26)

Example 4.28 explores the ambiguities of the imaginary continuo for the end of this passage by providing three hearings. What these three hearings have in common is the final measures’ E#/A dyad (and its enharmonic equivalents). The first hearing presents what is perhaps the most likely initial hearing—an F-major triad. Indeed, this hearing can be difficult to escape. The second hearing takes an E# dominant seventh chord, instead. This hearing gives a greater sense of motion to the F#-major arrival, though that arrival is nonetheless surprising. The seventh here (D#) offers a potential destination for the C## of measure 7. To my ear, this is a somewhat mystical hearing. The third hearing takes a clearer path to F#, reading the preceding measures as unfolding within a functional C# dominant seventh chord.
Example 4.28. Symphony No. 10, i, 1–16. Three hearings of the imaginary continuo

Conclusion

Mahler’s music is remarkably heterogeneous—not only in the range of styles deployed, but also in the range of compositional techniques. Different levels of structure can combine at the surface, unresolved dissonances can become structural, different voices can prolong different triads simultaneously, and the very concepts of harmony and counterpoint are expanded beyond classical convention, embracing phenomena such as non-tertian harmony and parallel perfect consonances. The surface of Mahler’s music is wonderfully complex, and classical theory does not fully address it. As in classical tonal theory, in Mahler’s music we find a careful coordination
of voices; but Mahler pushes the bounds of classical theory and achieves a different kind of tonality. That non-classical complexity has been featured in this chapter through the study of the dissolution of the classical imaginary continuo and the emergence of a Mahlerian imaginary continuo. This chapter concluded by examining some ways in which the very function of the imaginary continuo is fundamentally challenged by occasional passages in Mahler’s music.
BIBLIOGRAPHY


